Neoliberalism and Discourse: Case Studies of Knowledge Policies in the Asia-Pacific

Volume 1 of 2

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Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Baljit Singh Grewal
February 2008

Dedication

To my beloved Parents, Wife (Sarabjit) and Son (Mannat)

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Coming from a farming family background from the fertile plains of Punjab (the land of five rivers), India, I have journeyed to the Ports of Auckland, Aotearoa/New Zealand (the land of long white cloud). This journey would never have been complete without my family. My parents have loved and supported me in ways I cannot even begin to name. My late Father allowed me all the freedom in the world and had a dream that I study hard and do well at the best of institutions in India and abroad. My whole life owes a deep debt to his foresight, perseverance and belief in my capability. Though I have often taken the silent prayers of my Mother for my wellbeing for granted, without her support my Father would not have realised his dreams for me. My brothers, Amarjit and Baldev have been my friends and confidants at all times and their families (Sarabjit, Kuldip, Harman, Puneet and Anu) have played an important role in keeping the Grewals of Kum Kalan hanging-together. To have seen and played in the lap of my great grand father (who died in 1985 at the ripe old age of 110) is one of my most cherished memories.

I am very fortunate to have in-laws who have supported my family immensely. My late Father-in-law was a giant of a man, a patriarch without whom we all feel rudderless. My mother-in-law is a gentle, altruistic person and we are fortunate to have been in her prayers always. My brothers-in-law, Inderjit and Bobby are like my own brothers. They

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Abstract

This thesis examines policy documents relating to the knowledge society of six Asia-Pacific countries (India, Korea, Singapore, Malaysia, Fiji and New Zealand). I employ Norman Fairclough's version of Critical Discourse Analysis (CDA) to explore the discursive construction of knowledge-related policies within a comparative case study methodology. *Leximancer* – a computer software for text analysis is used to assist in operationalising parts of the CDA.

The general conclusions drawn from the study indicate that the evolving knowledge policy discourse in the Asia-Pacific is not based on any robust theoretical framework but on international and country-specific paradigms of the knowledge society. In the policy discourses, the knowledge society is posited as a desired outcome in light of external (global) imperatives - economic globalisation, technological knowledge and innovation flows, and ICT revolution – which are married to context-specific developmental imperatives arising from geography, culture, history and polity. This hybridisation process gives shape to unique knowledge society paradigms of each country. My CDA analysis shows that the ideology of neoliberalism is a key discursive influence on the knowledge society paradigms and is mutated by differences in contexts across different countries. In the discourses, neoliberalism operates via an emphasis on policy restructuring (privatisation, deregulation and liberalisation), and streamlining of governance mechanisms relating to key knowledge and information policy sectors.

The resulting knowledge society constructions are context and time-dependent frameworks and exhibit two core arguments of convergence in all the case studies: (1) ICT and Science & Technology as vehicles for knowledge-based development need to grow in an enabling policy environment and; (2) the twin imperatives of globalisation and technological revolution mean that knowledge policy should have a competitive and innovation orientation, and should be continuously readjusted in tune with global economic changes. In addition to convergence, there are two major issues of divergence, namely: (1) emphasis on affirmative action in knowledge-related policies of India, Malaysia, and Fiji; (2) the promotion of cultural production and creative industries in Singapore, New Zealand, and more recently in Korea.

The original contribution of this thesis is that it provides a reassessment of the role of neoliberalism in knowledge society. The study is novel both in the selection of the

problem and the methodology. Comparative case studies using CDA have not been attempted at the regional scale and not with this level of documentary data. The use of Leximancer improves the management of textual data and increases the validity of the interpretations. A study of this magnitude has not been attempted for the Asia-Pacific region previously. Finally, the conclusions drawn from applying the CDA are both persuasive and creative in terms of analysing policy discourses of the knowledge society.

Abbreviations

ADB	Asian Development Bank
APDIP	Asia Pacific Development Information Programme
APEC	Asia Pacific Economic Cooperation
APII	Asia Pacific Information Infrastructure
ASEAN	Association of South East Asian Nations
ASSOCHAM	Associated Chambers of Commerce and Industry of India
BAIP	Basic Act on Informatisation Promotion
BJP	Bhartiya Janata Party
BN	Barisan Nacional
BPO	Business Process Outsourcing
CDA	Critical Discourse Analysis
CSIR	Council for Scientific and Industrial Research
DIT	Department of Information Technology
DoC	Department of Communications
DST	Department of Science & Technology
EPB	Economic Planning Board
EPC	Economic Planning Committee
ERC	Economic Review Committee
ESS	Economic Survey of Singapore
EU	European Union
FDI	Foreign Direct Investment
FRST	Foundation for Research, Science and Technology
GCC	Great Council of Chiefs
GIF	Growth and Innovation Framework
HUMANZ	Humanities Association of New Zealand
ICT	Information and Communications Technology
IDA	Infocomm Development Authority of Singapore
IMD	International Institute for Management Development
IMF	International Monetary Fund
INC	Indian National Congress
INSA	Indian National Science Academy
IPC	Informatisation Promotion Committee
IPR	Intellectual Property Rights

IS	Information Society
ISIS	Institute of Strategic and International Studies
IT	Information Technology
ITAG	Information Technology Advisory Group
ITC	Information and Technology Services
JACUDI	Japan Advanced Computer Use Development Initiative
KBE	Knowledge-based Economy
KBS	Knowledge-based Society
KE	Knowledge Economy
KIES	Knowledge/Information Economy/Society
KII	Korea Information Infrastructure
KM	Knowledge Management
KS	Knowledge Society
KWNS	Keynesian Welfare National State
MCA	Malaysian Chinese Association
MCDS	Ministry of Community Development, Youth and Sports
MDG	Millennium Development Goals
MFNP	Ministry of Finance and National Planning
MIC	Malaysian Indian Congress
MIC	Ministry of Information and Communications
MICA	Ministry of Information, Communications and the Arts
MICMR	Ministry of Information, Communications and Media Relations
MNC	Multinational Corporation
MoC	Ministry of Commerce
MoCIE	Ministry of Commerce, Industry & Energy
MoE & HRD	Ministry of Education and Human Resource Development
MoE	Ministry of Education
MoED	Ministry of Economic Development
MoFE	Ministry of Finance and Economy
MoGAHA	Ministry of Government Administration and Home Affairs
MoHE	Ministry of Higher Education
MoIT	Ministry of Information Technology
MoRST	Ministry of Research, Science and Technology
MoST	Ministry of Science and Technology
MoSTI	Ministry of Science, Technology & Innovation

MoTI	Ministry of Trade and Industry
MPIP	Master Plan for Informatisation Promotion
MSC	Multimedia Super Corridor
MSD	Ministry of Social Development
MTI	Ministry of Trade & Industry
MyKE	Malaysian Knowledge Content Survey
NCA	National Computerization Agency
NCAER	National Council of Applied Economic Research
NCB	National Computer Board
NCRWC	National Commission to Review the Working of the Constitution
NDA	National Democratic Alliance
NDP	National Development Policy
NEP	National Economic Policy
NIA	National Information Society Agency
NIDA	National Internet Development Agency of Korea
NIE	Newly Industrialising Economies
NII	National Information Infrastructure
NITA	National Information Technology Agenda
NITC	National Information Technology Council
NKC	National Knowledge Commission
NKDC	National K-Based Economy Development Council
NPE	National Policy on Education
NVP	National Vision Policy
NZ	New Zealand
OBC	Other Backward Classes
OECD	Organisation for Economic Cooperation & Development
OPP	Outlook Perspective Plan
PAP	People's Action Party
PCGID	Presidential Committee on Government Innovation and Decentralisation
PIF	Pacific Islands Forum
PIIPP	Pacific Islands ICT Policy and Plan
PMO	Office of the Prime Minister
ROK	Republic of Korea
RS&T	Research, Science and Technology
S&T	Science and Technology

SAP	Structural Adjustment Programme
SC	Scheduled Caste
SIAC	Science and Innovation Advisory Council
SKDC	State K-Based Economy Development Council
SME	Small and Medium-sized Enterprises
ST	Scheduled Tribe
SWPR	Schumpeterian Workfare Postnational Regime
TAS	Telecommunication Authority of Singapore
TEAC	Tertiary Education Advisory Commission
TEC	Tertiary Education Commission
TES	Tertiary Education Strategy
TFP	Total Factor Productivity
UN	United Nations
UNCTAD	United Nations Commission on Science & Technology for Development
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia Pacific
UNESCO	United Nations Economic Social and Cultural Organisation
UNMO	United Malays National Organization
USP	University of the South Pacific
WB	World Bank
WDR	World Development Report
WEF	World Economic Forum
WSIS	World Summit on Information Society
WTO	World Trade Organisation

Chapter 1: Introduction

1.0: The problem

Development is a often contested discourse of transformation of societies. Policy reports are a significant vehicle in framing and shaping development debates. Policy publications are the flagship publications of policy bodies and one significant means of by which the policy bodies communicate the development paradigm to the public. Policy institutions at all levels – global, regional, national, and sub-national – routinely use policy documents to 'market' a policy. They serve ideological purposes and constitute a discourse. For these reasons, policy documents are of critical interest to policy researchers. As a case in point, Mawdsley and Rigg make the following observations about the World Bank's annual publications, the *World Development Report* (WDR).

> The WDRs are a prominent mechanism by which the World Bank seeks to extend its world view, to pre-frame development debates, and to 'naturalize' particular economic and political discourses. These may shift slightly around their moorings, while remaining within a neoliberal core, but there has been more continuity in the discursive aspects of the WDRs, including their confidence in their expertise and Eurocentric world view; their technocratic and apolitical facade; their apparent intellectual openness; and the deceptive distance that they seem to keep from the Bank (Mawdsley & Rigg, 2002, pp. 108-109).

This thesis is concerned with the policy discourse underlying the restructuring of societies, the increasing salience of knowledge in development policy and its implications for society. That the world is moving towards a knowledge-based society and economy is commonplace in development theory and policy discourse. Are there policy discourses of the knowledge society in Asia-Pacific? How do the policy discourses of the knowledge society operate in Asia-Pacific – a region of uneven development and constituting both western and eastern cultures. Are they merely speculative and hyperbolic or do they refer to some credible reality? What is the nature of "knowledge about knowledge" in the policy discourse? How are globalisation, information technologies, and technological innovations represented in the knowledge policy discourse? What is the place of knowledge policy within development policy? To what extent have the ideological and institutional contexts of diverse Asia-Pacific states been undermined by neoliberal (knowledge-related) prescriptions of global policy institutions? These are the core concerns for this research.

The following research questions guide this research:

1. What sorts of knowledge about the ‘knowledge society’ are at work in the Asia-Pacific policy communities? How is knowledge society conceptualised?
2. What are the salient features of the discourse about the knowledge society?
3. What metaphorical and literal strategies are deployed to engender certain effects and meanings as opposed to others? What "facts" are fabricated in this?
4. What rhetorical use are concepts like “globalisation”, “ICT” and “innovation” put to?
5. Do policy documents favour particular solutions about the knowledge society?
6. Are the conceptions about knowledge society similar in the different countries?
7. What shape and form does neoliberalism, as instantiated through knowledge policy documents, take in different countries?

These questions have acquired new significance for the Asia-Pacific economies during the period since 1990s, with the unravelling of the Asian Economic Miracle, rapid globalisation and technological innovations, the spectacular boom and bust of the dot-com bubble, and the crashing and subsequent revival of Asian financial systems. My research provides the first comparative analysis of six Asia-Pacific countries to examine their policy discourse about knowledge-society relationships.

1.1.0: Argument

The central argument of my thesis is that the governance of knowledge is the key issue in development policy today. Neoliberalism as a hegemonic developmental ideology and economic orthodoxy at the global level has played a major role in how knowledge is conceptualised, measured, and governed as a policy subject. The labelling of current configuration of society and economy as knowledge-based is a rhetorical device to package knowledge with neoliberalised notions of governance. Global neoliberalism in combination with economic globalisation and technological innovation exert strong, overwhelming pressures on the state to restructure knowledge producing institutions such as the universities. As a source of data, I concentrate on policy reports on the issue of knowledge society produced by governments and the evidence of neoliberal ideas within them. I argue that policy discourses in recent years have been substantially shaped by neoliberal ideas prevailing globally.

The following discussion informs my argument. I start by locating the notions of the knowledge society and knowledge policy in theoretical discussions. Thereafter I relate these to the ideology of neoliberalism and the Asia-Pacific. Further, I describe the theoretical framework for analysing knowledge policies focusing on the notions of discourse, context and ideology. The analytical elements of the framework include the following structural dimensions of the knowledge policy discourse: concepts, domains, and networks. This framework enables me to describe and analyse interactions among policy discourses and policy ideologies at the national level. As a context and prelude to outlining the knowledge policy discourse, the following section outlines the diversity of sources on the knowledge society.

1.1.1: The knowledge society

With regards to knowledge, it has been argued that indeed there is something new about the nature of knowledge at this juncture in history. In academic and policy discourse, what is often implied in relation to knowledge is the capability and life-chance enhancing role played by scientific and technological knowledge. While this refers to the role of knowledge in the human development of individuals, the notion of the knowledge society looks at the society-wide developmental impact of knowledge. The development of the knowledge society is at the same time an event denoting social change, and a subject of scientific analysis and political proclamation. In fact, the scientific analysis and policy prescriptions are inseparably entwined. Advances in scientific and technological knowledge have led to the generation of many theoretical and policy perspectives on what impact they have on society. The most dominant of such ideas –that scientific advances, particularly of applied, technology-creating knowledge, are leading the society to evolve into 'information/knowledge society/economy' have influenced policy thinking around the world (Dutton, 1999). The thinking about information and knowledge in general takes place in the context of a specific vision of social and economic development, which in the policy arena is variously termed as Knowledge Society (KS), Knowledge Economy (KE), Information Society (IS), or Information Economy (IE). An appropriate acronym for these labels is KIES -Knowledge/Information Economy/Society (Crothers & S. Harvey, 2004). It has been argued that KIES lacks theoretical vigour and therefore is difficult to validate empirically (Rohrbach, 2007). Though appearing convincing in policy documents,

> if one makes an attempt to penetrate the veil of wishful thinking and politically superficial hyperbole, one may discover … a set of completely heterogeneous theoretical assumptions and conflicting trends (Bechmann, 2000, p. 37).

The roots of KIES as a set of policy ideas lie in academic discourse, particularly in the work of scholars, many working for their governments. In the US it has been Daniel Bell (1973) the chief theorist of post-industrial society, and Robert Reich (1991) who popularised the terms “symbol analysts” and “National Information Infrastructure” (NII). In Japan, it was Masuda (1981) who was the central figure in the Japan Computer Usage Development Institute (JACUDI), policy document titled, “The plan for the information society: a national goal towards the year 2000”. Simon Nora and Alain Minc (Nora & Minc, 1978) authored a report on information society for the French President. Even the philosopher Lyotard, wrote “The Postmodern Condition: A report on Knowledge” (Lyotard, 1979) while working for the government of Quebec, Canada. The second major academic source of the knowledge society concept are the theories of particular transitions within the modern era, such as theories of “risk society” (Beck, 1988), “the information age” and “the network society” (Castells, 2000), “control revolution” (Beniger, 1986), “knowledge society” (Stehr, 1994, 2001), and many others. Other notable sociological contributors to the sociological discourse include Frank Webster's (1995) *Theories of the Information Society* and Alistair Duff's (2000) *Information Society Studies*. The third major source has been the scholars in the fields of economics and management sciences, including Peter F Drucker (1969, 1994), Nonaka (Nonaka & Takeuchi, 1995), Hayek (1945), Solow (1956, 1994), Machlup (1962, 1980), and Romer (1990, 1994) who theorised about different aspects of knowledge and its use in society, economy and the firm. The fourth and final major source of the knowledge society concept has been policy documents. There are an increasing number of national and international policy documents referring to the impending knowledge society as a result of technological advances and globalisation (Duff, 2004; Garnham, 2000).

In my view it is important to demarcate the conceptual linkages between the various sources of the knowledge society ideas. The sociology of knowledge is a sub-discipline of sociology dealing with interrelationships between knowledge (understood as a capacity to action based on verifiable facts and values, plus philosophies, ideologies, political and theological doctrines) and society. Knowledge society studied from a sociology of knowledge perspective must focus not only: (1) on the broader

epistemological question of the role of knowledge in the social construction of reality, but also on; (2) the relationship of socially situated and mediated knowledge to social change in contemporary (variously described in theory as "late-modern"," post-modern", "post-fordist", "post-industrial") society. With regard to the first dimension, the articulation of social construction theory by Berger and Luckmann (1966) led to a new sensitivity to the role of language in the development of social policy (Lemke, 1995). A more contemporary concern within sociology of knowledge is on the role of ideas, discourses and prescriptive metaphors (the knowledge society being one such metaphor) in social and political change (Stehr, 2001). Knowledge society as a theme can be located in and related to all aspects of knowledge described above.

The relationship of socially situated and mediated knowledge to social change has been subject of study for discourse theorists. Discourse theory is a body of knowledge, which has developed with contributions from across the social sciences, that accords a centrality to the role of language as a social practice, and proposes that ideology, hegemony, knowledge and power exist and operate in society through language practices. The study of knowledge society can benefit from incorporating the discourse theory perspective in order, firstly, to gain insights into the role of discourse in patterns of power (and ideology and hegemony) in society (also potentially as an emancipatory tool) and, secondly, by using the concept of discourse as a category (and method) of analysis for policy oriented research. The concept of discourse is useful for this research because discourse, like knowledge, is socially situated and mediated. Discourses are simultaneously a social practice (Fairclough, 2003), and a type of knowledge (in the sense of being ideologies, values, doctrines, and so on). Similarly, policy discourses can be seen as social practice, as well as carriers of ideologies, values, doctrines, etc. According to Fairclough, the power of discourses is nowhere more salient as in the present day world, where certain discourses (globalisation, managerial, techno-futurist) have gained supremacy over competing discourses such as human development. These discourses privilege certain kinds of knowledge (technological and scientific) over others. The main thrust behind these discourses is the dominant political and economic ideology of neoliberalism, which lays the groundwork for continual expansion of capitalism. The drive for knowledge society is primarily discourse driven. The "knowledge-based" societies of today are also discourse-based societies (Fairclough, 2003).

1.1.2: Knowledge policy

The notion of knowledge policy refers to the political mechanisms used to realise knowledge goals at the individual and social level. The policy focus on impacts of knowledge on society is part of what Nico Stehr (2004) has termed “knowledge politics”. The reason for the emergence of knowledge policies, according to Stehr, include, the emergence of new forms of knowledge leading in part to the diminishing of difference between applied and basic research; the rapid speed and volume of emerging new knowledge creates increased capacities to act, concerns for possible adverse impacts, increased risk and uncertainty, increased social, economic and political centrality of knowledge and a wish by governments to regulate knowledge in the face of globalisation and finally a further strengthening of the authority of science in modern society. The policy resulting from this new situation, relates to “policy aimed at facilitating the development of knowledge-intensive industries, and is about ‘knowledge work’ and ‘knowledge workers’ ” (Rooney, Hearn, Mandeville & Joseph, 2003, p. xv). Further, the knowledge-related policy discourse has an engineering bent, as it fixes attention on scientific, technological and information infrastructure (Graham & Rooney, 2001 cited in Rooney et al., 2003). Rooney et al. (2003) critique the limited focus of knowledge related policy and argue for a deeper level of analysis that includes social structure and cultural values, in order for a more comprehensive vision of the knowledge society.

1.1.3: Neoliberalism and knowledge policy discourse

Given the significance of the discourse perspective in policy analysis, I now present the major elements of the knowledge society as a ideological policy discourse. The notion of policy discourse refers to policy as an instrumental communication medium for legitimating social practices. Since discourse is one social practice among others, the role of policy in the materialisation of the discourse is important. The policy discourse around the issue of knowledge society needs to be understood to grasp the issues in contemporary development policy. I agree with Ungar (2003) that ‘knowledge society’ is an uncritical transposition into the social domain, of the ‘knowledge economy’ metaphor. The discourse around the knowledge society hides more than it reveals about the current level of knowledge awareness in a society. Knowledge has always been part of society, but what is so special about knowledge in society at this moment that makes so much difference that people label the present society as being a knowledge society?

The discourses employed by policymakers in Asia-Pacific to justify their work are related to the neoliberal ideology, which is a political project seeking to create conditions for expanding capitalism throughout the world. The neoliberal ideology conveys a message, based on neo-classical economic theories of knowledge and technological change, that globalisation is irreversible and that the state is an obstacle to optimum use of resources. Globalisation, for the most part, is a process which stimulates and promotes the conditions that help to project the rhetorical message of neoliberalism. KIES is a feature of the new face of capitalism driven by neoliberal ideology which seeks to refashion the state as an enabler of pure market. This ideology reverberates in the discourses of the policymakers and is reflected in policy outcomes which impact on realities on the ground. Neoliberalism favours the separation of economy from the social reality by means of a strong, technocratic discourse and is driven by the power of its principle agents – the global policy institutions like World Bank, IMF and OECD – whose belief system is informed by the neo-classical economic theories. Neoliberalism is utopian in nature and in the words of Bourdieu (1998b),

> In the name of the scientific programme of knowledge, converted into a political programme of action, an immense *political operation* [Italics in the original] is being pursued …. aimed at creating the conditions for realizing and operating of the 'theory'; a *programme of methodical destruction of collectives*" (pp. 95-96).

1.1.4: Neoliberalism and the Asia-Pacific policy discourses

This thesis seeks to contextualise the knowledge society discourse and neoliberalism in Asia-Pacific. Faced with neoliberalism-driven globalisation, the Asia-Pacific region is becoming more and more integrated. Asia-Pacific is the region where the battle over neoliberal regimes is most ardently joined by its critics and proponents. This was evident in the Asian Financial Crisis of 1997 that reverberated through the region and impacted economically on all the major players in the region. Most critics of global neoliberalism have pointed out that free market mechanisms, especially international financial capital flows, were mainly responsible for disrupting well-functioning economies. The proponents of global neoliberalism pointed out that the Asian Financial Crisis resulted from undue state interference in the market and from a lack of free-market policies in the region. One thing is clear, that global neoliberalism played a key role in precipitating the crisis, and this further strengthened the suspicions of many of

the states in Asia-Pacific about the true impact of the neoliberal globalisation (Hall, 2003).

States in Asia-Pacific, while becoming weak in some regards, have found new avenues to consolidate their control. Faced with a neoliberal onslaught and periodic crises, the states in Southeast and East Asia have moved to form new alliances based on new realities. The regional economic structure, particularly of the Southeast and East Asian economies, which was once dominated by Japan and the USA, is now facing new competition from China, especially after its integration into WTO (Palat, 2004). In terms of social policy, Asia-Pacific is a still unfolding enigma. Most countries of Southeast and East Asia do not have large welfare systems and have shown that high economic growth and rapid industrialisation are possible without an expansive social policy. In certain advanced Asia-Pacific countries with developed social policy regimes, such as New Zealand and Australia, the social welfare model is fast changing from a Keynesian (welfare state) one to a Schumpeterian (workfare state) one under the neoliberal onslaught (Jessop, 2002a, 2002b). Factors such as these paint a picture of the state in Asia-Pacific which is under twin pressures. Firstly, there has been a weakening of the state's monopoly in institutional and regulatory policymaking capacity due to neoliberalism driven globalisation resulting in a "rescaling" of state relations. Rescaling is characterised by a simultaneous upward movement towards supra-national scale (the states' responsibilities stemming from membership of international organisations and multilateral regimes), and downwards towards local scale (the states' response to local level issues). Secondly, there has been a dilution of the state's power by the rescaling of economic activities (of multinational and transnational) from local through to transnational level, resulting in parallel and powerful economic interests seeking to influence policy.

The developmental state in East Asia is far from dead, and neither have the Asian Tiger economies stopped their relentless pursuit of economic growth. Though subject to continuous "discursive demolition" (Hall, 2003) by proponents of global neoliberalism, state developmentalism in Asia-Pacific has persisted (Weiss, 2000). The influence of the neoliberal ideology on policy regimes is not identical on countries in Asia-Pacific. In fact, there is a dialectical relationship between neoliberal ideology on one hand, and policy outcomes on the other. The relationship depends on the capacity of a state to withstand and/or negotiate a way around neoliberal ideological complaints about

developmentalism – a counter ideology to neoliberalism which argues that strong state guidance is imperative for economic reforms. The result has been that states in the region show a great diversity of strategies along the state developmentalism - global neoliberalism continuum. While some have sought to selectively conform and/or adapt to the global neoliberal regime, others have tried to counter it with instrumental visions of their own. Some countries, such as Malaysia, have devised their knowledge society vision as a counter to what they see as a cultural and economic hegemony of the West. In contrast, New Zealand and South Korea's visions of knowledge society show a high degree of agreement and/or adaptability to the neoliberal strategy. Still others, such as India, have developed knowledge society visions, as a result of opportunities created by impacts of neoliberalism. Neoliberal pressures in shape of IMF and World Bank conditionalities of liberalisation of economy, combined with a trend towards outsourcing of IT services from the West formed the background to the development of the knowledge society vision in India. States such as India are not immune to such pressures as reflected in the attempts to justify or "sell" such policies to the masses, as the best and the only route to socio-economic development.

Neoliberalism as it operates in the knowledge society discourse is not a homogenous ideology centred on a single operating principle. Neoliberalism as an ideology has many sub-orders of discourse, each focused on a single dominating cluster of values, while other values are considerably less salient. Hyper-capitalism, techno-utopianism, and policies which aim to be market-friendly or innovation-focused or human and social capitalism, and so on, are some of the sub-orders of discourse, each signifying a dominance of one cluster of values in the knowledge society discourse. However, the underlying unifying theme in the neoliberal discourse is that knowledge is a critical factor of production and that the developmental divide between the rich and poor can be filled by bridging the digital divide, by utilising the full potential of ICTs for development, by participating in the opportunities created by globalisation by adopting free market mechanisms, and by reducing state interference. Further, adopting the knowledge society policies is proposed as the sole guarantee towards building knowledge societies. The aspects of globalisation which the discourse of global institutions highlights include: elimination of trade barriers; development of technology based on knowledge transfer; improved communications and transportation; standardising products and services; and economic competitiveness, among others. These selective aspects of globalisation are also the ones which are given higher priority

in policy discourses at the state level. Social reality is approached as something to be engineered by orienting social structures towards a new reality built upon economy rather than culture, information rather than knowledge, and facts in preference to beliefs.

States in Asia-Pacific are at various stages of development. The six countries that form the focus of this research show extreme differences in level of human development as measured by the Human Development Index (HDI) (UNDP, 2007). The 2007 HDI rankings and values show a three-pronged division (Table 1.1). New Zealand, Singapore and South Korea are advanced states with high level of human development. Malaysia falls in the middle category, while India and Fiji fall in the low human development category.

Table 1.1: Case studies - Human development ranking 2007

Country	**HDI Rank**	**HDI Value**
New Zealand	19	0.943
Singapore	25	0.922
South Korea	26	0.921
Malaysia	63	0.811
Fiji	92	0.762
India	128	0.619

Source: UNDP Human Development Report 2007/2008

The six case studies can be divided into three groups based on level of development. The first generation advanced industrialised countries – Korea, and perhaps New Zealand, followed by second generation developmental states – Malaysia, and Singapore, and finally, third generation developing states – India and Fiji. There is no single Asia-Pacific model as far as development goes. What we have is a patchwork of states, with varying socio-demographic profiles, levels of development, levels of democracy, degrees of state intervention, and varying histories of promoting ethnic, patrimonial, group, and other particularistic interests. The policy culture, institutions, state priorities, and state-society and state-business relations that exist in the second-

generation developmental states of Malaysia and Singapore stand in marked contrast to that of Korea.

1.1.5: Theoretical framework

In the framework used in this thesis, as depicted in Figure 1.1, there are four components contributing to the manifestation of knowledge policy as a neoliberal discourse. They are discourse (policy constructions of knowledge and the knowledge society), context (the characteristics of the domestic policy context in relation to knowledge policy), ideology (the relationship of the state to the ideology of neoliberalism), and time (the evolution of policy with changes in discourse, context and ideology). This research proposes that impact of neoliberalism on knowledge policy (i.e. how neoliberalism actually manifests) is the result of the interplay between these four components.

First, by synthesising a broad range of literature from sociology of knowledge, (especially Berger and Luckmann's (1966) social constructionist theory of knowledge), social epistemology, discourse theory, the theory of knowledge society, and the knowledge policy perspective, I propose that knowledge as it manifests in policy texts is socially constructed and situated. The principal agents in the social construction of knowledge are domestic and international policy actors. The policy arena is the organisational basis of such social constructions and plays a seminal role in shaping how and what constructions of knowledge become mainstream. Further, the articulation of this social construction in policy texts impacts the awareness and understanding of the lay public about the knowledge society. In the case of knowledge policy, a key feature of social construction has been the overwhelming sensitivity to the belief that there is something new about the nature and role of knowledge in contemporary society and economy. Such has been the perceived significance of knowledge-related issues that a new domain of policy has taken root – the domain I refer to as knowledge policy. In this research, I use the term 'knowledge policy' to refer to the policy frameworks deployed to achieve a knowledge society. In agreement with Graham and Rooney (2001), I view knowledge policy as a cluster of policy sectors including, but not limited to, education, science and technology, economic development, and information and communication policies of states. Further, I propose that knowledge policy is a new and

emerging policy domain whose boundaries are still fluid because of contextual diversity in which they arise.

Writing about the significance for policy research of the socio-political constructions of new policy domains, the sociologist David Knoke emphasises that

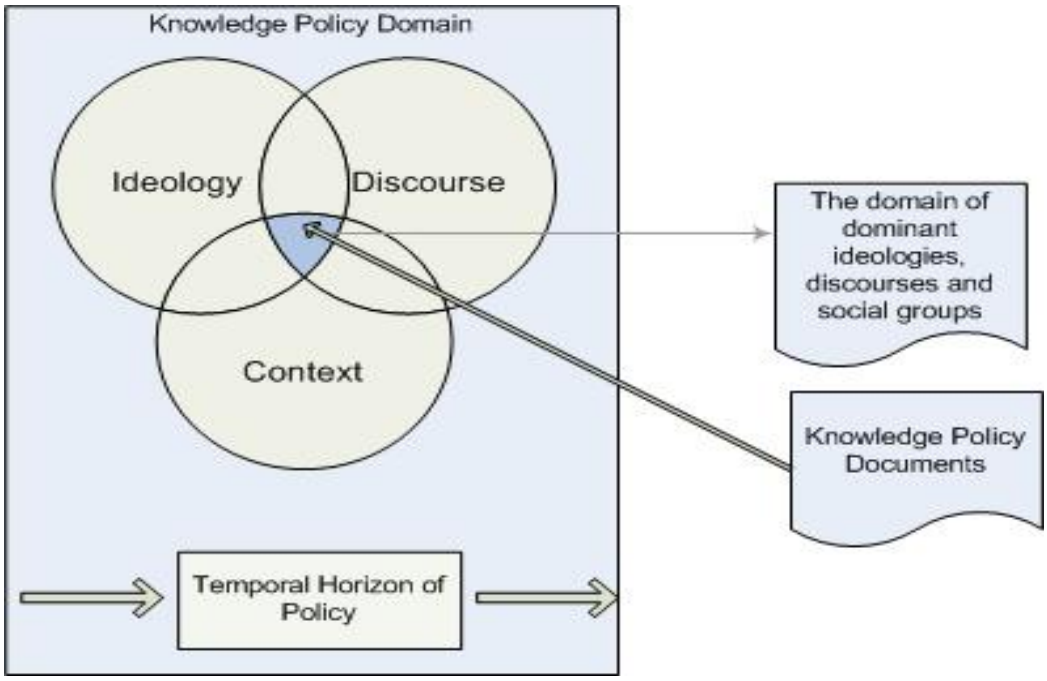
> Sociologists and political scientists should give serious attention to formulating testable theories about the historical emergence of distinct policymaking arenas. Both evolutionary and revolutionary changes are enmeshed in innovative efforts by political entrepreneurs to identify emergent substantive policy problems, redefine collective interests in those issues, and redraw the boundaries of institutions that formulate and implement proposed policy solutions. The sociopolitical (re)construction of policy domains potentially transforms shared cultural meanings, taken-for-granted assumptions, normative understandings, classificatory schemas, and tacit knowledge. New domains produce distinct legislative actions, administrative regulations, judicial rulings, bureaucratic practices, and, of course, numerous unanticipated consequences (Knoke, 2004, p.2).

Knoke (2004) deems six elements in social construction of policy domains as crucial. In his view, new policy domains emerge from a complex dialectical process involving the interplay of six elements. They are: "focusing events, technological innovations, political entrepreneurs, issue framing, policy networks, and policy domain institutionalisation" (Knoke, 2004, p. 5). Following Knoke's description of new policy domains as socially constructed, I propose that the origins of knowledge policy as a socially constructed policy domain lie in the discoursed imaginaries of the knowledge society in the domestic and international academic and policy communities. In my opinion, to operationalise Knoke's six-pronged dialectical schema, it is crucial to focus on the discursive dimension of the knowledge policy domain. The rationale behind this is that a view of policy as a discourse helps to drill deeper into Knoke's six elements of social construction of policy. A view of policy as a discourse helps to link Knoke's six elements with dominant discourses, ideologies and social groups. Further, a focus on discourse helps to link dominant discourses, ideologies and social groups with the policy imaginaries of the knowledge society present in policy documents (See Figure 1.1).

Second, I propose that the domestic context in which policies are developed impacts on the discursive framing of important issues raised and solutions proposed by the policies. Key contextual factors include the social, political, and cultural political economy of the

country; the demographic profile; and the existing governance mechanisms. The context determines how prevailing ideologies operate and how particular policy issues are communicated to the public. I propose that linkages between policy ideologies, policy history, and governance mechanisms must be considered to understand the pronouncements of national-level knowledge policy discourses. The dialectics of these three elements result in manifestation of context-specific discourses.

Figure 1.1: Theoretical Framework



Third, by applying ideas from the discourse theory, I propose that the interplay between the dominant state-level developmental ideologies to the global ideology of neoliberalism plays an intermediary role in discursive construction of knowledge policy, and constitutes the domestic policy context in significant ways. Global neoliberalism is not just an economic tenet but also a governance doctrine, which seeks to transform the role of the state in policy administration in line with its emphasis on liberalisation, privatisation and deregulation. The state, following neoliberal principles, must reorient itself into an enabler of the free market. This necessitates important changes in how policy problems are conceptualised, measured and their solutions implemented. In the Asia-Pacific, especially in East Asian developmental states where the state has historically played a strong guiding role in development policy, the proponents of global neoliberalism have attacked the states for not following practices of 'good governance'

(Wade, 1990; Hall, 2003). I propose that despite disagreements on how to govern, states in Asia-Pacific have been generally willing to neoliberalise their policies. The interplay between the state and global discourses on knowledge will determine what shape and form neoliberalism actually takes in Asia-Pacific.

Fourth, the temporal dimension is very important as all policies are aimed at time-bound and purposive change. The temporal dimension signifies that policy is a dynamic field where "decisions are made in historical contexts; influenced by the legacy of the past and uncertainty of the future" (Kay, 2006, p. 2). The analysis of the temporal dimension of policy helps to contextually embed policies in the national landscapes. In policy studies, the temporal dimension is sometimes seen as path dependency. According to Kay (2003)

> A system is path dependent if initial moves in one direction elicit further moves in that same direction…. Path dependency is not a framework or theory or model … it does not provide a general list of variables that can be used to organize 'diagnostic and prescriptive inquiry' nor does it provide hypotheses about specific links between variables or particular parameters of those links. Instead, path dependency is an empirical category; a concept which can be used to label a certain type of temporal process. The concept per se does not provide an explanation of why systems sometimes develop in a path dependent way (Kay, 2003, p. 406).

Since path dependency is not a theoretical category but a signifier of policy temporality it cannot be charged with the criticism of historical determinism. Ideologies and discourses can be characterised as path dependent. In this research, I propose that the knowledge policy and the neoliberal ideology are path-dependent, that is, their past trajectory constrains their present status. The elements of past trajectory include past policy decisions, changes in policy paradigm due to changes in ideological context, changes in the institutional context, and wider changes in the political economy. Knowledge policy can be characterised as path-dependent in the sense that previous policy decisions, dominant discourses and ideologies, the institutional structure, and domestic politico-economic context impinge in the shape and direction knowledge policy takes at the national level. Likewise, neoliberalism can be characterised as path-dependent in the sense that previous forms of state development ideologies (example, socialist, developmental and Keynesian welfare), periodic economic crisis, geopolitical power relations, levels of socio-economic development, degree of globalisation, nature

of relationship with global policy institutions, and domestic political economy impinge on the shape and form of transition to neoliberal policies.

The temporal dimension of policy can be examined using the concept of "spatio-temporal fix". David Harvey (2005) and Bob Jessop (2000, 2005, 2006) have used the notion of spatio-temporal fix to capture the significance of spatial and temporal dimensions in sustaining capitalism. According to Harvey (2005, p. 115), spatio-temporal fixes "are a metaphor for solutions to capitalist crises through temporal deferment and geographical expansion". Harvey writes that

> Over-accumulation within a given territorial system means a condition of surpluses of labor (rising unemployment) and surpluses of capital (registered as a glut of commodities on the market that cannot be disposed of without a loss, as idle productive capacity, and/or as surpluses of money capital lacking outlets for productive and profitable investment). Such surpluses may be absorbed by (a) temporal displacement through investment in long-term capital projects or social expenditures (such as education and research) that defer the re-entry of current excess capital values into circulation well into the future, (b) spatial displacements through opening up new markets, new production capacities and new resource, social and labor possibilities elsewhere, or (c) some combination of (a) and (b) (D. Harvey, 2005, p. 109).

Capitalism is able to expand and sustain itself because of spatial expansion and temporal deferment during periods of crisis. According to Jessop (2000), spatio-temporal fixes are spatial and temporal strategies within which capitalism finds its structural coherence. As Jessop explains

> These strategies seek to resolve conflicts between the needs of 'capital in general' and particular capitals by constructing an imagined 'general interest' that will necessarily marginalize some capitalist interests…. The general interest thus delimits the identities and relations relative to which calculation of interests occurs; and it confines the spatial and temporal horizons within which this occurs. It involves specific notions about which identities and interests can be synthesized within a general interest, about the intertemporal articulation of different time horizons (short-, medium- and long term, business cycles, electoral cycles, long-wave etc.), and about the relative importance of different spatial and/or scalar horizons (local, regional, national, supranational etc.). Thus, a conception of the general interest privileges some identities, interests, and spatio-temporal horizons, and marginalizes or sanctions others (Jessop, 2000, p. 335).

Further, for Jessop the spatio-temporal fixes manifest both discursively and materially and enable social agents "to operate within specific frames of action and serve to displace and/or defer certain costs, dilemmas, contradictions, and crisis-tendencies

beyond their respective discursive-material boundaries and spatio-temporal horizons" (Jessop, 2005, p. 144). Jessop (2005) interprets the discourse of knowledge economy as an hegemonic object of governance in response to the crisis of Atlantic Fordism. The discourse of the knowledge economy is a moment in time in "the search to identify and develop a 'new economy' following major crises in/of the Atlantic Fordist economies and … this search has been provisionally concluded with the (still incomplete) discursive construction and material constitution of the new economy" (Jessop, 2005, p. 142) as a knowledge economy. In terms of knowledge policy, the spatio-temporal fixes relate to the short-, medium-, and long-term allocation of capital, investment, and resources to the development of new sources of knowledge, new markets for knowledge-based products and services, and the mobilisation of the public in support of these endeavours.

The methodological component of the framework described above is informed by critical policy analysis, particularly Critical Discourse Analysis (CDA). The theory underpinning Norman Fairclough's (2001, 2003) version of CDA states that discourses, as a way of representing the world, are a type of social practice. These representations are evident in both text and in speech and help in constructing social reality, which is always relative to the position of individuals or groups in the society. Discourses manifest power and affect all social processes, while being themselves changed by those social processes. The relationship of discourse to the other social practices and processes is a dialectical one, each internalising the others, while being themselves changed and redefined in the process (Fairclough, 2001, 2003; D. Harvey, 1996). Policy discourses are one social practice among others which reflects power, whose nature is determined by its relationship with predominant and competing ideologies.

Globally powerful discourses can be distinguished from state discourses on the basis that global discourses such as neoliberalism and globalisation reflect geopolitical power alignments, while state discourses reflect domestic political economies, in addition to external pressures of global discourses. The global and state discourses are dialectically related to one another and this interplay is reflected in practices of the state. For instance, the Malaysian knowledge policy discourse is an outcome of the complex interplay between global neoliberalism, ethnicism, and Pan-Islamic ideology. Likewise, various kinds of global-state linkages can be seen in the policy discourses of Singapore, India, and South Korea. In addition to geopolitical practices, policy discourse is affected

by interplay of epistemological values. For example in knowledge-related policy, normative values (epitomised by critical and interpretive traditions in policy sciences) struggle against technocratic values (epitomised by positivist policy analysis). The struggle of the various anti-globalist movements inspired by critical social science against the neoliberal policies at national and international level, and the response of the policymaking bodies in the form of new jargon and labels ("Third Way", "New Labour", "Development with a human face", "Inclusive policy" etc.) is an example of the complex interplay between technocratic and normative values.

In operationalising CDA for the theoretical framework described above, I focus on two analytical dimensions of knowledge policy discourse: concept networks and policy domains. Concept networks in policy documents are composed of concepts that are semantically and conceptually nearer. Concept networks help us to determine how policy labels and concepts are textually constructed. By focusing on word collocations at phrase and sentence level, we can determine which concepts are networked together. By using Leximancer (Smith & The University of Queensland, 2005) - an automated text analysis software package – it is possible to obtain data relating to centrality, incidence and networking of concepts. The concept networking data can be mapped by means of social networking analysis software Pajek (de Nooy, Mrvar &Batagelj, 2005). Concept network maps help in determining the policy domain on knowledge-related issues.

Knowledge policy is not a single domain of policy but an amalgam of policy domains including education, economy, industry, ICT, and science and technology policy, among others. According to Knoke & Laumann (1982, p. 256, cited in Laumann, Knoke & Kim, 1985, a policy domain is

> identified by specifying a substantively defined criterion of mutual relevance or common orientation among a set of consequential actors concerned with formulating, advocating, and selecting courses of action (that is, policy options) that are intended to resolve the delimited substantive problem in question. (p. 2)

The sectoral composition of the knowledge policy domains differs across countries in Asia-Pacific due to differences in their domestic spatio-temporal context, which is a critical variable in the structuring of their policy spaces. The emphasis on sectoral composition helps to explain how and why knowledge policy manifests as its does.

In terms of CDA (see Chapter 4), the meso-level focus on interdiscursivity and intertextuality dimension of the discourse, and the micro-level analysis of modality and word meanings help in delineating the sectoral boundaries of the policy domain. Interdiscursive analysis looks at the use of other discourses (knowledge management, globalisation, nationalism, etc.) in the construction of arguments. The intertextual analysis looks at the presence of other texts (from the same and/or other domain and sector) in the discourse. In the micro-level CDA, the analysis of modality in the preface and foreword section of the documents helps to highlight the differences and/or sameness in the views of policy elites from different policy sectors. Finally, the analysis of word meanings of policy labels across different sectors of policy is crucial to explicate the core attributes of knowledge society in the discourse.

In the CDA procedure followed in this research (See Chapter 4), the determination of the concept networks and policy domains is critical in characterising the discourse in relation to the four theoretical components described above. The procedure for applying CDA within the theoretical framework is a combination of two stages. First, I analyse the domestic spatio-temporal context of knowledge policy by focusing on the developmental history, temporality of policy, and governance structure. This approach gives an overview of the country under study and contextualises the knowledge policy discourse as it developed, the institutional actors who played a role in its development and the politics surrounding the issue. This preliminary stage focuses on the domestic context and temporal components of the theoretical framework. The second stage involves focusing on the social construction and ideological aspects of the discourse. This stage relates to other two components of the framework – social construction of knowledge and relationship of state and global neoliberalism.

Because knowledge policy is an issue area spanning multiple domains, its governance manifests in widely differing strategies across Asia-Pacific countries. I propose that neoliberal policy values play an important role in not only the makeup of the knowledge policy domain but also in governance mechanisms enshrined to achieve policy aims. In addition, I argue that recent crisis moments relating to capitalism in the Asia-Pacific countries (such as Rogernomics Reforms in New Zealand in 1984, the liberalisation drive in India of 1991, and the Asian Financial Crisis of 1997) have resulted in context-specific spatio-temporal fixes. Policy visions of the knowledge society play a central role in the discursive construction of spatio-temporal fixes relating to investment in

S&T and ICT infrastructure, revamp of governance structures, restructuring of the economy, and mobilisation of the public in the post-crisis era in the Asia Pacific.

The temporality of knowledge policy is a key resource in identifying varieties of neoliberalism in the policy imaginaries of the knowledge society and its governance mechanisms. Considering the path-dependencies in Asia-Pacific countries' knowledge policies and forms of neoliberalism, we can expect that countries at different levels of development will accord different levels of discursive sensitivity to the four cornerstones of knowledge policy – science and technology knowledge, ICT, innovation and globalisation. For example, the level of socio-economic development is directly related to the development of ICT infrastructure and its utilisation; the contribution of science and technology knowledge to development; the success of innovation policies, and the degree of financial and economic globalisation. I argue that (1) the longer the history of knowledge policy in a country, the deeper will be the linkages with the discourse of the global policy institutions, (2) the higher the level of development, the greater the discursive emphasis on ICT utilisation, S&T innovation and creative industries, and (3) the higher the level of development, the greater will be discursive emphasis on globalisation.

Neoliberalism is not a static but a multi-dimensional and dynamic ideology. The relative importance of S&T knowledge, ICT, innovation and globalisation in knowledge policy is conditional on the character of neoliberalism in national policies in general. I propose that the actual manifestation of neoliberalism in knowledge policies in different Asia-Pacific countries will be dependent on (1) the degree of their (path-dependent) transition in relation to liberalisation, deregulation and privatisation, and (2) the degree of transmutation of the state role vis-à-vis governance by the amalgamation of previous state development ideologies with neoliberalism. In relation to the first, I propose that lower the levels of socio-economic development, greater the discursive emphasis on deepening neoliberalism through liberalisation, deregulation and privatisation. In relation to the second point, I propose that (a) knowledge policies of both developing countries (such as India and Fiji) and developmental states (such as Malaysia, Korea & Singapore) will show a continued emphasis on a strong role of the state in society and economy, and (b) advanced industrial and historically welfare states (such as New Zealand) will place a greater discursive emphasis on the state's facilitative role in

creating conditions for the creation, production and exploitation of knowledge by the people and business.

The relationship of proffered policy solutions and governance mechanisms to neoliberalism is also path and context dependent. The leverage of the state vis-à-vis global institutions such as the World Bank, IMF and the OECD is the key variable determining how neoliberalism manifests in the policy solutions and governance mechanisms in different policy sectors. Much has been written about the role of lending institutions in motivating policy change (Dollar & Svensson, 2000; Easterly, 2005; Killick, Gunatilaka, & Marr, 1998; Mosley, Harrigan, & Toye, 1995). The introduction of Structural Adjustment Policies in India post-1991, and the IMF bailout package in post-1997 South Korea are a good example of this from the Asia-Pacific. Therefore, I propose that states borrowing from World Bank and IMF are more likely to follow their policy prescriptions. Further, I propose that, in terms of policy solutions, the discourse of developing countries like Fiji and India is more likely to show a greater congruence with donor nations and/or multilateral institutions. In contrast, the knowledge policy discourses of developmental states with no or limited borrowing from these institutions (for example Malaysia and Singapore), are less likely to be neoliberal in governance sense and more in economic terms, as they imbibe selective economic principles of neoliberalism while rejecting some of its governance-related prescriptions. Finally, I propose that some developmental (Korea) and advanced states (New Zealand) are more likely, at least discursively, to be neoliberal, in both governance and economic senses due to their context specificities, and show a greater congruence with the discourse of the OECD.

The proliferation of knowledge policy discourse, coupled with the ascendancy of various types of neoliberalism in policy institutions, paradigms and contexts in Asia-Pacific are the two entwined core themes of this thesis. I propose that knowledge policy in Asia-Pacific is characterised by both continuity and change and; convergence and divergence of the knowledge society discourse. The temporal dimension of policy is key to unlocking issues signifying continuity and change in knowledge policies. Likewise, the sectoral dimension of policy helps to compare the issues of convergence and divergence in the discourse. The theoretical framework and analytical procedure described above will help to empirically corroborate the role of neoliberalism with regard to knowledge policy in Asia-Pacific countries. I argue that by their salience in

the knowledge policy discourses, neoliberal values have strongly influenced the conceptualisation, measurement and governance of knowledge in the Asia-Pacific.

1.1.6: Original contribution of the thesis

Government policy has been a critical factor in the economic success of many Asia-Pacific countries (Kraemer, Gurbaxani, & King, 1992). Knowledge policy has emerged as a key sector which has drawn the attention of policymakers as they seek to compete with other nations. Given the differences in their levels of development and domestic political economies, the empirical case linking knowledge policy to sustained growth is yet to be established. This research seeks to contribute towards understanding the dynamics of knowledge policy in the Asia-Pacific. Since knowledge policy is a key component of wider development policy discourse, I believe this research will locate, critique and advance the understanding of the knowledge policy discourses in contemporary Asia-Pacific. In this vein, this research contributes to the Asia-Pacific development policy literature generally and to knowledge-related policy in particular.

Another key contribution of this research is to the critical policy analysis tradition in policy science. Specifically, it seeks to apply CDA to policy texts from the knowledge policy domain. In this research, the empirical evidence of the policy discourses, as manifest in policy documents relating to six Asia-Pacific countries, namely India, Malaysia, New Zealand, Singapore, South Korea and Fiji, is analysed using a modified version of Fairclough's CDA (2001, 2003). CDA helps unravel the assumptions in the neoliberal discourse about the role of knowledge (especially technological and scientific knowledge) in social change under globalisation.

The discourses considered for analysis have been limited to those occurring between 1990-2006, as this is the period when there was heightened activity of policy discourses on the knowledge society in Asia-Pacific, stemming from advances in Information and Communications Technology (ICT) ("Internet Revolution" "dot-com bubble") and the resulting speeding up of globalisation, the financial crises and revival of Asian Tiger economies, and, a further entrenchment of the neoliberal ideology in the form of economic and financial restructuring in many countries.

Conclusions will be drawn about the discourses and their underlying ideologies, their impact on the reality, as well as the theoretical and policy significances of conceptions

of knowledge society in the respective Asia-Pacific countries. It is expected that conclusions will support the argument that, irrespective of the level of development of a country, global neoliberalism, by privileging some forms of knowledge over others, hastens potentially unsustainable social, political and economic changes. This mandates a serious weighing, at national policy level, of the costs and benefits of adopting knowledge-related policies informed by neoliberalism.

1.2: Purpose, significance and audience of the research

The present research is about arguments (and values therein) that policy documents make regarding the proposition that future society and economy will be knowledge-based. Arguments are the logic and reasoning employed by the policy documents. The textual elements of interest for analysing policy as a genre of governance include the use of metaphors of change, discourse style, interdiscursivity and intertextuality, and ideological assumptions and presuppositions manifest in policy texts. The text-oriented discourse analysis will help to analyse the meaning that the states make of the current global environment, how they recognise problems in the current policy order and how they choose to frame these problems to justify something new – a knowledge society policy. I believe that since policy texts and the language they use are political and ideological, they assume a power of their own over the public, and that there is a need to understand the policy discourse as a social practice, to fully comprehend the social implications of the global neoliberalism-driven knowledge policy discourse.

Two important and interrelated points must be understood to grasp the purpose and significance of the present research. Firstly, the policy discourses in most countries show a remarkable similarity and congruence, in terms of a shift towards the knowledge society pronouncements. These shifts can also be seen in the discourse of global level multilateral and inter-governmental organisations such as the World Bank (For example, the 1999 report, 'Knowledge for Development'), United Nations (Mansell, Wehn, & United Nations Commission on Science & Technology for Development, 1998; United Nations, 2001, 2003), and OECD (1996, 2002), as also in the discourse of regional organisations like the European Union (European Commission, 2002) and Asia Pacific Economic Cooperation (APEC) (APEC Economic Committee, 2000, 2003). The tenor of policy debates shows an urge for an adjustment to emerging global information society. The socio-economic background for such pronouncements lies in the transformations that characterise modern western societies – the post-World War-II

emergence and dominance of service industry, and the exponential speeding up of the information and communication revolution, among others. Science and technological knowledge has been identified as the crucial variable driving these transformations. Social policymakers in western, industrialised, and increasingly in the non-western, developing societies, have sought to re-orient their policy aims and objectives to these transformations.

Secondly, the knowledge society as a topic of study in social sciences has assumed increased significance at a time when there is a lot of concern and anxiety about the role of knowledge (especially technological knowledge and expertise) in society, and about the role of politics in creating conditions for knowledge. These concerns and anxieties are not entirely unfounded, as we find the society being transformed from an industrial to a post-industrial one, propelled ideologically by the influence of neoliberal ideology and technologically by the revolution in science and communications. What role can sociologists play in allaying the fears and anxieties over the new era? What role can social policy analysts play in better conceptualising and framing the policy agenda of knowledge? How can discourse theory enrich our understanding of the dynamics, effects and measurement issues of knowledge society related policy? These are some of the challenging questions that sociologists and policy analysts face, and this is what stimulated my interest in the topic.

This research lies at the cusp of sociology (particularly sociology of knowledge and its normative variant – social epistemology), public policy (particularly postpositivist or critical policy analysis) and discourse theory (particularly the version informed by critical social theory). It will be of interest to those in the sociology and policy analysis fields primarily, especially to those who study global social policy issues from a comparative perspective. While the main audience for this research are sociologists and the social policy community, this research will also be useful to people in social sciences generally, particularly public administration, political science, geography and international studies. The rationale for the regional focus of the research is provided by the need to study knowledge society policies with a view to understanding how different countries relate to the ideology of neoliberalism, that is, how neoliberalism affects the policy choices that countries make in response to it, and how do the ideologically-mediated policy discourses impact the social reality of these places.

To better understand the present form of social organisation – the so called "knowledge society" – and its construction in policy texts, is the primary concern of this research. The concern is with policy *in* and *of* the knowledge society. The *policy in knowledge society* focus assumes that the knowledge society exists or is at least impending. The Asia-Pacific regional focus of the study will help to demonstrate and locate the knowledge society rhetoric, its ideological roots and reality in this vital and dynamic region of the world. The *policy of knowledge society* focus describes how knowledge society as a policy agenda should be conceptualised and implemented. I propose that the study of the knowledge society from a policy perspective be focused on the dynamics of knowledge in contemporary society and its effects (including critique).

A central implication of this research is to uncover the technocratically informed and technologically driven nature of policy-making, what defects it has and what critical analysis of discourse over knowledge society can contribute to our understanding of the true stakes in the knowledge society. Fuller and Collier (2004, p. 189) offer an explanation of why policymakers rely on scientistic conceptions of "knowledge policy" and prefer technological fixes to the issue of knowledge society. According to Fuller and Collier (2004), knowledge policymakers convert problems that emerge in the public sphere to ones that can be dealt with by scientific means. Further, their conception of how science works informs how and what problems can be dealt with it. The authors liken the knowledge policymakers' beliefs about the efficacy of science to a "folk theory" – something which is commonsense but which is not put to rigorous testing – which stipulates that science alone can solve policy problems. One implication of this folk theory is that knowledge policy privileges applied research over basic research. This manifests as a hegemony of positivist approaches in the conceptualisation of knowledge society, and of science and technology knowledge in proffered policy solutions.

1.3: Justification of case studies and methods

To proceed in a meaningful way with the research aims, it is necessary to create an ideal type concept of knowledge society based on policy definitions, which can be operationalised in the research. One assumption behind using ideal-type definition is that knowledge society formulations bear a family resemblance. Although, not all the countries have the same definition of what constitutes a knowledge society for one

particular country, all of them show some degree of commonality in terms of what they mean by knowledge society.

For sampling purposes, the countries were chosen purposively to reflect the diversity of the Asia-Pacific region, in terms of population size, culture, and level of development (three types of countries on this basis: two OECD members, two developmental states of Southeast Asia, and two developing countries). On this basis, India and Fiji were chosen purely for their contrasting size and status as developing countries; South Korea and New Zealand for their membership of OECD and high level of economic advancement, and; Singapore and Malaysia for being newly-industrialising developmental states.

This study employed a case study approach in operationalising the CDA of selected policy texts from six Asia-Pacific countries. Data was collected by downloading online policy reports from respective government websites of the six countries. As the policy reports are in English (and in some cases official translations in English), there was no need for translation. In the data analysis phase, CDA was used for textual and structural analysis of policy documents. The CDA version proposed by Fairclough (Chouliaraki & Fairclough, 1999; Fairclough, 2001; 2003) is widely used and provides a step-by-step method. In this research, because of the constraints of the large size of the corpus, the CDA method was simplified. Only the semiotic analysis part of Fairclough's five-step method was used. The semiotic analysis consists of structural analysis (the orders of discourse) and the interactional analysis (intertextuality, interdiscursivity) of the discourse. Qualitative software – Leximancer (Smith & The University of Queensland, 2005) provided automated text analysis. The policy reports were machine-read and concept network data was obtained which was plotted in Pajek – a social network analysis and mapping software (de Nooy, Mrvar &Batagelj, 2005). The results of Leximancer were useful in all levels of CDA. The full and adapted versions of the CDA method are described in Chapter Four.

1.4: Thesis outline

This thesis consists of eleven further chapters, in addition to this one. In Chapter Two, I examine knowledge society as a policy concept in the service of neoliberalism-inspired capitalism. I examine neoliberal claims about knowledge, especially their privileging economistic and technocratic conception of knowledge over a broader sociological one.

The two main concepts that are discussed in this chapter are knowledge, and knowledge society. While both knowledge and knowledge society are academic as well as policy concepts, neoliberalism is an taken-for-granted ideology in policy which, along with the globalisation discourse, have profound impacts on social change.

Chapter Three picks up the thread from here and explores the relationship between knowledge society and neoliberalism. The concept of policy discourse straddles these concepts and remains the focus for most of the chapter. The concept of policy discourse – in linking the notions of discourse and ideology to public policy - is useful in situating 'knowledge society' as a policy concept of significance in the sociological study of knowledge.

Chapter Four explains the methodology employed in this research. It introduces Fairclough's version of Critical Discourse Analysis, its theoretical basis, and its relevance for this research. Further, I describe the modifications I have made to this method for its application in this research (Chapter Four).

Chapters Five to Ten are devoted to the CDA of knowledge policy texts in the six Asia-Pacific countries. CDA analysis for each case study is divided into three sections based on levels of CDA – macro, meso, and micro. The macro-level of analysis looks at the order of discourse, policy timeline, structure and results of automated text analysis by Leximancer. The meso-level deals with the intertextual and interdiscursive dimensions of CDA. Finally, the micro-level of analysis describes linguistic characteristics such as modality, meaning and wording of meaning to investigate the textual construction of policy labels such as 'knowledge society' and concepts, namely knowledge, innovation, ICT, and globalisation.

Chapter Eleven summarises the findings of the previous chapters and draws conclusions regarding the nature of knowledge policy discourse in the Asia-Pacific region. The conclusion chapter provides a discussion of knowledge policy discourse in light of the seven research questions. I provide an overall assessment of the role of knowledge in society and its significance as a policy problem, calling for policymakers to use inclusive conceptualisations of knowledge and its role in society.

Chapter 2: Academic and policy conceptualisations of the knowledge society

2.0: Introduction

In Chapter One, I explained the central argument of this thesis. In this chapter, I examine the academic and policy views on knowledge society. The two main concepts discussed in this chapter are knowledge and knowledge society. While both knowledge and knowledge society are academic as well as policy concepts, it is their free usage and economistic and techno-centric conceptualisation that is problematic. I propose that conflation of knowledge with science in academic discourse is responsible for shortcomings in theory and policy. The theory of knowledge society is plagued by multiple ills in conceptualisation of knowledge, including social and technological determinism, among others. Since theoretical knowledge contributes to policymaking, the policy discourse on knowledge is technocratic, utterly ideological, and reductionist. The policy discourse denigrates (social) knowledge and human beings as social agents. In this chapter, I describe the academic conceptions of knowledge and knowledge society. First, I describe three conceptualisations of knowledge – sociological (including social epistemological), management and information science, and economics conceptions of knowledge. Thereafter, I describe the sociological and policy paradigms of knowledge society.

The notion of discourse, being an important concept within the critical streams of thought in social policy and sociology of knowledge, is used in this research to uncover issues regarding knowledge generally, and knowledge society in particular. I am interested in the knowledge society discourse from a policy perspective, where it is part of an assemblage of visionary labels used for justifying policy change. My objective is to identify the dominant developmental ideology of neoliberalism within the varied knowledge society discourses within Asia-Pacific. My understanding of the notion of ideology is indebted largely to sociology of knowledge where it is considered to be a key determinant in social construction of knowledge.

Knowledge is a noun, which literally means to know or to understand. In everyday usage, knowledge is a word with many synonyms, including ability, accomplishments, acquaintance, awareness, cognition, comprehension, consciousness, discernment, doctrine, dogma, education, enlightenment, expertise, facts, familiarity, insight, instruction, intelligence, judgment, know-how, learning, observation, philosophy, principles, proficiency, recognition, scholarship, schooling, science, theory, and wisdom

(Kipfer, 2004). As we can see, these synonyms suggest that there are multiple meanings and types of knowledge in society.

The Greek philosopher Aristotle distinguished between three approaches to knowledge: *episteme* (the Greek word for scientific knowledge), *techne* (art or craft) and *phronesis* (practical knowledge) (Flyvbjerg, 2001). As a word in English language, it was popularised by the philosopher Francis Bacon, who argued for the inductive method in science and is famous for the aphorism "knowledge is power". Bacon described the inductive method in science as a means to generate verifiable knowledge (Klein, 2003). Likewise, distinctions can be made between many kinds of knowledge, ranging from the common sense or ordinary knowledge, to the practically oriented, and technical and scientific types of knowledge (De Weert, 1999). Other distinctions between types of knowledge include: universal and local knowledge, explicit or codified and tacit, experiential or reflective knowledge. The meaning of the term knowledge can also be distinguished on the basis of its usage in an epistemological sense and a pragmatic sense. While knowledge in an epistemological sense refers to analysing whether a statement or theory is objectively true or not, in a pragmatic sense knowledge refers to specific beliefs which are held to be true by specific groups and individuals.

At the outset, it is pertinent to point out that the concept of knowledge in sociology is different from the conceptions prevalent in policy. A key difference relates to its import – its nature and scope. Sociological views accord importance to the social determinants of knowledge, ideology, beliefs and values (Merton, 1937). Knowledge as a key concept within sociology is related to other core concepts such as social action, agency, interaction, differentiation, structure, change and development. I shall qualify the sociological conception of knowledge as 'social knowledge'. Policy views of knowledge, on the other hand, are grounded in the positivist tradition where emphasis is on scientific knowledge as a resource for development. Knowledge is of key importance in policymaking circles because policy is supposed to be the result of knowledge about policy problems and how to overcome them. This difference of perspective has consequences for the meaning of the knowledge society in policy and also in the scholarly debates over knowledge society. In relation to policy, it is not possible to view the policy-relevant knowledge as something detached from ideology and the economic system. Both the prevailing ideology of neoliberalism and the capitalist economic system have helped shape the concept of knowledge in policy. The view of linkages

between knowledge and policy that I develop here is not positivist but interpretive. It takes a broader view of what counts as knowledge in policy and accords greater importance to the contextual, ideological and evolutionary nature of knowledge.

The sociological study of knowledge and its role in society has a long history and is very broad in scope. Starting with Auguste Comte who wrote about the stages of development of knowledge , to the Marxian conceptions of development of knowledge and the role of ideas, which formed the basis of Mannheim's (1946) critique, as well as the basis of further elaboration by the Frankfurt School, to Merton's (1937, 1938, 1973) work on the sociological aspects of science, to Schutz (1972, 1982) work on the phenomenology of everyday knowledge, to Berger and Luckmann's (1966) classic treatise on the social construction of knowledge, to accounts of knowledge found in the works of Bourdieu (Bourdieu & Passeron, 1990), Foucault (1980), and Lyotard (1979) the sociological theory of knowledge and its relation to society is a major topic of concern in sociology. A recent strand of thinking about scientific knowledge and how it should be treated in sociology is found in the works of the "Edinburgh School" (Bloor, 1992, 1996; Bloor & Edge, 2000) and in the works of Steve Fuller (2000a; Fuller & Collier, 2004). These theoretical viewpoints are examined in the various sections of this chapter.

2.1.0: Disciplinary perspectives on knowledge

Academic views on knowledge have also been concerned about: (1) its ideological aspects; (2) its potential as a cultural resource where knowledge is considered as a public good, and as a determinant of social, cultural and human capital; (3) its usability potential; (4) its impact on human motivations and behaviour; (5) its potential as a policy resource; (6) forms of knowledge, and; (7) its measurement. We can differentiate between sociological, management and information science, and economic conceptions of knowledge. In each of these conceptions, different but related elements of knowledge are highlighted.

2.1.1: The sociological view

One major transformation in the sociological view of knowledge since the beginning of the last century has been the shifting criteria for evaluating knowledge. Much of the sociological literature on knowledge is concerned with its nature, verifiability and use

potential, especially in the fields of sociology of knowledge and sociology of science (Berger & Luckmann, 1966; Foucault, 1980; Gibbons, 1994; Mannheim, 1946; Merton, 1973; Polanyi, 1958, 1967; Stehr, 1994, 2001). In the sociological view, knowledge is a social activity encompassing commonly held beliefs and justifiable facts. Sociological definitions of knowledge generally differ in whether they emphasise peoples' commonsense understanding, or the utility value of such knowledge. Berger and Luckmann (1966, p. 13) defined knowledge simply as "the certainty that phenomena are real and that they possess specific characteristics". Likewise, definitions of knowledge can be differentiated in relation to objectivity and subjectivity and in relation to its connection with the prevalence of uncertainty and risk in society.

Aiming to develop a sociological concept of knowledge and highlighting its utility value, Stehr (2001) differentiates between the content of knowledge (the known) and the act of knowing (knowledge as an activity). Knowledge as an activity is about objectified knowledge, which according to Stehr is the symbolic representation of things, facts and rules. "Objectified knowledge is the highly differentiated stock of intellectually appropriated nature and society that constitutes the cultural resource of a society" (Stehr, 2001, p. 33). Hence, since every society is subject to differentiation, the access to knowledge by its members varies according to their social status. Based on these insights, Stehr proposes a concise definition of knowledge as a "capacity for action" (Stehr, 2001, p. 35). Following Beck (1988), Stehr reasons that advances in knowledge apart from enhancing the capacity to act also increase the potential risk and uncertainty in society. In Stehr's view, knowledge in contemporary society is a double-edged sword, the utilisation of which requires policy interventions. In contrast to Stehr's objectified knowledge focused definition, Hansson (2002) views knowledge as both subjective (belonging to the "species of belief") and objective (the requirement that any knowledge claim must be justified). Hansson proposes a concise definition of knowledge as a "true, justified belief" (Hansson, 2002, p. 39). In relation to the societal role of knowledge, Hansson proposes that (1) knowledge must be assimilated into the knowers' belief system, and (2) the knowers' belief must be based on high degree of subjective credibility. The absence of these two conditions increases the uncertainty and risk in society. As these two definitions highlight, knowledge in the sociological conception is a socially-oriented activity encompassing commonly held beliefs and justifiable facts.

Within the sociology of knowledge community there are differences in opinion over how knowledge ought to be conceptualised and studied. There are two divisions within sociology of knowledge: the “Strong Programme” on the sociology of knowledge, and the “Weak Programme”. The main sticking point is over how to treat scientific knowledge vis-à-vis social knowledge. The weak programme is associated with the work of Merton (1973), Mannheim (1946), Stehr (1994, 2001), and Gibbons (1994) who share the view that, while society is influenced by science, natural science (and especially mathematics) remains largely unaffected by society. In the weak programme, natural science is thought to be a privileged activity guided largely by the search for the truth.

The strong programme rejects this dualism between scientific knowledge and other (social) knowledge (Maffie, 1999). The strong programme, whose main proponents are David Bloor (1992, 1996; Bloor & Edge, 2000), and Harry Collins (Collins & Pinch, 1982; Collins, 2001), counts all kinds of beliefs as knowledge: biased and unbiased, valid and invalid, rational and irrational. The strong programme’s concept of knowledge is based around four core principles: causality, impartiality, symmetry and reflexivity (Bloor, 1992). Causality refers to the causal conditions which bring about knowledge. Impartiality refers to seeking causal explanations irrespective of the character of belief: biased-unbiased, valid-invalid, and rational-irrational. Symmetry refers to the style of explanation whereby the same kinds of causes seek to explain the various kinds of beliefs. Finally, reflexivity refers to the requirement that knowledge studied by sociology of knowledge can itself be subject to social scientific critique.

The sociological conceptions of knowledge which obtain from the strong programme emphasise the beliefs which people collectively hold and take to be knowledge. The weak programme by contrast is very much concerned with knowledge of the scientific kind. If we look carefully at the Stehr’s (2001) definition of knowledge (as the capacity for action), it largely refers to the concept of knowledge as it has developed in science and particularly refers to scientific knowledge, which is also at the core of Stehr’s and some other analyses of the knowledge society. On the other hand, Hansson (2002) who conceptualise knowledge as justified true belief, reflects a view of knowledge as synonymous with that of epistemologists. The strong programme view of knowledge is very broad (and is cause oriented) and has been developed largely in response to social epistemologists and the weak programme’s preoccupations with concepts such as

reason and logic as foundations of knowledge. All these perspectives do not necessarily coincide but reflect the diversity of debates within the scholarly community about the issue of knowledge, its relation to society, and how the pursuit of knowledge should be organised.

Equally significant from a sociological point of view is the work of French theorists such as Foucault, Bourdieu and Lyotard all of whom have written about scientific knowledge and its problems in the contemporary world. The poststructuralist thinker Foucault (1980) developed a radical view of knowledge and science, arguing that scientific knowledge related social practices really serve the aims of power and social domination. Power is not possible without scientific knowledge. Knowledge provides the capacity to exercise power over subjects. Bourdieu (1990), a social anthropologist, in his extensive analysis of academe as a site of capital, broadly shares with Foucault the view that knowledge is power. Knowledge evolves in the social context of power. Education as a field reflects the wider social inequalities in society. Knowledge in modern times does not lead to more equality but instead to further reproduction of existing social structures.

The postmodernist thinker Lyotard (1979) while specifically writing about scientific knowledge proposed that knowledge has become a kind of discourse since the second half of the 20th century. Lyotard reasoned that increasingly scientific knowledge has acquired a performative function. He calls it the “post-modern condition of knowledge”. Knowledge to be valid must have performativity. The performative function of knowledge works via language and discourse. Lyotard cites numerous examples from the fields as diverse as computer science to mathematics to cybernetics and linguistics to argue that progress in scientific knowledge has to do with language and discourse. The centrality of language and discourse in science and technology is leading to a shift in the nature of knowledge – from an end in itself to an informational commodity indispensable to productive power. An implication of this is that knowledge which cannot interface with computers falls by the wayside and knowledge which cannot be commercialised is not valued. The commercialisation of knowledge has an important implication for the state as the sentinel of scientific knowledge. These twin shifts force a realignment of state power vis-à-vis the economic interests. The state must learn to adapt to such changes in the nature of knowledge or become obsolete.

2.1.2: The epistemological view

Epistemology is the branch of philosophy which addresses the question, what is knowledge, and what must be added to the true belief to convert it into knowledge? While epistemologists agree that knowledge is both subjective as well as objective and has a social function, some such as Gettier (1963) have tried to prove that justified true belief does not always constitute knowledge. Subsequent work in epistemology has given weight to the argument that knowledge as a true belief does not necessarily require evidential justification but almost always requires reliable belief formation (Steup, 2001). How does this reliability come about? The Normative Epistemologists propose the argument that when the reasons are sufficiently cogent, knowledge is formed. The Naturalist epistemologists, on the other hand, focus on the conditions (causes) under which beliefs are acquired and argue that knowledge is natural phenomena occurring in a wide range of subjects. When a true belief has a coherent history of causes then knowledge is formed (Klein, 1998). So knowledge from epistemologist's standpoint, in one way or the other, must be justified whether evidentially or through reliability.

The above is true for individual knowledge but not for social knowledge. Social knowledge is the concern of social epistemologists (Schmitt, 1998). The constructivist social epistemologists hold that, collective or group knowledge is socially constructed. One strand of social constructivist thinking echoes Marx's view of knowledge - which is social in a socio-political sense (Goldman, 2001). Marx was concerned with the question – is knowledge an epiphenomenon? For Marx, ideology is a set of beliefs –a "false consciousness" - but the causes of such beliefs are grounded in the social situations and the interests of the believers. For Marx, scientific inquiry is inevitably and deeply affected by social interests and relations of social power. Marx's epistemology is "an epistemology that constructs a deep connection between the categories through which we know the world as social scientists and the social relations organizing our everyday experience" (Smith, 2004, p. 458). The early contributors to the sociology of knowledge (most notably Mannheim and Merton as well as the Frankfurt School) developed their conceptualisation of knowledge largely in response to the Marxian theory of ideology.

The social constructivist school within social epistemology has advanced significant intellectual effort on the issue of scientific knowledge. Social constructivists argue that in the realm of science it is the scientists who construct the knowledge and that truth and falsity of scientific knowledge and beliefs is determined by the social arrangement of scientists (Downes, 1998). This is the basis for their claim that all scientific knowledge is socially determined. Social constructivists are influenced to a great extent by the Marxian conception of scientific knowledge and ideology. Marx claimed that "it is not men's consciousness which determines their existence, but on the contrary their social existence which determines their consciousness" (Marx & Engels, 1970, p. 51). The best example of the social constructivist school in action is the "Edinburgh School" of sociology of knowledge identified with the works of Bloor (1992). The Edinburgh School has presented a strong criticism of the conceptualisations of knowledge of both Mannheim and Merton, both of whom left out natural sciences and mathematics from their claim that knowledge is socially determined. Bloor maintains that all scientific beliefs, including that of natural and mathematical science, are socially determined.

However, other social constructivists like Bruno Latour and Steve Woolgar focus on 'scientific facts' as socially shaped, unlike the Edinburgh School whose unit of analysis is 'scientific beliefs'. Latour (1987) and Latour and Woolgar (1986) maintain that scientific facts are constructed by a social arrangement between scientists, animate and inanimate objects and, scientific knowledge results from establishing relationships between objects, animals and humans. Latour and Woolgar are concerned with how facts become concrete, that is, how conjectures are transformed into background scientific knowledge over time. They argue that facts are not revealed to scientists but are constructed by them and that knowledge is not discovered but socially constructed. The social epistemological view of knowledge raises some basic questions regarding the nature and content of knowledge, its genesis in society, and the impact of prevailing social ideologies and conditions on what counts as knowledge. These questions will be raised later in the chapter, in the section on conceptualisations of knowledge society.

2.1.3: The management and information science view

A third strategically important conceptualisation of knowledge, especially from the policy point of view, is to be found in the discipline of management and information science. I refer to it as the technocratic view because of its influence in public and

corporate governance. Management science has used the notion of knowledge recently in the context of knowledge management and the theory of the knowledge-based firm. The knowledge management paradigm has come to dominate much of policy thinking on knowledge. Almost all the management science literature, with the exception of wisdom and complexity theory related perspectives, endorses the view of knowledge originally proposed by Polanyi who distinguished between "explicit" and "tacit" knowledge. Polanyi (1958, 1967) was concerned with the process by which people acquire 'personal knowledge'. Polanyi believed that knowing is a process which is grounded in tacit knowing. He introduced the aphorism, "we can know much more than we can tell", to exemplify tacit knowledge which is a type of knowledge which is difficult to make explicit. Tacit knowledge involves both telling (comprehension) and learning. Polanyi's ideas have had a huge impact on knowledge conceptualisation in many fields including the sociology of knowledge and management science. A vast amount of research is appearing under the rubric of tacit knowledge, which is a testament to its significance for theory as well as in management practice (Brockmann & Anthony, 2002; Castillo, 2002; Collins, 2001; Donaldson, 2001; Marra, 2004). The main figures behind the contemporary knowledge-based approach in management science are Drucker (1969), and Nonaka and Takeuchi (1995). Drucker had been a long-time exponent of the concepts of knowledge work and knowledge worker. According to Drucker, modern society is increasingly driven by knowledge because it has become the central economic resource. Nonaka and Takeuchi (1995) have proposed a model of knowledge creation in firms which is influential in management science. The authors acknowledge that they were influenced by Polanyi's concept of tacit knowledge and were interested in developing its practical side. They placed tacit knowledge at the heart of their model and proposed that firms have to find ways to capture and communicate tacit knowledge. Rooney (2005) criticises the technocratic nature of management discourse on knowledge and has asked for a change in mindset among the knowledge management scholarly community to reflect the wider views of knowledge prevalent in other social sciences. It must be pointed out that current management science conceptions of knowledge are more closely aligned to economic sciences than to social sciences. Maybe, that is why it has had more influence on the view of knowledge in policymaking than the social sciences.

In information science there are many approaches to information but within the social and organisational approaches, the popular concept of knowledge is the pyramidal

model, according to which raw data is processed to produce information and information is processed to produce knowledge (Newman, 2001). Hence, knowledge is purely derived from information, which must be explicit in the first place. This model ignores the fact that knowledge itself produces data. For the most part, information sciences such as library and information science and information systems, deal with the capture, storage, retrieval, communication and management of information. In contrast, in sociology the definition of information is tied to the use and challenges of information technology in society resulting from an explosion of information (Webster, 2002). Contrasted to these is the notion of information in management science where information is used to designate isolated pieces of meaningful data that, when integrated within an organisational context, constitute knowledge. The general picture of information and knowledge that emerges from information and management sciences is one of a process and product. This view of knowledge and information as a process and a product is very influential in the KIES-related policy mainly because often information and knowledge production and use are presumed to be linked to the reduction of uncertainty, and considered as the epitomes of positive action and decision-making. The technocratic view of knowledge draws upon linguistic elements such as metaphor and analogy to legitimise such optimism. The characterisation of knowledge in product and process terms assumes that only objectified and measurable aspects of knowledge are relevant for management. The fact that this technocratic view is a key feature of the ideology of neoliberalism will be explored chapter three.

2.1.4: The view from economics

Economic thinking lies behind much of the technocratic literature on knowledge and is salient in policymaking. Though classical economists including Alfred Marshall and Adam Smith understood the significance of knowledge to economy and society, in recent times the economic theory of knowledge has been developed by Hayek. According to Hayek (1945), the problem of knowledge is part of the problem of building a rational economic order. Hayek differentiates between scientific knowledge and knowledge possessed by people at different times and locations which gives them an advantage in economic affairs. Hayek's main point is that all human knowledge, and especially that available to social planners, is fragmentary and incomplete. Hayek believes that since no human can have complete knowledge of all the factors and because knowledge cannot be communicated to all the people in the society

simultaneously while solving a economic policy problem, it is wise that planning and decision making be decentralised as much as possible. Hayek's view must be seen in the context of the debate over the best method of economic planning to which his paper contributed. The three models of planning - the centralised (including socialist, Keynesian), mixed (Schumpeterian), and decentralised - form the background to this paper. Hayek was particularly critical of the Schumpeterian proposal that placed no great emphasis on individuals' knowledge in consumer behaviour and assumed that every individual's knowledge corresponded to the objective facts of the situation. According to Hayek, prices are not merely rates of exchange between goods, but rather a mechanism for communicating information between price-setters and price-takers. Hayek's paper argues against state planning and for liberal democracy and free market.

Peters (2003) identified six important strands within economics, all of which began after World War II and deal with the issue of knowledge: the economics of information; economics of the production and distribution of knowledge; the application of free-market ideas to education; the economics of human capital; public choice theory, and; new growth theory.

Among these theories, new growth theory's (Romer, 1990, 1994; Solow, 1956, 1994) refutation of knowledge as a global public good and its emphasis on technological change as the driving force behind economic growth has endeared it to public policymakers. The policy implication of these theories is that technological knowledge is necessary for economic growth to take place, and that policymakers should always aim to fill gaps in technological knowledge and information.

The economic view of knowledge can be seen in operation in the reports and research work of the policy institutions such as the World Bank and OECD. The OECD report, titled, "The Knowledge-based Economy" (OECD, 1996) explicitly recognises the analysis of knowledge in the 'new growth theory' as the key source of ideas. The report puts forward the view that production, distribution and use of knowledge are keys to economic growth and that investments in knowledge production will inevitably lead to a knowledge-based economy.

The World Bank's annual World Development Report for 1998/99 titled "Knowledge for Development" (World Bank, 1999) similarly positions knowledge as a product and

process. Aiming to see the problems of development from the perspective of knowledge the report identifies two main knowledge problems of the developing world – (1) lack of technological knowledge leading to a "knowledge gap", and (2) the lack of knowledge about effective markets leading to "information problems" and market failure. The main thrust of the report is on acquiring, absorbing and communicating knowledge useful for economic growth. As the report is directed at developing countries there is an emphasis on ways to acquire technical knowledge and techniques for success in the global marketplace, from the advanced countries. The Bank positions itself as an intermediary between advanced and developing countries, and an advisor in the knowledge policy arena.

The economic view of knowledge, especially its popularity among policy-making institutions points to the fact that the knowledge society as a policy concept is technocratic and ideologically based. The ideological aspects of knowledge society policy will be dealt with in the next chapter.

2.2.0: The theory of knowledge society

The label "knowledge society" encapsulates various interpretations based on the perspective one follows. Here, I will describe two perspectives: sociological and policy. At the outset I want to make two observations about these perspectives. Firstly, in both the conceptions there is a greater role afforded to scientific and technological knowledge as against common sense and cultural forms of knowledge. Knowledge is conflated with science, and the social and cultural impacts on knowledge are considered to be secondary to the primary impacts of science and industry. As Margaret Archer correctly pointed out the theories of postindustrialism and the information society suffer from cultural epiphenomenalism and cultural monism where "science and technology are utterly synonymous with knowledge and knowledge was completely conflated with the structure of the new Information Society" (Archer, 1990, p. 107). A reason for such conflation is that the theories of postindustrialism, knowledge society, and information society did not stem from a single disciplinary focus. Sociologists, economists, communication researchers, and management scholars have given shape to what is broadly known as the theory of knowledge society. It is in this context of multi-disciplinarity that this section discusses the status of knowledge society theory.

When we speak of the role of knowledge in context of the theory of the knowledge society, the main issue is to acknowledge the sociohistorical context in which these theories were proposed. With postindustrialism being largely a condition of the advanced, industrialised, Western countries, the theories of the knowledge society took these as reference points. The theory of the knowledge society that began to take shape in 1960s epitomised the developmental orthodoxy of the times – the positivist belief in the core tenets of the modernisation theory - industrialisation, technological progress, social welfare, democracy, and so on. Principle differences in the theories of the knowledge society relate not to their perspective on the epistemological and ontological foundations of knowledge itself, but with their treatment of what purposes the knowledge society serves.

Secondly, the conceptions of knowledge are ideological. Debates in sociology of knowledge have repeatedly stressed this point. In *Ideology and Utopia*, the sociologist Karl Mannheim (1946) proposed that no human thought is immune from the ideologising influences of its social context. Mannheim wrote about the power of the 'socially unattached intelligentsia' in realising utopian ideals in society. Mannheim's interpretation of ideology was an expansion of the Marxist theory of ideology from its political meaning (Berger & Luckmann, 1966). Unlike Marx, Mannheim does not consider utopia as a subset of ideology. Like Marx, Mannheim attaches a negative meaning to ideology and utopia. For Mannheim, ideology and utopia are functionally opposite with ideology being status quoist and utopia aiming at transformation of the social order (Levitas, 2007). For Mannheim, ideologies such as liberalism, socialism and conservatism might in the end be unrealisable, whereas as utopias these stand a higher chance of transforming the social order (Kumar, 2006). Berger and Luckmann (1966) conceptualise ideology as the situation where a particular conception of reality gets attached to a concrete power interest. Ideology in a pluralist modern society does not necessarily lead to conflict and different ideologies are able to coexist together within the same social system. Berger and Luckmann's concept of ideology is a narrow one compared to Mannheim's broad conception but is powerful enough to illustrate the relationship of ideology to society. For the authors, social change has a dialectical relationship to the ideologies. "Theories are concocted in order to legitimate already existing social institutions. But it also happens that social institutions are changed in order to bring them into conformity with already existing theories, that is, to make them more 'legitimate'" (Berger & Luckmann, 1966, p. 145).

2.2.1.0: Sociological theories of knowledge society

There is an emerging and still evolving theory of the knowledge and information society in sociology. The role of science and the impact of the explosion of scientific knowledge on social change form the undercurrent of the sociological imagination of the knowledge society. The variety of opinions on these themes range from strong endorsement to strong critique. I will traverse the various opinions on these themes in exploring how the recent focus on knowledge society has come about. It has been outlined in the previous section that discussions about knowledge in social sciences ultimately veer towards the positive role of progress in scientific and technological knowledge and expertise in society. This fact has been the subject of analysis for most prominent scholars writing on this issue.

Rooney, Hearn, Mandeville & Joseph (2003) make an important distinction between knowledge economy and knowledge society. Knowledge society is a broader term than knowledge economy because it embraces more activities than economic, commercial and industrial. Most research refers to the knowledge economy or the information society, but they are merely components of the knowledge society, which is a broader and all-encompassing concept. In sociological literature, the concern with labelling the transformation of society is not new. Knowledge society and related labels have been employed in social scientific literature since the late 1950s. According to Bell (1973), he had been using the label “post-industrial society” since 1959. In spite of its long lineage, there is still a lot of controversy among scholars as to what knowledge society and associated labels really mean for society – whether it leads to a professionalised society or a controlling society (Webster, 2002).

Most of the early theories of knowledge society were developed from the standpoint of developed and industrialised societies where researchers noted the transition in economies from manufacturing-based to a service-orientation (Powell & Snellman, 2004). Most of the work is positivist in orientation and sees the transformations in society as linear progressions from pre-industrial through industrial to post-industrial society. The label “knowledgeable society” was first used by Robert Lane (1966). For Lane, epistemology and logic of inquiry form the basis of a knowledgeable society.
Lane defines a knowledgeable society as one in which

> its members: (a) inquire into the basis of their beliefs about man, nature, and society; (b) are guided (perhaps unconsciously) by objective standards of veridical truth, and, at the upper levels of education, follow scientific rules of evidence and inference in inquiry; (c) devote considerable resources to this inquiry and thus have a large store of knowledge; (d) collect, organise, and interpret their knowledge in a constant effort to extract further meaning from it for the purposes at hand; (e) employ this knowledge to illuminate (and perhaps modify) their values and goals as well as to advance them (R. Lane, 1966, p. 650).

Lane leaves out much of the tacit and cultural aspects of knowledge. In fact, Lane proposed a model of a knowledgeable society by building on the existing sociology of knowledge, and social change and economic growth models. The most relevant parts of Lane's model of a knowledgeable society are those that relate to the relationship between knowledge and policy and knowledge and ideology. For Lane (1966, p. 657), policy is pre-formulated by policy professionals in a "professionalised domain of knowledge". Lane foresees a shrinking domain of pure politics as the motivating force behind policy decisions, as a result of the growing influence of the professionalised knowledge domain in decision-making. This means the decreasing influence of the electorate, lobby groups, interest groups and elites in decision-making. Further, this will occasion a change in the policymaking process, beginning with the conceptualising of policy problems by scientific and governmental authorities and leading towards selecting scientific solutions for mitigating problems. In Lane's view, this kind of policymaking will result in the reduction of "ideological" thinking in favour of knowledgeable thinking for rational policy action. Lane believes that a democratic system, based on a democratic legislative process and an enlightened voter, is a sure guarantee against partisan, irrational and dogmatic thought. In reality however, the influence of ideology is not replaced in Lane's scheme. Though Lane's model of knowledgeable society displaces ideology of a "pure" political kind, it replaces it with an ideology based on scientific knowledge and knowledge professionals.

Daniel Bell's (1973) venture in social forecasting about the impending "post-industrial society" is centred on conditions under which the industrial society will transform into post-industrial society. Bell, like Lane, refers to the advanced industrial societies as the most probable candidates for this transformation. Bell's forecast suggests a time period between 30 to 50 years (from 1973) for the emergence of the post-industrial society. Bell forecasted a change in the social structure of the industrial societies, although he saw the consequences of an emerging post-industrial society to vary depending upon the political

and cultural systems. The candidate would-be post-industrial systems he had in mind were those of U.S.A, Japan, Western Europe and (then) Soviet Union. There are five dimensions of the post-industrial society, according to Bell:

1. Economic sector: Creation of a service economy.
2. Occupational distribution: Pre-eminence of professional and service class.
3. Axial Principle: Centrality of theoretical knowledge for innovation and policy.
4. Future orientation: The control of technology and technological assessment.
5. Decision-making orientation: Making of new intellectual technology.

Bell's view of post-industrial society privileges scientific and technical knowledge. Bell placed technology and knowledge as two axes of the post-industrial society. Both these are embodied in social institutions and individuals. The result of this is the "knowledge society" (Bell, 1973, p. 212)

The post-industrial society, for Bell, is a knowledge society in two senses: (1) sources of innovation are increasingly derived from research and development; (2) the post-industrial society, based on measurement of Gross National Product and share of employment, is overwhelmingly weighed in favour of the education field. Bell chose the label post-industrial society over knowledge or information society because in his view the western, industrial societies were in the throes of massive change not only technologically but also culturally, and in his view the label post-industrial society better conceptualised these changes.

Bell's forecast had two shortcomings. Firstly, Bell's concept of society is very abstract and fuzzy for analytical purposes. For Bell, society is composed of three dimensions: social structure, polity and culture, and each of these have an axial principle. For example, the axial principle of social structure is to economise in the way resources are allocated. This suggests that for Bell, society is synonymous with an industrial society with a democratic polity where individuals are interested in self-fulfilment and enhancement. Secondly, Bell's concept of knowledge is tilted in favour of theoretical knowledge useful for innovation and policy purposes. Overall, Bell's forecast is a very optimistic and hopeful account of the future direction of industrial societies of the West, driven by scientific knowledge. According to Bohme and Stehr (1986), while elevating knowledge to the axial principle of society, Daniel Bell has not reflected adequately on

the nature of knowledge, especially scientific knowledge, which he treated as a black box. Further, both Bell's and Lane's theories are based in the functionalist tradition of sociology (because both emphasise the consequences of scientific knowledge for society), and, are influenced to a great extent by the earlier theories of modernisation, which see a particular trajectory of the evolution of industrial society as inevitable.

The metaphor of a 'flow' was used by Castells (2000) in his analysis of "network society". Castells' (2000) attempt at a theory of network society in an informational age looks at the issue of social transformation from a global perspective. Castells is of the view that globalisation is increasing the flow of information, capital and cultural communication across borders. These flows are dependent upon networks, which determine the pace of innovation and social transformation. The technological divide within and among countries is leading on the one hand to a refashioning of economic enterprises and on the other to the flexibilisation of work and individualisation of labour. Castells' greatest contribution is perhaps his global scale of analysis and how the flow of information through global networks is spatially differentiated, resulting in what he calls the 'space of flows'. The space of flows is a social order where social and cultural space is reconfigured as a result of the rise of the network society and differs from the 'space of place' which was tied to a geography and where places have a direct tie with the people, and, which was more a characteristic of modernity. The space of flows is generic in nature with no ties of place but one characterised by a flow of information across the network. Castells, like his predecessors, has been criticised for technological determinism and of promoting the ideology of informationalism, because of his suggestion that the new mode of development is informational (Garnham, 2000).

William Dutton (2004) in a report he wrote for UNESCO observes that the visions of information society in all the major theories have had a considerable influence on policymaking as they have highlighted the role of technology and of information work in economic transformation. A major drawback of this line of thinking is that it does not adequately anticipate the role of technology in social transformation and, conversely, the role of social factors in technology adoption (Bechmann, 2000).

2.2.1.1: Critique of knowledge society theory

The concept of ideology has attracted considerable attention in the social sciences (Althusser, 1971; Eagleton, 1994; Mannheim, 1946; Marx & Engels, 1970; van Dijk,

1998). Ideology is a child of the enlightenment period and was originally the name for a discipline oriented to the study of knowledge and ideas. Through time it has gained many meanings but in many senses it has acquired a pejorative meaning. The Marxian conception of ideology is a critique of the notion of ideas and, in Marxism, ideology is deemed to be more than just a set of ideas. The meaning of the concept of ideology has undergone change from its original Marxian interpretation, especially since the 1970s when it was rearticulated by Althusser. For Althusser, ideology consists of deep and systematic forms of interpretations conditioned by capitalism that serve dominant economic interests and reproduced inequality (Corner, 2001). Ideology arises from institutional apparatuses, for example in the media, in think-tanks and even in the academy in the discourse of the experts. From these sources it enters the state and private sectors where it pulls the levers of policy. The concept of ideology has most significantly been employed in Discourse Theory and Critical Discourse Analysis related literature (Fairclough, 1992, 2003, 2001; van Dijk, 1997, 1998).

Scholarly critiques of the information society have also used this concept by referring to the ideology of information society (Garnham, 1998, 2000; Webster, 2004). Work on the ideological aspects of the information society dates back to 1970s when Bell (1973) opined that the future post-industrial society would not be ideological in nature (Mattelart, 2002). Most researchers do not share his optimism. Delanty (2003) believes that knowledge as a concept is related to three new ideologies – postmodernism, neoliberalism and third-wayism. In the context of postmodernism, Delanty discusses postmodernist scholars such as Lyotard (1979) for whom knowledge is devoid of meaning. For Delanty, the separation of research and teaching and the demise of the modernist idea of a curriculum has been some of the effects of the ideology of postmodernism in education. Likewise, Delanty blames neoliberalism and its moderate version ‘third way’ as leading to important changes in the governance of knowledge and in the sidelining of some forms of knowledge, such as basic research. Garnham (2000) criticises the ‘information society’ as a “concept with no objective co-relative in the real world. Used as an ideological mantra it merely and dangerously distracts – as is often intended – from the real issues” (Garnham, 2000, p.151). Slack (1984) laments that in research not enough attention has been directed at studying the ideological determinants of the information revolution. For Slack the whole information revolution is an ideological phenomena. The information age, according to Slack, continues to develop in political, economic, and ideological struggle. The information revolution is

ideological because it is part and parcel of a system of ideas which provides its meaning and within which it is a determinant. The very descriptions of the information age are in part constitutive aspects of the information age. Ideology permeates what the information age actually is, how it is lived and experienced and how it will develop in future (Slack & Fejes, 1987). Slack and Fejes recognise that at one level, the changes taking place in society due to the information revolution are real changes. On another level, there are competing systems of meaning or ideologies which claim to represent these changes -- maps of reality which are in a constant struggle to achieve and maintain dominance. Gramsci (1971) has called this struggle for dominance hegemony. The dominant ideology of the information age presents a one-sided and partial way of mapping the social reality. The information age as an ideology, according to Slack and Fejes (1987) equates information and communication technologies with social development while hailing the individual as user of new technologies. Further, the ideology hails the entire Third World as a user on a global scale. It relapses all the alternative definitions of knowledge and information into one single definition – that information and knowledge are commodities to be produced for the market. In this way, the ideology positions the information age as a new and superior way of life.

The critique of the ideology of the knowledge society is based around the core idea that the development and diffusion of ICTs have introduced no fundamentally new direction in society. ICTs are seen to be applied within a political, social and economic environment that reproduces existing patterns, rather than giving rise to new ones (Kumar, 1995). The ideology of the information society continues to exist despite these criticisms because has a commonsense appeal for a lot of people in the world including in the media, the public relations, and advertising (Slack, 1984). The ideology of the information society is also manifest in the calls of global neoliberal institutions which give rise to the questions as to what is the role of policy in sustaining the ideology of information society.

2.2.1.2: Social epistemological critique of knowledge society

The distorted view of knowledge in social science is also the main point of debate in social epistemology. What role should be accorded to natural science knowledge in sociological and policy perspectives is a major concern in social epistemology. According to Steve Fuller (1995), sociological theory generally has accorded greater

legitimacy to natural science. In addition, the sociological theory is indeterminate about whether to use a diffuse or a precise definition of knowledge. Fuller lays the charge that social sciences reify scientific knowledge and expertise in solving societal problems. In a recent article, Fuller (2001a) has tried to analyse the origin of the expression 'knowledge society' that is so often invoked to characterise the distinctiveness of the present time. According to Fuller (1999), the main objective of social epistemology is "knowledge policy making" (p. 103). This means that the social epistemologist has to answer the normative question: what ought scientific knowledge be? Fuller's notion of scientific knowledge is that it is manifested materially in a society, and is a product, which requires resources of time and money to produce. Fuller argues that the legitimation of science is a political process where factors such as knowledge, policy and constitution play an important role in the legitimation process (Remedios, 2003). Fuller claims that the rise of knowledge management as the dominant perspective on the knowledge society in social science and policy is the result of the expansion of the capitalist mode of production. There are several indicators pointing towards this expansion, including: requirements of credentials for employment, the proliferation of computerised expert and decision-making systems and the intellectual property legislation. A consequence of this has been that knowledge conceptualised in such terms, serves to lock people into particular positions within society which are similar to what was prevalent during pre-capitalist, feudal times. Further,

> the knowledge management movement can be seen as the final stage in the retreat of knowledge's status in the economy from a public good in the tertiary sector to a natural resource in the primary sector (Fuller, 2001a, p. 190).

Fuller says that to rescue knowledge from the knowledge managers, it is important to see the value produced by knowledge according to three sources of income in classical economics: rent, wage and profit. By rent is meant the income earned from a resource, wage is income paid for labour, and profit is the return on investment depending on the price that a commodity earns. Three different perspectives on knowledge society emerge and any one of these maybe predominant at a particular point in time (see Table 2.1 in Appendix A). Fuller sees these three sources of value as leading to social inequality and dominance. Only those people who are favourably positioned in this scheme get rewards. Such a knowledge regime is a source of power for bureaucrats, scientists, doctors, engineers and academics. Fuller suggests that such a knowledge regime is detrimental to wider social interests.

Fuller (2003) writes that the capitalist ideology of neoliberalism has eroded state authority in areas of research and knowledge policy. This, in combination with the erosion of the social redistributive emphasis in social policy, has resulted in the marginalisation of certain groups of people within society. The legitimisation of science as a ideological process is distinct from the legitimisation of science as a political process which Fuller supports. Fuller favours affirmative-action based knowledge policies and constitutional measures to widen access to marginalised groups.

Rouse (1987) differs from Fuller's view about the legitimation of science and argues that it occurs at the level of scientific practices in the various fields of scientific knowledge. Rouse argues that similar power strategies to those described by Foucault in relation to the modern institutions such as prison and mental hospital, are discernible in the scientific laboratory which is a "micro world", a "structured space" where scientific practices and procedures take shape and are standardised. In addition, the laboratory is not just a enclosed scientific space but an political force in the modern world. The scientific knowledge produced in the laboratory is realised as technology in the outside world. The development of scientific practices and their extension into the world by technology transforms people, their institutions and their understanding of the field of possible action. Rouse believes that it is the forms of power/knowledge that are embodied in natural science that help to reshape the world and influence our lives, and that these power relations originate in the laboratory.

The social epistemological views of the role of scientific knowledge in society are a critique of the conceptualisations of knowledge in social sciences and the impact that such conceptualisations have had on society when applied through policy. Next, I turn to the policy perspective on the knowledge society.

2.2.2: Policy perspective on the knowledge society

The policy concept of the knowledge society as well as the sociological theory of the knowledge society share an overlapping history with the rise of neoliberalism in economic thinking and the rapid advance ICTs. All these trends took shape in the early 1970s. The first major policy towards knowledge society was formulated in Japan (Masuda, 1980) in the early 1970s roughly the same time as the rise of neoliberal

economic policies and the appearance of Bell's classic treatise on post-industrial society. Advances in ICTs have led to the generation of many theoretical perspectives on what impact they have on society. The most dominant of such ideas – that the information revolution is leading society to evolve into a 'knowledge/information economy/society' have influenced policy thinking around the world (Dutton, 1999). The policy thinking about information and knowledge in general takes place in the context of a specific vision of social and economic development, which in the policy arena is termed as the information or knowledge society.

The shift towards an increasing policy interest in scientific knowledge reflects for some scholars a wider shift in governance. Political scientists have proclaimed that the post-World War II era signified a shift from the "administrative state" to the "scientific state" (Schmandt & Katz, 1986). The role of science in statecraft is seen as leading to changes in the nature of governance. The dominant global policy issues of recent years, such as sustainable development, North-South technology and the developmental divide, and so on, are related to the changes brought about by advancements in growth and the social utility of scientific and technological knowledge (Schmandt and Katz, 1986). According to Dunn (2004), policymaking and the socioeconomic organisation of the post-industrial society are dominated by an "educated professional-technical class" and policy analysis has developed out of this shift to a post-industrial society and scientific state. To the critics this era of policy analysis has been dominated by what they call a "technocratic" paradigm (Fischer, 2003).

The policy projects on knowledge embed the knowledge discourse in the discourses of social forecasting/foresight and futurology which in turn is heavily influenced by the economic and technocratic views of knowledge. Cozzens (2003) reviewed twenty years of articles in the journal *Prometheus* on science and technology policy and found that five themes predominated the discussions: competitiveness, knowledge economy, human resources, public participation in science policy, setting national priorities and management of science by the state. These relate to the economistic logic prevalent in the technocratic and policymaking realms. Cozzens also observed an analytical distinction between research policy and innovation policy within the field of science and technology policy. These themes give a hint of the general orientation of policy studies while dealing with knowledge society issues amidst a general emphasis on management of science and technology via policy.

The views of knowledge from disciplines such as economics, management and information science are also very influential in the neoliberal arguments about knowledge as a panacea for socio-economic development. Michel Peters (2002) has observed a growing body of literature on knowledge economy policy in management and economics, where the main organising concepts have shifted between "knowledge" and "information" and between "economy" and "society" and where these concepts have been conflated without regard for their differences. Further, Peters alleges that the understanding of "knowledge economy" from these disciplines shows five alleged characteristics: (1) economics of abundance of information resources; (2) the annihilation of distance; (3) the de-territorialisation of state; (4) the importance of local knowledge, and; (5) emphasis on investment in human capital (Peters, 2002, p. 94).

These five alleged characteristics form the basis of arguments about the knowledge economy. Peters (2002) argues that the policy constructions of the knowledge economy obfuscate the conceptual differences between "knowledge" and "information" and fail to recognise that knowledge is a global public good. Peters (2002) advocates that policy constructions need to base their arguments around the normative ideals based on wider social and cultural parameters of knowledge.

Peters (2000) shows how the policy construction of the knowledge society in New Zealand by the Ministry of Research, Science and Technology is based on fuzzy techniques of social forecasting and scenario building, which are neither a form of planning or prediction but an analysis of global trends nor how they impact New Zealand. The main purpose of such exercises is to gain public consensus about desirable policy outcomes.

Rooney (2005) in his analysis of policy documents on the knowledge society from both developing and developed countries finds that while there is some concern shown about culture, art, the environment and social welfare, much of the discourse is technology-centred. Also there is little discussion in many documents about what knowledge is, and its use apart from being of value to economy and technology. Rooney laments that the social meaning of knowledge is changed by policy discourse. This greatly restricts the scope of the public debate over knowledge. Rooney et al. (2003) critique the limited focus of knowledge related policy and argue for a deeper level of analysis that includes

social structure and cultural values. They argue that policy constructions of the knowledge economy should be based on an inclusive understanding of the knowledge society. Padovani (2004) also laments that visions of the information society, such as those enunciated at international fora like the World Summit on Information Society (WSIS 2003 & WSIS 2005), tend to invest too much capital on narrow ICT aspects while ignoring the broad communication and knowledge concerns. For Padovani,

> Visions of the information society can only be developed if information, communication and knowledge are addressed together; if technology infrastructures and media contents are debated in the wider framework of global communication and media systems; if new critical social and cultural issues raised by the transformations in technology are fully recognized as part of the agenda (Padovani, 2004, p.188).

We can see from the above-mentioned studies that there is a definite trend in policy discourse favouring the knowledge economy perspective. Also there is an increasing tendency to use alternative labels for the knowledge society. Let us turn our focus towards the labels that pretend to refer to a knowledge society, to find out more about the policy concept of knowledge society.

Understanding the knowledge society as a policy concept is fraught with difficulty given its loose and rampant usage in media and in policy circles. Knowledge society goes by different labels in different countries depending on the jargon in vogue and the aims of policy. Recently, knowledge society has acquired a buzzword status and has become fuzzy and confusing. This kind of confusion is typical of many concepts used in current policy discourse such as globalisation, information society, governance, civil society and so on. Knowledge society is a contested concept and such concepts are hard to categorise, classify or describe because of they are shaped by the discourses in which they are situated. What is meant by knowledge society in academia might be different from what it signifies in policy discourse. This creates a discrepancy in peoples' understanding of the knowledge society and its existence in reality, because peoples' understanding is influenced by dominant discourses. In the political context, language serves a crucial double purpose, in that it does not merely describe but also creates meaning for such concepts, based on prevailing political ideologies. Also, a reference to the knowledge society in policy discourse does not merely describe what it is according to the policymakers, but it also shapes the conception of knowledge in the minds of the

audience – the public. In this way, the language of policy is not only a tool for making sense of reality but is also a tool for political persuasion through discourse.

The policy discourse of the knowledge society is the attempt by policymakers to come to terms with globalisation and technology-induced changes at the sub-national, national and international levels. Indicators and statistical measures are being developed and adopted by countries and international organisations to measure the record of countries in the impending information society. The policy mantra of the knowledge society comes in various garbs and is variously referred to as knowledge society, knowledge-based-economy, information society and so on. However, there seems to be some pattern behind the descriptor used. Multinational organisations, like the European Union (UN) and UNESCO, and WSIS tend to prefer the label information society. Also, in Europe and Africa the label predominantly used is information society, in Asia-Pacific and North America, the descriptors knowledge society or knowledge-based-economy are used interchangeably and are fairly common. In addition there are a variety of country specific policy labels used to describe the knowledge society (see Table 2.2 in Appendix A). The labels ‘information society’ and ‘knowledge economy’ are generally more prevalent than ‘knowledge society’ or ‘information economy’ in media and policy discourse. Also, many countries and institutions are using labels from the ICT policy domain, such as ‘digital economy’ or those prefixed with ‘e’ or ‘i’.

The preference of poorer countries, especially in Africa, for the label ‘information society’ may be due to its transplantation from international organisational discourse, especially of the OECD and the two WSIS summits. In Europe, although individual countries might use different labels, the label preferred by the EU as an organisation is Information Society, though the European Commission Sixth Framework Programme has a project on Knowledge Economy Indicators. Likewise, there is a great deal of interchangeable usage of labels in OECD and APEC documents. The meanings portrayed by these labels are largely intertwined as most refer to the same type of policy problems, opportunities and solutions. However, it must be pointed out, that the information society as a label places greater emphasis on the influence and role of information and communications technology in the development and alleviation of problems relating to poverty, access to education, human rights and so on. On the other hand, the knowledge society and knowledge economy policy labels, denote a wider focus on production and use of knowledge for socio-economic development. Moreover,

the knowledge society and knowledge economy imaginings place higher education, and research and development at the centre of policy reform, whereas information society and other ICT specific labels draw attention to the developmental significance of using ICTs.

In the Asia-Pacific context, the literature shows a deficiency of critical scholarship in policy studies on the knowledge society, especially from an international comparative perspective. Most policy research is country specific and/or a general account of issues in the knowledge society. There is a lack of regional level studies although there are some exceptions (Masuyama & Vandenbrink, 2003; Moore, 1997; Yue & Lim, 2002). This may be related to the fact that most policy-oriented studies tend to be country-specific. The debate around the knowledge society at regional level is mostly to be found in the development policy literature (reports, policy analyses and policy documents) of regional level organisations, most notably UNDP's Asia-Pacific Development Information Programme (APDIP), the Asian Development Bank (ADB), the Association of South East Asian Nations (ASEAN), and APEC. There is no dearth of scholarly literature on Asia-Pacific development, most of which is concentrated in the fields of development economics and economic policy. Within the regional policy focus, two salient issues that have implications for knowledge society policy are the ICT revolution, and the process of globalisation. These are significant for policy because they encapsulate global level structural changes, especially since the last quarter of the twentieth century (Lipsey, 1999).

Policy documents often cite external processes and factors, mainly globalisation (the imperative of economic competitiveness in an increasingly globalised world), and the need for innovation in an increasingly competitive world, as the motivation behind calls for knowledge society policies. Rosamond (1999) argues that in the EU, the globalisation discourse provide an opportunity for policy actors to enact policies in various spheres, where actors assume themselves to be operating within a globalisation imperative which limits policy options. This argument also seems to be true in the case of knowledge society polices where policymakers extrapolate the benefits of exploiting knowledge in a world of endless economic opportunities provided by globalisation. Viewing globalisation in these terms marginalizes the concerns raised by anti-globalists and sceptical academics, who for the most part, believe that globalisation is a neoliberal

project. Stifling alternative views of globalisation also leads to stifling of alternative voices on knowledge society.

In conclusion, I will explicate and explore the idea that policy formulations of the knowledge society may suffer from problems inherent in the policymaking process. The reasons for regarding knowledge society policies in these terms require an explication of the epistemological goals and role of knowledge (especially scientific knowledge) in the social policy process. In policymaking, knowledge is used for better decision-making. The relationship of scientific knowledge to policy process is multifaceted: ranging from communication of on-the-ground reality, to useful knowledge for policy decision-making, to issues relating to the operation of power via knowledge in policy.

Policy research is the tool that helps in the communication of the ground reality to the policymakers. Its veracity depends on who and under which circumstances and contexts the research is conducted. Policymakers rely on both in-house expertise and outside expertise from the think-tank or from the academic arena (King, 1999). Also, often policies are transplanted from overseas. Many policies are amalgams from several sources of knowledge and expertise.

By looking at the policy cycle, we can see various kinds of knowledge at work – expert knowledge, bureaucratic official knowledge, elected official knowledge and the knowledge that the various members of public bring to the policy. There is a tension among these various kinds of knowledge in the policy arena. The claim that policy knowledge is derived from the social reality is not without problems. Cohen, Salomon and Nijkamp (2002) describe the knowledge and communication gaps which distort the description of social reality that result in biased decisions. The knowledge gap is the gap between reality and its biased interpretation by the policymakers leading to greater uncertainty and risk. The communication gap is the gap where the communication process itself is responsible for biased interpretations and distortions of content of knowledge. Communication gaps may result from language, cultural and professional differences. In policymaking, communication gaps manifest as differences between the academics, policymakers, politicians and administrative staff. Language differences between those involved in the policy process arise because of different understandings of reality. The similarities and differences in the use of catch phrases, the use of jargon, metaphors may increase the communication gap and affect the policy. In terms of

organisational cultural differences, Cohen et al. (2002) argue that academics are usually a sceptical group and exercise caution in deriving conclusions, while policymakers are more action-oriented and jump easily to conclusions. Another organisational cultural difference relates to the vision. Academics, because of their sceptical nature, are usually blamed for their lack of vision in policy matters while policymakers consciously look for a future vision which they endeavour to achieve. The idea of "vision" has a particular relevance to knowledge society policies where the knowledge and communication gaps are amplified due to professional differences between the academic and policy experts. According to Melody (1996), national policymakers in most countries are devising knowledge/information society visions based on grand technological determinist accounts. These are more

> statements of aspiration than realistic policies directed to achievable goals. They tend to reflect an uncritical acceptance of the claimed potential benefits of information technologies to the economy, the government and individual citizens, despite the fact that most claims cannot be supported and some already have been refuted (Melody, 1996, p. 258).

The culpability of policy visions in increasing knowledge and communication gaps, which distort the reality and affect the decision-making, shows that the knowledge-policy relationship is not a simple case of applying knowledge for rational decision-making but rather a more complex phenomenon that includes other factors such as ideology.

2.3.0: The role of economics in knowledge policy

The discipline of economics has contributed immensely to the theory of knowledge society. A long line of economists including, Adam Smith, Karl Marx, Joseph Schumpeter, Hayek, Machlup, Romer, Solow have written about the economic significance of knowledge, its creation, production and appropriation. The work of the economists has given rise to two conflations prevalent in the policy discourse on the knowledge society: (1) the conflation of knowledge with science and technology, and; (2) the conflation of knowledge and information.

A key figure who has had enormous impact on the study of knowledge society is the economist Fritz Machlup (1962; Machlup, 1980). Machlup's (1962) data formed an important basis of analysis for both Bell and Lane. Machlup's, *Production and*

distribution of knowledge in the United States, put forward an argument that the size and effect of the US information industries in the 1960s was increasing. Machlup demonstrated that education, the media, computing, information services (including insurance, law and other information based professions), research and development and so on accounted for some 30% of GNP (Machlup, 1962). Machlup concluded from the data that "knowledge-producing" occupations have grown significantly and the salaries of knowledge producers are higher than others. The "knowledge industry" which included education, research and development, communications, information machinery, and information services, was the conceptual basis of Machlup's data analysis. In Machlup's data, most of the value (44%) created in the knowledge industry had its origins in the education sector.

Whereas originally Machlup (1962) proposed the concept of "knowledge industry", he later advocated the label "information economy" (Machlup, 1980). Machlup defined an information economy as

> a group of establishments - firms, institutions, organizations, and departments, or teams within them, but also in some instances, individuals and households – that produce knowledge, information services or information goods, either for their own use or for use by others (Machlup, 1980, Vol. 1, p. 228).

The major contribution of Machlup's (1980) work is the distinction he draws between knowledge as a stock, and information as a flow. Machlup's conception of knowledge is economistic as he conceives knowledge as a product and not a factor of production.

More recently the work of economist duo, Paul David and Dominique Foray (David & Foray, 2002; Foray, 2004) has been instrumental in disseminating economy-centred ideas of knowledge society. David and Foray have been active participants in wide-ranging global policy institutions such as OECD and UNDP. They conceptualise the knowledge society as a sea change rather than a mere sharp discontinuity from the labour and resource based industrial society. Basing their arguments on OECD data, David and Foray (2002) contend that the key factors for this sea change include: (1) the acceleration of knowledge production; (2) the significance of human capital at macroeconomic level; (3) the dominance of innovation; and (4) the ICT revolution. Further, David and Foray identify the importance of the value system of knowledge communities such as ICT professionals as agents of change. They argue that such knowledge communities face multiple challenges in the shape of intellectual property

rights issues, the digital divide, uneven development of productive knowledge bases, a problem of lack of trust in new knowledges, and the fragmentation of knowledge with its division and specialisation. They conclude that only if these challenges are resolved can knowledge economies be transformed into real knowledge societies. In their own words:

> The knowledge economy's growth into the knowledge society hinges on the proliferation of knowledge-intensive communities. These communities are basically linked to scientific, technical and some business professions or projects. …. To function effectively, they must have overcome many, if not all, of the challenges that this review has identified. Only when increasing numbers of communities displaying those very characteristics are formed across a wide array of cognitive fields, when professional experts, ordinary users of information, and uninitiated students are brought together by their shared interest in a given subject, will 'the knowledge society' really begin to develop (David & Foray, 2002, p. 21).

The main criticism of David and Foray's knowledge community-based approach is that it considers only science, technology, and industry based professionals as members of knowledge communities.

2.3.1: Knowledge, innovation, and the knowledge-based economy

The knowledge economy paradigm is based on the view that knowledge is a major factor in economic growth. Science and technology innovation is considered a key component of this paradigm. Underpinning this is a conviction that innovation processes can be strengthened by selective governmental intervention in science and technology policy arena. The main concern of policy is to prevent market failure i.e. prevent conditions under which innovation processes do not fulfil the growth-enhancing role they are designed for. The private sector actors involved in science and technology innovation are considered as important as the government investment in research and development. It is therefore considered imperative to build the network of institutions that enhance the production of new technologies. It has become fashionable to refer to this network of institutions as the National Innovation System (NIS). There are many scholarly accounts of the role of technological innovations in economic development. Dominant policy influences stem from two main theories – evolutionary economics, and neoclassical growth theory. Joseph Schumpeter was the main figure in the evolutionary theory of technology development. Schumpeter's work on the evolution of capitalism considered competition for technological innovation at the level of the firm as the dominant force behind economic, social and institutional change. Schumpeter proposed

that the process of creative destruction through innovation – the replacement of old by new – is the basic fact about capitalism. Competition from innovative activities drives this process of creative destruction. Schumpeter expanded Marx's concept of innovation as mechanisation to include "competition from the new commodity, the new technology, the new source of supply, the new type of organisation" (Schumpeter, 1994, p. 84). Schumpeter's work influenced later work on innovation, particularly studies of qualitative changes brought about by innovation. The evolutionary perspective on innovation emphasises the fact that the social system is composed of mutually influencing domains of science, technology, politics, economy and culture, and "any 'model' that limits itself to pure economic factors (such as R&D, capital investment or human capital) provides a much too narrow perspective on economic growth" (Fagerberg & Verspagen, 2002, p. 1293). Further, the world economy is seen as a process of transformation of technologies and institutions, which results in long-waves and technology revolutions and not a steady growth path.

The neoclassical theory of growth, as outlined by Robert Solow in the 1950s, considered technology to be a public good, whereby all countries had access to the same pool of technological resources. Cross-country differences in GDP had nothing to do with technology, according to this approach. Much of this research, which was based on the experience of the USA, assumed that technology was freely available and that in the long run technology progress would result in growth of GDP per capita. This theory failed to explain the differences in technological and economic growth across countries, nor did it explain the contributions of R&D investment in private firms (Fagerberg, 1994). Neoclassical theory was resuscitated by Paul Romer's development of what is known as the "new growth theory". The new growth theory tries to explain why countries differ in technology development induced growth. It assumes that technological development involves "learning by doing" and that there is a separate technology sector in the economy which supplies other sectors with technologies. The higher the resources given to the technology sector at the firm and state levels, the higher the GDP growth per capita.

The evolutionary and neoclassical theories spurred policy related work on the question of why technology developments fail to translate into growth and why technology developments are not evenly spread across countries. Research on these questions led to the development of the "technology-gap" thesis, and the National Systems of

Innovation framework. Alexander Gerschenkron (1962), an economic historian, suggested that economically backward countries do not develop in the same manner as the advanced ones because of the differences in rate of growth, institutional differences, and differences in ideologies. Technological gaps can be a grate advantage to late-developers if they are able to build institutional mechanisms aimed at leap-frogging. Late developers can catch-up with the advanced countries by imitation, by being competitive, and by learning from their mistakes. The technology-gap thesis highlighted, among other things, the impact of policy learning on technology-led growth.

Technology innovations and policy innovations co-evolve. Policy thinking on innovation started in the OECD, UNCTAD, UNECLA, and the European Commission and was led by a small multidisciplinary group of scholars focusing on the "new innovation paradigm" (Mytelka & Smith, 2002). According to Mytelka and Smith, the reason why these institutions and not the World Bank and IMF played a major role in the development of the NIS paradigm was that

> in contrast to more hierarchical organisations such as the IMF and the World Bank, access to policy-making circles and opportunities for influence have been far greater in these ostensibly weaker siblings over the same period. While in both sets of international organisations, problems growing out of the twin processes of globalisation and rapid technological change were being placed squarely on the agenda, more hierarchical organisations retained the macroeconomic perspective and broadly neo-classical conceptual approaches with which they were most familiar. By contrast, faced with the paradoxes of productivity growth in the 1970s, the challenge of competitiveness in the 1980s and the problem of equity in the1990s, other—perhaps more internally differentiated or consensual—organisations, such as the OECD and the European Community, contained niches in which conceptual diversity was possible (Mytelka & Smith, 2002, p. 1470).

The conceptual framework behind NIS rejected the neoclassical and evolutionary theory emphasis on linearity and proposed a systemic view of the innovation process – that production, research & development, existing S&T knowledge, the market, and diffusion of innovation are linked by an interactive feedback mechanism. In this view clusters of innovation rather than single innovations were critical for growth. The systemic view emphasises the role of the institutional context – national and local level policy – as critical for innovation. Bengt-Ake Lundvall is credited with popularising the concept of NIS, where innovation is framed as learning. In Lundvall's view there are two conceptions of NIS,

> The narrow definition would include organisations and institutions involved in searching and exploring—such as R&D departments, technological institutes and universities. The broad definition . . . includes all parts and aspects of the economic structure and the institutional set-up affecting learning as well as searching and exploring—the production system, the marketing system and the system of finance present themselves as subsystems in which learning takes place (Lundvall, 1992, p. 12 cited in Mytelka & Smith, 2002, p. 1472).

Using the NIS concept implies a policy focus on collaboration of the science and business sectors in the generation of innovation, where the government plays an enabling role as a knowledge manager with the aim to enhance technology-led change. The governance and ideological contexts of the state are of critical importance in determining the success or failure of a NIS.

The above discussion has shown that innovation has emerged as the central discursive issue in economic analyses of technology-led growth. The neo-classical and evolutionary theories have been superseded by 'new growth theory' and the NIS paradigm. The view of innovation in theory and policy has co-evolved. Innovation policy has shaped, and has been shaped by the research paradigm of innovation. This raises the question of the role of social factors in innovation – a concern missing in most economic theories of knowledge and innovation. Innovation studies and policies have been rightly criticised for being the purview of technocratic policy experts and management experts (McDaniel, 2006). For McDaniel, innovation is a social process rather than merely a technological process with social attributes. Innovation studies and policies should likewise focus on not only what social factors contribute to technological innovation but also how social predictors of innovation such as a skilled labour force are linked to essential questions like work satisfaction, social capital, and quality of life. The focus on social innovation is promising in enhancing our overall understanding of the role of context-specific factors, which strongly impinge on a nation's knowledge-based development.

2.3.2: Globalisation, ICT and the knowledge economy

In addition to innovation, globalisation and ICT are the other two main discursive planks in the knowledge economy theory and policy. In both the knowledge economy theory and policy, the globalisation and ICT revolution are seen as critical background

factors in the development of knowledge economies (Mansell & Wehn, 1998; Stiglitz, 2000). Globalisation and ICT are vehicles for the transmission and communication of knowledge. Knowledge is a key economic dimension of globalisation, among others including, trade, capital and labour (Stiglitz, 2003). The ICT revolution is the common denominator in major globalising tendencies such as increasing financial and knowledge flows (Soete, 2002). While contextual factors such as the national capacity to access and use such knowledge are important, the fact that ICTs have made knowledge globally available is important for its potential for enhancing the developmental catch-up process (Soete, 2006). Organisations such as OECD have enthusiastically endorsed the central role of ICTs in the knowledge economy. Various reports of the World Bank and other global policy institutions have also pointed out that ICTs are generating social, political, cultural, and economic change (Ahmed, 2007). The UN sponsored WSIS highlighted the impact of ICTs as not merely a mode of communication but as an enabler for overall development.

2.4: New ways of thinking about the knowledge society

Recent scholarship on the knowledge society, however, attempts to rectify the ideological economic and technocratic biases in the conception of knowledge. Stehr (2001) blames the ideological and epistemological legacy of the social science discourse, which has given form to a theory of modernity, focused purely on a handful of definitive, unavoidable and unilinear processes, such as functional differentiation, industrialisation, rationalisation, innovation, and so on, which originated at the dawn of the industrial age. Stehr proposes that modernisation process involves “multiple and not necessarily unilinear processes” (2001, p. 19), and that these processes started way back in human history. These multiple processes are driven by the enlargement of the conditions and capabilities to act (both in terms of spatial extension and personal extension). Knowledge society is the result of this extension of conditions and capabilities for action. Further, Stehr (2001) states bluntly that, “knowledge is the constitutive, identity-defining mechanism of modern society” (p. 20) and it has replaced and transformed both, property and labour, which were the constitutive mechanisms of the industrial society.

Stehr’s (2001) critique of theories of knowledge societies presents a forceful argument that the narrow conceptualisation of knowledge in previous theories of knowledge

society is a result of the efforts of the scientific community towards installing a particular, narrowly conceived concept of knowledge as the dominant public concept of knowledge. Thus 'scientistic' conceptions of the knowledge society tend to allude to rather straightforward and linear effects, including the hopes for highly rationalised forms of social action. Stehr (2001) deals at length with the argument for the labelling of the current form of society as 'knowledge society'. He believes that in the face of the scientistic conceptualisations of knowledge in contemporary theories which lead their proponents to label the current society as 'information society', a 'post-industrial society', a 'network society' or a 'technological civilisation', the label knowledge society is more appropriate because (1) it does not suffer from technological determinism; (2) does not conflate knowledge with information; (3) does not presuppose the end of the industrial era; (4) or of modernity.

In Stehr's words,

> the changes I want to analyse are the developments that occur with respect to the forms and dominance of knowledge itself. Our focus is not merely on science, but on the relationships between scientific knowledge and everyday knowledge, declarative and procedural knowledge, knowledge and non-knowledge, and on knowledge as a capacity for social action (Stehr, 2001, p. 29).

Based on this broader conception, Stehr proposes that the knowledge society impacts tend not just towards the positively linear progression of rational forms of social action, but also towards greater fragility of society. Importantly, knowledge societies do not mean the end of ideology or of irrational action, but provide the groups on either side of ideological divide with arguments which they can use to their own ends.

2.5: Conclusion

Knowledge and knowledge society have been the subject of discursive construction in policy and academic circles. Their respective views on the knowledge society foreground the wider question of relationship between knowledge and society. The relationship between society and knowledge has been the subject of theorising in the sociology of knowledge. Three inter-related themes have been identified in the sociological literature on knowledge society: (1) the relation between progress in scientific knowledge and society; (2) the relation between (social) knowledge and ideology, and; (3) conceptualising the recent transformation of society as knowledge

society. It has been pointed out in this chapter that the ideological nature of knowledge is problematic for the future development of a knowledge society. Policymakers and academics should try to answer the question - Is the knowledge society an ideology or a utopia? This is a pertinent question at this point because the answer will impact on the outcome of the knowledge society. The short answer to this question is that it is both. Karl Mannheim (1946), a founding father of sociology of knowledge, defined "ideology" as a conservative belief, based on the distorted conception of social reality, which justifies the existing social order, and "utopia" as a revolutionary belief that distorts important aspects of social reality to justify social change. Conceptualisations of the knowledge society from social science are ideological in a Mannheimian sense, as they rely on a narrow and distorted view of knowledge. Likewise, the policy concept of the knowledge society is utopian because it advocates for a social change based upon a distorted concept of knowledge.

Chapter 3: On neoliberalism and the knowledge policy discourse

3.0: Introduction

This research considers the key issues in the official discourse on the knowledge society from an international comparative perspective and outlines a framework for discourse analysis which explicitly addresses the diverse character of neoliberalism and the knowledge society in Asia-Pacific. It is hoped that this research will bring out the continuity and change within the neoliberal knowledge policy discourse, particularly with reference to its core characteristics (liberalisation, deregulation, and privatisation), and effects including power, ideology and hegemony. In this chapter, I argue that neoliberalism has appropriated the policy discourses to great advantage in setting the terms of the developmental debate, problemitising issues and providing solutions. Further I argue that behind the deployment of the neoliberal discourse arsenal is the need to maintain the hegemony of richer countries led by the USA over the rest of the world. This, I argue, is achieved largely through the global policy institutions that they control. The knowledge society is but a new and potent addition to the discursive armoury of neoliberalism, whereby the technocratic global development policy institutions advance the aims of power and hegemony by using knowledge and information as the main referents. In this chapter, I examine the knowledge society as a policy concept in the service of neoliberalism-inspired discourse on knowledge as an economic resource. Specifically I examine neoliberal claims about knowledge, especially their privileging of an positivist and technocratic conception of knowledge over an inclusive, contextual and sociological one. This chapter examines the concept of policy discourse in the context of (1) its importance in linking the notion of ideology to policy, (2) its hegemonic nature, (3) its manifestation in policy epistemic communities, (4) its role in relation to the context and path dependent nature of neoliberalism, (5) its role in the emergence of a neoliberal governmentality due to the shift from government to governance in knowledge policy, and (6) its centrality in explaining language practices relating to policy.

3.1.0: Policy as discourse

To look deeply at any policy involves the analysis of labels, concepts, frames, arguments and contexts. Considering policy through its discourse also involves the analysis of its ideological and political dimensions. Many scholars have described policy as a kind of discourse (Bacchi, 2000; Hajer, 1995; Rein & Schön, 1996). Policy discourse, as defined by Schmidt (2002), consists of “whatever policy actors say to one

another and to the public in their efforts to generate and legitimize a policy programme" (p. 211). As such, discourse encompasses both an argumentative process characterised by policy ideas and values, and an interactive process of policy construction and communication. Ideology operates at the level of representation of issues, which includes both the argumentative and interactive aspects of policy discourse. According to Bacchi (2000, p. 46) a view of policy as discourse means that the focus should be on the ways issues get represented. The ways the issues get represented in policy subvert the very epistemological core of any policy, particularly the democratic ideals of legitimacy and objectivity.

From a discourse theory perspective, policy discourse is powerful because it consists of "communicative interactions among political actors that translate problems into policy issues" (Fischer, 2003, p. 30). According to Fischer (2003), technocratic discourses are distributed across institutions, and in addition to the "dominant discourses, competing discourses struggle to gain recognition and power" (p. 76). The discourse of New Labour on "Third Way" is a good example of how the new capitalist order is reinventing and repositioning itself through discourse. The discursive construction of society emerges from "practices that are rooted in and oriented to basic social structures and ideological practices, particularly the tensions and conflicts to which they give rise" (Fischer, 2003, p. 76). At the policy level, such practices construct, support and alter specific relations between classes and groups of people.

Conceptually, discourse is a fuzzy notion. In everyday use, discourse refers to a "form of language use" (van Dijk, 1997, p. 1). Fairclough's (2003) view of discourse "as ways of representing aspects of the world – the processes, relations and structures of the material world, the 'mental world' of thoughts, feelings, beliefs and so forth, and the social world" (p. 124), recognises that they are not only representations of the world as it is, but are also projections and imaginations of how it ought to be. There are many meanings attached to the term discourse. An important distinction is made based on types of discourses prevalent in different social situations, such as medical discourse, legal discourse, classroom discourse, organisational discourse, media discourse, academic discourse, and so on. Policy discourse can be seen to be one such type of discourse which occurs in public policy contexts. Policy discourse manifests itself in the form of policy documents, green and white papers, vision documents, ministerial statements, speeches, press releases and parliamentary debate apart from others. These

kinds of policy discourse can be seen as genres. Genres are types of discourse similar in content and form. It is well recognised in the discourse community that there is a complex interplay between text and context. Genres provide a way of looking at texts and their context. In policymaking, genres emerge as solutions to rhetorical problems in society (Bazerman, 1988). Therefore, the understanding of the text and context in the emergence of genres is very important. The genres of policy are not to be seen as objects in themselves but within the activities of the policy cycle which gives rise to them. Policy genres have goals, in the sense that they help the policymakers to sell their viewpoint to audiences in a particular and often recognisable form. Most importantly, they help policymakers to maintain control over the direction of policy debates and are a significant endeavour of national policymaking bodies (Bazerman, Little, & Chavkin, 2003).

The view of discourse as a system of representations is exemplified very well by the forms of policy discourse around knowledge society. The policy discourse on knowledge society is a specific variant of broad policy discourse on reform and restructuring. The knowledge society discourse is also woven into the educational, health and immigration policy discourses. My endeavour in this chapter is to approach policy as a type of technocratic discourse, in the way that it constructs policy problems, offers solutions, exemplifies power and has ideological effects.

3.1.1: The hegemony of the neoliberal policy discourse

The concept of hegemony was introduced by Antonio Gramsci in his *Prison Notebooks* (1971). According to Gramsci, hegemony is the intellectual, moral and political leadership of social groups by the structure. Gramsci proposed that there is a dialectical relationship between the socio-economic structure and the political ideological superstructure. The first two dimensions (intellectual and moral leadership) relate to the civil society and the third to politics. To understand hegemony at the global level, we need to substitute social groups with the state, and structure by the global policy institutions, and multinational corporations.

Kim England and Kevin Ward (2007) in attempting to define neoliberalism, outline four different but overlapping understandings. They are, neoliberalism: (1) as an ideological hegemonic project, (2) as policy and program, (3) as a state form, and (4) as governmentality. Firstly, neoliberalism as an hegemonic project refers to

> the places and the peoples behind its origins that are involved in its apparent uptake in geographically discrete but socially connected parts of the world. In this work political (and indeed cultural) dominance is exercised through the formation of class-based alliances – elite actors, institutions, and other representatives of capital – at a variety of spatial scales, who produce and circulate a coherent program of ideas and images about the world, its problems, informed by gendered and racialised power hierarchies (England & Ward, 2007, p. 11).

Secondly, the understanding of neoliberalism as a policy and program refers to transfer of ownership from public to the private sector through privatisation, deregulation and liberalisation. The policy discourse uses the freedom of the market, public choice, competition, and efficient management as logic underpinning policy change. Both national and international policy actors are involved in the espousing the policy shift to neoliberalism (England & Ward, 2007). Thirdly, neoliberalism as a state form, according to England and Ward, refers to the a roll-back of the state, where the emphasis is on restructuring - the "redrawing the boundary between civil society, market, and state" (p. 12). Fourthly, an understanding of neoliberalism as governmentality refers to the refashioning of the role of the public by governance mechanisms. Such governance mechanisms aim to construct the individual as an responsible subject so that he/she can be managed with minimal state interference.

Bob Jessop (2002a) has characterised neoliberalism as the hegemonic ideology at the global level. According to Jessop,

> The resurgence of liberalism in the form of neoliberalism is often attributed to a successful hegemonic project voicing the interests of financial and/or transnational capital. Its recent hegemony in neoliberal regimes undoubtedly depends on the successful exercise of political, intellectual, and moral leadership in response to the crisis of Atlantic Fordism – a crisis that the rise of neoliberalism and neoliberal policies has exacerbated (Jessop, 2002a, p. 455).

At the global level, the hegemony of neoliberalism has enabled the elites from the transatlantic power bloc, global policy institutions and multinational corporations to promote neoliberal norms, value systems, and beliefs in all spheres. Neoliberal hegemony can be seen in policy adjustments, regime shifts, and radical system transformations that have been promoted in the economies since 1990s (Jessop, 2002a). Given the hegemony of neoliberalism globally, how has it manifested differently in various states and regions will be discussed in section 3.3.

3.1.2: Knowledge policy as a discourse

Though knowledge policy is not separate sector of policy, it is nevertheless an amalgam of policy sectors all of which are concerned with aspects of knowledge and information. In academic literature, there are three prevalent senses of the term "knowledge policy". One is associated with the discipline of social epistemology, whereby it refers to the social conditions under which knowledge is produced, and ought to be produced. The normative dimension of social epistemology is termed knowledge policy. Steve Fuller, the main proponent of the normative approach to knowledge integration believes that there are two kinds of knowledge organisation strategies – universalist and globalist. In policy terms, the universalist and globalist strategies manifest as interdisciplinarity and transdisplinarity, respectively (Fuller, 2001b). A policy problem can be tackled interdisciplinarily by experts from many disciplines working together or, transdisciplinarily by considering the problem as domain of inquiry in its own right. The second sense of knowledge politics comes from Stehr's reference to knowledge politics, that a new field of politics emerging in modern, democratic societies, concerned with regulating the development and use of new scientific and technical knowledge (Stehr, 2005). The third perspective on knowledge policy is the socio-linguistic approach of Graham and Rooney (2001; Rooney et al., 2003) which considers knowledge policy from a autopoietic systems perspective. For Rooney et al. (2003), knowledge policy relates to "policy aimed at facilitating the development of knowledge-intensive industries, and is about 'knowledge work' and 'knowledge workers' (p. xv). Further, they consider knowledge policy as being an amalgam of traditional policy sectors such as industry, education, innovation and research. Graham and Rooney's socio-linguistic approach considers 'knowing' from the perspective of the 'knower' whereby the focus is on how knowledge is socially produced and situated. The authors argue, based on their analysis of policy documents, that socio-cultural systems and processes are represented in terms of technocratic value systems. The meaning of knowledge in technocratic knowledge policy discourses therefore, says less about the social dimensions of knowledge and more about the instrumental views of knowledge (as outcomes and outputs) in the value systems of the technocratic elite. The technocratic discourses of knowledge policy create an artificial fit between society (the knowers) and instrumental dimensions of knowledge (considered narrowly as science and technology knowledge). Thus, the knowledge policy discourses are an evaluation by the knowledgeable, technocratic experts of what constitutes knowledge. Such evaluations

are an important part of the "institutional processes of legitimation" (Graham & Rooney, 2001, p. 156).

There is not much difference between Stehr's and Fuller's approaches as they examine knowledge policy largely in relation to science and technology knowledge. There is a good reason for according greater role to scientific knowledge in policymaking. The ever-improving science and technologies in areas such as ICT show the growing need for improved policymaking on issues such as knowledge infrastructure development, codification of knowledge, protection of intellectual property, knowledge transfer across borders, university-government-industry linkages, among others. However, Graham and Rooney's perspective sheds an important light on the shortcomings of the extant knowledge policy frameworks and directs attention on how knowledge policy can be analysed.

In this research, I use the term 'knowledge policy' to refer to the policy frameworks deployed to achieve a knowledge society. In agreement with Graham and Rooney (2001), I view knowledge policy as a cluster of policy sectors including, but not limited to, education, science and technology, economic development, and information and communication policies of states. Further, in agreement with David Knoke's (2004) work on the emergence of new national policy domains, I propose that knowledge policy is an still emerging policy domain in most countries of the world whose boundaries are amorphous. There is no fixed template of what policy sectors are included in the knowledge policy domain. Different countries have different knowledge policy domains depending on three elements: their national policy ideology, policy history and governance structures. I propose that linkages between policy ideologies, policy history, and governance mechanisms must be considered to understand what shape the domain of knowledge policy actually takes in any state. The rationale for this is that changes in the knowledge policy strategies are inextricably entwined with the continuous streamlining of governance via a myriad mechanisms such as whole-of-government approaches, centralised planning, cross-sectoral long-term visions, and so on. Further, changes in policy and governance structures are mediated by changes in national policy ideologies. The dialectics of these three elements at the national level means that knowledge policies are hard to pin down as a coherent set of policies.

As a hegemonic discourse, neoliberalism has had an important influence on public policymaking throughout the world. According to Jamie Peck (2001), the political economic context of public policymaking is increasingly being influenced by

> various strands of neoliberal conviction politics, which assert that the fiercely competitive economic environment abroad, coupled with deep-seated social problems at home, leave 'no alternative' to a course of deregulation, marketization, privatization, and public asset-stripping. This policy medicine may be administered in a number of ways – from the shock treatment of Third World structural adjustment programs to the sweetened pills of 'Third Way' politics *à la* Blair, Clinton, and Schröder. The doses do vary, but, never mind what it says on the bottle, the basic treatment is pretty much the same: purge the system of obstacles to the functioning of 'free markets'; restrain public expenditure and any form of collective initiative; celebrate the virtues of individualism, competitiveness, and economic self-sufficiency; abolish or weaken social transfer programs while actively fostering the 'inclusion' of the poor and marginalized into the labor market, on the market's terms (Peck, 2001, p. 445).

In this research, I make repeated references to knowledge policy as a discourse. The term 'knowledge policy discourse' is used in two senses here. Firstly, it refers to the macro-level, policy agenda on knowledge society, and secondly, it refers to the set of policy documents (reports, White Papers, ministerial speeches, etc.) enunciating knowledge-related policy aims. The knowledge policy discourse is characterised by: (1) intertextual and interdiscursive linkages which help to connect the cross-cutting, macro-level knowledge governance ideologies with the micro-level, policy strategies; (2) global and local linkages whereby knowledge-related policy ideologies and beliefs of actors and institutions at the global level exercise discursive influence on policy actors and institutions at the state level, and; (3) the knowledge policy discourse makes knowledge-self linkages whereby it seeks to construct a public capable of using science and technology knowledge. Consequences of the knowledge policy discourse include: (1) emergence of technocratic policy communities; (2) preference for positivist policy epistemologies; (3) lack of deliberation in policymaking; (4) widespread use of policy spin, and; (5) entrenchment of neoliberalism as a non-negotiable, omnipotent ideology.

3.2.0: Neoliberalism and the epistemic community of knowledge policy

The power of neoliberalism has also been enhanced by the prevailing academic paradigms and their influence in policy. Wagner (1994) characterises the knowledge-policy relation since the 1930s in the Western world as 'discourse coalitions for

modernization between social scientists and reform-oriented policy-makers' (Wagner, 1994 cited in Slagstad, 2004, p. 73). These discourse coalitions promoted a transformation of the role of the intellectual, from impartial and outside observer to an active and involved policy designer and technician. Slagstad (2004) calls such arrangements between academia and policy "knowledge regimes", which he defined as "a constellation of political power, legal normativity, and scientific knowledge" (Slagstad, 2004, p. 66). The intellectuals participating in the policy process become "ideologists of action" who both shape and are shaped by the regime's institutions. Giddens (1979) likewise talks of "knowledgeable agents" who are active participants in the political process and use their tacit and explicit knowledge in discourse.

The notion of an "epistemic community" explains the dominance of particular scientific paradigms in policymaking. As an epistemic community, policy analysts are a social formation who try to solve social problems. According to Peter Haas (1992) an epistemic community is a network of professionals from a variety of disciplines and backgrounds, who: (1) share a set of normative and principled beliefs; (2) share causal beliefs derived from their analysis of practices relating to a set of policy problems; (3) have shared notions of weighing and validating knowledge in a policy domain; and (4) have a set of common practices associated with a set of policy problems out of the conviction that human welfare will be enhanced as a consequence. Haas believes that knowledge-based-experts play an important role in solving complex policy problems and in the diffusion of new ideas, information and solutions for policymaking. The epistemic community need not, he argues, share a common methodological approach. A key function of an epistemic community is to frame a policy problem and provide solutions.

In development policy and by implication in the knowledge-related policy there are three major epistemic communities who display these characteristics. They are: (1) the economics of knowledge and information, (2) the technological innovation-induced economic growth theory, and (3) the human development paradigm. In relation to knowledge policy, the most vocal and influential of the three are the economics of knowledge and technological innovation-induced growth epistemic communities. According to Michael Peters (2001), the 'Chicago School' dominates the economics of knowledge and information and has contributed to shaping the knowledge-related policy discourse. Peters and Olsson (2005) characterise the Chicago School as the key

player in popularising the notion that knowledge is a form of capital. The authors argue that

> The most significant material change that underpins neoliberalism in the twenty-first century is the rise in the importance of knowledge as capital. This change, more than any, propels 'the neoliberal project of globalization'—an outcome of the Washington consensus and modeled by world policy agencies such as the IMF and World Bank— which has predominated in world policy forums at the expense of alternative accounts of globalization (Peters, 2005, p. 330).

Peters (2001) identifies six strands within the economics of knowledge and information which are mostly identified with the Chicago School. They include: (1) economics of information, (2) economics of production and distribution of knowledge, (3) public choice theory, (4) economics of human capital, (5) application of free-market ideas to education, and (6) new growth theory. Peters argues that these six strands have contributed to development of neoliberalism as a policy ideology.

The new growth theory with its emphasis on managing technological innovation as the central plank of economic policy and can be called the "neoliberal" epistemic community. Neoliberals are particularly strongly entrenched in many multilateral institutions and think tanks. The ascendance of the new growth theory in economics since the 1970s can be largely attributed to its use by elite policy institutions such as the World Bank and IMF. The "Chicago School" economists led by Milton Friedman, have held important advisory and consultant positions in these institutions. Some of the leading thinkers of this line of thought, such as Milton Friedman and George Stigler, have won the Nobel Prize in economics. As these theories became entrenched in policymaking institutions, so did their underlying set of ideas called "neoliberalism". In terms of knowledge society, the community of economists at the World Bank under its Knowledge for Development Programme have been instrumental in shaping the discourse. Joseph Stiglitz (2002) and later Carl Dahlman have been at the core of the community of economists to coordinate the Bank's activities in the knowledge policy arena. This programme has been instrumental in the development of the Knowledge Assessment Methodology (KAM) and the Knowledge Economy Index (KEI) which the World Bank promotes as a barometer of the knowledge society.

The second epistemic community is centred around the economic theory of technological change and innovation. This epistemic community is linked to the

economics of knowledge community because both share a concern with theorising technological knowledge. One of the strands of the economics of knowledge community - the new growth theory – is also a key source of ideas in the technological change and innovation community. The new growth theory has been especially salient in the knowledge policy discourse because it is a central player in both these communities. The technological change and innovation epistemic community emphasises the role of technological knowledge and innovation in economic competitiveness of countries. There are three strands of this epistemic community: (1) the evolutionary theory of technological change identified with Schumpeter (1994) and Gerschenkron (1962), (2) the neoclassical growth theory of Solow (1956, 1994) and its recent reformulation by Paul Romer (1990, 1994) as the new growth theory, and (3) the National Systems of Innovation theories of Lundvall (1992) and Richard Nelson (Nelson & Winter, 1977, 1982). Reports of the OECD have based their arguments on theorists of this community as sources of ideas (Peters, 2005).

The third epistemic community composed of critics of neoliberalism is a less compact community comprising various perspectives such as post-positivists, poststructuralists, and members of Human Development paradigm. This group is spread around the academia, the UN related organisations and the NGO's. It is only recently that alternative voices in development theory have been heard and rewarded. Amartya Sen (1999) and Mahbub-ul-Haq, both pioneers of the Human Development paradigm, first rose to prominence in policy circles through the United Nations Development Programme. It was much later that Sen was awarded by the Nobel Committee and his work was acknowledged by the World Bank. The Human Development paradigm forms the theoretical basis of Human Development Index and numerous other indices promoted by UNDP. This second community can also be referred to as a "counter-epistemic community" because it claims to hold policy-relevant knowledge "in opposition to the recognised expertise of the dominant epistemic community" (Youde, 2007, p. 45).

The concept of epistemic community, which has normative ideals at its heart, is useful for explaining the epistemological basis of policy paradigms. The reduction of uncertainty based on the use of knowledge is the core aim of an epistemic community. Miller and Fox (2001) argue that epistemic communities can be inclusively built up by demonstrating a willingness to accept alternative viewpoints. Policy issues, such as the

knowledge society, can benefit from an eclectic mix of methods and viewpoints and this is possible only if policy experts on this issue are willing to build an epistemic community oriented towards a normative understanding of knowledge society. At the global level there is some indication that the neoliberal-aligned Knowledge for Development programme of the World Bank is including the indices from the Human Development paradigm to widen the scope of its knowledge economy analysis. This it does with an aim to better frame arguments regarding the urgency of neoliberal reforms. It remains to be seen whether it is a rhetorical strategy to placate critics and to subsume them, or whether it is part of a newly reinvigorated neoliberalism emboldened by the rise of its political cousin - neo-conservatism - under George Bush.

What role does the state play in legitimising one or the other epistemic community? The state is not solely a power and interest focused being. The state is a social being in the international arena. The state has a view of itself – an identity based on its culture and history - which plays an important role in determining its engagement with global policy regimes on issues such as knowledge, trade, health, energy and so on. Global policy regimes determine how states understand and respond to those issues. The state's relationship with international regimes and epistemic communities is an indicator of its self-identity. This identity is not fixed but is changed by its interaction with the international regimes and epistemic communities (Youde, 2007).

At the global level, the knowledge policy regime is represented by competing norms – those of economics of knowledge, economics of technological innovation and the human development epistemic communities. The policy response of the state is guided by a combination of contextual factors (such as self-interest, history and identity) and the nature of its relationship with the global policy actors espousing the beliefs of the epistemic communities. Counter-epistemic communities on such issues tend to frame policy problems in terms of state's self-interest, history and identity. For example, states such as Malaysia take exception to neoliberal norms dominant in IMF and World Bank. Malaysia positions its knowledge policy not only as a moral response to Western-led neoliberalism – a response which is largely in agreement with the counter-epistemic community of human development scholars – but also in keeping with its history and self-identity. Another example of counter-epistemic communities at work is the contrasting descriptions of the Asian developmental state found in the discourse of IMF and World Bank on one hand, and in the work of scholars such as Robert Wade (1990).

3.2.1: Neoliberalism as a ideology in knowledge-related policy

> Intellectuals specialise in two sorts of activities: moralizing and criticizing, which are typically deployed against the powers that be. However, with the right incentives, they can be just as easily deployed on their behalf. Thus, intellectuals may be made to moralise by appealing to norms that, at the same time function as principles for reproducing the social order (Fuller, 2000b, p. 83).

From the beginning of the establishment of policy studies there has been a recognition of the dangers of ideology. According to Lasswell (1951), the founding father of policy science, policy studies has a normative aim, in addition to problem-orientation and multidisciplinarity. Policy sciences must aim to be "policy sciences of democracy" (Lasswell, 1951, p. 96), based on "entwined frames of reference: knowledge of the policy process; knowledge in the process" (Lasswell, 1970, p. 1). The normative emphasis is especially important since Lasswell believed that policy science should serve democratic and not partisan aims. However, policy analysts have failed to measure up to the challenges and visions espoused by Lasswell. The resulting malaise in policy is two-fold. Firstly, the field has come to be characterised by an dominance of a single paradigm – behaviourism. Secondly, policymaking has acquired a technocratic bent. Torgerson (1985) relates both these to an over-reliance on the epistemological framework of positivism. Other critics of contemporary policymaking highlight the problems within the use of knowledge for policy that make it susceptible to charges of being technocratic and undemocratic. These include: (1) the positivist nature of policy knowledge and hegemony of empiricism resulting in the rise of technocratic knowledge (Fischer, 2003; Morcol, 2001, 2002), (2) scientific knowledge being a kind of discourse (Lyotard, 1979), and (3) the neglect of the contextual and subjective factors in analysing policy problems resulting in the marginalisation of some stakeholders (Yanow, 1996, 2000). How do these criticisms of policy relate to the dominant ideology of neoliberalism? What is the relationship between the knowledge society as a policy concept and neoliberalism? The answer to these questions can be found in the domain of development policy because that is where neoliberalism originated from and finds sustenance.

Neoliberalism is multi-dimensional. As a political ideology it transcends the traditional Left and Right dichotomy. Although it originated in the praxis of economic policies by right wing governments such as the Allende regime in Chile in early 1970s, its later

development in 1980s as Thatcherism, Reaganism, and Rogernomics shows that it transcends party ideologies. More recently it re-emerged as guiding doctrine for New Labour in UK, in the Clinton presidency in USA, and social democrats in Germany. An important feature of neo-liberalism is that it is an elite and intellectual phenomena, whereby much of the discourse emanates from think tanks based in mostly rich, Anglo-Saxon countries. Neoliberalism is an example of how power permeates knowledge and knowledge mirrors power through the policy discourse. The purpose of the neoliberal ideology and its related elite discourse is to seek to impose a free market vision on all countries to promote the mobility of finance capital (Bourdieu, 1998b). The policy institutions use the scientific knowledge created by experts and use it selectively to legitimate neo-liberalism aligned solutions as the ideal solutions for crises in the economic and social sphere. Neoliberalism pervades most policy discourse on socio-economic development and is possible to be pinned-down in the knowledge society discourse as well, particularly in relation to its prescriptions in the social and economic policy arena.

The two important variables of development in the contemporary world – the ICT revolution and the globalisation process – are the subject of much attention among development scholars (Archibugi & Michie, 1997; Narula, 2003). The neoliberal model, which has been the dominant model of development since the last quarter of the twentieth century, is the most vociferous proponent of using the two variables for developmental advantage. The neoliberal model is the overarching paradigm that places market forces at the centre of policy. This paradigm has been variously termed “market fundamentalism”, “free market economics” and “Washington Consensus” (Williamson, 1990). The application of this paradigm through policy and practice, with disastrous consequences, in Latin America in 1970s and 1980s earned it the label “neoliberalism” by its critics (Broad, 2004). Like ideology in general, neoliberal ideology has acquired pejorative connotations.

Neoliberalism is a revised form of classical liberalism which placed a heavy emphasis on free market and freedom of the individual. In line with neoliberal thought, financial, trade and economic liberalisation; privatisation; foreign direct investment; deregulation, and measures to protect intellectual property would enhance the competitive advantage of nations in an era of globalisation (Bourdieu, 1998b; Lane, 2003; Shamsul Haque, 1999; Stegar, 2002; Watkins, 2004). Likewise, in relation to the knowledge society, the

public policy priorities should be to facilitate ICT related infrastructure and knowledge, create demands for products of such knowledge, and create a suitable environment for commercial enterprise to take advantage of the globalisation related economic opportunities. The role of the state in the neoliberal model is reduced to that of a facilitator. The expectation is that the state will actively intervene only in the case of market failure (Moore, 1997).

Whereas the proponents of neoliberalism believe that economic globalisation when combined with progress in information technology ensures an unprecedented surge of development, its critics question the veracity of the underlying neoliberal premises as contrary to equitable development. Both the proponents and critics of the knowledge society are engaged in a debate over the successes and failures of the neoliberal model. There is mounting evidence against the success of the neoliberal model, so much so, that some scholars are beginning to see it as a failed model facing a legitimation crisis (Broad, 2004; Stiglitz, 2002). There is also a continuing feeling among scholars that despite the setbacks, the core neoliberal proposals still exist in the policy and practices of organisations such as World Bank and IMF (Broad, 2004). Neoliberal discourse is changing in line with the attacks mounted against it. Though it may seem to be explicitly absent in the discourse, it still continues to hold a sway over the policy practices of institutions. The actively "normative" neoliberalism of the 1970s has transformed into "normalised" and "neccessitarian" neoliberalism in the 1990s (Hay, 2004, p. 510). In this sense, far from being a rigid model, neoliberalism refashions itself with changing circumstances. At the national level, neoliberalism operates through the social and economic policies of governments. This is especially true of richer industrialised countries of Asia-Pacific such as Australia and New Zealand, both of whom are also OECD member countries. The rollback of the social policy along with the decline of social democracy and the rise of "new right" (and of "new labour") thinking in these countries have been a result of neoliberalism. Similarly, the economic and social development promised by the neoliberal model for the non-industrialised world is based more on perception than any actual policy outcome (Krugman, 1995). If the experience of Latin American economies is any guide neoliberalism is not the best model for the developing world. Likewise, the success of the Asian Developmental Model, despite opposition from neoliberalist institutions and neoliberal scholars, proves that there are other possible routes for developing countries to follow than the neoliberal one (Wade, 1992, 1998). In developing and newly industrialising economies in a

diverse region such as Asia-Pacific, it would be interesting to investigate what role neoliberalism has played in the policy and practice. There is evidence to suggest that the Asian Developmental Model has been target of "discursive demolition" by proponents of neoliberal model post-Asian Financial Crisis of late 1990s (Hall, 2003).

The rise of neoliberalism has been gradual but consistent and we can observe that it has impacted most spheres of social life. Table 3.1 (see Appendix A) shows that many factors have contributed to its prominence. Also, as pointed out earlier, there have been simultaneous trends in terms of the knowledge society rhetoric. Both the neoliberalist economic thinking and the theory of knowledge society, originated roughly at the same time and gathered momentum initially outside the policy arena. Similarly advances in information technology and increasing economic globalisation gave boost to the ideology of neoliberalism and to knowledge society discourses. Gradually, as the economic trends in advanced countries pointed to a crisis brought about by sluggish economic growth rates, bourgeoning social welfare budgets, increasing competition from new players in the global marketplace and insecure energy supplies, neoliberalism found staunch believers among the political leadership such as Margaret Thatcher and Ronald Reagan, who initiated radical restructuring projects. The appeal of neoliberal structural reform is based on the failure of prior state-driven welfare policy regimes to ameliorate socio-economic problems. Thatcherism, Reaganism and Rogernomics are some of the paradigm examples of such discourses of reform in advanced countries such as UK, USA and New Zealand, respectively. Even the recent Left-Liberal challenge to neo-liberalism -- the so-called "Third Way" -- accepts the basic framework of neo-liberalism and the imperative of economic globalisation in policy prescriptions (Watkins, 2004).

At the same time the developing world was moving from one economic crisis to another coupled with dwindling foreign aid and stricter loan conditions from the IMF and the World Bank. The twin mantra of freeing the market from the shackles of governmental regulation to foster the free flow of global finance capital and the internal reform in the social and economic sectors was promoted as a bitter-pill which must be swallowed by the rich and poor countries alike to encourage economic growth. These neoliberal ideas have not borne expected fruits but have led to increasing misery in the poor countries apart from the increasing gulf between the rich and poor in the rich countries (Shamsul Haque, 1999). Worldwide ICTs have flourished and more and more communities have

been exposed to globalisation but these trends have not delivered the promised results (Morales-Gomez & Melesse, 1998; OECD, 2002; United Nations, 2001; Wade, 2004). Escobar (1995) has pointed out that on one hand the neoliberal developmental policies have failed, and on the other hand the global entrenchment of US- led hegemony of the advanced countries over the rest of the world has ruled out emergence of any alternative strategies of development.

3.3: Actually-existing neoliberalism

Recently geographers have elaborated the idea of 'actually-existing neoliberalism' which emphasises the path and context dependent nature of neoliberalism (Brenner & Theodore, 2002; Peck, 2004). Neoliberal restructuring projects are seen to be contextually embedded in the local, regional or national landscapes. According to Brenner and Theodore, the emergent neoliberal policies in advanced countries are built upon the existing policy landscapes such as Keynesianism. Consequently, neoliberal reforms are almost never implemented in their pure form. Although, economic and financial globalisation play a critical role in fostering the transition to neoliberal policies, the local institutional conditions are decisive in actually shaping the nature and meaning of the shift (Fourcade-Gourinchas & Babb, 2002). The policy history of a country plays a great role in how new reforms are proposed, discussed and implemented. The characteristics of neoliberalism are not same across all states globally but vary from one form of state to another – socialist, developmental and welfare state (Peck, 2004). Likewise, Bob Jessop (2002a) identifies three forms of neoliberalism which he terms as: policy adjustment, regime shift, and radical system transformation. These three forms represent the increasing neoliberalisation of a country. From adoption of piecemeal measures to improve performance to complete policy transformation from state socialism to neoliberal capitalism, neoliberalism in various forms is found in most countries of the world today.

In terms of policy change, Jessop (2002a) believes that the post-World War – II Keynesian Welfare National State (KWNS) has transformed into the Schumpeterian Workfare Postnational Regime (SWPR). The SWPR is distinguished from KWNS in four ways: First, SWPR actively promotes supply-side policies with an emphasis on international competitiveness and socio-technical innovation. Second, it aims to get people off welfare and into the workforce. In this case the social policy is subordinated

to economic policy with the aim to reduce welfare dependency. Third, the local, regional and supranational scales of policymaking have become more powerful with the result that the national scale of policymaking has lost its significance. Fourth, there is an increasing emphasis in policy planning on governance rather than on government.

In Jessop's view, the shift from KWNS to SWPR is associated with four strategies: neoliberalism, neocorporatism, neostatism and neocommunitarianism (see Table 3.2 in Appendix A). The policy-mix for each state will be determined by its policy history, the political environment and the prevailing political and economic factors when these strategies are initiated. Jessop (2002a) emphasises that within a state, policy-mixes based on these strategies may exist simultaneously at different scales. For example, even in situations of the neoliberal regime shift at national and international level, the local level may be characterised by neocorporatism, neostatism, and neocommunitarianism.

According to Jessop (2002b), the challenge posed by the globalisation of capitalism (inspired by neoliberalism) to state sovereignty is three-fold: First, the "de-nationalisation of the state" whereby the state capacities are reorganised, both in terms of territory and functions, on local, national, supra-national and trans-local levels. Second, the "de-statisation of the political system" resulting from a shift from government to governance. This shift does not mean an end to the state's role as it is "reproduced in and through continuous changes in the articulation of government and governance" (Jessop, 2002b, p. 15). Third, the "internationalisation of policy regimes". Of particular concern to knowledge society policy is the increasing remit of the World Trade Organisation (WTO) whose binding recommendations on intellectual property and trade in services issues constrains the state's ability to implement policies favourable to its interests.

The map of neoliberal policy shifts in Asia-Pacific reflects the significance of contextual factors such as policy history, institutional character and the political economic environment at the time of policy change, in addition to factors related to global and regional power, and associated discourses of globalisation, governance and the impact of the information revolution. This suggests that in terms of knowledge society policy discourse in Asia-Pacific countries, the historical, institutional, economic, technological and geopolitical factors would play an important role. Asia-Pacific is a

good example of the transformation of the state as well as the shift towards neoliberal policy regimes by a diverse group of nations (Beeson, 2007). Power imbalances between developed and developing countries is another reason for policy change. The persuasive power of the neoliberal argument is significantly related to the global neoliberal geopolitics (Roberts, Secor, & Sparke, 2003). A power imbalance between the rich and poorer countries has meant that the richer countries have been able to impose their point of view on poorer countries. In Asia-Pacific, where there has been remarkable progress in many countries, there is a heightened sensitivity to the issue of sovereignty in policy making and the attitude of richer countries, as is shown by the recent financial crises in "Asian Tiger" economies. Many East Asian economies have grown economically by heavy state intervention and not as desired by the neoliberal policies promoted by the "Washington Consensus" (Wade, 1990, 1992). Related to this is the fact that many Asia-Pacific countries have domestic political cultures characterised by high levels of state control in socio-economic sphere and/or less than democratic political dispensations, and are especially cautious in implementing neoliberal reforms (Beeson, 2001). The relative vulnerability of states to the neoliberal onslaught is partly related to their position in global or regional power scales. More powerful countries in the region such as China are less vulnerable to direct external pressure for policy change. The poorer, aid-dependent countries have little ability to withstand such pressures. The net result is that while in some Asia-Pacific countries, the neoliberal proposals are accepted by the governments with lots of modification, in others there is little choice but to adopt these proposals.

Olssen and Peters (2005) in their discussion on neoliberal knowledge society policies speculate that "knowledge capitalism will exhibit different patterns of production, ownership and innovation according to five basic regional models of capitalism" (p. 339). These five regional models are labelled as: Anglo-American capitalism, European social market capitalism, French state capitalism, the Japanese model, and Chinese market socialism. The Asia-Pacific includes countries from at least three of the five types of knowledge society policies described above. This suggests that knowledge society discourse would be a key feature in the shift towards neoliberal policy regimes in Asia-Pacific countries.

The previous discussion has argued that the knowledge society discourse is part of strategies to consolidate neoliberalism through policy. The notion of 'actually-existing

neoliberalism', helps to understand the contextual differences in which neoliberal policies arise and the forms of neoliberalism such differences give rise to. Actually-existing neoliberalism thus helps to explore the influences of intra-national, regional and global conditions on neoliberal policy formation in Asia-Pacific.

3.4: Neoliberal policy discourse and governance

The analysis of policy discourse is an analysis of governance in the wider sense. The Foucauldian idea of 'governmentality' takes a critical look at governance in relation to power (Dean, 1999; Foucault, Burchell, Gordon, & Miller, 1991). Governmentality is concerned with the increase in governmental power, part of which is made possible by scientific knowledge. The creation of scientific knowledge and the construction of expertise is essential to the operation of governmentality. The governmental practices of the state have an objective – to shape human conduct in particular directions. Governmentality also provides sustenance to ideology in that it naturalises and embeds the dominance of one set of ideas in society that shapes human conduct. What governments want to happen in response to policy problems or state objectives and through what strategies, determines the relation between ideology and governmentality.

In policy discourse analysis, Gramsci's (1971) concept of hegemony and Bourdieu's concept of *doxa* provide a fruitful way of conceptualizing and exploring the interrelated ideological and political aspects of policy discourse. These both contribute to and are shaped by wider processes of social and political change (Fairclough, 1992; Laclau & Mouffe, 2001). Hegemony, in Gramsci's work refers to the power over society by one of the economically defined classes in political alliance with other societal forces. Constructing and maintaining the alliances necessary to sustain the hegemony involves integrating rather than simply dominating subordinate classes to win their consent. Hegemonic struggle, as Fairclough (1992, p. 92) explains it, "takes place on a broad front, which includes the institutions of civil society (education, trade unions, family), with possible unevenness between different levels and domains". Common-sense knowledge serves as a repository of ideology. In common-sense knowledge, "ideologies become naturalized, or automatized" (Fairclough 1992, p. 92). Furthermore, "discursive practice, the production, distribution, and consumption (including interpretation) of texts, is a facet of hegemonic struggle which contributes in varying degrees to the reproduction or transformation not only of the existing order of discourse, but also to

the reproduction of existing social and power relations" (Fairclough, 1992, p. 93). Fairclough cites 'commodification' as an example of ways in which language and discourse are used to facilitate social change. The discourse of commodification draws on neoliberal economic discourse in the context of commodity production. Since the Thatcher and Reagan years in the UK and USA, the discourse of commodification has been extended to one institutional domain after another. In the domain of education, the discourse has had an impact of changing the traditional liberal curriculum into an industry oriented one, and that education is now seen as an 'industry' catering to 'consumers'.

Pierre Bourdieu is widely known for the new concepts he introduced in social analysis such as habitus, field, doxa, capital, symbolic power and the logic of practice. In the study of policy discourse, Bourdieu's (1997) concept of doxa is very useful because it represents the uncontestable nature of ideologies and their role in creating social consensus. Bourdieu explains doxa in the context of habitus which is the dispositions of the individuals and social groups obtaining from social practices specific to that group. Doxa is habitus specific. Consensus across society (in social groups and at national level) is brought about by means of spheres of activities and practices called "fields". Fields in society are cultural, social, political, economic and so on. The practices of the political field, most importantly policy, play an enabling role in determining the impact of doxa. The impact of field on doxa can be legitimating resulting in the maintenance of the habitus or it can also be disruptive, as in the case of social crises where doxa is challenged and the habitus of the individuals and social groups is modified. Bourdieu (1998a) specifically mentions neoliberalism as a doxa – an unquestionable orthodoxy that operates as the sole, objective truth applicable to all individuals, social groups and nations (see Table 3.3 in Appendix A).

Doxa is the taken for granted knowledge of a situation. The two groups in society in relation to the doxa – the dominated and the dominant – have their own interests which they want to protect. The dominated group, representing the dissenting voice - the alternative discourse – has an interest in exposing the taken for grantedness of doxa and in its place establishing heterodoxy of opinion. Likewise, the dominant group has an interest in defending the integrity of doxa by establishing orthodoxy. In terms of neoliberalism as doxa, the orthodox group would like to maintain its integrity through mechanisms of power and knowledge.

> The theory of knowledge is a dimension of political theory because the specifically symbolic power to impose the principles of the construction of social reality – in particular, social reality – is a major dimension of political power (Bourdieu, 1997, p. 165).

Further, for Bourdieu the heterodox and orthodox represent the universe of discourse – the realm of the thinkable, whereas the doxa is outside discourse, unthinkable and taken for granted.

> If one accepts the equation made by Marx in *The German Ideology*, that "language is real, practical consciousness", it can be seen that the boundary between the universe of (orthodox or heterodox) discourse and the universe of doxa, in the twofold sense of what goes without saying and what cannot be said for lack of an available discourse, represents the dividing-line between the most radical form of misrecognition and the awakening of political consciousness (Bourdieu, 1997, p. 170).

From Bourdieu's concept of doxa and his analysis of neoliberalism as doxa, we can extrapolate that thematic issues in political discourse, such as the knowledge society, are dependent for legitimacy upon the doxa. Bourdieu's concept of doxa is another way of looking at things usually discussed under the rubric of ideology. Neoliberalism as ideology is not entirely the same as neoliberalism as doxa. In Bourdieu's view we can live without ideology (in the sense of having a completely objective view of reality) but can not live without doxa (Calhoun, 2003). The question arises as to whether neoliberalism is better understood as a doxa or as an ideology. Bourdieu's notion of nomos explains the impact of neoliberalism on policy better. Nomos for Bourdieu is the fundamental law at the level of the field which like doxa remains beyond dispute. Nomos is doxa at the level of the field. Neoliberal arguments such as deregulation and liberalisation operate as nomos at the policy discourse level. They are beyond dispute whether the discourse is conservative or liberal. The state is the agency which legitimises the value system of neoliberalism through policy. If a state decides to apply the neoliberal value system to every field of society, the nomos of those fields would also reflect neoliberalism. The status of neoliberalism as doxa and as nomos in the political field is what gives the dominant neoliberal discourse its strength.

For a policy discourse to become hegemonic and constitute doxa, it has to emerge as a dominant discourse among other discourses. The aim of the discourse analysis of policy is to examine questions such as what interpretation of a policy problem becomes

authoritative, and why. How do dominant discourses treat governance? To get at these questions the discourse analyst has to examine the social and institutional logics that underlie the policy discourse. Fairclough's (1992) version of critical discourse analysis (described in Chapter 4) is useful to analyse these questions because it treats discourse in three dimensions – the text, the discursive practice and social practice. In discourse analysis the part that deals with discourse as text is descriptive in nature, whereas the discourse as discursive and social practice part is interpretive in nature. In the interpretation part of discourse analysis, questions such as why policy takes a particular shape and why particular solutions and governance mechanisms are proposed can be investigated. The answers to these questions help to locate the ideological influences and effects in and of policy.

3.5: Neoliberalism and language practice – spin, metaphors, and buzzwords

A feature of the knowledge policy discourse is the use of language to 'spin' the policy message to the public. John Searle maintains that the function of language is not solely to regulate but also to "create the possibility of certain activities" (1995, p. 27). Facts, he suggests, can be "created by explicit performative utterances," which, by virtue of being performed, "create the very state of affairs they represent" (p. 34). According to Lemke (1995), contemporary policy discourses do not directly command, but the command itself is implied in and disguised as, value-free, objective scientific facts. As such, policy discourses are closed discourses, which admit no criteria of validation outside their own framework. Lemke believes that this positivist and technocratic strategy transforms discourses of expert knowledge into social policy discourses, and hence, has ideological effects, as it serves to maintain social elites and their access to power and privilege.

Discourse theory, which aims to show how changes in the use of language can be seen as a sign of general social and cultural changes in a society stemming from changes in power relations, has highlighted the use of language in technocratic policy discourses (Fairclough, 1995). Referring to the use of language in policy discourses at the global level, Bourdieu and Wacquant (2001) talk of the "new planetary vulgate" or the neoliberal vocabulary comprising words like globalization, flexibility, zero-tolerance, exclusion, new economy and so forth, which signify a new kind of imperialism embodied in the discourse of the powerful nations and international organizations.

The analysis of language use in the policy texts is the most critical element in showing the constructions of policy problems and solutions. For example, the use of metaphors in policy documents is an important indicator of the recourse to language as a persuasive tool. The concept of metaphor provides insights into the dynamics of the policy discourse. Traditionally, metaphors are regarded as words, ideas, phrases used in language for their decorative, entertaining, and persuasive functions. More recently, especially in the discourse theory of Foucault, a metaphor is seen as a social practice by which the "production of discourse is controlled, selected, organised and channelled" (Foucault, 1974, p. 7 cited in Maasen & Weingart, 2000, p. 21). Therefore, metaphors become effective elements in the power/knowledge interplay. Metaphorical representations are separate from literal descriptions. According to Potter (1996, p. 180), "literal descriptions may be just telling it how it is, while metaphorical ones are doing something sneaky". Literal meaning is direct meaning, whereas, metaphorical meaning is indirect meaning. Maasen and Weingart (2000) suggest that science is part of the cultural system, as the scientific discourses are linked to political, literary and technological discourses. Metaphors, such as Darwin's "struggle for existence", Kuhn's "paradigm", and the notion of "chaos" from Physics, have travelled from biology, philosophy and physics, respectively, into most other discourses, and in their courses changing those discourses, while being themselves changed or acquiring newer shades of meaning. Non-scientific discourses are scientised by these metaphors from the scientific discourse. Maasen and Weingart (2000) start with a proposition that in this day and age, there is a great deal of hyperbole over the dynamics of knowledge, its production, acquisition and diffusion. Based on this development, a knowledge society is seen to be slowly evolving throughout the world. Further, in this knowledge society, words, phrases, and ideas are put into metaphorical use as catchwords and phrases to attract attention, thus signifying that "data, information, and knowledge not only increase but also compete with each other for consideration" (Maasen and Weingart, 2000, p. 2). In addition, the label knowledge society,

> is not only characterised by the sheer quantity and quality of knowledge circulating today, but more importantly, by the sheer speed of knowledge acquisition and the diversity of knowledge processing. Both speed and diversity are a function of discursive procedures that need to be revealed in order to fully understand how a knowledge society operates (p. 3).

Schön (1978) was one of the first in policy studies to recognise the potentials of metaphors for policy definition and policy solutions. For Schön, the framing of problems often depends upon metaphors underlying the stories which generate problem setting and set the direction of problem solving. The process of naming and framing issues through "generative metaphors" is one where a familiar "constellation of ideas" is carried to a new situation, with the result that both the familiar and the unfamiliar come to be perceived in new ways. Schön gives the example of framing a slum as a "disease" or alternatively as a "natural community". Whereas a disease must be cured through surgery, the slum as a natural community must be restored and preserved. Generative metaphors derive their persuasive force from certain normative dualisms, which are part of a cultural or social group, such as disease/health, natural/artificial, and so on.

Straehle, Weiss, Wodak, Muntigl and Sedlak (1999) show how the metaphor of "struggle" is invoked in two related policy genres (speeches and conclusions of European Union Presidency) in EU policy discourse on unemployment. Fairclough (2003) has also referred to metaphors as important in differentiating discourses. Fairclough, based on Halliday (1994), distinguishes between two kinds of metaphors: lexical metaphors (the sense of metaphors which Maasen and Weingart (2000) use in their analysis), and grammatical metaphors – metaphors which represent social processes as things, entities. For example, 'the push/drive towards knowledge society' and 'knowledge wave', use the metaphors of driving and wave, respectively to refer to the significance of knowledge society. In these representations, there is no mention of who drives the knowledge society or creates the knowledge wave, but the context in which they are used, generalises the process as if everybody is driving or creating the wave. Fairclough (2003) calls this kind of generalising through metaphorical representation of social processes nominalisation.

> Nominalisation is a resource for generalising, for abstracting from particular events and series or sets of events, and in that sense it is an irreducible resource in scientific and technical discourse as well as governmental discourse (p. 144).

The knowledge society discourse shows the presence of both types of metaphors – lexical and grammatical. In its usage as a policy label, the knowledge society is a lexical metaphor for economic competitiveness in the era of globalisation. Likewise, the

ideological and ontological preferences of the policymakers dictate the use of grammatical metaphors in policy documents.

In the context of knowledge society discourse, Graham (2001) describes a metaphor representational tendency in policy discourse termed 'process metaphor', which is a powerful tool to represent the future (time) as a fact-like object (space). A process metaphor is a type of grammatical metaphor. Process metaphors can be seen in policy texts about the knowledge society which sometimes build utopian images of the future. Graham cites the following example from an OECD text on the knowledge economy (OECD, 1999) to show how a process metaphor (in this case, '*opens up*') combines two abstract and temporal processes ('*the transition to a knowledge economy and society over the next few decades*', and '*the possibility of massive productivity gains'*) and gives an impression that they already exist as objects in reality.

> The transition to a knowledge economy and society over the next few decades **opens up** the possibility of massive productivity gains (OECD, 1999 cited in Graham, 2001, p. 768)

The above discussion underscores that policy discourses exercise power by means of language. Policy language has a subtle relationship to power. Policy discourses constitute what Foucault calls the "technologies of power" – a set of techniques for the regulation of society. Policy documents help prepare the groundwork for the exercise of state power. Policy discourse is not power per se, but it produces and transmits power (Fischer, 1995). Depending on their content and context, policy discourses can serve both as a tool of domination or of liberation in society. They work in both enabling and constraining ways (Hajer, 1995). The knowledge society as a policy discourse also has both these potentials. In the service of ideological interests it can be a tool for hegemony and domination. In contrast, it can be potentially liberating if there is a consensus on its means and implications, and its threats and potentials. The importance of deliberative democracy in engaging the technocratic discourse of the knowledge society, in Fischer's words is as follows:

> In the emerging "knowledge society," where policy experts move more and more to the centre of the decision-making processes, the political role of discourse becomes increasingly evident. Policy experts – like experts in general – are committed to the art and science of their technical discourses. …. Thus, preoccupation with discourses – their standards, criteria, and rules of evidence – makes it difficult for technical experts to ignore competing discourses, including democratic discourse. But democratic theorists who wish

> to engage technical experts in such discourse must also confront the challenge of technological society. No longer can they limit themselves to the task of theoretical critique. To effectively undermine the technocratic position, they must also show the ways in which democracy can be made compatible with technical complexity. … What we need is a democratic theory capable of moving from critique to social reconstruction (Fischer, 1995, p. 225-226).

3.6: Conclusion: Neoliberal technocracy versus deliberative democracy

The technocratic nature of policy discourse has been analysed by many scholars (Fischer, 2003; Fuller, 1995; Fuller & Collier, 2004; Graham & Rooney, 2001; McKenna & Graham, 2000; Rooney et al., 2003; Rooney, 2005; Torgerson, 2003). Technocrats are people who transform 'discourses of expert knowledge into discourses of social policy' (Lemke, 1995, p. 58). Knowledge society discourses are technocratic in the sense that they show a permeation of industrial values in the field of science and technology which when commercialised are thought to lead to a knowledge society (Fuller, 1995). Technocratic policy discourse emphasises technocratic values such as the technological and expert knowledge and scientific management of knowledge for business and policy. One of the consequences of technocratic thinking is that complex social processes, such as knowledge, are over-simplified and presented as things (McKenna & Graham, 2000). Discourse theory shows how the aims of technocrats are aligned to the values underpinning the powerful discourses relating to knowledge. In the context of the knowledge society, technocratic discourse argues what values and ideas are necessary and not why they are necessary (Rooney, 2005). The discourse, therefore, serves to legitimise policy programmes without much regard for alternative and emancipatory aims.

The technocratic character of policy discourse stems from defective practices in modern liberal democracies where it is assumed that public interest is represented in the legislature. However, the liberal model is "too comfortable with a quiescent public and technocratic governance" (Torgerson, 2003, p. 115). As a consequence, in modern democracies public contestation of technocratic discourses is diminished. Dryzek (2002) believes that contestation of discourses in the public sphere is a key component of deliberative democracy. The idea of democracy enshrined in deliberative democracy departs from the liberal democratic model. Deliberative democracy takes a critical look at the liberal state where the democratic governance is limited to official circles. In the

deliberative model, the policy process takes place in the larger social networks and the policy discourse is 'reflexive' rather than technocratic (Torgerson, 2003).

It is pertinent to ask at this point, what role technocratic policy discourse plays in policy change and through policy change in broader social change. Is it a causal or an enabler role? Habermas (1992, p. 452 cited in Torgerson, 2003, p. 115) believes that "discourses do not govern" meaning that there is something in the policymaking process itself that deflects direct public involvement. Schmidt (2000) concurs that there is no direct relationship between discourses and policy change and at best policy discourses are enabling, meaning that policy discourses can be both legitimising, as well as, legitimation-dependent. Further, policy discourses are not *the* cause of policy change but *a* cause in circumstances where they serve to "reconceptualise interests rather than just reflect them, to chart new institutional paths instead of simply following old ones, and to reframe cultural norms rather than only reify them" (Schmidt, 2002, p. 212).

In line with Schmidt (2002), Torgerson seems to suggest that policy discourses can be *a* cause, rather than *the* cause of policy change, but only if the processes underpinning them are deliberative and not technocratic. "Reflexive policy discourses are not a happy ending, but a point of departure that offers a prospect of democratisation" (Torgerson, 2003, p. 117). Further, policy discourses can be both transformative and emancipatory, or status-quo preserving and suppressive, meaning that their potential is ambivalent. The whole thrust of Torgerson's argument is that governance must privilege democratic politics over technocratic policy discourse. A democratised policy discourse would not separate policy and politics but would connect them through a realignment of power among policy actors.

The future of policy planning lies in taking a centrist course following the ideas of Habermas (Goonewardena, 2003). This chapter has highlighted the need to articulate emancipatory and normative ideals in policy by showing that the existing discourse on the knowledge society is insufficient, ideological, positivist and technocratic. It is deficient because it fails to envision the full role and possibilities of knowledge in societies. It is ideological because it is inexorably aligned to the globally dominant neoliberal ideology of capitalism. It is positivist because it legitimises a view of reality whereby only scientifically validated knowledge is true knowledge. It is technocratic because it largely reflects two powerful interests of technocrats in a globalising world –

technology and economy. Knowledge, seen solely as a product to be commercialised and managed, does not help the wider interests of societies. To represent the wider social interests, knowledge society as a policy label and as an academic concern should address the deficiencies of the discourse.

Chapter 4: Methodology

4.0: Introduction

Methodologically, this study is a critique of the prevalent policy discourse on the knowledge society which tries to engender policies on knowledge based on narrow conceptualisations and ideological agendas. Social researchers generally have become sensitive to the complexity and multifacetedness of social reality. Therefore interdisciplinary and multiple research methodologies have become commonplace (Denzin & Lincoln, 2003a, 2003b; Flick, 2002). Though policy research has become multidisciplinary in orientation, methodologically it still largely uses quantitative methodology and still espouses a positivist orientation (Fischer, 2003). In policy research, the triangulation of discourse analysis and quantitative statistical data is still not common, although it is accepted that quantitative data can be useful when considered in relation to assumptions of critical social science. Most researchers still prefer either qualitative or quantitative methodology depending upon the perspective they hold. Based on the aims of the research, this study uses the qualitative, interpretive methodology known as Critical Discourse Analysis (CDA). CDA is used to analyse official, documentary data on knowledge society, especially its characteristics seen in light of influence of neoliberalism on policy. CDA is particularly well-suited to this investigation because it can describe the discourses relating to ideologies in policy especially their qualitative aspects - the issues, themes, concepts, words, arguments, ideas and frames.

4.1.0: Critical Discourse Analysis

Critical Discourse Analysis (CDA) is an analytical tool developed in linguistics and now fairly widely used in social research as a way of depicting and engaging the discourse that surrounds complex socio-political issues. Policy discourse is a powerful governance and political instrument – a fact underlined by policy analysts in their quest to come to grips with the effects of discourse in the policy arena. Policy discourse is just one of many types of discourses in society. It manifests itself as both text and talk in the daily routine of governance. Policy reports, ministerial documents, ministerial press releases and parliamentary debates are some of the most important genres within the wider policy super-genre. One of the strengths of using documentary sources is that their examination is an unobtrusive method and they can be reviewed repeatedly.

Although CDA is one of many ways of analysing documentary data, its appeal and novelty lies in the fact that CDA aims at an interpretive and deconstructive reading of the discursive and linguistic features of texts with a view to providing insight into the implication a policy may hold for society.

Meaning, as constructed textually in policy by language use, is also a social construction. Language is a key "vehicle" for social and political practices to take place (Chilton, 2004). Another version of this argument is prevalent in linguistics and known as the Sapir-Whorf hypothesis, namely that - characteristics of language determine the worldview of its speakers (Lee, 1996). Most aspects of society, including social and political institutions and customs, find their symbolic representation in language. CDA regards language as a social practice and considers the context of language use to be a crucial variable. According to Wodak (2001a, p. 2), CDA being particularly interested in the relationship between power and language, "aims to investigate critically social inequality as it is expressed, signalled, constituted, legitimised and so on by language use (or in discourse)". The concepts of power and ideology are indispensable and figure in most variants of CDA (Fairclough, 1992, 2003; van Dijk, 1993, 1997, 1998).

Theoretically, CDA has been influenced a great deal by social theory, especially the critical theory of the Frankfurt School and the ideas of French theorists Bourdieu and Foucault as these have linked politics, language and culture (Chilton, 2004). Proponents of CDA believe that it is more than merely a method for social scientific research; it is also a theory in itself as it combines elements from social theory (Fairclough, 1992, 2001, 2003; Meyer, 2001). The notions of critique, ideology and power are the three pillars on which CDA theory stands. First, the notion of critique in CDA according to Wodak (2001, p. 9) entails "having distance to the data, embedding the data in the social, taking a political stance explicitly, and a focus on self-reflection as scholars doing research." Second, CDA views ideology in a critical vein as a mechanism of maintaining unequal power relations in society. CDA aims to demystify discourses by deciphering the ideologies contained in them. Finally, power for CDA is a key factor in social life and texts are sites for power struggle within society.

Despite their differences in ways of analysing discourse, the members of the CDA community share a common interest in investigating the role of language, ideology and power in contemporary society. According to Wodak (2001a), although CDA evolved

within the linguistics community, at present it shares common ground with many areas of the social sciences on issues such as the constitution of knowledge; the relationship of discourse to social institutions; the workings of ideology in social institutions, and how power operates within society.

This chapter outlines the methodology to be used to analyse the policy narratives on knowledge society and explores the links between language and discursive practices, particularly the use of policy reports to publicise and propagate the ideology of knowledge society. To achieve the aims of this thesis, I use a variant of CDA developed by Norman Fairclough (Chouliaraki & Fairclough, 1999; Fairclough, 1992, 1993, 2000a, 2001, 2003; Fairclough & Mauranen, 1997). All the variants of CDA are strongly grounded in a wide variety of theoretical traditions, ranging from microsociological theory (ethnomethodology) to Foucauldian theory of society and power, social psychological theory, Systemic Functional Grammar of Halliday, apart from concepts borrowed from general social theory. Some forms of CDA are very strongly linguistically oriented such as Wodak's discourse-historical approach (Wodak, 2001b), while others borrow heavily from social psychology such as van Dijk's socio-cognitive approach (van Dijk, 1993). Fairclough (2001) synthesises Marxist, Hallidayan, Foucauldian, Bourdieuan and Bhaskar's theories in his version of CDA. Other major forms of CDA include Ron Scollon's (2001) mediated-discourse analysis based on microsociological theory, and Siegfried Jager's (2001) critical discourse and dispositive analysis based on Foucauldian theory.

The diversity of approaches to CDA means that there is no single approach to data collection. Meyer (2001) suggests that the procedure for data collection and analysis in CDA is similar to Glaser and Strauss' (1967) grounded theory where data collection is not a phase before analysis starts but might coincide with it. The data consists of representative texts chosen on the basis of research questions. The sources of data include but are not limited to media coverage, ethnographic fieldwork, qualitative surveys and participant observation. Finally, the analysis step in most forms of CDA is strongly linguistic in character as it relies on linguistic concepts.

In this research, the policy documents relating to the knowledge society from selected Asia-Pacific countries are the data for CDA. These documents are in English language and have been downloaded from the respective government websites on the World

Wide Web. Selected portions of representative text from these documents are presented for discussion and analysis. The selected national policy documents are situated within the context of wider policy discourses of multilateral organisations. This is done to highlight the impact of wider international discourse on national policy documents. It is assumed that ideologies professed at international level have an important bearing on the nature of the national level ideologies at the heart of the policy discourse. The discourses and ideologies in operation at the global level are reproduced, rearticulated and re-enacted in the national level policy discourse.

4.1.1: Description of CDA method used in the study

CDA has two components – methodological and theoretical. The theoretical component is part of the discourse theory in social sciences in which the major contributors have been Foucault and Habermas, while the methodological component has many variants based on the works of leading authors in the field such as Fairclough, Wodak, Scollon, Jager, Chilton and, van Dijk among others. Fairclough (Chouliaraki & Fairclough, 1999; Fairclough, 1992, 2001, 2003) suggests a stepwise procedure for the method component of CDA, modelled on the concept of 'explanatory critique' proposed by Roy Bhaskar (1986). The notion of explanatory critique is part of a perspective in social science known as 'critical realism'. Critical realism takes a middle position between positivism and postmodernism on the question of reality and how to interpret it. Critical realists believe that the positivist approach reduces reality to the one that is observable. On the other hand, postmodernism is suspicious of truth claims and the possibility of interpreting reality definitely. Critical realism holds the view that while it is not possible to objectively interpret reality, it is possible to arrive at better interpretations of reality than the ones offered by positivism (Cruikshank, 2003). Critical realism is based around the idea that "the world is structured, differentiated, stratified and changing" (Danermark, Ekstrom, Jakobsen, & Karlsson, 2001, p. 5). Further, critical realism contends that:

(1) "there is a real world independent of our knowledge about it",
(2) "it is possible to gain knowledge about this real world: facts are certainly theory-laden, but they are not theory determined"
(3) "knowledge is always fallible and more or less truthlike"
(4) the usability of knowledge "varies in various social situations, since there are many different levels and forms of social practice" (Danermark et al., 2001, pp. 202-203).

Critical realism advocates for methodological pluralism and linking of theory and methods based on the aims of research and what we can learn from using multiple methods. Critical realism in the social sciences is inherently political. According to Cruikshank, critical realists believe that

> the task of empirical research is to explore how existing social, political and economic relations create inequality, and turn on exploitation, in order to develop a normative critique against those relations. Research is used to provide the facts about hardship and exploitation, and from such facts normative and political arguments may be developed against the status quo (Cruikshank, 2003, p. 3).

The fundamental task of research, according to critical realism, is the explanation of social phenomena by revealing the causal mechanisms which produce them and the consequences of those mechanisms for the social setting. With regards to social issues, critical realism believes that emancipation is possible if causes are sought in the social domain which produces them. Explanatory critique, therefore starts with a problem in the social domain, analyses its causes, identifies obstacles to its solution and finally suggests possible ways past the obstacles.

Table 4.1: Fairclough's five-step CDA framework.

1. Focus upon a social problem which has a semiotic aspect.
2. Identify obstacles to it being tackled, through analysis of
    a) The network of practices it is located within
    b) The relationship of semiosis to other elements within the particular practice(s) concerned
    c) The discourse (the semiosis itself)
    i. structural analysis: the order of discourse
    ii. interactional analysis: interdiscursive analysis and linguistic and semiotic analysis
3. Consider whether the social order (network of practices) in a sense 'needs' the problem.
4. Identify possible ways past the obstacles.
5. Reflect critically on the analysis (1-4).

Source: Based on Fairclough (2001, p. 125; 2003, p. 209).

The method component of CDA according to Fairclough is a five step analytical framework based on Bhaskar's concept of explanatory critique (Fairclough, 2001, p. 125; 2003, p. 209). In this method emphasis is placed on semiosis which is considered to be as an element in social practice (see Table 4.1, step 2c above). Most of the analysis of discourse takes place in this step. Explanatory critique in CDA starts with a focus on

a social problem. A social problem from CDA perspective manifests itself as a discourse (for instance the neoliberal discourse). Explanatory critique, by focusing on problems aims to provide solutions or ways past the problem and in the process investigates the obstacles which hinder solution. Table 4.1 shows the procedure proposed by Fairclough in his version of CDA. The part of the CDA adapted for this research has been highlighted in bold letters.

According to Fischer (2003), the discourse analytic method suggested by Fairclough combines various approaches to discourse analysis. At the core of Fairclough's CDA are the notions of discourse and discursive event. Discourse is a multidimensional concept and is not easy to capture, largely because there are many definitions formulated from various theories and disciplines. Fairclough attempts to bring the various conceptions of discourse together in his three-dimensional conception of discourse enshrined in his concept of a discursive event. He believes that a 'discursive event' can at once be seen in three ways: (1) as text, (2) discursive practice, and (3) social practice (Fairclough, 1992, p. 4). The 'text' dimension of discourse relates to language analysis of texts, the 'discursive practice' dimension attends to the types of discourses, and the 'social practice' dimension deals with the institutional and organization context within which discourses arise and are maintained.

In Fairclough's scheme, all three dimensions of discourse are analysed in the step 2c and it is this step which has been used for CDA in this research. In this step, Fairclough sub-divides the procedure into two – structural analysis and interactional analysis. Interactional analysis is further partitioned into (1) intertextual and interdiscursive analysis, and (2) linguistic and semiotic analysis. I think this creates a confusion for the reader who may not be well versed with CDA methodology and also might not appeal to a sociologist not trained in linguistics. Therefore, I have decided to divide this step into three separate levels based on the dimensions of discourse (text, discursive and social practice dimensions) identified by Fairclough (described below). In my view, though in reality these three dimensions overlap considerably in terms of their focus, it is necessary for the present research to separate the three dimensions and label them according to the levels of analysis – *macro, meso and micro* – which result from these dimensions. Political geographer, Gearóid Ó Tuathail (2002) divides discourse analysis into three types – macro, meso and micro. Macro-level discourse analysis, in his scheme, is concerned with wide "historical range and philosophical depth" (p. 606)

about key dimensions of a issue. The meso-level discourse analysis is related to the 'argumentative turn' in policy studies whereby everyday manifestation of the discourse is the main concern. This type of discourse analysis employes notions from many theorists to explain the manifestation and reproduction of discursive formations. Finally, the micro-level discourse analysis is largely linguistic and psychological in orientation. According to Ó Tuathail, the most productive form of discourse analysis from a public policy perspective is the meso-level discourse analysis. This research tries to combine the three levels of discourse analysis into one. Being a study from a sociological and not linguistic angle, CDA in this research is predominantly focused on the macro and meso-level picture, though this does not mean that micro-level analysis is neglected. The micro-level analysis is carried out from a sociological angle, especially in the socially significant linguistic and discursive features. A detailed linguistics-type analysis is out of the purview of this study because the corpus is too large for that purpose.

In this research, the 'text' dimension is a micro-level look at the linguistic and discursive features of policy reports. The 'discursive practice' dimension is a meso-level analysis of the intertextual and interdiscursive features of policy reports. The 'social practice' dimension is the most important part of CDA in this research as it provides a macro-level perspective on the order of discourse relating to knowledge society for each country. This is because the concern with discourse as social practice is of special significance in policy research. According to Fischer (Fischer, 2003, p. 74), discourse as a social practice focuses on "the kinds of assumptions that underlie practices of particular policy institutions". Further, discourse analysis of politics begins with the recognition that discourses are distributed across institutions and that in addition to the "dominant discourses, competing discourses struggle to gain recognition and power" (Fischer, 2003, p. 76). Table 4.2 (see Appendix A) shows how the three dimensions of discourse are related to CDA and social theory. I have added the column titled 'Perspective' to show how these dimensions can be seen in terms of knowledge generation. The social practice dimension of discourse can be analysed using the discourse theory concept of 'order of discourse' complemented by the social theory of Bourdieu and Foucault to understand discourse at the 'macro' level. I use the "Eagle" metaphor to describe the type of knowledge about knowledge gained from this perspective. The discursive dimension focuses on intertextual and interdiscursive features of texts which can be explained by the social theoretical concepts of Bernstein and Gramsci. I use the "Honey Bee" metaphor to illustrate the fact that texts are like

Honey Bees as they combine elements from other discourses and texts to produce new knowledge. Finally, the text dimension involves the CDA focus on linguistic features. I have used the "Ant" metaphor to illustrate that at micro-level, words, concepts, and so on, collectively work together (just like ants) to create knowledge.

The procedure proposed by Fairclough is a skeletal sketch of how CDA can be operationalised. One of the strengths of this version of CDA is that it can be adapted to suit research aims. Chouliaraki and Fairclough (1999) suggest that CDA be adapted to suit research goals and that any CDA framework should not remain static but must be shaped by the research. In this research, because of the constraints of the large size of corpus, because of the choice of six countries, and because the policy documents are voluminous, the CDA method has been adapted to suit study needs, especially the aim to locate neoliberal attributes in the discourse. In the data analysis phase, CDA will be used for structural (macro) and interactional (meso and micro-level) analysis of policy documents. Only one step of Fairclough's procedure (Step 2c) will be used.

4.1.1.0: Macro-level analysis: The order of discourse

The relationship of discourses to society has been summarized by Fairclough in the following sentence. "Discourses are diverse representations of social life which are inherently positioned – differently positioned social actors 'see' and represent social life in different ways, different discourses" (Fairclough, 2001, p. 123). A network of social practices constitutes a social order. Fairclough (2001) refers to neoliberalism as a global order of new capitalism and the related neoliberal discourse is termed as an "order of discourse". The concept of order of discourse refers to the "semiotic aspects of a social order", "the way in which diverse genres and discourses are networked together" (Fairclough, 2001, p. 124). Concepts such as 'hegemony' denote the struggle between discourses and explain how the dominant orders of discourse on particular issues become mainstream in society while alternative orders of discourses get marginalized. For instance, the global neoliberal order of discourse is mainstream while the alternative discourses of development have become marginalised. Neoliberalism, therefore, as an economic doctrine and political rationality allied to contemporary global capitalist expansion is an order of discourse to which the various discourses, especially policy discourses (New Labour, Third Way) are related.

> Governments on different scales, social democracies as well as conservative, now take it as a mere fact of life (though a 'fact' produced in part by inter-governmental agreements) that all must bow to the emerging logic of a globalizing knowledge-driven economy, and have embraced or at least made adjustments to 'neo-liberalism' (Fairclough, 2003, p. 4).

To explain the textual operation of neoliberalism it is necessary to look both at the text and at the wider environment in which the text is produced. CDA, for Fairclough (2003), oscillates between a focus on particular texts (the micro-level) and a focus on the order of discourse (the macro-level). CDA is based on the assumption that texts, such as policy texts, have significant social consequences as they help bring about social changes in both the short and long term. However, this does not imply that the social world is entirely textually constructed. Fairclough (2003) prefers a moderate version of the claim that the social world is textually constructed by noting that while it is possible to represent the world textually in particular ways, whether it leads to social change depends on contextual factors. This suggests that texts, individually on their own, do not have the power to influence social change but when they exist as part of a chain of texts, on a specific issue and in a specific policy milieu, they do have more influence on the trajectory of change in society. The macro-level perspective evident in the concept of the order of discourse in CDA is useful because it includes an emphasis on contextual factors which determine whether any text or a series of texts has social effects.

In terms of the macro-level focus on texts, another concern of CDA is with whether texts have ideological effects. Ideological effects relate to long term changes in the social relations brought about by powerful ideological representations. Fairclough (2003) believes that CDA ought to take a 'critical' view of ideology as a modality of power. Fairclough maintains that ideological representations can be found in the texts. Such ideological representations in texts (at micro-level) have long-term effects on social relations of power and domination which are the purview of the macro-level concept of the order of discourse. Ideologies appear in individual texts as assertions or assumptions and can be shown to have causal effects on aspects of social life in the macro-level social practice dimension of discourse.

CDA as a theory places great importance on the macro-level social impact of discourse. Fairclough (2001), while describing Critical Discourse Analysis (CDA) as a method in social science research, emphasises that it is both a theory as well as a method. The

theoretical component of CDA is based on the belief that every social practice has a semiotic element where social life is seen as "interconnected networks of social practices" (Fairclough, 2001, p. 122). Further, Fairclough sees all social practices as practices of production, whose elements (productive activity, means of production, social relations, social identities, cultural values, consciousness and semiosis) are dialectically related. CDA is concerned with an "analysis of the dialectical relationship between semiosis (including language) and other elements of social practices" (Fairclough, 2001, p. 123). In this research, the elements of social practice of interest relate to changing social relations, identities and values as a result of discourse driven changes in the social order based on a capitalist political economy. Knowledge society policy discourse is part of a wider discursive onslaught aimed at social change via policy. Discourse labels such as the knowledge society are exemplars of what Bourdieu and Wacquant (2001) termed the "new planetary vulgate" – a new vocabulary of capitalism.

CDA theorists are particularly interested in the radical changes taking place in the world social order, "the currently emergent global order of the new capitalism" (Fairclough, 2001, p. 124). The idea of new capitalism being a knowledge-driven social order means it is also discourse-driven (Fairclough, 2003). The discourse on the "Third Way" of the Labour Government in the UK is a good example of how the new capitalist order is reinventing and repositioning itself through discourse (Fairclough, 2000b). The discursive construction of society emerges from "practices that are rooted in and oriented to basic social structures and ideological practices, particularly the tensions and conflicts to which they give rise" (Fischer, 2003, p. 76). At the policy level, such practices construct and support specific relations between classes and groups of people.

In analysing the order of discourse, CDA looks at higher level tendencies in discourse. Fairclough (1992) identifies three major types of tendencies, namely

(1) The 'democratisation' of discourse: These tendencies are about changes in how discourse practices occur, including elimination of sexist language, informality in language and access to prestigious discourse, among others.
(2) The 'commodification' of discourse: These tendencies are about representation, where social domains come to conceptualise their work as a commodity. For

example, the reference to education as a product to be marketed to student customers.

(3) The 'technologisation' of discourse: The tendency to control over parts of the social world by trans-contextual discourse techniques (such as interviewing, counselling, advertising).

In policy discourse, there are specific tendencies at the higher level. These include, technocratic values and the quest for policy legitimacy (these have been described in Chapter 3). Other knowledge policy specific tendencies include, (1) the global diffusion of discourse under various labels; (2) high level of abstraction from the academic discourse (Bourdieu and Wacquant's (2001) charge of gross summarisation of academic concepts – knowledge, globalisation, and so on - with a resulting loss of meaning) and; (3) futurological orientation of discourse.

Macro-level analysis was conducted with the help of Leximancer – an automated text analysis software. The specific procedure is explained in section 4.2. In analysing the order of discourse, macro-level analysis is concerned with three components – discourse, genre, and style. Three analytical categories - genre, discourse and style – are proposed by Fairclough as essential to CDA at all levels of analysis. According to Fairclough (2003, p. 37), "discourses, genres and styles are both elements of texts and social elements", meaning that they operate at all three levels of analysis. Leximancer assists in characterising the discourse, particularly semantic and conceptual relation and the description of policy history and structure. The focus on genre entails looking at the kinds of sub-genres the policy reports fall into within the wider policy genre. Some sub-genres are white papers, ministerial strategic direction documents, annual reports, press releases, and ministerial speeches. The third focus in macro-level analysis is on the style dimension of discourse, that is how are the people represented or constructed in the discourse. The identity of the public is an important aspect of the style dimension of policy texts. The style dimension of the order of discourse looks at how social identities are realised in texts. The discursive construction of social identity (which is analysed in depth in the micro-level analysis) in policy texts concerns the values (what is deemed true and necessary) and evaluations (what is deemed good or bad) expressed by the authors of the texts. These are discussed in the section on micro-level analysis. What I refer to here as the style dimension of the order of discourse deals with how the authors of the texts construct publics or subjects. Since an important aim of policy texts is

public relations, we ought to know what kind of publics they construct. It is important to note here that the public or a subject is not a pre-existing entity but is constructed in the process of the production of discourse. The policy texts have a projected dialogue with the subjects they construct in the way that they raise issues and answer them. Policy texts construct subjects in statements. According to Fairclough, "this view of the relationship between subject and statement is elaborated through a characterisation of discursive formations as being made up of particular configurations of 'enunciative modalities'. Enunciative modalities are types of discursive activity such as describing, forming hypotheses, formulating regulations, teaching, and so forth, each of which has its own subject positions" (Fairclough, 1992, p.43). Policy texts construct subject positions by statements of what the government wants the people to be – that is, what they should be like and what they should believe.

4.1.1.1: Meso-level analysis: Interdiscursive and intertextual analysis

Whereas the macro-level analysis concerns the structuring of the order of discourse across the various policy domains, meso and micro-level analyses deal with what actually happens within texts. At the meso-level, the concern is with the external discourses and texts are present in texts and those that could have been but are absent. In Fairclough's scheme the meso-level is linked with the other two levels, firstly by maintaining a focus on discourses, genres and styles, and secondly by connecting the external relations of the texts (intertextuality) to the linguistic and discursive features of texts (micro-level analysis) through the interdiscursive analysis of the genres, discourses and styles (Fairclough, 2003). In other words, the interdiscursive analysis mediates between intertextual and linguistic and semiotic analysis. The interdiscursive analysis (carried out in step 2c-II of CDA) is connected to the macro-level analysis (step 2c-I) because, it too, deals with categories such as discourse, genre and style. Interdiscursivity is the relationship between discourses, genres and styles in texts and interactions. Interdiscursive analysis works on the assumption that texts are hybrid in terms of discourses, genres and styles. Fairclough (2003) gives examples of hybrid genres in the texts of local governance which show an incorporation of corporate advertising genre into local government.

Hybridity is a feature of language use where different kinds of discourse are mixed together. Most policy discourses are hybrid discourses. Hybridised policies may result

from (1) elements of different governance regimes (the continuation with some changes of programs of past governments by the incumbent government); (2) mixture of different ideologies (the contextual materialisation of ideology – for example the varieties of neoliberalism in the world); (3) struggle of domination between policy sectors, political formations or institutions, global or national, over others (for example, the struggle for appropriating the meaning of knowledge in policy) and; (4) by the reconfiguration of boundaries between the fields like the ones created by the colonisation of the social sphere by the economic. The hybridity of the knowledge policy discourse is also reflected in the different things that are going on the various texts – how they mix discourses. Hybridity of discourses can be seen in Wodak's (2000 cited in Chouliaraki & Fairclough, 2003) article on the transformation of a policy paper detailing the hybridisation of neo-liberal discourse of global change with a political discourse representing societies in terms of the goal of social cohesion. Social cohesion is reconstructed in economic terms incongruent with the aims of neoliberalism.

According to Fairclough, "intertextuality is basically the property texts have of being full of snatches of other texts, which may be explicitly demarcated or merged in, and which the text may assimilate, contradict, ironically echo, and so forth" (1992, p. 84). Policy documents have distinctive technocratic language and format, and are often intertextual as they refer to other texts directly or indirectly. Such intertextual borrowing means that policy texts are not suddenly produced at a certain time but have a history. Texts contribute to existing history by responding to existing texts and thereby transforming the past into the present. The interpretation of texts is not solely shaped by its 'manifest intertextuality' but also by its 'constitutive intertextuality' or interdiscursivity (Fairclough, 1992, p. 85). Intertextuality in policy discourse works by invoking authoritative knowledge by citation of evidence from scientific research, conceptual and legal allusion, recourse to political ideologies, word inflections and so on. These underpin what Hansen (2005) terms conceptual intertextuality. For Hansen, conceptual intertextuality is a key dimension of political intertextuality. Conceptual intertextuality is established in texts in the form of concepts and data from scientific and non-scientific sources. Policy concepts with roots in scientific debates (such as knowledge, knowledge society, globalisation and innovation) are recontexualised in policy reports in keeping with the politico-temporal context. Conceptual intertextuality according to Hansen (2005) comes into play through implicit or explicit reference to concepts, catch-phrases and buzzwords developed in a larger body of earlier policy and

other texts. While referencing to concepts, older texts are recontexualised for the present debate. The knowledge society and the related mosaic of concepts likewise are re-read in policy discourse. Conceptual intertextuality in policy documents constitutes policy meaning and knowledge and influences the construction of policy. In relation to intertextual analysis, this research follows the distinction proposed by Hansen. Hansen (2005) distinguishes between two types of political intertextuality – explicit (direct, textual) and implicit (indirect, conceptual). Policy texts re-read historical texts through the dominant categories of a contemporary policy debate. According to Hansen,

> As a text makes references to older texts it constructs legitimacy for its own reading, but it also simultaneously reconstructs and reproduces the classical status of the older ones. Rather than seeing new texts as depending on older, one should therefore see the two as interacting in an exchange where one text gains legitimacy from quoting and the other gains legitimacy from being quoted. This construction of an intertextual link produces mutual legitimacy and creates an exchange at the level of meaning (Hansen, 2005, p. 57).

Interdiscursivity refers to the other texts or discourse types which interpreters of texts bring into the interpretation process. The " 'interdiscursivity' of a text is a part of its intertextuality, a question of which genres, discourses and styles it draws upon, and how it works them into particular articulations" (Fairclough, 2001, p. 124). In CDA practice, interdiscursive analysis of discourses within a text involves: (1) Identifying the main themes of a text, and; (2) Identifying the particular point of view from which they are represented. Likewise, the interdiscursive analysis of genres involves: (1) Analysis of genre mixtures in the text, and; (2) Analysis of individual genres in the text.

Policy documents are polemical in nature as they attempt to persuade their audience into a specific set of opinions or to draw their attention to a specific set of issues. In doing so, texts attempt to draw upon other discourses and genres and articulate them as a mix. The analysis of interdiscursivity reveals how policy reports through textual devices (genre, topics, perspective, choice of sources, choice of vocabulary) incorporates discursive elements of other discourses which are drawn upon within the policy report discourse, such as using references to academic literature and theories, other policy reports, narrative stories and vignettes, jargon, buzzwords, truisms, and catch-phrases, which is in the interest of issues discussed by the texts.

A particular issue in analysing genres through interdiscursive analysis is to identify which modes of communication (language – spoken or written, photographs, visual imagery etc.) are drawn upon and how they are combined.

> Genre analysis has a significant contribution to make to research on the relationship between technological change, mediation …. economic change, and wider social change – both in terms of how the integration of new technologies into economic, political, social and cultural processes is instantiated through new genres, and in terms of how genre chains are woven into the fabric of the 'information society' (Fairclough, 2003, p. 78).

The meso-level CDA of policy texts raises issues such as the propagation of hegemonic ideologies via mixing and chaining of discourses and genres, the rearticulation of relationship between the social and economic spheres by the colonisation of the former by the latter, and by recontextualisation of elements of the social in economic terms. These issues leave a mark on social practices (order of discourse) as well as text practice.

4.1.1.2: Micro-level Analysis: Linguistic and discursive features of texts

The macro (structural) and meso (interactional) analysis of texts and discourses reveals the operation of certain linguistic features which have social effects depending upon the meaning and context of discourse. The micro-level analysis of linguistic and semiotic features in Fairclough's scheme includes analysis of semantic, grammatical, vocabulary, phonological and graphological and semiotic relations. This entails a high degree of mastery in linguistics, as is evident from the description of these categories below.

1. Semantic relations: "Meaning relations between words and longer expressions, between elements of clauses, between clauses and between sentences, and over larger stretches of text" (Fairclough, 2003, p. 36).
2. Grammatical relations: For example the relationship between morphemes in words, between words in phrases, between phrases within clauses and between clauses in sentences.
3. Vocabulary or lexical relations: The "patterns of co-occurrence between items of vocabulary" (Fairclough, 2003, p. 37).
4. Phonological and graphological relations: This level deals with both the relations in spoken language (intonation, rhythm) and written language (example, graphological relations between fonts and type sizes in text).

5. Semiotic relations: For example, the analysis of visual imagery.

These linguistic features are very useful in the data analysis phase while describing the social effects of discourse such as power, ideology, legitimation and hegemony.

Fairclough (1992) believes that text analysis (at micro-level) concerns two aims – the construction of social identities and the construction of social reality. The construction of the self or of social identity in discourse is a major feature of the texts which contributes to social change. According to Fairclough (1992) the analytical categories that help to understand how social identity is constructed in texts include interactional control (including topic control) which is a facet of text structure, modality which is related to grammar, and politeness and ethos. These categories vary in importance across the various discourse-types. Of these, topic control and modality are especially significant for policy documents. In the policy documents, topic control helps to set the agenda for policy solutions. Modality is important in policy texts because it helps us to understand the affinity of the text producer to a particular point of view. Verbs (must, may, can, should, etc.), tenses (is, was, will, etc.), adverbs (possibly, probably, definitely, etc.) and adjectives are important grammatical elements relating to modality. In this research, modality is analysed with reference to the presence of futurology in the preface and foreword sections of policy reports.

The construction of social reality in texts helps to us to uncover how words, ideas, concepts and beliefs are constituted, reproduced, challenged and rearticulated. This is also termed the ideational function of texts. The analytical dimensions of texts which are important in this regard include transitivity, theme, word meaning, wording and metaphor. *Transitivity* relates to whether particular grammatical processes are favoured in the text; *theme* refers to the correspondence between the text structure and clause level themes; *word meaning* emphasises meanings of key words, words with changing meaning and particular word meaning preferences in texts; *wording* emphasises the differences in meaning of words in the text from texts of other types, and; *metaphor* relates to the characteristics of metaphors used in the text, in contrast to other texts.

In this research, as the corpus of texts is large it has been decided to focus on those linguistic features which can be useful for understanding core issues in the knowledge society discourse. In this research, the micro-level analysis of texts focuses, firstly on

the construction of social identity through analysis of the modality dimension of texts, and secondly on the construction of social reality through analysis of the word meaning and wording of key concepts relating to knowledge society in the texts. The first focus on the modality dimension of texts is necessary because it helps in analysis of a significant aspect of the macro-level analysis – the construction of 'publics' or subjects (for instance, the "New Zealander") and its salience in the order of discourse. The conclusions reached in the analysis of modality is described under the Style section of macro-level analysis. The second focus on word meanings and wording is particularly significant for at least three out of seven research questions of this research relating to CDA methodology, namely:

1. What sorts of knowledge about the 'knowledge society' are at work in the Asia-Pacific policy communities? How is the knowledge society conceptualised?
2. What metaphorical and literal strategies are deployed to engender certain effects and meanings as opposed to others? What "facts" are fabricated in this?
3. What rhetorical use are key concepts like globalisation, ICT and innovation put to?

4.2: Description of the CDA procedure adapted for this research

To restate, the goal of this research is to examine the discursive context of knowledge society in six Asia-Pacific countries. CDA assists with this goal, namely, to examine the discourse of the knowledge society in the policy documents to extract themes relating to neoliberalism. The following is the shortened version of Fairclough's CDA framework. This has been done keeping the research goal in mind. The large size of the corpus dictated that Fairclough's CDA framework be adapted to include only those steps and procedures that help in making sense of the discourse. It was deemed logical therefore to not follow the five-step framework as it is. Since the bulk of critical discourse analysis in Fairclough's version of CDA is performed in Step 2 (see Figures 4.1 & 4.2 in Appendix B), only this step will be used. Figures 4.3 and 4.4 (see Appendix B) present the analytical procedure used in this research and the format of presentation of case studies.

In the next six chapters (Five to Ten) the results of the CDA are presented for each of the six case study countries. The presentation of analysis follows the steps described in this chapter. Analysis for each case study occurs at three levels: (1) a macro-level

description containing the order of discourse, (2) a meso-level description of intertextual and interdiscursive links, and (3) a micro-level look at the linguistic features of the discourse. For each case study, the macro-level description of the order of discourse is the primary focus of analysis because it reveals how the linguistic and discursive features of policy documents serve to legitimate the overarching ideological objectives. The meso and micro-levels of analysis help to reinforce the arguments presented in the macro-level analysis. In this research, CDA follows a repetitive cycle of reading (both personal and computer-based) the texts for a better understanding. The reading of texts helps in identifying the discursive and linguistic features of interest in the meso and micro-levels.

At the micro-level, policy documents highlight certain words, themes, ideas, beliefs, arguments and concepts which engender a particular meaning, and possess collocational linguistic features such as adjectives, metaphors and proverbs. Pictures and other visual material can also be a source of discursive construction. Also, these words and concepts carry a meaning which may or may not be similar across all the texts from the same discourse type (policy discourse from the same country or policy domain) or from a different discourse type from which it claims to achieve its legitimacy (for instance multilateral institutional discourse and academic discourse). At the discursive level, these words, themes, ideas and concepts can be seen as serving a variety of purposes such as: (1) argumentatively binding the various elements of discourse together; (2) intertextually referring to other texts and interdiscursively incorporating other discourses; (3) articulating context-specific ideas and arguments, and; (4) re-articulating ideas and arguments from other genres, discourses and styles to suit the aims of ideology and power. Whereas the linguistic features of texts relating to key words, themes, ideas and concepts are part of the micro-level analysis, the points 1, 3 and 4 above are valuable for the macro-level analysis and point 2 is useful for meso-level analysis.

Computer-based text analysis using Leximancer software compliments personal reading and helps in managing and making sense of a large corpus by means of semantic and concept maps. The software identifies the dominant words, concepts and themes in the policy texts. Further, it automatically generates semantic and concept maps based on the relationship of the concepts to each other. Such maps provide a macro-level picture of the documents and help to link the micro-level analysis to the macro-level analysis. The

discursive and linguistic features identified in the meso and micro-level in combination with the semantic and concept maps generated by the software inform the macro-level analysis of the order of discourse. The semantic and concept maps are part of the macro-level analysis and are thus presented under the order of discourse section for each case study. Likewise, the construction of social identity (social publics or subjects) through texts - a part of micro-level analysis - is presented under macro-level analysis as it helps in describing the order of discourse. CDA in the present scheme starts from the micro-level linguistic analysis upwards to the macro-level analysis. In presenting the findings, the direction is reversed with macro analysis described first and micro-level analysis at the end. The reason for this is that macro analysis provides a more representative picture of the discourse as a whole.

Research questions formulated in Chapter 1 have been categorised in accordance with the three levels of analysis (Table 4.3).

Table 4.3: Research questions and CDA levels of analysis

Research Question	CDA Level of Analysis
What sorts of knowledge about the 'knowledge society' are at work in the Asia-Pacific policy communities? How is it conceptualised?	Micro-level
What are the salient features of the discourse about the knowledge society?	Macro and Meso-level
What metaphorical and literal strategies are deployed to engender certain effects and meanings as opposed to others? What "facts" are fabricated in this?	Micro-level
What rhetorical use are concepts like globalisation, ICT and innovation put to?	Micro and Meso-level
Do policy documents favour particular solutions about knowledge society?	Macro-level
Are the conceptions about knowledge society similar in the different countries?	Comparative evaluation of CDA results for the six case studies.
What shape and form does neoliberalism, as instantiated through knowledge policy documents, take in different countries?	Comparative evaluation of CDA results for the six case studies.

The next section lists the documents which have been processed with Leximancer software for the purposes of CDA.

4.3: List of documents analysed

New Zealand

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Ministry of Research, Science and Technology. (2005a). *Anchor Paper for Picking Up the Pace: Intervention rationales for outcomes in research, science and technology*. Wellington: Ministry of Research, Science and Technology.

Ministry of Research, Science and Technology. (2005b). *Research, Science and Technology in New Zealand: Picking up the pace* (Summary). Wellington: Ministry of Research, Science and Technology.

Ministry of Research, Science and Technology. (2005c). *Statement of Intent: 2005-2008 Igniting the Future*. Wellington: Ministry of Research, Science and Technology.

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Tertiary Education Advisory Commission. (2001b). *Shaping the Strategy*. Wellington: Tertiary Education Advisory Commission.

Tertiary Education Advisory Commission. (2001c). *Shaping the System*. Wellington: Tertiary Education Advisory Commission.
The Office of the Prime Minister. (2002). *Growing an Innovative New Zealand*. Wellington: The Office of the Prime Minister.
The Treasury. (1987). *Government Management*. Retrieved 15 January, 2007. from http://www.treasury.govt.nz/briefings/1987/.

Korea

Minister for Human Resource Development. (2004, 15 December, 2004). *Educational Reform and LLL in the Global Knowledge Economy: The case of Korea.* Paper presented at the LLL Int'l Forum Shanghai.
Ministry of Commerce Industry & Energy. (2005). *Toward 2010: Industry Policies*. Seoul: Ministry of Commerce & Industry.
Ministry of Education & Human Resource Development. (2004). *White Paper 2004: Adapting Education to the Information Age*. Seoul: Ministry of Education & Human Resource Development.
Ministry of Education & Human Resource Development. (n.d.). *Education in the Information Age*. Seoul: Ministry of Education & Human Resource Development.
Ministry of Education & Human Resource Development. (n.d.). *Human Resource Development Policy*. Seoul: Ministry of Education & Human Resource Development.
Ministry of Education & Human Resource Development. (n.d.). *Human Resource Development Policy*. Seoul: Ministry of Education & Human Resource Development.
Ministry of Government Administration and Home Affairs. (2005). *Annual Report for e-Government 2005*. Seoul: Ministry of Government Administration and Home Affairs.
Ministry of Human Resource Development. (2004, 15 December, 2004). *Educational Reform and LLL in the Global Knowledge Economy: The case of Korea.* Paper presented at the LLL Int'l Forum Shanghai.
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Ministry of Information & Communications. (2006b). *IT839 Strategy: The Road to $20,000 GDP/capita*. Seoul: Ministry of Information & Communications.
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Economic Review Committee. (2002b). *Singapore 2012: The Living Digital Hub*. Singapore: ERC ICT Working Group.
Economic Review Committee. (2003). *New Challenges, Fresh Goals - Towards a Dynamic Global City*. Singapore: Ministry of Trade and Industry.
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National Council for Applied Economic Research, & Shukla, R. (2005). *India Science Report: Science Education, Human Resources and Public Attitude towards Science and Technology*.

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4.4: Software used for data analysis

Two software packages were used for conducting the analysis. They are:

1. Leximancer (Smith & The University of Queensland, 2005): For Macro-level CDA.

2. Pajek (Batagelj & Mrvar, 1998; de Nooy, Mrvar & Batagelj, 2005): For drawing the Network Maps based on data generated by Leximancer.

In addition, some other software packages were used for handling and tabulating the data. They are:

1. Adobe Acrobat Professional: For converting non-PDF texts to the PDF format, creating an index of words in the corpus, searching the corpus, and for calculating word counts.

2. Image viewing and editing software: Adobe Scalable Vector Graphics (SVG) plug-in for Internet Explorer, Microsoft Image Editor, Microsoft Paint, and Adobe Photoshop.

3. Spreadsheet Software: Microsoft Excel.

Leximancer is an automated text analysis and mapping software developed by Andrew Smith at the University of Queensland (Smith & The University of Queensland, 2005). Using a machine-learning technique, Leximancer transforms “lexical co-occurrence information from natural language into semantic patterns in an unsupervised manner” (Smith & Humphreys, 2005, p. 262). Leximancer can handle large corpora of texts. It

has been used in analysis of large corpora of policy documents (for example, Rooney, 2005). Leximancer extracts word co-occurrence information from electronic text in two stages. In the first phase, it identifies the main word concepts in the corpora. In the second phase it establishes relationships between concepts. The more times any two words co-occur, the greater is the semantic relationship between the two. The first phase concerns conceptual analysis and the second phase concerns semantic analysis (Smith & Humphreys, 2005). Finally, Leximancer performs a concept-mapping algorithm on the conceptual and semantic analysis data. The concept map presents a macro-level picture of the corpus showing concept frequency, connectedness, relative strength of semantic relationship and proximity (Smith, Grech & Horberry, 2002; Smith & Humphreys, 2005). Concept maps display five types of information about the corpus: the main concepts, their relative frequency, frequency of co-occurrence of concepts, centrality of each concept, and thematic contexts in which they co-occur (Smith, 2005). Concepts appear on the map in clusters. Concept occurrences identified by Leximancer are important and address a range of important features of the discourse. Each highly connected and frequently occurring concept characterises a cluster and can be chosen as a theme for that concept agglomeration. To enhance the interoperability of the software with other social networking tools, Leximancer creates a network map data file which can be read with other more specialised graphing software such as Pajek.

Leximancer procedure used in this research is as follows. First the documents belonging to each country were filed in separate folders on the computer. The documents which were not in Portable Document Format (PDF) were converted using Adobe Acrobat Professional software. Second, the policy documents for each country were fed into Leximancer for automated text analysis. A limit of 80 concepts was set for automatic identification because, considering the voluminous nature of documents, a higher limit would result in too many general concepts. Once the automatic identification phase had run, some frequently occurring words of a general nature such as ‘should’, ‘rate’, ‘number’ were removed. To make the concept identification relevant to the research aims words and phrases such as ‘knowledge society’, ‘knowledge economy’, ‘governance’, ‘globalisation’, ‘innovation’ and ‘ICT’ were manually seeded. Also manually seeded were some core concepts relating to neoliberalism such as ‘deregulation’, ‘liberalisation’, and ‘privatisation’. Once the program was trained to include manually seeded concepts, the program was allowed to run the remaining sequence of steps. The concept frequency statistics were extracted to an Microsoft Excel

Spreadsheet file. The network map data file was copied to a separate folder for generating a concept map by Pajek software.

Before I describe the procedure for Pajek, I will explain how the concept frequency statistics were analysed. First, the top twenty frequently occurring concepts were tabulated on a separate worksheet. In combination with the concept maps, concepts from the top twenty list are helpful in identifying concept agglomeration-based themes on the maps. The columns of the worksheet show concept rank, concept name, relative weight in Leximancer, manually seeded words used (if any), and word counts of the concepts calculated by Adobe Acrobat Professional software. For counting in Adobe, the catalogue feature was used to index all the words in the corpus relating to each country. The catalogue, apart from making the corpus searchable, also makes it count the actual number of times the concept occurs in the various documents.

The list of top twenty ranked concepts often does not include words and phrases that are important for this research. Concepts such as ‘globalisation’, ‘liberalisation’, ‘governance’, ‘deregulation’ and some context-specific words, phrases and labels might not occur frequently in texts but are crucial in the discursive construction of knowledge society. For this a separate worksheet was prepared along the lines of top twenty concepts, containing the concepts deemed important for that particular corpus. These concepts are shown in a separate table and included in the analysis.

Now I will describe the procedure followed for drawing the concept map in Pajek. Pajek is a social network analysis software developed by Vladimir Betagelj and Andrej Mrvar at the University of Ljubljana. Pajek is a Slovene word for spider. Being a specialised graphing software, Pajek provides powerful network visualisation capabilities. It is interoperable with graph data created by other social networking and graphing software and can handle large networks (Batagelj & Mrvar, 2007). Pajek was used in this research to draw concept maps because of its specialised abilities and its ability to read the network data file created by Leximancer. The network data file created in Leximancer has the default name ‘markers.net’ where .net is the three-alphabet file extension. In this procedure, the marker.net file is opened by Pajek and the draw command is given. The resulting concept map shows concept names and their links with other concepts based on co-occurrence frequency. The initial network drawing contains all the conceptual linkages including many weak ones. Pajek can be set to eliminate

weak linkages by removing linkages below a certain value. To make the network more intelligible and remove the weak linkages, Pajek was set to eliminate linkages below the value of 0.25. This value shows the relative strength of connectedness of concepts. The resulting concept-network maps are more visually appealing than the ones in Leximancer.

The next step is to covert the concept-network map into a graphic image. Pajek allows the map to be exported into a variety of formats including bitmap and SVG. For this research, Pajek was set to export the image as a SVG graphic which can be opened in Internet Explorer by using the Adobe SVG Viewer plug-in. The reason SVG was chosen over other formats was because it is possible to manipulate the colours for vertices and nodes and the possibility to copy and paste an SVG image into Adobe Photoshop – a specialised photo-editing software. Once the SVG image has been imported into Photoshop, the final step is to draw the boundaries of thematic clusters and to label them. The resulting image is saved as a high-quality JPEG image file in the respective case study folder.

The ranked concept spreadsheet and the concept-network image file created though the procedure described above were used in the macro-level analysis stage of CDA for each case study. The Adobe Acrobat Professional software package is very valuable for meso- and micro-level CDA because of its advanced text indexing and searching capabilities. Once an index/catalogue of all the textual content of the case study corpus is created, searching for words and phrases becomes very easy. For instance, when we search for a word or a phrase the results are categorised according to documents. So it is possible to distinguish objectively which documents contain certain concepts more than others.

In concluding the discussion of the procedure followed in this research, I must stress that computer software can assist in conducting CDA of policy documents in many important ways including handling vast amount of textual information, providing reliability in identifying the conceptual and semantic relations in the discourse, and enabling visualisation of the discourse. The power of the computer software makes its easier to make interpretive judgements about the nature of the discourse and the effects it engenders.

4.5: Conclusion

In any study there are bound to be limitations imposed by the aims of the research, the availability and selection of data and the choice of methodology. In this study I am aware of some of the methodology related limitations. The choice of documents from six countries means that the size of corpus is large. However, a smaller corpus would have limited the value of the study because it would not have been possible to obtain a fuller understanding of the knowledge society discourse. A choice had to be made between a smaller set of documents and in-depth CDA, and a larger, more representative set of documents and less detailed CDA. The choice for a larger corpus and focused CDA was made to meet core research aims, that is to use CDA for eliciting dominant themes relating to the discourse of knowledge society and its relation, if any, with neoliberal ideology.

The chapter scheme for the case studies is based on three factors – membership of the OECD as an indicator of development status; geographical size and location. Chapters Five and Six deal with the two OECD member countries – South Korea, and New Zealand. Chapters Seven and Eight deal with two geographically contiguous Asian Tigers with contrasting political economies – Singapore (a highly developed, westernised, small island state), and Malaysia (a fast developing, Islamic state). Chapters Nine and Ten analyse two developing countries – India (the world's second most populous, and largest democracy with a fast developing economy), and Fiji (a small island state in the Pacific beset with political problems). The choice of the case studies is based on similarity in knowledge policy thinking despite contrasting socio-historical and politico-economic experiences.

Chapter 5: Case study - South Korea

5.0: Introduction

Till the 19th century, Korea had been relatively isolated from the rest of the world. Located on the southern half of the Korean Peninsula, the Republic of Korea or South Korea (hereinafter Korea) has had a turbulent political history in the twentieth century. Occupation by Japan (1910-1945) was followed by its division due to cold war rivalry shortly after it became a republic in 1948. The Korean conflict (1950-1953) resulted in the division of the country into Soviet Union-backed North Korea and American-backed South Korea. Korea was one of the poorest nations in Asia at the end of the Korean War (Crotty & Lee, 2001, p. 4). Korea's domestic political history has also been quite turbulent. Between 1948 and 1960, Korea was ruled by the democratic but corrupt and authoritarian regime of Syngman Rhee. In 1961 a military dictatorship under Park Chung-Hee assumed control which lasted till 1979. The military regime began planned development of Korea and is credited with establishing the foundation of Korea's developmental miracle which in a thirty year period propelled Korea from a poor country to a member of the OECD in 1996. From 1962 the military controlled the power in one way or the other till 1992 when first civilian president was elected. In relation to the knowledge policy, the informatisation promotion policies started in earnest under the last authoritarian regime of Roh Tee Woo in 1987. The first civilian president Kim Young-Sam, elected in 1992, further entrenched the informatisation promotion slant of Korea's knowledge policy and started the practice of informatisation plans. The 1997 Asian Financial Crisis was accompanied by the first peaceful and democratic transfer of power when Kim Dae-Jung was elected the president. The Kim Dae-Jung regime, elected on the promise of policy reform and corruption control, was itself embroiled in a corruption scandal. In the 2002 elections, Roh Moo-Hyun was elected as the president whose term expires in 2007.

The first point to be noted about Korea's political economy is that economic policy changes are dictated largely by political changes, and economic restructuring is dictated by downturns in growth. For example, the impetus to state-led industrialisation was provided by the rise to power of the authoritarian Park regime and Park's assassination in 1978 resulted in the beginning of the liberalisation era. Likewise the three economic crises described by Pirie (2005) resulted in widespread policy reforms (see Table 5.1). Secondly, despite periodic crisis and political upheavals, Korea has consistently grown

dramatically in the last four decades, thanks to the developmental model it has followed. Reflecting on the pre-1997 period, Crotty commented that,

> Under their unique version of the East Asian economic model, Koreans experienced perhaps the most successful three-decade economic development success in world history (Crotty & Lee, 2001, p. 4).

Table 5.1: Policy Reponses to the three economic crises in Korea.

Crisis	Causes and effects	Reform Features
1972	Domestic political unrest, perceived threat of loosing competitiveness in export sector	"state sought to lay the foundations for a new, more intensive, form of state-led industrialization by tightening its control over finance and strengthening systems of dirigiste coordination" (Pirie, 2005, p. 356).
1980	Political instability after Park's assassination, financial strain caused by excessive overseas borrowing during the HCI Drive, perceived need to build a self-reliant industrial base.	"a cautious long-term piecemeal liberalization project" (Pirie, 2005, p. 356).
1997	Currency decline due to the Asian Financial Crisis, capital flight, production overcapacity, financial problems facing the Chaebol leading to bankruptcy in some firms, troubles in the merchant banking sector, heavy unemployment, modernising industrial structure under globalisation.	Economic reform in four major areas: corporate governance, financial sector, labour market, and state-owned enterprises.

Jong-Wha Lee (Lee, 1997) divides the period between 1945 to1992 in four stages: post-World War II reconstruction stage (1945 – 1961); the export-oriented growth stage (1962 – 1973); the crisis and recovery stage (1974 – 1982) and the adjustment and growth stage (1983 to 1992). The period after return to the civilian rule can be divided into two: the pre-1997 growth period (1992-1997), and post-1997 crisis reform, recovery, and growth period. The main economic feature of the reconstruction stage was the introduction of the import substitution policy aimed at export. The initial impetus to industrialisation-led development was provided by the export promotion policy of mid-

1960s. Whereas import-substituted industrialisation aimed at promoting exports through inviting foreign companies with a promise of cheap labour for manufacturing products for export, the export oriented industrialisation policy of Park Chung-Hee was aimed at promoting indigenous exporters with loans and subsidies. This policy is credited with laying the foundation of Korea's economic miracle (Graham, 2003). The rise of authoritarianism under Park also led to other important changes in the political economy of Korea. According to Haggard, Kim and Moon

> The military coup of May 16, 1961, had three consequences for the Korean political system. First, the military broke the political networks of the Rhee period by centralizing power in the executive. Even after the transition to a nominally democratic system in 1964, the new political structure resulted in a high degree of executive independence from the demands of both legislators and interest groups. This is visible in a second major change: the restructuring of business-state relations. A new alliance with the private sector was forged during the early 1960s in which opportunities for rent-seeking were reduced. Finally, the centralization of political authority was matched by a centralization of economic decision-making in the Economic Planning Board. These reforms increased the power of reformist technocrats by elevating their stature within the bureaucracy and by expanding the range of policy instruments at their disposal (Haggard, Kim, & Moon, 1991, p. 857).

As Haggard et al. note one of the most important decisions of the Park regime was the creation of Economic Planning Board (EPB) in 1961. The EPB - modelled on the Planning Commission of India – was the hub of bureaucracy, and was tasked to prepare five year plans the first of which was initiated in 1962. The First Five Year Plan (1962-1966) followed the institutional philosophy of state guided capitalism (Wolf, 1962). The plan proposed private sector-led but government-facilitated industrialisation. In the 1960s and 70s it was the planned transformation of Korea from an agriculture-based country to an industrial capital based country that laid the foundation of modern Korea. State guided capitalism is largely responsible for the emergence of the Chaebol - large industrial conglomerates supported by the government. Chaebol include such names as Samsung, Daewoo and LG. Korea borrowed heavily from international institutions like the World Bank to finance large industrial projects or to subsidise private sector projects. The export oriented strategy worked specially in sectors where Korea had comparative advantage (textiles and apparel).

The focus on industrialisation led to efforts to modernise the education system which over time bore fruit in the form of rising literacy levels (Yang, Kim, & Han, 2006). The Ministry of Science and Technology (MoST) was created in 1967 which was first of its

kind in the developing world. The government funded a number of specialised R&D institutes in areas such as ship-building, chemicals, and telecommunications and so on. In 1973, under the Third Five Year Plan (1972-1976) the Park regime started the "HCI Drive" – one of the most interventionist periods in Korea's economy when heavy and chemical industries were promoted as the core of capital and technology intensive, engineering products oriented, export-led industrialisation strategy. These efforts enhanced both economic development and technological knowledge capability (Yang, 2006). MoST divides the S&T development in Korea under following stages: imitation (1960s & 70s); internalisation (1980s); innovation approach (1990s), and; the innovation stage (2000s).

A negative feature of the HCI drive was that Park deliberately chose to locate big industrial complexes in the south east and especially in Kyongsang (his own home state) which lead to regional disparities in economic and knowledge development. The HCI drive also strengthened the Chaebol and the concentration of economic power in their hands (E. Graham, 2003). The HCI Drive was abandoned after the assassination of Park in 1979. Heavy overseas borrowing during the Park years adversely affected the economy and in 1980 reforms were announced to liberalise the economic management. Heavy state intervention and state favouritism towards the Chaebol, under the Park regime was blamed for bad management resulting in structural problems in the economy. The new authoritarian government under Chun sought to legitimise itself by launching the policy of macroeconomic stabilisation – a move aimed at deregulating and liberalising the economy. This policy resuscitated the Korean economy and in 1987 the democratisation pledge by Chun successor Roh Tae-Woo led to gradual democratisation. Kim Young-Sam, the first civilian president elected in 1992, continued the piecemeal liberalisation efforts of the previous two regimes (Noland, 2000).

In 1994 Kim's government downgraded the powerful EPB and merged it in the newly created Ministry of Finance and Economy (MoFE). The reasoning was to make the economy respond to global market forces and to signal the diminishing role of industrial policy (Graham, 2003). The new philosophy was to embrace globalisation and ensure Korea's economy remained competitive. This was accompanied by the passing of the Informatisation Promotion Act in 1995 which gave significant importance to the need for technological modernisation in a globalised world. The years preceding the

crisis saw high economic growth based on high exports of electronics and automobiles, and high Japanese Yen which reduced Japan's competitiveness vis-à-vis other Asian Tigers. Cheaper finance and high Japanese Yen meant exporters increased capacity in anticipation of continued growth (Graham, 2003). However growth began to slow in late 1996 due to overproduction of many export products (Emery, 2001). Several high profile bankruptcies like Kia Motors before the onset of the 1997 crisis made matters worse. The onset of the Asian Financial Crisis in Thailand, Malaysia and Indonesia made matters worse for Korean banks who had invested in these markets, particularly in Indonesia. The resulting fall in Korean currency due to agglomeration of all the mentioned factors brought the full force of the crisis to bear on Korea in November 1997. An emergency bailout package was signed with IMF. In December 1997 amid the turmoil, Kim Dae-Jung was elected president. With the help of IMF package and with reform measures, slowly the currency stopped declining and by July 1998 it stabilised.

The 1997 crisis revealed the vulnerability of Korean economy to global market forces and necessitated the need for sound economic management. In addition, the bitter pill of IMF conditionalities required deep reforms in economic management which were to exercise the Kim Dae Jung regime till the end of its tenure in 2002. The post-1997 reform is described as leading to the creation of "a new functioning neoliberal economy by dirigiste means" (Pirie, 2005, p. 356). Further, Pirie argues that,

> The Korean state's commitment to creating a neoliberal economy in the wake of the crisis cannot be understood outside of the wider context of globalization and the crisis of the developmental state. The neoliberal project must be understood as a logical attempt to secure Korea's position as a site of accumulation within a rapidly changing global economy (Pirie, 2005, p. 356).

The imperative to reposition itself according to the needs to the global economy has pushed Korea deeper into neoliberalism. The IMF conditionalities including macroeconomic austerity; policies welcoming FDI inflows; financial and corporate sector reforms; and labour market reform unleashed full fledged neoliberalism, leading to speculation among some authors of future vulnerabilities (Crotty & Lee, 2002, 2005; Mah, 2006). The current regime of Roh Moo-Hyun has continued down the neoliberal reform path while attempting to deepen democracy. The current government describes itself as the "Participatory Government" implying it is the first people-friendly government in Korean history.

The history of post-crisis Korea is one where three multilateral organisations have played a profound role. They are IMF, World Bank and the OECD. Whereas the strings of the IMF bailout package resulted in deepening of neoliberalism, the World Bank and OECD have been involved in policy advice in the knowledge policy sector. In 2000 a joint report involving OECD and World Bank titled, "Republic of Korea: Transition to a Knowledge-Based Economy" (2000) was published. This report was initiated at the behest of the Kim Dae-Jung government's desire to become an advanced knowledge economy. The diagnosis of the report was that despite the IMF reforms post-1997 challenges still remain which requires more reforms in four key areas: (1) the economic incentive and institutional regime; (2) education; (3) information infrastructure, and; (4) innovation system. A second World Bank report was published in 2006 titled, "Korea as a Knowledge Economy: Evolutionary Process and Lessons Learned" which expressed satisfaction with the post-1997 progress. The report dubbed Korea as a mature knowledge economy. The report emphasises that the policies should synergise with the market forces rather than trying to guide the market (World Bank, 2006).

Korea's discursive engagement with OECD, IMF, and World Bank in the post-1997 period has focused on key issues in the knowledge policy debate such as liberalisation, knowledge economy, science and technology innovation, and ICT infrastructure development. These institutions serve as knowledge institutions – institutions which provide policy ideas, and legitimacy of those ideas. In the next section I focus on the history and structure of knowledge policy of Korea.

5.1.0: Macro-level analysis: The order of discourse

5.1.1: Knowledge policy: Timeline

Korea, like other Asian developmental states such as Singapore, Japan and Malaysia began promoting IT infrastructure seriously in the 1990s (see Table 5.3 in Appendix A). In 1995 Korea enacted the Basic Act on Informatisation Promotion (BAIP) which provided the legislative basis for establishing an advanced information society by 2010. BAIP also created the Informatisation Promotion Committee and empowered the National Computerization Agency (NCA) to implement a master plan for informatisation promotion, in addition to spearheading the Korea Information Infrastructure (KII) initiative. In many ways the history of informatisation in Korea is

tied to the history of the NCA. Established in January 1987, NCA had a name change in November 2006 and is now called the National Information Society Agency (NIA or NISA). In this research I will use the abbreviation NCA since most of the documents under study were published before the name change. NCA has been involved in most informatisation projects ranging from National Basic Information System (NBIS), the nationwide high-speed telecommunications network, and the establishment of e-government infrastructure. NCA is always in the loop, whether in conceptualising or in supporting and implementing information society visions. In its twin role as an IT policy think tank and implementer of policy, NCA sees its mission to informatise Korea into a knowledge-based society (NCA, 1996). In its informatisation promotion mandate NCA initiated the KII in 1992 and in 1994 was designated as the sole agent for implementing KII. Based on KII, the government of Korea proposed the Asia Pacific Information Infrastructure (APII) at the Seoul meeting of APEC in 1995. The policy model behind KII and APII believed that information and telecommunications infrastructure can pave the way for liberalisation of trade and investment in the Asia-Pacific. By envisioning APII, Korea wanted to take the lead in ICT developments in Asia-Pacific and wanted to be seen as a model of informatisation.

Table 5.2: Information society policies in Korea, 1994-2006.

Vision/Plan	**Year Started**	**Discursive Emphasis**
Korea Information Infrastructure (KII)	1994	Promoting Informatisation
Master Plan for Informatisation Promotion.	1996	Promoting Internet infrastructure and use.
Cyber Korea 21	1999	Reforming Society with information revolution in the post-financial crisis era.
e-Korea Vision 2006	2002	Maximising digital competitiveness.
Broadband IT Korea Vision 2007	2003	Maturity of Informatisation based on broadband use.
IT839 Strategy	2004	Building new IT growth infrastructure.
u-Korea Master Plan	2006	Starting the journey towards the ubiquitous network society.

Source: Adapted from NCA Informatisation White Paper 2006 (NCA, 2006, p. 9).

NCA started publishing the annual Informatisation White Paper in 1994 to report the progress of informatisation and the outline the plans for the future (see Table 5.2). The first Master Plan for Informatisation Promotion (MPIP) was established in 1996 with a

three-pronged emphasis on removing regional and social disparities, to improve quality of life, and enhance national competitiveness by the year 2000 (NCA, 1996). The discursive emphasis in the first master plan was on the label 'information society'. In 1997, as a result of the financial crisis, the Korean economy suffered severely and the IMF extended an emergency bailout package which demanded severe restructuring. In 1998 there was a change of government and the new government under Kim Dae-Jung revised the first master plan. The second master plan known as 'Cyber Korea 21' was in the government's view born out of a consensus among the Koreans in the aftermath of the 1997 crisis to

> accelerate the reform of the government, the business corporations and the general public alike through expanded application of the information technology as early as possible. In doing so, Korea could overcome the current economic turmoil by expediting the overall restructuring of the society, while promoting investment to create sufficient new jobs (NCA, 1999, p. 6).

Cyber Korea 21 shifted the discursive emphasis from information society to knowledge economy and society. The aim of the plan was (1) expanding and upgrading of the information superhighway, especially the fibre-optic network; (2) to enhance productivity through IT utilisation, and (3) to create employment. The tenure of Cyber Korea 21 was till 2002 when it was succeeded by the third plan known as 'e-Korea Vision 2006'. The discursive emphasis in this plan was back on information society. The aim of the plan was to deepen informatisation by focusing on quality of service and practical application of IT.

A nationwide informatisation public campaign was started; measures were adopted for enhancing safety of cyberspace; e-government infrastructure was emphasised, and international cooperation in informatisation focused on Asia-Pacific, particularly in the Far East. However, the election of the new government in late 2002 resulted in a revision of the e-Korea 2006 in December 2003. The revised plan was called 'Broadband Internet Korea 2007' and its discursive emphasis became 'knowledge and information based society'. The vision of this plan was to make Korea 'World's best IT country' (see Figure 5.1 in Appendix B). Focusing on convergence by development of fixed-line and wireless broadband infrastructure, e-government, IT utilisation was touted as the 'New Growth Engine' (NCA, 2004a, p. 11). Parallel to Broadband IT Korea, the Ministry of Information and Communications (MIC) announced the IT839

Strategy in February 2004. The name IT839 means eight services, three infrastructures and nine products relating to the IT sector.

The IT839 strategy set a target for achieving the per capita GDP of US$ 20,000 based on commercialisation of ICTs at home and abroad. The MIC saw IT839 as "a landmark opportunity for Korea to move away from the 'catch-up' development model of the past and to lead the world's IT market" (Ministry of Information & Communications (MIC), 2006a, p. 5). IT839 sowed the seeds of the 'ubiquitous' concept in policy. Promoting u-Korea was one of the aims of the IT839 strategy. Like IT839, the u-Korea Master Plan was based on the market-oriented ICT growth model (see Figure 5.2 in Appendix B). The discursive emphasis of IT839 and u-Korea was on creating a 'humanistic digital society'. Created in 2006, the 'u-Korea Mater Plan 2006-2010' postulated that the ubiquitous age (or the 4th wave) has succeeded the information age (the 3rd wave). The slogan was to be "the world's FIRST u-Society based on the world's BEST u-Infrastructure" (NCA, 2006, p. 14). Technologically the emphasis was to be on the products and services based on high speed broadband convergence network. The discourse championed the ubiquitous society as a step further than the knowledge-information society, "where everyone can enjoy the benefits of advanced IT services anytime and anywhere" (NCA, 2005a, p. 6).

Informatisation has been the central organising principle of Korea's knowledge policy. Though other policy sectors such as science and technology, and education have outlined policies for the information age, they have not been as vocal as the IT policies. This may be due to the fact that Korea's science and technology and education sectors have not enjoyed as much success internationally as has been the case with its IT policy. The knowledge policy structure in Korea plays an instrumental role in the discursive dominance of informatisation, as I explain in the next section.

5.1.2: Knowledge policy: Structure

Korea follows a two-tiered planning model. The top layer consists of five yearly or longer visions and master plans. The second layer consists of annual programs devised in keeping with the priorities of the long term plans. Between 1962-1994, Korea followed the five year plan system administered by the EPB. The EPB was a very effective tool during the authoritarian regime era as it allowed power to be centralised in

the hands of a clutch of technocrats working according to the wishes of the executive. The merger of the EPB with MoFE in 1994 was partly a reflection of the democratisation of Korea and partly as a desire to modernise its structure to reflect international trends. But the powers of the executive branch in shaping Korea's future have not declined after the demise of EPB.

In Korea power is concentrated in the office of the President who appoints a Prime Minister to lead the cabinet. Most important policy decisions are taken in policy bodies headed by the President and the Prime Minister. Figure 5.4 (see Appendix B) shows the current configuration of Korea's policy structure. The President's office oversees committees on economy, science, technology and innovation, and on e-government. In the ICT policy field two committees – the Presidential Committee on Government Innovation and Decentralisation (PCGID), and the Prime Minister led Informatisation Promotion Committee (IPC) - are responsible for conceptualising new policy or changing directions which are then enacted and implemented by NCA and MIC (see Figure 5.3 in Appendix B). The NCA in its think tank role is instrumental in advising the higher level committees like the IPC and PCGID.

The PCGID is a new committee setup by the current government. Other administrative changes enacted by the present government include shifting the e-government portfolio from MIC to the Ministry of Government Administration and Home Affairs (MoGAHA), and the renaming of NCA to National Information Society Agency (NIA).

The legal basis of informatisation promotion is provided by the Informatisation Promotion Act 1995. In keeping with the reformist zeal of the successive Korean governments 187 informatisation promotion-related legislations have been enacted or revised since 1995. These include 85 legislations in the public sector and 101 targeting the private sector (Hong & Koh, 2006). The sheer number of legislative decrees on informatisation shows how active the state has been on this issue.

5.1.3: Genre

Korea's policy discourse is highly developed in terms of its output. As Korea has developed economically, so has its policy discourse matured. Mindful of its leading role in Asia and its self-perception as a leading player on the world economic stage, Korea has been publishing policy reports not only in Hingul but also in English. This research

has focused on official English translations of its policy reports available on its government websites. The policy reports under study fall into four main sub-genres – White Papers, ministerial reports and publicity materials, and presentations of policy elites.

1. White Papers: White papers are authoritative reports on major policy themes. In Korea, white papers serve a dual purpose: (1) to outline new plans, and; (2) to describe the progress of policies. NCA has been publishing the annual Informatisation white papers since 1994, and Internet white papers since 2000. MIC has published white papers outlining information society visions since 2000. In the education policy domain Ministry of Education and Human Resource Development (MoE & HRD) published the 'Education in the Information Age' white paper in 2004. In total there are 22 documents from the white paper genre in the case of Korea.

2. Ministerial Reports and Publicity Materials: The genre of ministerial reports includes a very wide range of documents including: the annual reports on topical issues such as e-governance (MoE & HRD, n.d.); documents describing an issue area such as higher education and human resource development, and documents publicising policy reform in science and technology policy (Ministry of Science & Technology (MoST), n.d.; 2000a). In contrast to the white paper genre which outlines new policy and reports progress on topical issues, the ministerial reports and publicity materials are less substantive in information and more boastful and informal in style. The S&T policy discourse after the change in government in 2002 illustrates this quite well. The MoST report titled 'New Vision, Fresh Start' (MoST, n.d.) is an example of the public relation type of policy reporting. Other reports of MoST such as 'Science and Technology in Korea' (MoST, n.d.) though less explicitly propagandist can still be considered part of the broader publicity material genre. Other examples of publicity material are the sections of official websites devoted to explaining the current policy scenario, for instance, the Ministry of Commerce, Industry & Energy (MoCIE) webpage for Industry 2010 vision (Ministry of Commerce, Industry & Energy, 2005).

3. Presentations by Policy Elites: Often the presentations and speeches of senior officials are showcased on official web sites. These constitute a separate genre because they signify the views and beliefs of the policymaking bureaucrats on knowledge policy

issues. This genre is pronounced in case of the policy elites from NCA (Suh, 2002) and MoE & HRD (2004; Kim, 2005).

5.1.4: Discourse - Leximancer results

This section describes the results of the Leximancer-based text analysis. This section has a twin focus – a focus on concept clusters based on concept rank and word count, and a focus on semantic closeness based on interpretation of the concept map. In relation to the first focus, the main concepts identified by Leximancer software tool help us in describing the macro-level features of the policy discourse. The list of ranked concepts generated by Leximancer tool is shown in Tables 5.4 & 5.5 (see Appendix A). Table 5.4 lists the top twenty concepts, whereas Table 5.5 shows other significant concepts relating to Korea's knowledge policy. Word counts of these concepts are calculated by Adobe Acrobat software. Leximancer weights and Adobe Acrobat word counts are compared. With regard to the second focus, the concept map (See Figure 5.5 in Appendix B) produced by the Leximancer software helps us to visualise the semantic agglomeration or clustering of concepts based on geographical proximity. Semantic agglomerations help in deducing the main themes observable on the map.

Leximancer results for Korea reveal one major overarching concern – the governmental promotion of ICTs for economic and technological modernisation, or to use the Korean terminology 'Informatisation Promotion'. The strong role of the state is evident in the word count for the top twenty concepts (see Table 5.4 in Appendix A). Seven of the top twenty concepts relate to ICT, namely 'information', 'internet', 'network', 'informatisation', 'technology', 'mobile', and 'MIC'. This shows the dominance of the ICT paradigm in Korea's knowledge policy. Five concepts namely, 'service', 'development', 'growth', 'market', and 'companies' represent economic development. The third category of concepts relates to the broad category of policy and governance. The concept domain representing policy and governance includes words of a general nature which can be semantically related to either ICT or economic development domains. The seven concepts from the domain of policy and governance are, 'government', 'Korea', 'public', 'management', 'system', 'international' and 'national'. Finally, the conceptual domain of education is represented by the word 'education'.

If we look at concepts outside the top twenty, we find new additions to the concept clusters discussed above. Table 5.5 shows the other important concepts identified by Leximancer tool. In addition to ICT, economic development, education, and policy and governance clusters, two new clusters - science and technology, and Korean public can be deduced. The science and technology cluster (shown in orange) includes concepts such as 'R&D', 'science', and 'science and technology'. The concepts in the Korean public cluster include 'users', 'personal', 'culture', and 'Koreans'. Concepts falling in the ICT cluster in Table 5.5 include 'communication', 'ICT', 'NCA', 'KII', 'IT839', 'ubiquitous', 'e-Korea', 'Cyber Korea', 'e-commerce', 'digital divide' and 'globalization'. Globalisation has been included in the ICT cluster because it occurs predominantly in the ICT policy documents of MIC and NCA. 'Regulation' is the sole new concept in the policy and governance cluster. New concepts in the economic development cluster include 'economy', 'OECD', 'trade', 'finance', 'APEC', 'WTO', and 'IMF'. I have not included the concept 'knowledge' in any cluster because it is highly trans-discursive and can be associated with a number of clusters. Even on the concept map 'knowledge' falls into three concept agglomerations, namely, research, science, and technology, governance, and informatisation promotion (See Figure 5.5 in Appendix B, and Table 5.6 in Appendix A).

Turning to the decoding of the concept map by identifying semantic agglomerations of similar meaning concepts, the concept map (Figure 5.5) reveals five agglomerations. These conceptual agglomerations are deduced from semantic and locational nearness of concepts in a section of the map and denote argumentative nearness, that is concepts falling in close proximity also co-occur in sentence, clause and paragraph level argumentation. Table 5.6 shows the concept agglomeration based on six core issues of discourse – informatisation promotion, globalisation, research, science and technology, governance, and Internet and e-commerce.

A glance at the concept map for Korea shows that most of the concepts are densely concentrated in the centre right section of the map. The dense concentration means that the bulk of the documents share a common, overarching theme. The overarching theme underpinning the discourse is technological modernisation.

This theme is reflected in the five core issue based agglomeration categories described in Table 5.6. This theme is best encapsulated in the centre right section of the map. The

informatisation promotion cluster in the centre right part of the map overlaps with the research, science and technology, and governance agglomeration clusters. The main argument that links the five categories is that the state needs to play a more proactive role in promotion, utilisation and governance of technological knowledge in Korea and state-directed and visionary planning is the imperative solution.

5.1.5: Style

Korea's policy discourse constructs a public that is modern, and technology savvy. Individuals are constructed in various ways – as 'Koreans', 'IT professionals', 'prosumers', and 'users'. The discursive emphasis in the construction of the public is on the technology related skills and attitudes of the people. I will describe each of these constructions in brief.

The construction of the public as 'Koreans' has two dimensions. Firstly, the word 'Koreans' is predominantly used in arguments describing the technological skills of the people. The three quotations below exemplify this tendency. The first quotation is laudatory as it compares the science and technology accomplishments of Korea with the western civilisation. The second quotation is a intertextual reference to a report published in the Wall Street Journal. The third quotation constructs the public as proficient with the Internet.

1. "Koreans attempted to scientifically measure rainfall 200 years ahead of Westerners" (MoST, p. 7).
2. ""Koreans are the world's most active and sophisticated Internet users..." - May 3, 2001, Wall Street Journal" (Suh, 2002, p. 8).
3. "The Internet is now perceived as a basic service among Koreans" (NCA, 2003b, p. 47).

The second dimension of the 'Koreans' portrays the public as target of policy solutions. This tendency is pronounced especially in the MIC and NCA discourse relating to ICT. For example, e-Korea Vision 2006 aims at "providing the opportunity for all Koreans to enjoy high quality broadcasting services" (MIC, 2002, p. 59). The focus in the ICT discussions is mostly on young Koreans who are portrayed as technology-savvy. PC and Internet use among Koreans is seen as the first step towards knowledge society. The

quotation below shows the construction of Koreans as technologically adept citizens of the knowledge society.

> The use of ICT has now become an inseparable aspect in the daily life of Koreans. Korean youngsters are going to PC game rooms for amusement as well as for Internet use. The Internet is widely used for reading newspapers, searching for information, tele-banking, cyber shopping, e-mail, and bond investment. It seems that all the Koreans, regardless of age and area of living, will be able to access and use computers in the very near future. These are the first steps toward the knowledge-based society (Republic of Korea (ROK), 2000, p. 11).

The use of the term 'IT professionals' is also prominent in the discourse. The discourse portrays the IT professionals as knowledge workers, the consistent supply of whom should be a target of policy. Overseas Koreans in the IT professions have to be scouted and lured to contribute to Korea's IT industry.

> The widespread usage of information technologies throughout society has led to changes in the labour market. IT professionals and experts have emerged representing the new knowledge worker (MIC, 2002, p. 15).

The term 'Internet users' has been widely used in statistical tables. The discourse distinguished between internet users on the basis of mode and speed of Internet – for example 'wireless', 'wireless broadband', 'high-speed' and 'broadband' users. An interesting new terminology in relation to the construction of public is 'prosumers' – a word formed by combining producers and consumers of information. Prosumers was used in e-Korea Vision 2006 document of MIC and defines a prosumer as "one who is both a producer and consumer of information (2002, p. 20). The same document identifies prosumers as typically computer literate citizens with internet access who learn online. The following quote explains the need for prosumers in the information society.

> By providing the opportunity for all citizens to have access to Internet service and establishing a lifelong education system through online learning, all citizens will be able to nurture their creativity and to improve their ability to use information and communication technologies. As a result, all citizens will be able to participate in the information society as "prosumers" of information. Their ability to utilize IT will lead to the creation of added value in all aspects of society and to the enhancement of our quality of life (MIC, 2002, p. 20).

The construction of the public in Korea's policy documents suggests a preference for young, dynamic, and technology savvy creators and users of products and services.

There is little attention paid to intergenerational gaps in technology adoption and use. It is clear from the above quotations that the documents portray the public largely as beneficiaries of the information society policies.

5.2.0: Meso-level analysis

5.2.1.0: Interdiscursivity

Interdiscursivity in knowledge policy documents concerns the other knowledges affecting or driving the argumentation of policy. In terms of Korea, the main question is whether its ICT dominated knowledge policy discourse has been impacted by other discourses and knowledges. The other discourses and knowledges here refer to knowledge paradigms, trends in knowledge, social, political and economic events, and global and local processes. Interdiscursive influences on Korea's knowledge policy can be divided into two periods – the period before 1997 Asian Financial Crisis and the period after 1997. The pre-1997 crisis period saw sustained economic growth which propelled Korea into the league of fast industrialising societies of East Asia. The interdiscursive influences during this period can not be understood without reference to the concept of the developmental state which influenced Korean policy. In its unique version of the developmental state aimed at becoming an advanced industrial society, Korea saw heavy state intervention in social and economic policy; limited, piecemeal liberalisation, deregulation and privatisation of state assets; formation of a clutch of powerful *Chaebol* business conglomerates assisted by the government, and a polity controlled by ex-military generals. South Korean chaebol are akin to the Japanese keiretsu business groups. With government patronage the chaebol succeeded in export market. Protection of the chaebol interests was a significant goal of policy in the pre-1997 era. In terms of knowledge policy, the informatisation drive which started in late 1980s significantly boosted the Korean business conglomerates involved in manufacture of products which required ICTs in the production process. Korea being a plan-directed country pushed the development of private IT industry of which the major beneficiaries were Chaebol companies such as Samsung, LG and Hyundai.

5.2.1.1. Mixing IMF and OECD Discourses

In the post-1997 period the significance of Chaebol patronage has declined as the post-crisis policy reform recognised the negative influence of Chaebol on industry policy and Korea's image abroad. The IMF shared the view about Chaebol being the leading cause of the 1997 crisis in Korea. The post-1997 discourse is impregnated with multiple discourses, prominently including those of the Asian Financial Crisis and the need to evolve a deregulated, open, and growth-oriented system compatible with advanced industrialised countries. It is notable that Korea was inducted into the OECD in December 1996 exactly a year before the crisis engulfed the economy. The 1997 crisis made it easier for the state to push through sweeping reforms that the OECD expected of Korea. The crisis also brought pressure from the IMF for a more open, deregulated and free market system. The following quote from NCA's 2000 white paper puts the impact of the crisis on the perception of information and knowledge among the policy makers.

> In 1997, Korea faced a financial crisis that resulted in a painstaking economic restructuring effort under an IMF bailout program. Heavy government intervention, lack of transparency, and general ineptitude destroyed competitiveness in the nation that was once hailed as an Asian economic miracle. As it turned out, the present problem is perceived to be not so much as a consequence of past faults as a disparity in knowledge and information between Korea and its more advanced counterpart nations. Chronically lacking in access to and utilization of information, the nation has been stayed behind of its international counterparts. Therefore, a core informatisation strategy has been deemed as the essential element in enabling the nation to recover from the turmoil of economic crisis and to restore its growth potential (NCA, 2000a, p. 5).

Clearly knowledge policy was at the core of the post-1997 reform. The crisis helped introduce new vocabulary such as corporate governance, combating and eradicating, competition reform, and labour market and social safety net reform. The revival of the economy after the crisis has been largely attributed to the reform carried out by the Kim Dae-Jung at the behest of IMF and OECD and Korea has been held up as an example to emulate for other economies in the region. In relation to knowledge policy, there has been an increasing emphasis on need for liberalisation of telecommunications and on Korea-led efforts in OECD aimed at standardisation of telecommunication technologies.

5.2.1.2. Knowledge Management

The knowledge management discourse influences the knowledge policy discourse. Especially since 1997, there has been increased concern with efficiency and quality, as

knowledge management speak has encroached into information society domain. The following quote is representative of type of language that has become increasingly prevalent.

> National Knowledge Information Resource Management refers to all the national activities for the purpose of making national knowledge & information and its flow systematic and efficient. This is to help achieve the goal for using knowledge by providing right knowledge to the right people at the right time (NCA, 2001a, p. 51).

5.2.1.3. The neoliberal imperative post-1997 crisis

Behind all these interdiscursive influences is the ideology of neoliberalism, according to which Korea will have to meet several challenges to streamline its economy. These challenges, mostly economic in nature, stem from the process of globalisation and include the challenge to constantly reform policies in line with global level changes. The following quote is representative of the tendency to legitimise neoliberal policies on the basis of external economic imperatives.

> As global competition becomes intensified in the world economy, Korea must actively respond to the changing environment with efforts to restructure the national economy. The survival of numerous domestic companies will be dependent on the ability to compete at a global level (MIC, 2002, p. 15).

As globalisation is itself significantly shaped by neoliberalism, the policy alternatives for the state, in relation to competitiveness, are constrained. The state has little choice but to legitimise neoliberal policies on the basis of the globalisation imperative. In Korea's policy discourse globalisation is the rationale behind informatisation policies, especially the way in which the state wants to be seen as responding to the need for being up-to-date and to create world-class infrastructure, products and services. As early as 1994 Korea developed a globalisation strategy called "Segyewha". NCA's 1995 Informatisation White Paper notes,

> In addition to the initiative for the KII, Korean Government announced "Segyewha Strategy" in 1994. "Segyewha" is the Korean word similar to "Globalization." Its purpose is to bring various fields of the society up to the world-class standard through the reinformation of institution, consciousness and routine practices. And which should result in the reinforcement of competitiveness of the nation and the people. In the "Segyewha Strategy", information is regarded as a critical element (NCA, 1995, p. 7).

The discursive influence of globalisation on informatisation policies has increased since the 1997 crisis. Presently most documents do discuss the need for evolving globalisation strategies aimed at standardisation of emerging technologies (MIC, 2006c). E-Korea Vision 2006 document concludes that,

> Globalization requires the social system of each nation to be compatible with the global standard. Transparency of a society is an important factor which influences the international position of a country. For example, national credit ratings announced by international financial institutions help determine a country's position in the world. In addition, national informatisation efforts can enhance transparency in order to elevate Korea's position in the global society (MIC, 2002, p. 15).

Korea's myriad information society visions enshrine neoliberal free market policies where competition between domestic companies is seen as contributing to innovative products and services, and growth in technology uptake by its citizens. The state sees emerging technology trends and paradigms such as ubiquitous computing as opportunities to continuously propel the IT sector forward. The shift in emphasis from informatisation to ubiquitous computing has been made possible by knowledge from two sources: (1) the information science discipline, and; (2) policy learning from its main competitor in Asia, Japan. Both Japan and Korea have a history of emulating each other in the ICT and electronic field as they see each other as competitors in the global market.

The above description of the other knowledges and discourses that impinge upon Korea's knowledge policy shows that the Korean developmental model is informed by the ideology of neoliberal globalisation which promotes technological knowledge and knowledge management paradigms resulting in over-emphasis on ICT and governance. In the Korean case, neoliberalism has been doubly justified – firstly as a response to the demands of OECD and IMF, post-1997, and secondly as a response to the pressures of economic globalisation.

5.2.2.0: Intertextuality

The two forms of intertextuality considered in this research – political and conceptual - can be seen as the presence of past (historical) sources in a text. Intertextuality in a policy discourse domain concerns the generation of meaning by other texts from intra-discourse source (sources from the same policy domain such as other knowledge policy documents for the same country) or extra-discourse sources (academic texts, policy

documents from multilateral, international institutions, or policy texts of other countries). Policy documents of any single country will surely have internal variation of intertextual sources. For example, ICT policy documents will draw upon sources different from those in education policy. Likewise, the level of development of a country also bears upon intertextuality. A developing country dependent upon foreign aid might have more references to aid organisations, while a developed country might make no or little reference to aid organisations such as the World Bank but instead might reveal the intertextual stamp of OECD.

When dealing with policy discourse in a wide and cross-cutting domain such as knowledge policy, it is not possible to pinpoint each and every case of intertextuality. Therefore, I will characterise the main themes in the intertextual construction of meaning, which are:

1. Main internal sources of intertextuality are the myriad visions of information society and informatisation promoted by NCA and MIC. The main external sources of intertextuality are OECD, APEC, IMF, International Data Corporation (IDC), International Telecommunications Union (ITU), and UN. Whereas ITU, UN and IDC appear primarily as sources for statistical data quoted in the reports, the OECD, APEC and IMF appear in arguments, specifically OECD as source of policy ideas; APEC in relation to internationalisation of policy ideas such as Korea Information Infrastructure (KII), and; IMF in relation to the bailout programme after the 1997 crisis.

2. Conceptual intertextuality: The intertextuality of the external sources on the core concepts of the discourse is difficult to establish as there is virtually no direct evidence of external sources such as OECD impinging on the meaning of such concepts. One reason for this is the use of unique labels for policy visions. Apart from the KII which seems to have been influenced by the notion of National Information Infrastructure (NII) in USA, no other label can be said to be explicitly linked to OECD or APEC. The intertextual construction of the other major concepts in the discourse, such as information society, globalisation and innovation is even less clear as there is no clear cut and explicit external source for these.
However, concepts such as informatisation and information society and labels such as e-Korea and u-Korea can be seen as being implicitly linked to external sources in the region and in the wider discourse of the multilateral institutions such as APEC and

OECD. In relation to the intertextuality of unique policy labels, within the region, especially in Japan, Hong Kong SAR, and Singapore, there is a trend towards naming policy visions with ICT-related catchphrases such as ‘cyber’, ‘internet’, ‘i’, ‘e’ and ‘u’. In addition to weakness of explicit linkages with policy discourse, there is also an absence of linkages with academic or quasi-academic sources. Unlike policy documents in other case studies, such as Malaysia, India, and New Zealand, Korea’s policy does not make explicit reference to classic academic discourse texts on the information society issue. This can be because the ideational domain of knowledge policy of Korea is considerably restricted, stemming from the overarching dominance of the ICT policy domain and of the neoliberal economic ideas.

3. In contrast to the weakness of conceptual intertextuality in terms of explicit external and internal linkages, political intertextuality (or policies showing intertextual linkages) is very strong. This is not to say that concepts and labels don’t mean anything but that their meaning seems to be taken for granted as conventional wisdom. The strength of political intertextuality stems from the discursive emphasis on engaging with the policies of OECD, APEC and IMF – institutions which represent the fount of such ideas. By being different in labelling, and on the basis of its ICT accomplishments, Korea wants to be seen as a front-runner in both policy and technology developments.

5.3.0: Micro-level analysis

5.3.1.0 The construction of social identity

5.3.1.1. Modality: Futurism in introductory sections of documents

In Korean policy documents, ministerial forewords and prefaces often appear under the title “Message from the Minister”. This is especially the case for NCA and MIC white papers. Some documents have both – a preface or foreword and a Message from the Minister. The breakup of the ministerial forewords and prefaces is as follows: Preface (9), Forewords (2), Message from Minister (8), and Message from the President (3) (see Table 5.7 in Appendix A). The right hand column contains the analysis of modality. Two forms of modality are considered: (1) epistemic modality in sentences where the author shows a degree of evidence for his/her statement. Epistemic modality is the author’s assessment of predictability and probability of a statement. (2) Deontic modality in sentences connotes the author’s desire for and commitment to the

realisation of the propositions made in a statement. Since the authors of prefaces and forewords in policy documents are individuals who have a level of expertise in the related field, a level of objectivity behind utterances (in contrast to a lay person's utterances which are subjective) is assumed. Since many sentences (especially long sentences) can be seen as possibly showing both forms of modality, these are considered in combination as having contributed to the proposition in the statement.

5.3.2.0: The construction of social relations

5.3.2.1. Meaning: Labels and their meaning

In terms of policy labels, Korea is a minefield (see Table 5.8 below). Every new policy report has a new label for the visions which are relatively similar. But as the word counts for the various labels prove, 'information' has been the major concern as it features in wording of many labels.

Table 5.8: Labelling preferences by word count

Label	**Adobe Acrobat Word Count**
Information Society	409
IT839	219
Cyber Korea 21	54
Knowledge based Society	73
e-Korea	52
u-Korea	109
IT Korea	55
Knowledge based Economy	18
Knowledge Information Society	11
Knowledge based Information Society	11

The label 'Information society' is synonymous with informatisation and information technology. The main reason the label information society is terminologically dominant is because it has been used in Korea for a long time. The Korea Information Society Development Institute was set up in 1988, and the use of information society and informatisation had been widespread through out the 1990s. Knowledge related labels

(Knowledge economy and knowledge society) were used for the first time in the 1999 Informatisation White Paper. The discourse of knowledge society and economy arose in the wake of the Asian Financial Crisis which had particularly adverse impacts on Korean economy.

Information society, knowledge economy and knowledge society are often used interchangeably without regard to there individual meaning. The following abbreviated quotation from NCA's Informatisation White Paper, 1997 illustrates this point.

> Korea government is faced with two urgent urgently challenging tasks: revitalization of the national economy and expeditious relief of unemployed people. To transform the nation into a knowledge-based society at the earliest date for solving these problems, the government has actively taken various policies. The policies included its active support of the private sector information technology development as well as implementation of government plans for informatisation deployment projects. … These policies are designed to create a maximum number of new jobs through development of new types of industries that are ideally viable in the upcoming information society. … To ensure continuous efforts exerted for an early realization of the knowledge-based economy, the government has formulated policies of developing the human resources in the information technology fields, as the foundation of the information society (NCA, 1999, p. 5).

Three labels are used in space of three paragraphs all of which justify informatisation to address the post-1997 financial crisis. The confusion of labels is compounded by their use in semantic context of other Korea specific labels such as e-Korea, Cyber-Korea and u-Korea. The use of novel labels is not unique to Korea as other countries in the region such as Japan (e-Japan, u-Japan), and Singapore (Singapore 2000, iN2015) have also done so. Novel labelling creates confusion about the policy conception of knowledge/information economy/society. The following quotation from NCA (1999) illustrates this point. Explaining the rationale behind aiming for knowledge economy, the document states

> As 1999 is the last year to prepare for the new millennium, the government concentrates its effort on the development of future-oriented informatisation policies. The world today is rapidly changing into a so-called "knowledge-based economy", where the utilization of knowledge and information, rather than the use of labor and capital, generate the core sources of added value. For this reason, a key task is to promote the production, distribution and utilization of knowledge and information by improving the infrastructure for rapid realization of the knowledge-based society. In connection with this, the government began implementing 'CYBER KOREA 21' in March 1999 with the aims of constructing a creative knowledge-based economy to overcome the current

> economic difficulties and also establishing new paradigms for the knowledge-based society (NCA, 1999, p. 8).

Apparently, knowledge society is the paradigm behind Cyber Korea 21 which itself is aimed at constructing a knowledge economy. The last sentence is particularly confusing as it mentions three labels in one sentence. Another example from NCA's 2000 Informatisation White Paper proves that in Korean policy documents the labels merely serve to continuously reinvigorate, re-frame, and re-legitimise policy as it travels down the path to ever-increasing informatisation of society.

> In 1997, Korea faced a financial crisis that resulted in a painstaking economic restructuring effort under an IMF bailout program. Heavy government intervention, lack of transparency, and general ineptitude destroyed competitiveness in the nation that was once hailed as an Asian economic miracle. As it turned out, the present problem is perceived to be not so much as a consequence of past faults as a disparity in knowledge and information between Korea and its more advanced counterpart nations. Chronically lacking in access to and utilization of information, the nation has been stayed behind of its international counterparts. Therefore, a core 'informatisation' strategy has been deemed as the essential element in enabling the nation to recover from the turmoil of economic crisis and to restore its growth potential. For developing an advanced knowledge-based society, the government put the foremost priority on building an information superhighway. While actively promoting informatisation since 1996, the government incorporated the new concept of a 'knowledge-based society' into the nation's informatisation master plan when the government drew up Cyber Korea 21 in March 1999, as a revised master plan to make the vision of an advanced 'knowledge-based information society' into reality (NCA, 2000a, p. 5).

The discursive reign of Cyber Korea as a label was short and it was succeeded by newer labels such as e-Korea, IT839 and u-Korea. This change happened with the change of government in 2002 which accelerated reforms in the economy at a time when it was bouncing back after the crisis.

The main change from Cyber-Korea to e-Korea was the discourse of utilisation, particularly the emphasis on quality of service provision and introduction of new applications. e-Korea 2006 was about enhancing Korea's digital competitiveness and was aimed at an advanced information and knowledge society. The slogan of e-Korea was "Global Leader e-Korea". As argued in the 2002 Informatisation White Paper, "Korea has been committed to reforming society and improving the national competitiveness through strategic planning of informatisation. Just as developed nations….. Korea is not behind the trend" (NCA, 2002a, p. 4). The new government in

2003 revised the e-Korea Vision with some cosmetic changes and named it 'Broadband IT Korea Vision 2007'. The new government argued that e-Korea did not reflect changes that had taken place in Korea's external environment particularly increasing global economic and technological competition, the rise of China and EU, faster and better Internet, and the convergence of wired and wireless technologies (See Figures 5.6 and 5.7 in Appendix B).

In the convergence emphasis of Broadband IT Korea Vision 2007 lay the basis for the idea of 'ubiquitous' IT environment as the basis of 'ubiquitous society'. The emphasis on ubiquitous society arose at the same time when the idea of 'ubiquitous network society' was being promoted in Japan. The 2004 Informatisation White Paper of NCA, the 2003 White Paper of MIC and the 2003 Internet Korea white paper also of MIC sowed the seeds of the u-Korea master plan. IT839 Strategy provides the infrastructural foundation for u-Korea. u-Korea, like its predecessors, was also framed in terms of achieving information and knowledge society. The 2004 White Paper of MIC argues that,

> As we enter the 21st century, the limits of time and space that have restricted our daily lives are disappearing with the development of semi-conductors, computers, the Internet, and other types of information technology. At the same time, the global social paradigm is rapidly shifting from an industrial society to an information society, and from a knowledge-based society to a ubiquitous society. It seems that Korea will be able to realize the ubiquitous society that aims to achieve limitless communications between person to person, person to object, and object to object, in the not-too-distant future with the integration and convergence of digital technologies and government policy efforts (MIC, 2004b, p. 8).

The discursive emphasis mirrors Japan's aim to be a leader in the world in promoting ubiquitous IT infrastructure. Another common thread that binds u-Korea, IT839 and Broadband IT Korea is the discursive emphasis on attaining a per capita GDP of US$20,000. In terms of vision, u-Korea is aimed at, "transforming Korea into an advanced country by realizing the world's FIRST u-Society based on the world's BEST u-Infrastructure" (NCA, 2006, p. 14) (See Figures 5.8 and 5.9 in Appendix B). With the formulation of the u-Korea master Plan, the IT839 Strategy has also been revised and is now called u-IT839 (MIC, 2006c).

> The Vision of the 'u-KOREA Master Plan' is transforming Korea into an advanced country by realizing the world's FIRST u-Society based on the world's BEST u-Infrastructure. Under the vision, the Plan provides advancement goals of five areas - government, land, economy, social environment, and individual life; and optimization goals of four engines - globalization, industrial

> infrastructure, social infrastructure, and technology development. The ultimate goal of the 'u-KOREA Master Plan' is to achieve a society where all people can benefit from a safer ubiquitous society (4U: Universal, Usable, Unisonous, Upgraded) through advancement of the five areas and optimization of the four engines (NCA, 2006, p. 14).

It is noteworthy that the meaning of information and knowledge society has not been explicitly stated anywhere in these strategies and visions, although they have been cited as the goal in almost all of them.

Definitions of knowledge society:

The three text samples below show that the meaning of knowledge or information society is not clearly described in the Korean discourse. The meaning of the knowledge society varies from one domain to another. For example, in the S&T policy domain the emphasis is on infrastructure whereas in the education policy domain the emphasis shifts to creation of skill.

> Knowledge, Information, and Intelligence-based Society: A society that provides infrastructure through which individuals, businesses and organizations can function in the most efficient way (MoST, n.d., p. 20).

> To help Korea's advancement into a knowledge-information society, where knowledge and information are the sources of wealth, and develop into a "ubiquitous society", where everyone can enjoy the benefits of advanced IT services anytime and anywhere, the Korean government is forging ahead with the u-Korea vision. To this end, the government has already devised an array of strategies to facilitate informatisation and advance the nationwide level of IT through Broadband IT KOREA VISION 2007, an effort focused on introducing digital IT into every corner of society including industry, culture and economy. Also, to help maintain its lead in the global IT industries by strengthening its competitive edge, the government has mapped out the IT839 Strategy. This endeavor aims to provide eight new services, build three kinds of infrastructure and foster nine new driving forces of growth, as well as channel efforts into attaining a per-capita GDP of US$20,000 (NCA, 2005a, pp. 5-6).

> In a knowledge-based society, knowledge creation skills are important to gain a competitive advantage. Therefore, developing human resources for the purpose of cultivating future leaders in a society that demands diverse and specialized knowledge is a crucial mission. A learning culture community that supports such a society through e-Learning must be created (MoE & HRD, 2004, p. 16).

The unstability in the meaning of the knowledge society is related to the ever-changing landscape of policy. New policy emphases, such as the current emphasis on the ubiquitous society replace the older meanings.

5.3.2.2.0. The Wording of meaning

The most predominant words in Korean discourse are information (word count = 6718), technology (2298), service (7054), government (4445), IT (3203), informatisation (2270), and industry (2382). These words are either collocated with or include the four key words which are the focus of this section – knowledge, ICT, globalisation and innovation. Below I describe the core features and important collocations of these four key words.

5.3.2.2.1. Knowledge

Word Count = 410

Two features stand out in the wording of the meaning of knowledge in Korean policy documents. Firstly, its occurrence in a context of nominalisations, and secondly the frequency of its occurrence with the word 'information'. In terms of nominalisations or grammatical metaphors, the emphasis is on activity or process denoting lexical items. This tendency results in high level of generalisation or abstraction. Nominalisations are used to drive the policy agenda. The word informatisation is an archetypal nominalisation. The word itself does not denote informatisation of what?, and who drives this informatisation? Other cases of nominalisations relating to knowledge include – distribution, expansion, application, utilisation, sharing, creation, package, distribution, digitalization, management, and transformation, among others (see below for a list of words occurring alongside knowledge).

The second distinctive feature of wording is the collocation of knowledge with information. The Korean discourse is unusual in the sense that knowledge and information are combined, as in 'knowledge information'. There are at least two examples where this word pair has also been used in naming institutions and policies. They are "Knowledge Information Resource Management Project" of the Informatisation Promotion Committee, and "Act on Management of Knowledge Information Resources".

Table 5.9: Collocations of 'knowledge'

Documents	Words and phrases collocating with 'knowledge'
MoE & HRD :(2004):	lifelong learning, education, information, skills, workers, nation, creation, sharing, individual-thinking, human resources, community, management system, knowledge package, and e-learning.
MIC's IT839 and Broadband IT Korea visions(2002):	knowledge intensive, worker, sharing, management system, expansion, distribution, information, digitalization, skills, supports, advanced, lead, capability, transition, realisation, nationalising, leader, construct, IT, broadband.
MIC's White Papers: Broadband IT Korea, 2003 & Dynamic Digital Korea, 2004 (2003; 2004b):	information, emergence, benefits, deploying, expanding, portal (also Korea Knowledge Portal), management, managing, multiple, digital, distribution, national, development, resources, knowledge-based society to a ubiquitous society, building, transform, expanding, management, dissemination, resource management, towards, developing, public.
Ministry of Government Administration and Home Affairs (2005):	knowledge-based government, sharing, build, promoting knowledge management, auditing, portal, system, legal knowledge information system, management, system, evaluate, provide, realising, sharing.
MoST (2000a):	creation, national, fostering new, innovation, disseminating, world class, transformation, use, realise, specialised, experience, applied, information, related law/budget/business knowledge.

'Knowledge Information' is a lexical item unique to Korean policy discourse. Other 'knowledge information' word-pair related lexical items found in the documents include – knowledge information society/economy, knowledge information resources, knowledge information base, and knowledge information resource management. If we consider just the phrases beginning with the word knowledge, the following lexical items are found - knowledge-based industry, knowledge infrastructure, knowledge-based informatisation, knowledge-based infrastructure, knowledge-based information society, and knowledge-based government. Finally some typical lexical items for phrases including knowledge are - construction of the knowledge-based economy, advanced knowledge-based country, utilisation of knowledge, rapid realisation of knowledge-based society, and advanced knowledge-based society. Table 5.8 (see Appendix A) shows lexical items and nominalisations from NCA's Informatisation White Papers from 1995 to 2006. It is interesting to note that before 1999 the terms

knowledge-based economy and knowledge-based society did not occur, nor were knowledge and information collocated. Also in the NCA discourse, the concept of knowledge occurs most frequently in the 1999 white paper. Table 5.9 shows the collocations of knowledge from rest of the discourse.

5.3.2.2.2. Globalisation

Word Count = 48 (spelling: globalization)

In 1994 Korea announced the "Segyewha Strategy" (National Computerization Agency (NCA), 1994, p. 1). Segyewha in Korean means globalisation. The term globalisation has largely been used in context of the global economic order and the need for informatisation (of software, software and Korean language) and the competition for markets. Korea wants to be a leader in the global race for IT standards. For this reason, globalisation is considered one of the "engines" of the u-Korea strategy (NCA, 2006, p. 15). Globalisation is seen as restructuring in the world economy which brings in new threats from China and the EU. According to e-Korea vision document,

> With the rapid spread of globalization throughout the world economy, a possible threat to the entry of Korea into the world economy is the emergence of new economic superpowers such as China and EU. In order for the Korean economy to compete successfully in the global market, the application and usage of information and communication technologies in all industries should be fully maximized to create greater added value. For the Korean economy to maintain its growth in the future, the government needs to foster new knowledge-intensive industries such as BT (Biotechnology), NT (Nano Technology), CT (Culture Technology), ET (Environmental Technology) and ST (Space Technology), on a solid background of IT. Globalization requires the social system of each nation to be compatible with the global standard. Transparency of a society is an important factor which influences the international position of a country. For example, national credit ratings announced by international financial institutions help determine a country's position in the world. In addition, national informatisation efforts can enhance transparency in order to elevate Korea's position in the global society (MIC, 2002, p. 15).

Globalisation also figures prominently in MoE & HRD's "e-Learning Globalization Strategy" the goal of which is to create an international e-Learning hub in Korea for providing e-Learning know-how to less developed countries, and for providing opportunities for overseas Koreans (2004, p. 109). Likewise, on the back of globalisation of S&T activities, "Vision 2025" of MoST aspires to create Korea as the research hub of Asia (MoST).

The outstanding feature of the wording of globalisation, which it must be pointed out is itself a nominalisation and a lexical item on its own, is its collocation predominantly with words and phrases from economy and technology domains. Table 5.10 shows some of the lexical items relating to globalisation.

Table 5.10: Collocations of 'globalisation'

Document	Words and phrases collocating with 'globalization'
NCA's Informatisation White Papers (1994, 1995, 1997, 1999, 2000, 2003, 2004, 2006)	informatisation, opening markets, targeting, Korean language, software, operating system, reorganization of world economic order, u-Globalization engine
MIC's e-Korea and Broadband IT Korea visions (2002)	Restructuring the world economy, spread, requires, promoting, culture.
MoE & HRD White Paper 2004 (2004)	e-learning, digital age, international cooperation.

5.3.2.2.3. ICT

Word Count: IT = 3534; ICT = 418

IT policy has been at the forefront of Korea's knowledge policy endeavours. The National Computerization Agency (NCA) was established in 1987 by 'Computer Networks Dissemination and Utilization Promotion Act'. NCA was tasked with among other things, the implementation of National Basic Information System (NBIS) from 1987-1996. NBIS was the first wave of government-lead informatisation. The Basic Act on Informatisation Promotion (BAIP) of 1995 and APII proposals of Seoul Declaration of APEC Ministerial Meeting on Telecommunication and Information Industry in 1995 resulted in a twin emphasis on Korea Information Infrastructure (KII) and informatisation promotion. NCA's informatisation white papers of 1994 and 1995 describe Korea's leadership role in proposing an APII for Asia-Pacific countries. The BAIP paved the way for implementation of informatisation plans in both the public and private sector. Both these initiatives paved the way for the further development of the IT sector. The NCA 1996 white paper remained focused on infrastructure development and as a justification comparisons were made with other countries in Asia-Pacific such as Canada, Japan, Singapore, China, Thailand and India. The Asia-Pacific Information Infrastructure (APII), an APEC initiative, also figures in discussion. From 1999 the

emphasis shifted towards IT utilisation and enhancing government IT investment. e-Korea emphasised public education on IT, in addition to informatisation of public sector and industry. From 2004 IT emphasis shifted towards broadband technology, IT exports and contribution of IT to national growth. IT became synonymous with Korea's rapid growth. As NCA 2004 White Paper contends,

> As a result, the early adaptation of broadband Internet networks created various Internet business opportunities and explosive demand for communication and entertainment. Korean society is fast becoming a dynamic and innovative civilization as the open and network nature of IT is combined with Korean cultural characteristics. Korea has recently announced its IT839 strategy to build the foundation for upgrading Korea's national wealth by integrating services, infrastructures and devices with contents to ensure a virtuous cycle structure for IT. Detailed blueprints are now in preparation for the country's next economic leap and for improving the quality of living for its citizens (NCA, 2004a, p. 6).

Broadband IT Korea vision aims to exploit the potential of IT as the "new growth engine" on the back of Korea's edge in IT equipment and service industry (NCA, 2004a, p. 11). IT839 aims to make Korea the global leader in IT. IT839 is the strategy to transform Korea into u-Korea or Ubiquitous Korea.

The term 'IT' is one of the most dominant concepts in Korean discourse on the basis of its occurrence. Notwithstanding its widespread usage, IT (and its hyponym ICT) occurs with understandable severity in the MIC discourse. The core features of its wording of meaning include (1) collocation of IT & ICT with words and phrases denoting economic activity (example, manpower, professionals, industry, infrastructure), and; (2) collocation of IT & ICT with words denoting processes (such as informatisation, globalisation, education, and so on). Table 5.11 (see Appendix A) shows the co-occurring phrases, lexical items and words from NCA, MIC, MoCIE, MoE & HRD and MoST discourse. Whereas the NCA and MIC documents reveal words and phrases referring to ICT hardware, software, infrastructure, use, and IT policy, the discourse from MoCIE, MoE & HRD, and MoST relates ICT to education, e-learning, emerging technologies, and S&T.

5.3.2.2.4: Innovation

Word Count = 442

Korea has been actively promoting S&T innovation since late 1990s. In 1997 the Five-Year Plan for S&T Innovation was started and in 1999 the National Science and Technology Council (NSTC) was formed to oversee the S&T policy activities in which over 20 ministries and agencies are involved. NSTC was formed under the Special Act on Science and Technology Innovation which also lead to the First Five Year Plan for S&T Innovation (1997-2002). In 2001 the S&T Foundation Las succeeded the Special Act. Under the new law, the NSTC announced the S&T Basic Plan (2002-2006). The incoming government in 2003 revised the Basic Plan and expanded the concept of S&T into 'technological innovation'. The Minister in-charge of MoST was promoted to the rank of Deputy Prime Minister.

The wording of meaning of innovation shows that it has characteristics of a nominalisation. In policy documents, nominalisations occur as abstract nouns for processes. A classic example of a nominalisation in policy documents is 'provision' based on the verb 'provide'. Innovation is a positive sounding word with connotations of necessity. Innovation and an innovation system hold an important position in the policy value system. While there is no argument that the noun 'innovation' signifies a process, there are occasions when (1) it is used in preference to the verbs 'innovate' or the adjective 'innovative', and (2) when it is used in multiple contexts. Because innovation is a buzzword in the S&T discourse, it is often preferred over words with similar meaning. In relation to concealing or masking policy change, the use of innovation as a nominalisation helps to win public support. The words used in context of innovation show that it can be used as a substitute for the word 'change' in myriad circumstances. As Table shows, innovation has been used in context of changes to management thinking (collocation with words like 'decentralisation', 'process', 'government', 'public sector' and 'management'), provision of services ('innovation of government services', delivery', 'activities'), and changes to policy ('evaluation', 'education', 'Science & Technology', 'policy innovation', 'promoting' and 'program'). There is also evidence of its being used rhetorically such as in 'raise the innovation flag', 'innovation-lead economy', 'National Innovation System', 'innovation stage', 'pursuit type', 'creative type' and 'creative' (Table 5.12).

Table 5.12: Collocations of 'innovation'

Documents	Words and phrases collocating with 'innovation'
MoST Vision 2025 and other discourse (MoST, 2000a, n.d., n.d., n.d.).	Science and Technology, Regional Innovation System, National Innovation System, innovation stage, raise the innovation flag, program, full scale, pursuit type, creative type, policy, S&T Innovation Headquarters, management, evaluation, education, cluster, innovation-lead economy, balanced, shifting, creative, evaluation, mature, promoting,
NCA's Informatisation White Papers (NCA, 2002a, 2003a, 2004a, 2005a, 2006).	innovation of government service, decentralisation, public sector, government, continuous, management, process, delivery.
MIC's e-Korea, Broadband IT Korea, and IT839 visions (MIC, 2002, 2006a, 2006b)	continuing, public sector, technological, activities.

5.4: Conclusion

Korea's meteoric rise and strong economic growth continues and is set to continue with the further entrenchment of democracy. Like Japan, Korea's policy discourse is ICT-centric and shows a shift from infrastructure development to utilisation of ICT in its informatisation drive. Japan and Korea are competitors in the ICT industry and their policy prescriptions mirror each others' initiatives. Korea, like Japan, was one of the first countries to emphasise the importance of ICT industry as a vehicle for achieving the information society aims. Following the 1997 crisis, Korea liberalised its telecommunications sector to foreign direct investment and allowed up to 49% foreign ownership to stimulate competition.

Korea has been an ideological battleground for advocates of neoliberalism versus statist development (Hart-Landsberg, 2001). Before the 1997 crisis the terms of debate were set by the role of the state in economic development. The state support for large industrial corporates called Chaebol was a key debating point. After 1998, the debate shifted to whether the state played a negative role in precipitation of the crisis by continuing to support Chaebol despite many of them being highly indebted. Korea's experience in knowledge policy shows that neoliberalism and statism accommodate each other. Especially after the 1998 crisis when neoliberalism has been on the ascendancy and when, at least at the discourse level, statism has been identified as a

disease, it is notable that statism still exists in the form of a strong state guidance of the IT839 initiative. It can be expected that due to domestic political economy, the neoliberal dream of unfettered market will be hard to realise. Korea faces a lot of criticism from global policy institutions and foreign scholars for its statist policy regime. Considering that neoliberalism leads to unbalanced development, it is pragmatic to suggest that countries such as Korea evolve policies and institutions which eschew the excesses of statism and aim to cater for the development of the whole society rather than economic elites.

Chapter 6: Case study – New Zealand

6.0: Introduction

Aotearoa/New Zealand is an OECD member country with a long-standing social policy tradition. New Zealand is a settler country where peopling occurred due to two major migrations – the settling of the Maori between 9th-13th century, and the European (largely from the UK) migration starting from early 19th century. The Treaty of Waitangi, signed in 1840, was an attempt for ethno-political accommodation between the Pakeha (represented by the British Government) and the Maori (represented by the Tribal Chiefs). Ever since there have been serious disagreements among the parties about the interpretation of the treaty and issues like land and governance have dominated the ethnic policy agenda. Economically New Zealand has made remarkable progress from an pre-industrial economy prior to European settlement to a advanced, highly developed one. Politically it is a mature democracy. The political spectrum of New Zealand has been dominated by two political parties – National and Labour. Recently after the introduction of the Mixed Member Proportional (MMP) electoral system, other minor parties have become important in government formation stakes.

A major impact relating to European colonisation has been the salience of an increasingly greater role of the state. In relation to public policy, the increased role of the state has manifested in a deep rooted reformist zeal. Cheyne, O'Brien and Belgrave (Cheyne, O'Brien, & Belgrave, 2000) have identified four critical periods in New Zealand history when reformism was widespread: (1) the 1840s when the main reformist concern relating to the Treaty of Waitangi was the future of New Zealand society; (2) the 1890s when state socialism was introduced in the form of Old Age Pension; (3) the 1930s when the Labour government introduced the social policy model based on welfarism; and (4) the period from 1984-1992 when wide-ranging structural reforms of state, economy and society were carried out. The reforms adopted during these critical periods have impacted the political economic realities of New Zealand later on. The last of the four periods is of greatest importance for this research as this is not only the most recent but also most relevant to the nature of the knowledge policy that developed after mid-1990s.

The 1980s reforms, pejoratively known as “Rogernomics” after the Finance Minister, Roger Douglas, have received a lot of scholarly attention. Scarcely is a study on New Zealand society, politics and economy published which does not comment on reforms of 1984. Some of the best known works relating to this are Jane Kelsey’s analyses of the “New Zealand Experiment” (Kelsey, 1993, 1995, 1999, 2002), and Brian Easton’s (Easton, 1989, 1997) account of ‘commercialisation’ of New Zealand. The main argument of critics of Rogernomics is that the introduction of neoliberalism inspired free market policies are not in tune with the social, geographical, cultural, political and economic foundations of New Zealand, and have exposed it to global market forces to which it is finding difficult to adjust. Further, they argue that wholesale reforms have led to a colonisation of social, educational, and political realms by economic logic. They argue that reforms motivated by a mix of neo-classical economic theory and neoliberal policies were not needed. Critics such as Kelsey and Easton take issue with the proponents of neoliberalism that there is no alternative and argue that Rogernomics was ideological motivated and driven.

Despite the criticism heaved upon them the reforms set in motion in 1984 have continued and the contradictions created in their wake have impacted the road to the knowledge society. The unravelling of the knowledge society discourse in New Zealand is testament to multiple impacts of the post-1984 political economy. A major impact has been shifts in governance which occurred alongside the reforms. Government policy reports such as the Treasury’s briefing to the incoming Finance Minister in 1987 titled, *Government Management* (The Treasury, 1987), put forth an argument for limiting the size and refashioning the role of government in meeting the globalisation imperative. Successive governments have aimed to refashion the state in keeping with shifts in globalisation. The thinking is to be abreast of changes occurring elsewhere in the world so New Zealand can be more competitive.

The Treasury takes the lead in economic policy planning in New Zealand. According to Boston and Cooper (1989), Treasury being the financial controller and employer of a large staff of policy analysts is able to set the policy agenda and its influence “extends over the whole state apparatus and touches almost every important area of public policy, be it macroeconomic policy, social welfare, education, government administration, broadcasting, and even defence and foreign policy” (Boston & Cooper, 1989, p. 123 cited in Roper, 2005, p. 158). Prominent shifts in policy planning after World War II

have been conceptualised in the Treasury. Roper (2005) , in his analysis of the policy values reflected in Treasury's policy reports believes that, the shift in Treasury thinking from Keynesianism in 1950s and 1960s to neoliberalism in 1980s and 1990s reflect wider shifts in economic orthodoxy worldwide. Especially in the post-Rogernomics era, the Treasury has acted as the 'Herald of the free enterprise' (Roper, 2005, p. 160) through the policy briefing papers to the incoming governments. Neoliberal ideas contained in the Treasury reports during 1984-1996 include the advocacy of: (1) free market economy, (2) rational choice, (3) market liberalisation, (4) disinflationary macroeconomic policy, (5) supply-side economics and rollback of welfare state, and (6) a minimalist, pro-capitalist state (Roper, 2005, pp. 160-168). With election of the Labour government in 1999, Treasury's advise has sought to include the Third Way ideas while arguing for the absolute necessity to extend neoliberalism through policy frameworks such as the Growth and Innovation Framework. This is evident in the six elements of government policy suggested by the Treasury in its briefing to the incoming government in 1999. They are: "openness and international linkages, macroeconomic stability, a competitive private sector, a generic skills base, a cohesive society and an effective public sector" (The Treasury, 1999, p. 2). Another example of this line of thinking is the Treasury working paper, *Towards an Inclusive Economy* (The Treasury, 2001).

The dominance of neoliberal economic orthodoxy in New Zealand public policy in recent times has repercussions for the knowledge policy discourse that has emerged. In this Chapter, I analyse the nature of knowledge society discourse with special reference to the neoliberal value system that sustains it. The analysis of New Zealand policy discourse is based on twenty three policy texts published by different sectors of government during the period 1998-2005. The domains of government the documents relate to are the Ministry of Research, Science and Technology (MoRST), the Ministry of Economic Development (MoED), the Ministry of Commerce (MoC), the Ministry of Information Technology, the Office of the Prime Minister (PMO), and the Ministry of Education (MoE). In the next section, I start with the description of the order of discourse – its history, governance structure, policy genres, outstanding discourse features, and the representation of the public.

6.1.0: Macro-level analysis: The order of discourse

6.1.1: Knowledge policy: Structure and timeline

Despite its record as a pioneer in many social policy interventions, New Zealand has been a relatively late bloomer as far as knowledge policy is concerned. The history of New Zealand policy discourse relating to the knowledge society mirrors recent political history. The knowledge society discourse originated during the term of the last National Party led coalition government (1996-1999) (see Table 6.1 in Appendix A). Serious policy thinking started in the last months of the National Party led government (1993-1996). In October 1996, a National Part-New Zealand First coalition assumed office which continued giving shape to a nascent knowledge policy. From 1996 – 1998, a series of reports dealing with role of IT in learning in the information age, prepared by Information Technology Advisory Group (ITAG) of the Ministry of Information Technology sowed the seeds of the knowledge society concept. Though the initial impetus was provided by the ICT policy, this changed with a shift in the perceived role of governance of science and technology knowledge. In March 1998, the Ministry of Research, Science and Technology (MoRST) published *Building Tomorrow's Success* (MoRST, 1998) report on the Foresight Project. The Foresight Project, as the name suggests, was an exercise conducted using tools of forecasting, with a view to construct an ideal route to knowledge society. Parallel to the MoRST's call for knowledge society as a national goal, the economic policy domain started to promote the knowledge economy concept. In 1998 the Prime Minister setup the Enterprise and Innovation team. The much talked about, *Bright Futures* report was published by the Ministry of Commerce in August, 1999 based on report of the Enterprise and Innovation team of ministers. This document was the result of consultation with business and academia and its timing close to elections raised questions about the intentions of the National-led coalition government. In May 1999, MoRST published the *Blueprint for Change* (MoRST, 1999a) report consisting of what the government needed to do to transform New Zealand into a knowledge society - a society of knowledge led innovation. In August 1999, ITAG submitted the *Knowledge Economy* (Information Technology Advisory Group (ITAG), 1999) report to the government which argued for minimising governmental role in the economy, while at the same time better channelling the current interventions in S&T and education policy to suit the knowledge economy goal.

The knowledge policy discourse has endured (indeed matured) during the reign of the Fifth Labour government (1999-till date). The change of guard in Wellington led to change in sound bytes if not the actual substance of the policy. The emphasis under Labour has been on 'strategic direction', 'strategies', and 'frameworks'. MoRST was the first out of blocks with the *Igniting the Future* (MoRST, 2000) report in early 2000. This report in setting out the strategic direction for research, science and technology (RS&T) is notable for accepting the findings of the Foresight Project while at the same time making no mention of the Blueprint for Change report of the previous government. From July 2000-November 2001, the Tertiary Education Advisory Commission (TEAC) published four reports (2000, 2001a, 2001b, 2001c) on future development of human capability in the tertiary education sector. TEAC - setup by the Labour government in April 2000 – advocated two main concepts encapsulated in the slogan "lifelong learning in a knowledge society". The four reports emphasised a policy paradigm which was inclusive while at the same time maintaining all the traits of neoliberalism in tertiary education. In September 2000, the Humanities Society of New Zealand (HUMANZ), wrote a report for MoRST, entitled: *Knowledge, Innovation and Creativity: Designing a knowledge society for a small, democratic country*. This report sounded a note of caution about the manner in which knowledge society was being conceptualised as a policy concept and argued that policy prescriptions should be contextualised to New Zealand and not imported wholesale. However, voices like these are a rarity in the policy echelons.

The Fifth Labour government invested a lot of time and effort in refashioning and reinvigorating New Zealand's economy. The two *Knowledge Wave* conferences of 2001 and 2003, epitomised government's efforts about setting economy on a new path forward – the path of knowledge-based economy. The organisation of the first conference, held at University of Auckland in August 2001, comprised corporate and university elites. Though it was touted as a collaborative effort between University of Auckland and the government, but in practice it seemed more as a collaboration between the university and corporate sectors (Stephenson, 2003). The main theme of the first conference was to promote the ideals of innovation led economic growth with special focus on the innovation in research, science and technology sectors which would propel New Zealand to a knowledge economy placed in top ranks of OECD. Presentations at the first conference exemplified the mutation of knowledge society and knowledge economy. The first conference was criticised for conflating knowledge with

science and technology knowledge and for privileging the ideal of knowledge economy (Stephenson, 2003). The second conference, held in 2003, tried to make amends by widening the focus of discussion from innovation and economic growth to a wider taxonomy including inclusiveness, community, and leadership. However, there was still an undercurrent of neoliberal knowledge economy beliefs in the thinking behind these themes.

In February 2002 the fifth Labour government released another landmark document for building a knowledge society based on innovation, entitled: *Growing an Innovative New Zealand* (The Office of the Prime Minister (PMO), 2002). This report proposed the Growth and Innovation Framework (GIF) – a whole-of-government approach to achieve social and economic goals for innovation in three focus areas – Biotechnology, ICT, and Creative Industries. The policy advice behind GIF consisted of reports by the Science and Innovation Advisory council (SIAC) on innovation, Boston Consulting Group on investment, LEK Consulting on talent initiatives, and recommendations from the 2001 Knowledge Wave Conference. The upshot of the framework was to constitute society, education and culture as the subject of innovation policy (S. Harvey, 2006). As of October 2006, the GIF framework has been discontinued and superseded by the Economic Transformation agenda (Ministry of Economic Development (MoED), 2007).

The knowledge society discourse after the introduction of the Growth and Innovation Framework (PMO, 2002) reflects a preference for whole-of-government approaches. The whole-of-government approach centralises decision making in the agenda setting wings of government – the Department of the Prime Minister, the Treasury, and ministries such as MoED, MoRST, and MoE. Senior bureaucrats in these institutions are members of new bodies such as the Digital Secretariat, and ministers have new responsibilities such as being a Digital Minister and Economic Transformation Minister. The emphasis is not so much on what the knowledge society is but on cross-sectoral initiatives to achieve the policy goal of a knowledge society. In fact the meaning of knowledge society is continuously being redefined by the strategic directions of the three main ministries – MoRST, MoED, and MoE. Three strategies – the *Digital Strategy* of MoED (2005), the *Tertiary Education Strategy* of MoE (2002), and *Picking up the Pace* initiative of MoRST (2005a, 2005b) – are key to understanding the whole-of-government approach post-2002. A key attribute of these is the implementation of new cross-sectoral collaborative governance mechanisms which group disparate policy

sectors under a lead ministry. For instance, MoRST is the lead ministry for the Advanced Research Network, MoED for the Digital Strategy and Economic Transformation Agenda, the Ministry of Social Development (MSD) for the Social Policy Evaluation and Research Committee (SPEAR), and MoE for the Tertiary Education Strategy, Tertiary Information Strategy, and Project Probe (see Figure 6.3 in Appendix B).

A consequence of the recent cross-sectoral strategies has been the loss of any serious thinking about the knowledge society. During the tenure of GIF, innovation was the buzzword. From October 2006, economic transformation has become the buzzword with innovation being demoted to one of the five priorities of the government - growing globally competitive firms, world class infrastructure, innovative and productive workplaces, Auckland as an internationally competitive city, and environmental sustainability. Under the whole-of-government approaches, various policy fields compete with each other over funding for strategies where they lead. As a result each field tends to overplay certain attributes of theme areas. For example, MoED, MoE and MoRST have different conceptions of innovation and what they think is the best way to approach it. While the MoED tends to highlight the ICT infrastructure dimensions of innovation, MoRST tends to focus on S&T infrastructure dimension and MoE on building academic research capacity. In the zeal to promote innovation, there is little emphasis on nurturing societal knowledge.

6.1.2: Genre

The policy texts chosen were downloaded from the Internet – one form of mass media among others that is used to disseminate policy reports in New Zealand. Other forms of mass media that disseminate the policy reports either entirely or concisely include print publications (both printed reports in book form and press releases) newspapers, ministerial pamphlets, and so on), radio and television. The Internet having increased the access of policy reports to the public has also potentially increased reports' power as a genre. Policy reports are a genre but there are considerable differences within this genre dependent upon the fields of policy, which they relate to, and their historicity. The New Zealand policy reports under investigation relate to MoRST, MoED, MoE and the PMO. The temporal and politico-historical context varies for each report. Some reports were the first ones in a series of reports (for example, the Building Tomorrow's Success

report was the first in a series of reports stemming from the Foresight Project initiated by the National Government in late 1990s); others are part of the work of ministerial advisory groups (for example ITAG and HUMANZ), and the rest relate to the ministerial and inter-ministerial strategic direction (GIF report from PMO (2002), the Blueprint series reports from MoRST (1999a, 1999b) and Digital Strategy of MoED (2005)). These are sub-genres within the broader policy report genre. One of their major characteristics is that they are linked together (genre-chaining) – a tendency which has gained momentum since the Labour government. They are linked together because the works of ministries routinely intersect because they are supposed to be working in consort with other wings in pursuing the incumbent government's agenda. For instance, the GIF is referred to in most subsequent policy reports. In addition, linkages can also be traced with reports of multilateral organisations such as the OECD and the World Bank – an intertextual feature explored later in the meso-level analysis. Policy reports such as the Building Tomorrow's Success (MoRST, 1998) document can be seen as a chain extending globally to the work of OECD in the 1990s (example *The Knowledge-based Economy* (OECD, 1996)).

The policy report genre is seen by Jessop (1998) as a genre of governance. As a genre of governance, it combines features of other genres (genre-mixing) to amplify the message (for example, marketing and promotional genres are used in combination with academic research). The concept of 'recontextualisation' developed by Bernstein (1990) helps to explain the impact of the appropriation of academic, promotional and marketing genres by the policy genre. For instance, the concept of knowledge society developed in one social practice (academic research) is recontexualised into another (policy reports) as knowledge policy is in turn recontextualised back into academic research as knowledge policy research. The documents from the New Zealand policy advisory committees such as ITAG, TEAC, SIAC and HUMANZ can be seen as having the impact of recontextualisation because they were written by academics with expertise in the field. The subject matter of these reports relates to the academic field but they are written with an aim to inform policy. In a similar vein, knowledge management research is recontextualised into policy institutions as a philosophy for scientific management.

The role of genre in the order of discourse is complex and some of its elements suggest that genre-mixing and chaining are an integral part of the materialisation of policy discourse in society. Other features of the policy genre found in the New Zealand texts

include (1) the use of forewords by authority figures to persuade and personalise the interaction with the policy audience through the genre of conversation (see the micro-level analysis for details), and; (2) the use of factual information in the text in the form of data (statistics, ministerial budget allocations, first person narratives, and so on) for the purpose of persuasion and legitimation.

6.1.3: Discourse

Turning to the description of the operation of the neoliberal knowledge policy order of discourse in New Zealand, it is important to locate the discourse in relation to a network of orders of discourse and fields which sustain it. This is shown by the concept map generated in the Leximancer software (see Figure 6.1 in Appendix B). The concept map (see Figure 6.1 in Appendix B) shows that education, research, science and technology, and development related thematic clusters are most dominant in the policy discourse. The reason for this is that the bulk of discourse on knowledge occurs in the policy fields of tertiary education (MoE), economic development (MoED), and research, science and technology (MoRST). Eight clusters can be identified from the concept map. Table 6.2 (see Appendix A) shows the top twenty concepts. Deviating from the trend in other case studies, 'education' figures as the top ranked concept in New Zealand policy documents. The reason for this is that education related discussions occur in most policy documents. Six of the top twenty concepts relate to the theme of education: 'education', 'funding', 'students', 'learning', 'skills' and 'training'. The research theme cluster is represented by five concepts in the top twenty list - 'research', 'knowledge', 'innovation', 'technology', and 'information'. Three concepts relate to the development cluster – 'development', 'economy', and 'work'. The remaining concepts in the top twenty list are of general nature and can be classed as governance related. They are, 'New Zealand', 'Commission', 'Maori', 'Government', 'Policy', and 'Society'.

The concepts ranked outside the top twenty are shown in Table 6.3 (see Appendix A). The semantic content of these concepts is linked to the three concept clusters described above. In terms of their relevance to the overall order of discourse, these concepts (occurring at the sentence and paragraph level) relate to the wording of meaning of the dominant concepts. It is interesting to note that economic growth related concepts dominate the development cluster (see Table 6.3). Concepts in the development cluster outside top twenty rankings include, 'capital', 'investment', 'business', 'industry',

'growth', 'market', 'management', 'financial', 'employment', 'competitive', 'regulatory', and 'liberalisation'. Likewise the semantic domain of the research, science and technology cluster is extended by concepts such as 'future', 'science', 'science and technology', 'ICT', 'foresight', 'infrastructure', 'Digital Strategy', 'FRST', and 'GIF'. Finally, the education-related concepts in this list include, 'universities', 'academic', 'competencies', and 'higher education'.

The spatial spread of concepts on the Leximancer map (see Figure 6.1 in Appendix B) reveals eight conceptual agglomerations (see Table 6.4 in Appendix A). These conceptual agglomerations have been deduced from semantic and locational nearness on the Map. Table 6.4 shows concept agglomerations (shown as circles) which form the core themes of the discourse – research, science, and technology, research policy, tertiary education, education policy, skills, development, knowledge economy, and knowledge society. There is a fair degree of overlap among these agglomerations, which suggests that these are interdiscursively linked. For instance, the agglomeration named 'research policy' overlaps with 'research, science and technology', 'knowledge economy', 'development' and 'tertiary education' agglomerations. It means that the concepts in this agglomeration are also found in neighbouring agglomerations. Neighbouring concepts have semantic and discursive linkages.

Locational nearness on the map also signifies argumentative and thematic linkages. The spatial distribution of concepts on the map shows concepts clustered in the central region signifying the existence of a compact meaning. The concept clustering in the centre of the map can also be seen as a consequence of the whole-of-government approach, whereby the same nomenclature exists in different policy fields. For instance, references to GIF and innovation can be found in most policy documents post 2002. The central region of the map is dominated by two issues – development and research policy. The development agglomeration overlaps with research policy, education policy, skills, knowledge economy and knowledge society agglomerations. The agglomeration named the knowledge society is located in the top right of the map and is locationally adjacent to the knowledge economy, development, and skills agglomerations which suggests that discussions of knowledge society at sentence and paragraph levels involve discussions about the knowledge economy, economic development and skills related issues. If we look at the concepts falling in knowledge society cluster we find that issues such as 'globalisation', 'growth, 'Digital Strategy' and 'ICT' are salient in its meaning

construction. The knowledge economy, on the other hand, is closely identified with the OECD on the map. Finally, when we look at actual word counts for knowledge economy and knowledge society, there is a clear preference for knowledge society (word count 392) over knowledge economy (word count 193) as far as labelling is concerned.

From the order of discourse point of view, the most important thematic clusters are development and research policy as they account for most of the concepts identified by the Leximancer software. These two clusters contain concepts highlighting the core features of GIF (PMO, 2002) – the emphasis on S&T innovation and economic growth, and an emphasis on the governmentality of cross-sectoral collaboration or the whole-of-government approach.

6.1.4: Style: The New Zealander as a knowledgeable subject

Here I will describe how policy discourse positions the subjects – those it is addressed to (and those who are excluded by implication). The knowledge policy discourse in New Zealand enunciates both what the government wants the public to be and what they should believe. The main subjects in this case are the 'New Zealanders'. The term 'New Zealander' exists in all the policy documents analysed. Its context of occurrence can provide vital clues about the kind of subject New Zealander is.

First, let us see what the government wants the subject to be like. The policy discourse on knowledge society seeks to transform New Zealanders into knowledge subjects. Often in the policy discourse, connections are made between the changing global environment and the need for the public to adapt to those changes and become more proficient users of knowledge and technology. The government sees itself to be working for the best interests of New Zealanders. Jenny Shipley, the former Prime Minister, in her foreword to the *Bright Future* document writes of her government working to get "the best results for New Zealanders" and that the document was about "turning ideas into wealth for New Zealanders" and "how we can move forward together by making our 'ideas machine' work better for all New Zealanders" (Ministry of Commerce, 1999, p. 5). The '5 Steps' policy package shows support for only some New Zealanders by proclaiming its objective as "promoting success, and supporting creative and innovative New Zealanders" (p. 7). This excludes many New Zealanders who don't fall within this

criterion. Similarly, "the Government wants tall poppies to bloom" (p. 62). A similar strategy to include and at the same time exclude groups within New Zealand society is evident in the following passage:

> We will make sure all New Zealanders have the skills to live and work in a knowledge era. We will be looking to back people with the potential to build New Zealand's knowledge and economic base (p.8).

This knowledge-skills-for-all-but-emphasis-on-winners approach is evident in the policy discourse spanning the two governments. The Labour government's GIF document argues that

> government recognises that to make the jump to a successful high growth economy, we need not only to ensure that all New Zealanders have the education skills they need to be productive members of society, but also we must develop, attract and maintain a solid core of the exceptionally talented, who can lead the way in the innovation stakes (PMO, 2002, p. 37).

Apart from enunciating what the 'New Zealander' subject should be like, the discourse also prescribes what the subject should believe. Some of the typical beliefs prescribed of the New Zealander are shown in Table 6.5 (see Appendix A).

Table 6.5 shows that the policy discourse, especially of the Labour Government, has been actively advocating for the public support of its RS&T initiatives. The government realises that public confidence in RS&T is vital to success of the sector. It seeks to address the concerns of the people by means of devising better ways to communicate its message effectively. The assertion that people agree with the general direction of the policy goal of the knowledge society is frequently stated in the form of a call for action. For instance, one of the first pronouncements of the incoming Labour coalition on MoRST, was to shift priorities to action towards the knowledge society. One reason that the Labour Government gives for a greater role for state intervention in various policy sectors is that it is responding to the needs of the people and to encourage people to take a positive view of the governmental interventions in RS&T. There is a frequent refrain in the documents for the people to adapt their attitudes to those required for knowledge society. Towards this aim the government sees itself in a teacher's role vis-à-vis the people.

Both governments have insisted that overseas citizens who are successful should return and/or contribute in some way to New Zealand society. The call for diaspora underlines

economic factors that are predominantly the reason behind this. There is an emphasis on the need for citizens to take up the challenge of the knowledge age. This is realised by warning of dire consequences and by explaining that there are no choices and; by requesting people's participation. There is also an emphasis on inclusiveness in the policy discourse. But the calls for inclusiveness do not shed any light on how to achieve it or what the government plans to do in this regard.

The text samples (see Table 6.5 in Appendix A) of the construction of the subject show that enunciations play a very important role in the order of discourse. The construction of the subject gives a glimpse of the intentions and power of the authority figure in relation to the subject. For the most part, these discursive constructions of the subject do not give any real power of agency to the subject. The agent is merely expected to act in a particular way. The enunciative statements do not give any choice to the subject either.

6.1.5: Outstanding discourse feature: Soft neoliberalism

The New Zealand knowledge policy order of discourse is an example of how articulations of different policy domains and discourses have resulted in an emergent knowledge policy-specific order of discourse. The knowledge policy order of discourse is characterised by a realignment of discursive relations between the various policy domains. Domains of policy that are able to dominate and colonise the newly emerging order of discourse stand a higher chance of mapping the new order of discourse onto their own field. In the knowledge policy domain, MoRST has been able to achieve dominance because of its status as a provider of policy guidance and governance mechanisms, and being a recipient of significant budgetary funding. This is evident in the importance it has in the overall debate on knowledge society.

The manner of issue framing, the dominant values, and forms of governance proposed in policy, reflects a struggle between the field of power (the government which follows neoliberal ideology) and various individual policy fields. The frontier between the agents has shifted with the changing political and economic circumstances. In general, there has been a softening of the once hard-line neoliberal stance in policy because of the changes in the field of power, especially the change from National to a Labour-led government since late 1999. Despite its softening, neoliberalism has remained the dominant ideological force in the policy. The persistence of neoliberalism can be partly

explained by concept of hegemony. According to Fairclough, hegemony is consensual rather than coercive in nature as it involves the "naturalisation of practices and their social relations as well as relations between practices, as matters of common sense" (1999, p. 24). The ideology has been able to persist because it is present in the guiding philosophy of the New Labour, to which the Labour Party of New Zealand adheres. The rearticulation of neoliberalism with a human face has enabled the maintenance of the hegemony of the neoliberal order. The neoliberal agenda has been present in New Zealand at least since 1973 when it joined the OECD, but which was boosted by Rogernomics reforms of the 1980s which enshrined neoliberalism at the centre of policymaking as a field of power.

Perhaps the most persistent neoliberal issue has been the combined influence of the language of management (management speak) and policy concepts of OECD on New Zealand policy thinking. This is an OECD wide phenomenon (Stewart, 2006). The hegemony of the neoliberal value system with an emphasis on management of knowledge by market-oriented governance mechanisms marginalises long-standing social values oriented towards pluralism and social welfare. Governments have had to do a difficult balancing act in accommodating the conflicting neoliberal and social welfare ideologies.

Being a member of the OECD, New Zealand faces both constraints and benefits. The constraints of being a member of the OECD relate to the obligation to follow in the footsteps of the prominent countries within the OECD and the constant pressure to keep social, economic, environmental, governance and policy developments on the boil. The intra-OECD competition has its ramifications for domestic politics where the constant flow of statistics from OECD policy reports becomes the basis of domestic debate and the parties in opposition to latch onto every weakness to embarrass the government. The benefits of OECD membership relate to increased influence at the global level, the ease of policy transfer and most importantly, the relative ease with which policies are sold to the public.

Neoliberalism is an economic doctrine as well as a political ideology. As an economic doctrine, the neoliberal policies have been adopted by both the left and right side of the political spectrum. The historical conjuncture in which New Zealand found itself in mid-1980s when neoliberal reforms were pursued with a greater vigour gave rise to a

new kind of governmental rationality which altered the equation between state and society. The state used the policy mechanism to implement neoliberal theory into practice. There were considerable hurdles, for example the social policy model was deeply entrenched in the administration as well as in the social psyche. Social welfare policy was in direct conflict with the core principles of the neoliberal doctrine. The emerging New Zealand variant of neoliberalism was the governmental rationality of economic prosperity. The goal of economic growth could no longer be made subservient to social welfare. Now social welfare had to play a second fiddle to economic growth. It was argued that social welfare had to be reduced for better functioning of the economy. The new political rationality sought to meld neoliberalism with restructured social welfare system. A new kind of discourse emerged, in policy and in media, where the benefits of neoliberal reforms were hyperbolised and pitched as irreversible, while social welfare was presented as a social problem. 'New Zealander' as a policy subject was an important target of this discourse. The 'dole' mentality had to go. Citizens had to be responsible for themselves and their duty was presented in terms of nation-building. The new governmental rationality of development was in operation till the mid-1990s when the talk of the 'knowledge-based economy' started to filter into policy. The knowledge-based economy was the OECD's formula to transform the workforce into knowledge workers in advanced countries to kick-start sluggish economies.

While efforts of the New Zealand governments in the 1980s to mid-1990s were influenced by the desire to redress the problems of the past, knowledge-based economy required a future orientation, which called for policy foresight. This need was met by the Foresight Project which put knowledge at the centre of policy discourse. The developmental imperative metamorphed into the knowledge imperative. At this juncture, some developed English Speaking countries (USA, UK) saw a change of political regimes from conservative to liberal governments. These governments were active in promoting the knowledge agenda which they saw as being appropriate in an increasingly ICT-enabled world. New Zealand, too, saw a change of guard with the election of the Labour-led coalition in late 1999. Although the knowledge policy reforms were initiated under the National government, Labour injected its own agenda into them. Labour did not challenge the knowledge agenda of National but incorporated it as a cornerstone of its policy reform programme. The emphasis was on reforming the reforms. Labour thought that a decade of National rule had dented the potential of social

control through public services. Labour framed the reform of public services in terms of the need for social protection mechanisms for enhancing social cohesion. The knowledge agenda played a key role in justifying these public service reforms. The 'knowledge society' started to figure in policy as a best way to enhance social cohesion, individual well-being and economic prosperity.

The knowledge society as a policy label plays a discursive role in marrying the twin needs of following the neoliberal ideology and being socially responsive. In my view, the two ideologies (welfarism and neoliberalism) are highly unstable – one progresses to the detriment of the other. In balance, it can be stated that although neoliberalism does not have a free run, it is still the stronger of the two ideologies as it has been able to penetrate both the private and the public sectors of government. The relative increase in emphasis on 'knowledge society' in contrast to 'knowledge economy' under Labour shows a discursive softening of neoliberalism. For Labour, the goal of the 'knowledge society' is a social and economic necessity which requires reform of the policy system to make it more accountable, professional and manageable. Knowledge entails controlling, managing and harnessing societal resources for collective benefit. Knowledge, especially new knowledge, is to be awarded highest priority as a policy goal. Knowledge producers, especially those that produce applied scientific knowledge and technology, have to be encouraged and rewarded. Likewise, the knowledge society being a society of high social standards demands a high level of individual self-regulation, responsibility and discipline.

6.2.0: Meso-level analysis

6.2.1: Interdiscursive analysis

The analysis of interdiscursivity focuses on references to discourses including academic literature and theories, other policy reports, narrative stories and vignettes, jargon, buzzwords, truisms, and catch-phrases, which is in the interest of issues discussed by the texts. The New Zealand knowledge policy documents draw upon mainly four types of discourses: knowledge management, globalisation, political and nationalist, and the OECD described in subsections below. This list is not exhaustive but it does address the discourses that are salient for this research.

Firstly, the use of knowledge management discourse in the policy documents concerns the need to manage the creation and distribution of the kinds of knowledge deemed essential in contemporary New Zealand society. The language of management is particularly salient where the topics of discourse relate to resources, quality, strategy and administration of policy. Direct references to knowledge management are present solely in the recent MoRST documents in the context of developing knowledge management systems. For example, *Igniting the Future* (MoRST, 2000, p. 14) aims to develop a "formal 'knowledge management system'". Igniting the Future also talks of implementing the "balanced scorecard model" (p. 16) for evaluating its strategy. Balanced scorecard is a measurement-based management technique developed by Harvard management gurus Norton and Kaplan and is widely used as an evaluation tool for organisations. Likewise, the SOI 2005-08 document (MoRST, 2005c, p. 22) calls for

> Developing knowledge management systems that enable enterprises and RS&T providers to access global trends relating to new knowledge and technologies, and consumer attitudes and behaviours.

The use of knowledge management language as a persuasive tool is also reflected in other spheres of policy. Lack of effective management is seen as a problem hindering realisation of a effective tertiary education system. The first report of TEAC identifies "inward looking governance and management" (TEAC, 2000, p.16) as one such problem. Management concerns in economic development discourse include the emphasis on the development of management skills for a competitive economy and a call to embrace the information revolution (ITAG, 1997, 1999). Likewise, information management is required if tertiary providers have to meet quality and productivity standards. "Efficient information management will be a key attribute in attaining and retaining high standards of learning and in being cost competitive" (ITAG, 1997, p. 45).

Secondly, there is a strong influence of the OECD economic thinking and the New Growth theory of economics on the New Zealand discourse. The ITAG document, *The Knowledge Economy* (1999) uses New Growth theory to lay the foundation for arguments about the direction New Zealand economic policy should take with regard to the impending knowledge economy. It warns against the "Argentine disease" (p. 3) where a prosperous country regresses to a developing country. It compares New Zealand's dwindling economic fortunes vis-à-vis other OECD countries and asks "Have we caught the Argentine disease? Why have we dropped so far?" (p. 3). It predicts that if New Zealand does not make a transition to the knowledge economy, economists may

call it the “New Zealand Syndrome” (p.3). New Growth economics, and especially the ideas of OECD consultants Foray and Lundvall (who wrote the 1996 OECD report on Employment and growth in the knowledge-based economy), are used to introduce the idea of a ‘learning economy’ where people, firms and countries use technology to access and share knowledge for creating economic wealth. The theme of knowledge as a factor of production is also present in the MoRST discourse in the context of the need for public funding of RS&T. Arguments about knowledge as a public good are related with the ‘value-for-money’ propositions to argue the case for a publicly-funded RS&T system in the MoRST Anchor Paper in the *Picking up the Pace* (MoRST, 2005a) document. Evidence is given from the OECD and EU regarding the incidence of publicly funded RS&T.

Thirdly, globalisation is a key theme in the New Zealand policy discourse. It is usually presented as an imperative to which policy must respond. The theme of globalisation has been linked to New Zealand’s distance from the developed world markets. For instance, the first report of the TEAC concludes that

> New Zealand is a small nation, physically distant from most of the world’s larger and more prosperous markets and societies, but with a unique identity and set of strengths and opportunities. To participate successfully in the global community, New Zealand’s society and economy must be characterised by innovation, cleverness, and the careful selection of niche opportunities (TEAC, 2000, p. 6-7).

The second TEAC report also recognises globalisation as a key influence shaping the tertiary education system. Other important references to the globalisation themes are found in the Foresight Project which considers it a “key driver” in context of the three scenarios (MoRST, 1998, p. 18). Also, it sees globalisation through the lens of ICT.

> The great enabler for globalisation is information technology, primarily through communication networks. But the motivator is the idea of the open society (MoRST, 1998, p. 17).

The ITAG document *The Knowledge Economy* sees the benefits of globalisation in terms of its potential to help realise the “vision of perfect competition” (ITAG, 1999, p. 6). Here too, globalisation is seen as tied to ICT revolution and its proof is the “death of distance” (p.7) a reference to the subtitle of Frances Cairncross’ book (2001). The 2001 GIF report refers to “Increasing our global connectedness to overcome the tyranny of distance” (PMO, 2002, p. 6) which it aims to achieve through foreign direct investment

and supporting trade and overseas promotion initiatives that enhance New Zealand's image.

Finally, nationalist rhetoric can be seen embedded in the policy documents. Often calls for knowledge society are framed as being in the collective national interest, where the citizens are asked to play their part in realising the goal of the knowledge society. The conversation genre is mixed with the policy genre. The 'conversationalisation' of discourse which Fairclough (2003) alludes to is found at various points in policy documents. For example, the use of cultural colloquial terminology such as "our Kiwi can-do attitude" (Ministry of Commerce, 1999, p. 7), "tall-poppies" (p. 10), and "There's a buzz about New Zealand right now" (MoED, 2005, p. 1) shows the mixture of discourse of everyday life in policy statements. Likewise, documents also use terms such as 'national interest' and 'national identity' to signify the everyday relevance of the policies.

6.2.2: Intertextual analysis

There is no set pattern of intertextuality in the texts. The most common form of intertextuality in the New Zealand texts is where texts refer to other texts from the national level organisations, most often previous policy documents from the same ministry. For example, the Tertiary Education Strategy (TES) is most often referred to by the TEAC documents. Likewise, MoRST documents make frequent references to the earlier Foresight Project.

To a lesser extent, international discourses have been referred to. The best example is the first report of TEAC (TEAC, 2000) which refers to the Council of Ministers of Education of Canada (p. 8), Dearing Report in Britain, and the West Report in Australia (p. 10-11) on the issue of lifelong learning and what other governments in the developed world are doing. It should be noted that the report chose to refer to only English-speaking countries with similar policy experiences. The more recent Baseline Monitoring Report from the same ministry (MoE, 2005b) summarises the findings of an OECD report on Adult Literacy Survey of 1996. Although the time gap between the two reports is considerable, the following conclusions have been drawn regarding the role of adult literacy in knowledge society.

> The 1996 International Adult Literacy Survey showed that raising foundation competencies of much of the adult population would be one of the significant

> challenges across OECD countries as they move into a knowledge economy and society (MoE, 2005b, p. 15).

Perhaps the earliest and most important example of intertextuality with regards to knowledge society is an abridged quote from the 1999 World Development Report (WDR) of the World Bank in the Bright Futures report.

> knowledge has become perhaps the most important factor determining the standard of living – today's most technologically advanced economies are truly knowledge based. (World Development Report, 1999, p. 4 cited in, Ministry of Commerce, 1999, p. 12)

What is remarkable about this quote is that it conflates technological advancement with knowledge and accords no role to human agency. Such quotes both assert and assume the power of technological knowledge for human development. The first part of the quote is clearly an assumption. The second part is an assertion that the assumption is true. The assumption simply takes for granted that technological knowledge is desirable for higher standard of living. In this, there is no room for other voices and opinions. This background assumption is part of the assemblage of ideas which constitute the hegemonic ideology of neoliberalism.

Another text that uses the extended version of the same quote from WDR 1999 is the ITAG 1999 report titled, "The Knowledge Economy"

> For countries in the vanguard of the world economy, the balance between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living – more than land, than tools, than labour. Today's most technologically advanced economies are truly knowledge-based. (World Development Report, 1999, p. 16 cited in ITAG, 1999, p. 3)

This quote exposes the ideological bias of the Bright Futures report. In this quote the assumption is more elaborate as it refers to *the balance between knowledge and resources has shifted so far towards the former* and qualifies the assumption by adding *more than land, than tools, than labour*. The fact that these were omitted from the *Bright Futures* quote is puzzling as New Zealand is a country that owes its economic development and standard of living significantly to natural resources exploited with the help of technological knowledge.

In the New Zealand policy texts, intertextual relations with academic discourse are scant. Academic discourse relating to knowledge economy is found in two texts from policy advisory groups (HUMANZ Knowledge Policy Research Group, 2000; ITAG, 1999). ITAG 1999 discusses the new growth theory of economics in relation to knowledge economy and directly quotes Romer (1990, 1994), who is perhaps one of the major contributors to that approach. ITAG 1999 also quotes the management guru Peter Drucker.

> The next information revolution is well under way.. It is not a revolution in technology, machinery, techniques, software, or speed. It is a revolution in CONCEPTS.. (Drucker, 1998 cited in ITAG, 1999, p. 3).

Drucker was a well known writer on information, revolution, knowledge workers, knowledge management and knowledge economy and has been instrumental in popularising these concepts in management sciences. The above quotation reveals that Drucker represents himself as an authority on the issue of information revolution and makes use of the rhetorical skill of explaining something by denial (explaining what information revolution is not). It is clear that an unsubstantiated (there is no mention of Drucker in the references) and ambiguous quotation from a Drucker (who has been used for his appeal value) has been given mainly for setting the tone for reforms and rethink in the section of the report titled “Beating the Argentine Disease: a call for action”.

Perhaps the most intertextual report is the HUMANZ document authored by academics for the Knowledge Policy Research Group of MoRST (HUMANZ Knowledge Policy Research Group, 2000). The authors were tasked to investigate what the knowledge society is and how the government can contribute to achieving this goal. This report is of a mixed genre. Its structure is that of a policy report but its content is more or less academic in tone. The purpose of the intertextual links is to introduce expert voices consonant with the arguments and make them authoritative. Little or no attention is given to the context of the original quote. In the text, some of the leading contemporary scholars on the knowledge society are discussed, namely Brown and Duguid, Stehr, Lash & Urry, Mulgan, Castells and Giddens. Notable absences by name are Bourdieu, Lyotard, and Bell whose arguments and concepts are used in the text. For example, Bell’s ‘post-industrial society’ and Bourdieu’s ‘cultural capital’ have been used in the text. The whole report legitimises the ideas of the sponsor (MoRST). The concept of ‘culture of innovation’, which is an OECD idea often referred to in MoRST discourse, is the central idea around which the discussion on knowledge society and the role of

government takes place. The authors present their own 'cultural model of innovation' within this context. This is an example of recontextualisation, where an academic genre has been appropriated by the policy genre and which changes both. For example, the rhetorical concept of 'culture of innovation' is recontextualised by using academic researchers who then give it authority through their 'cultural model of innovation'. One impact of the recontextualisation is that it transforms the appropriated genre or discourse to suit the new context and discourse. As a result, the notions of 'culture', 'knowledge' and 'innovation' are given a new meaning where they are seen as essentially correlated. The actual correlation between these concepts has been described in an abbreviated form and incorporates the agenda of the MoRST policy discourse.

6.3.0: Micro-level analysis

The micro-level analysis shows how 'knowledge society' and the related assemblage of concepts are constructed as inevitable facts of life to which policy must respond.
In the micro-level analysis of New Zealand policy texts, firstly the construction of social identity through analysis of the modality, and secondly the construction of social reality through analysis of the word meaning and wording of key concepts relating to the knowledge society is described. The first focus on the modality dimension of texts highlights the construction of an ideal knowledge-based future. The second focus on word meanings and wording is particularly significant in answering questions relating to what does knowledge society mean in the policy discourse?

6.3.1: The construction of social identity: Modality

In policy documents a crucial aspect of modality concerns prediction or 'futurology' (Fairclough, 2003, p. 167), which can be seen in forewords and scenarios portrayed in text. I will specifically deal with these to show how texts construct social identity. The modality dimension of texts concerns the affinity of the authors to particular points of view through statements and answers to raised questions or issues. Most New Zealand policy documents have a ministerial, secretarial or a chief executive's foreword which encapsulates the main thoughts of the government on the issue and perform the function of topic control. These are also a rich source for finding how the government addresses the citizen and perceives them. Table 6.6 (see Appendix A) presents the analysis of modality of futurism in the preface and foreword sections of documents. Apart from

prefaces and forewords, in the New Zealand discourse, modality can also be deduced from forecasting scenarios presented in *Building Tomorrow's Success* (MoRST, 1998).

Scenario-building as a policy technique was realised in the MoRST Foresight document, Building *Tomorrow's Success* (MoRST, 1998) through the three choices that position the desirables ('utopian visions') against the undesirables ('nightmares'). Here the authors of the text seem to address not solely the readers but the whole population (the large majority who have not read the document). I will describe firstly how topic control is at work here, and thereafter, how these scenarios construct social identity. The exercise of scenario building is bound by the "key drivers" which aim at topic control – the control of agenda and how people think about issues. Four key drivers are mentioned in the text, namely, fundamental technological change; globalisation, environmental quality, and social and demographic trends. People engaged in this exercise obviously think about the future (year 2010) within these limits. Topic control is also exercised by description of the three scenarios. The least desirable and nightmare scenario ('*Possum in the glare*') is mentioned first and the most favourable and utopian ('*Nga Kahikatea: reaching new heights*') is mentioned last. In terms of modality, the three construct three different social identities. The three scenarios present three varieties of neoliberalism (three variations on a theme) and exhort people to make a choice. The three scenarios are part of a strategy to legitimise the discourse of knowledge society within the bounds of the neoliberal discourse.

Scenario 1 – "Possum in the Glare" presents a nightmare scenario characterised by corporatisation of agriculture, conflict-ridden ghettos in Auckland, foreign pests and weeds, struggling businesses, an interventionist Australia, possums in the environment and on the roads and growing rich-poor gap. Briefly, "we are not really in control of our own destiny in the fast-paced global knowledge age, and we feel helpless. As a nation, we spend more time looking back than looking forward into the glare" (p. 28). The social identity of New Zealanders in this scenario is akin to possums – a foreign pest. Symbolically though, the ideal typical possums in this description are the foreigners (international students, permanent residents, migrant labour and Australians) who destroy the 'ecological' balance (and balance of power) between Pakeha and Maori.

Scenario 2 – "Shark Swimming Alone" is a mixed-blessings scenario. While technological advancements have been rapid and globalisation has had a favourable

impact on New Zealand, social, economic and environmental changes have had a mixed impact. The social identity of the New Zealander is that of a predator – a shark which has the "freedom to roam, and the confidence to attack any new opportunity, has provided ongoing access to large and diverse sources of sustenance. But we are constantly moving to new feeding grounds, and suffer from a growing concern about the social and environmental problems we leave behind. Loneliness increasingly haunts the roaming shark" (p. 30). Symbolically, the shark is a victim of its own success.

Scenario 3 – "Nga Kahikatea Reaching New Heights" is the favourable but utopian scenario. The style reflected in this scenario is how New Zealand is reaching new heights as a leader in the knowledge society and economy in the world. The social identity of a New Zealander is that of a leader who combines vision with good networking. Socially, economically and environmentally problem areas have been translated into goals. How did this breakthrough happen? The text constructs hypothetical events of race riots in South Auckland in 1999 (though protagonists are not spelt out) and a Maori Hui deciding on ending the "Waitangi grievance industry". Similar environmental and business initiatives came into being on the back of Maori-Pakeha unity and shared goals, which further strengthened social cohesion. The text also constructs a new word to describe the new state of affairs, "co-opetition". This scenario is a good example of how the discourse of social cohesion is legitimated in terms of neoliberalism. For example, the following text sample construes social cohesion in economic terms.

> New Zealand's new identity, expressed proudly by people throughout the country, was technologically literate, networked, "co-opetitive" and eco-rich. This lifestyle renewal brought social cohesion to new heights, as we collectively celebrated New Zealand's renewed social leadership (MoRST, 1998, p. 32).

In this scenario, 'lifestyle renewal' resulting from 'new identity' expressed by 'technologically literate, networked, "co-opetitive" and 'eco-rich' people is shown to have resulted in higher levels of social cohesion. This description reduces social cohesion to an enhancement of human quality which is part of the neoliberal discourse. Human quality, according to Fairclough (2003, p. 128) "reduces people to forces of production which rank along with others, such as Information technology". Thus even though the discourses of social cohesion and neoliberalism are fundamentally incompatible, they are textually shown as compatible.

The three scenarios describe three scenarios under neoliberalism, ranging from the most socially disruptive 'Possum in the glare', the least socially integrated 'Shark swimming alone' to the most socially cohesive 'Nga Kahikatea Reaching New Heights'. The irony in the most favourable scenario is that despite being explicitly focused on social cohesion, it seeks to address social cohesion from an economic perspective. This logical inconsistency can be explained by how the 'key drivers' of the scenario building exercise are visualised or operationalised. The emphasis throughout is on achieving social change with the aid of technological knowledge, economic liberalisation, environmental richness and globalisation related opportunities. The actual social environment is presented in three scenarios as containing elements which potentially hinder the positive benefits from these opportunities. The third scenario solves this puzzle by constructing hypothetical events where social change occurs when agents (Pakeha and Maori) involved weigh economic benefits from social unity against economic disaster amidst disunity. This hope that human agency is solely determined by economic factors and the related conclusion that social cohesion can be enhanced by favourable forces of production is misguided and represents the folly of neoliberal policy possums under the glare of logic.

6.3.2.0: The construction of social relations

In this section, first I will focus on the word meaning dimension where I will describe the instability of the meaning potential of the word 'knowledge' as it is used in relation to policy labels 'Knowledge Society' and 'Knowledge Economy'. I will also focus on the label preferences of the various texts. Second, I will focus on the multiple ways a meaning is worded where I will describe how certain meanings of the word knowledge are changed by the use of literal strategies (for example, adjectives) and how rhetorical policy concepts such as 'globalisation', 'ICT' and 'innovation' used in relation to the policy labels, can change the meaning of the knowledge, which is a key cultural concept.

6.3.2.1: Word meaning

The meaning of 'knowledge' in most policy texts is explained within the discursive context of 'knowledge society' or of 'knowledge economy', depending upon the preferred label used. Most texts have used the label 'knowledge society', while

'knowledge economy' is predominantly found in texts from MoED and MoRST. MoRST uses both 'knowledge economy' and 'knowledge society'.

The meaning of knowledge in New Zealand policy discourse is characterised by a low degree of stability because some recent reports have sought to view knowledge in a different light to the previous ones. However, this unstableness of meaning is only slight as semantic variations are restricted to the discourse on tertiary education. Within other policy communities or sectors the meaning is quite stable. I begin with how the Foresight Project document, "Building Tomorrow's Success" (MoRST, 1998) views knowledge, since it set the tone for how knowledge is viewed in the New Zealand policy discourse. The quotation below comes closest to providing the policy meaning potential of knowledge.

> Knowledge is one of the main drivers of prosperity and well-being. Knowledge includes information in any form, know-how and know-why. It involves the way we interact, as individuals and as a community. Knowledge can be embodied in people, as human capital, and in technology (MoRST, 1998, p. 8).

The first sentence contextualises knowledge as a global process (the use of 'is' denotes a global space-time) related to the process of development ('prosperity and well-being'). The second-sentence is interdiscursive in nature as it contains elements of a definition of knowledge from the knowledge management perspective. The third sentence connotes knowledge as a social activity. The fourth sentence denotes the qualities of knowledge as it refers to the concept of human capital and to technology. The fourth sentence is intertextually (though not by direct quotation) related to the notion of the 'knowledge-based-economy' proposed in the 1996 OECD document (OECD, 1996) which is the landmark document introducing the policy labels and concepts much in vogue today. If we look at the following quote from the OECD document, the similarity with the Foresight Project definition is striking.

> Knowledge, as embodied in human beings (as *"human capital"*) and in technology, has always been central to economic development" (OECD, 1996, p. 9).

The lexical items 'know-how' and 'know-why' used in the Foresight project document also exist in the OECD text. The Foresight Project document articulates its vision of a knowledge society as follows:

> New Zealand, like other Western industrialised nations, is evolving to become a knowledge society. In this type of society, individuals who are well educated, self-motivated, and linked into information networks, are the most likely to live prosperous and fulfilling lives. Enterprises that are attuned to their customers' requirements, employ educated workers, encourage innovation through their workplace organisation, and know more and learn faster than their competitors, are the most likely to succeed and grow. At the national level, societies that maximise opportunities for individuals and enterprises to develop knowledge-age skills and access knowledge-age services, and that enable people to share a common sense of national identity and belonging, are the most likely to be cohesive. This context for the Foresight Project requires that we recognise how the world's economy is changing rapidly, and what we can and must do if we are to adapt to these changes. We need to consider issues such as the role of knowledge in innovation, what drives successful innovation, and the critical leadership role which the government can play in this process (MoRST, 1998, p. 8).

In this quote, the New Zealand knowledge society is framed by reference to the 'other Western industrialised nations'. The characteristics of the knowledge society are largely explained as economic imperatives. Economic criteria ('knowledge-age skills' and 'knowledge-age services') are used to frame the concept of social cohesion. In the last part of the quotation, the work of the Foresight Project is legitimised in terms of adapting to changes in the world economy, and rationalised by 'issues' requiring urgent attention – the 'role of knowledge in innovation', the answer to a rhetorical question ('what drives successful innovation'), and deciding upon the 'critical leadership role' for the government.

Let me turn to the meaning of 'knowledge' in MoRST documents published after the Foresight Project. In addition to the Foresight Project document, MoRST has been publishing reports under its Blueprint and Picking up the Pace series. The first Blueprint series document was published in 1999 during the National government's time. Blueprint for Change (MoRST, 1999a) frames knowledge within discussion of changes in the global space-time (world economy and the definition of knowledge from economic and management science is used. The changes to national space-time (New Zealand) are likewise described in economic terms where development of the knowledge society is made conditional on economic criteria ('systems, services and products' and 'value added'). The last paragraph presents the aspirations of policy with regard to knowledge society.

> The world economy is undergoing significant change, with an increasing emphasis on the ability to create, store, distribute and apply knowledge. … For New Zealand, the successful development of a knowledge society will involve

> moving to systems, services and products with higher levels of value added by knowledge. … Government aspirations for New Zealand focus on building an enterprise economy, creating a culture of innovation, enhancing the roles of individuals, families, communities and the private sector, maintaining and enhancing environmental quality and building national identity and cohesion. Collectively, they create a vision for New Zealand's future as a knowledge society (MoRST, 1999a, p. 7).

The key meaning of knowledge - 'knowledge creation, sharing and exploitation as factors in prosperity and well-being' – is repeated in most other documents of MoRST (see for example MoRST, 1999a, p. 4, 1999b, p. 4, 2000, p. 6, 2005b, p. 6). The concept of knowledge that is in operation here focuses on economic rationale and emphasises the exploitation of knowledge obtained from applied research, science and technology. The same theme is repeated in the 'Following the Blueprint', 'Igniting the Future', 'Strategic Direction', and "Picking up the Pace' documents which span both National and Labour governments.

The second most prevalent meaning of knowledge is found in the MoE documents, specifically the TEAC reports. The first TEAC report focused on developing a vision for tertiary education explicitly calls for a wider view of knowledge. The first of its twelve conclusions deals with the concept of knowledge. Conclusion 1 states,

> A broad definition of the knowledge society should be adopted in the development of policy for tertiary education. This includes a recognition of the potentially valuable contribution of all forms of knowledge (TEAC, 2000, p. 9).

Before reaching this conclusion, TEAC foregrounds this by arguing that the concept of knowledge has been restricted in debates elsewhere. In the following quote, it is noteworthy that the reason for opting for a broader definition of knowledge is that it suits 'small nations without large industrial or technological economies, such as New Zealand' and that they 'can contribute to individual well-being and social progress'.

> In some debates concerning the concept of the knowledge society or economy the focus has been on the importance of information and communications technology, the sciences and engineering. However, the Commission's view is that all forms of knowledge, including culture and identity, the arts and design, have a vital role to play in the development of a knowledge society. This might be particularly so for small nations without large industrial or technological economies, such as New Zealand. … This broader view of the role of knowledge in society means that no easy distinctions can be drawn between the value of domains of knowledge. Rather, it suggests that all fields of learning and

> knowledge, whether they be in the arts and the humanities or the natural and physical sciences, are of value and can contribute to individual well-being and social progress" (TEAC, 2000, p. 8).

Apart from the HUMANZ report, this document is perhaps the only one in the New Zealand policy discourse which propounds a broader view of knowledge. The reason for this may be that tertiary reforms have focussed on a wide range of issues such as lifelong learning, development of a qualification framework and development of funding framework. The impact of these reforms on universities and Crown Research Institutes has not been that far reaching. Instead universities and crown research institutes have been impacted more by MoRST whose jurisdiction over funding for research directly affects teaching and research components of universities.

New Zealand policy documents reveal a largely homogenous meaning of knowledge as applied scientific and technological knowledge useful for prosperity and well-being. This meaning, as we have seen above, has ideological roots in the OECD and knowledge management discourse. Knowledge described in such terms is an activity (exploitation of science and technological knowledge) as well as a personal quality ('well-being', 'human capital'). Throughout the discourse, the activity dimension gets greater coverage while the quality dimension is used as a legitimising technique. The precise meaning of knowledge may vary with the context of argument at paragraph and sentence level. Also, the meaning may mention only one sense of the word or it may accord greater importance to any one of them. Amidst this homogeneity of meaning, the underlying semantic thrust of the discourse at the macro-level is on knowledge as an activity. Through strategies and solutions, the policy institutions seek to control this activity and steer it in particular directions. A consequence of this political and ideological jostling is that key social concepts such as knowledge become discursively invested with specific meanings.

6.3.2.2: Wording of meaning

Different social contexts are characterised by differences in the vocabulary they use for the same word, term or concept. The policy domain is one such context which, at the level of vocabulary, draws upon a particular wording-mix in constructing social reality. This wording-mix, which includes "jargon", metaphors, rhetorical concepts and literal

strategies, adds up to a standardised form of expression. In the case of knowledge, policy documents' form of expression or wording-mix (how the meaning of knowledge is worded) raises ideological issues. I begin with a focus on some lexical items used repeatedly in texts. The most important lexical items concerning knowledge in the text relate to knowledge as an activity. Lexical items such as 'knowledge-based', 'knowledge-rich', 'knowledge-driven', 'knowledge-intensive', 'knowledge sharing', 'tacit knowledge', 'explicit knowledge', 'knowledge creation', 'knowledge production', 'transferring knowledge', 'global knowledge', 'knowledge assets', 'collective knowledge', 'new knowledge', 'knowledge community', 'knowledge worker', 'building knowledge', 'improving knowledge', 'configuring knowledge', 'utilise knowledge', 'knowledge base', 'knowledge-age', 'knowledge era', 'increase knowledge', 'accelerate knowledge', 'knowledge products', and 'knowledge uptake', among others are found in the various texts. These lexical items highlight the predominant use of activity-related wording for knowledge. In terms of intention almost all of these lexical items are positive as they emphasise (perhaps over-emphasise) the good points of knowledge. The context of wording, frequency of occurrence and the positive intentionality of word-mixes demonstrate that they are ideological in nature as they emphasise certain meanings and hide other meanings of words such as knowledge.

Despite a largely positive orientation, a certain degree of negative emphasis on what is not desirable in relation to knowledge can also be deduced from the policy discourse. At some places in the discourse there is an emphasis on what could happen if New Zealand does not make certain policy choices. A classic case is the scenarios presented in "Building Tomorrow's Success" (MoRST, 1998). The Possum in the Glare scenario ends with a grim outlook for New Zealand.

> We are not really in control of our own destiny in the fast-paced global knowledge age, and we feel helpless (MoRST, 1998, p. 28).

The implication of this sentence is that if New Zealand does not adapt to the 'fast-paced global knowledge age' it will loose control over its 'destiny'. The lexical item 'fast-paced' converts a process (fast-pacing knowledge) into an entity ('knowledge age') and disguises the agents (who drives this 'global knowledge age'). It is a grammatical metaphor from the domain of driving. The reference to 'we' and 'our own' masks (colonises) the identity of actors who do not agree with the policy.

Nominalisation, according to Fairclough, "is a type of grammatical metaphor which represents processes as entities by transforming clauses (including verbs) into a type of noun. … It is a resource for generalising and abstracting …. But can also obfuscate agency and responsibility" (Fairclough, 2003, p. 220). Nominalisations do not work alone in producing social effects, but they work alongside other linguistic forms and in particular meaning-making contexts. Consider this warning from the document "The Knowledge Economy" which shows how a negative emphasis can be used for ideological ends. Here the real agent (the government) is masked by referring to a collectivity ('New Zealanders') in enacting the 'knowledge economy' as an entity space (just like 'amusement park' and 'holiday land' to which it is deemed superior):

> If New Zealanders do not seize the opportunities provided by the knowledge economy, we will survive only as an amusement park and holiday land for the citizens of more successful developed economies (ITAG, 1999, p. 2).

The strategy of comparison carries a meaning potential. Semantically, it matters with whom, in what context and for what purpose a comparison is made. In the following quote, the strategy of comparison is used to contrast 'we' and 'our' from 'theirs' and 'they'. The purpose of comparison is persuasion and the context of the comparison is the relatively poor strategy of the knowledge society in New Zealand.

> We have not yet learned to see our country, as our competitors now see theirs, as a 'knowledge export platform'. Our competitors – Ireland, Singapore, Australia, United Kingdom – have done so, and they are beating us in the game of economic prosperity. If we do not heed the call, we will fall further in the rankings, perhaps as far down as Slovenia and Hungary, countries that aspire to our standard of living. In ten years' time economists may characterise New Zealand as one of those unfortunate countries that failed to make the transition to the new economy, and count it among the also-rans. They may call it 'the New Zealand syndrome' (ITAG, 1999, p. 3)

The use of metaphors is quite revealing. The building metaphor ('platform') and the sports metaphor ('game') are given positive connotations, and in contrast the medical metaphor ('syndrome') and the journey metaphor ('transition') are assigned a negative connotation. The purpose of positive evaluation is to show that those economic processes enable us to meet our goals, whereas the negative evaluation is for barriers to achieving economic goals. Intertextual configurations that refer to language of daily use are also present, as is shown by emphasis is on 'If we do not heed the call' and by 'count it among the also-rans'.

Adjectives and adverbs help to qualify the words (especially nouns and verbs) that they describe and they are an important resource in wording a meaning. They modify the meaning potential of words by adding or emphasising information in relation to them. Adjectives sometimes also have the capability to be metaphors. In policy discourse, positively oriented adjectives and adverbs serve to hyperbolise policy concepts and strategies and negatively oriented adjectives and adverbs serve to belittle the voices of difference. Positively oriented adjectives and adverbs can also be seen in the New Zealand policy discourse. Table 6.7 (see Appendix A) shows the use of adjectives in relation to 'knowledge society' and 'knowledge economy' in the New Zealand policy documents.

In Table 6.7 (see Appendix A), we can see that certain adjectives occur repeatedly, for example, 'vibrant', 'world-leading' 'innovative' and 'inclusive' showing that they are related to how the meaning has been predominantly worded in the discourse. All of these possess the quality to hyperbolise knowledge economy or society. At least one of these –'vibrant' - is also a metaphorical adjective which draws upon the natural world to signify positive evaluation of knowledge society. In the discourse, twice 'vibrant' has been used in conjunction with the adjective 'thriving' and once in conjunction with 'innovative' both of which again strengthens its metaphorical value.

If we look at metaphors (see Table 6.8 in Appendix A), we find that life-cycle metaphors ('creation', 'creating' and 'development') are predominant in the MoE's "Tertiary Education Strategy 2002-2007" (MoE, 2002) document. Also noteworthy in this document is the natural world related literal strategy – a riddle - appearing in the beginning of Chapter Three titled, "The Imperative for Change". The riddle, apart from showing intertextual and interdiscursive linkages with ordinary life and genre-mixture (policy and folk/literary), shows how solutions can be legitimised as an imperative. In this document, the emphasis is to move away from increasing participation in tertiary education towards greater management and commercialisation of tertiary education. The policy imperative is to "respond to the challenges of globalisation, accelerating technological change and the increasing importance of knowledge" (MoE, 2002, p. 15).

In the MoED discourse metaphors are varied but tend broadly towards the engineering and travel fields (see Table 6.9 in Appendix A). Metaphors relating to food technology ('recipe'), bio-physics ('incubator'), finance ('gold standard'), building ('threshold')

and travel ('racing', 'journey', 'direction', 'forward') have been used in relation to the concepts of knowledge and knowledge society/economy. A mixed configuration can also be seen in terms of the literal strategies used. The use of public relations techniques such as '5 Steps Ahead' in *Bright Futures* document (MoC, 1999) and the 'Three Enablers' in the Digital Strategy (MoED, 2005) shows a tendency to use catch-phrases. Similarly the appropriation of negative cultural terminology - 'tall poppies' - in Bright Future (MoC, 1999) and ImpacT 2001 (ITAG, 1997) documents for something that is good and necessary (' our tall poppies', 'The Government wants tall poppies to bloom', and 'academic tall-poppies') shows how words can be exploited as a literary strategy for argumentative purposes. Likewise, the use of the word 'competitor' in a very restricted economic sense (see definition in Table 6.9, Appendix A) throughout "The Knowledge Economy" (ITAG, 1999) is an example of nominalisation via use of a conceptual metaphor. The word 'competitor' amounts to nominalisation because it converts the metaphorical expression of the global political economy (as free market competition) into an entity ('competitor'). Also, its usage by definition excludes those nations which are newly industrialised and fast developing and who compete with New Zealand in the economic sphere. This might also suggest a preference to stay in concert with the powerful neoliberal economies.

Table 6.10 (see Appendix A) shows the non-congruent or metaphorical and literal representation of the knowledge society and economy in the MoRST documents. The predominant use of biological and life-cycle related metaphors such as 'development' and 'evolution' in the wording of the meaning of the knowledge society is problematic. The development metaphor highlights determinism (an imperative that must be addressed) while at the same time obfuscates the role of social agency (the alternative choices that are available). Apart from development, the fire and electricity related metaphors such as 'igniting' and 'switch on' are visible in more recent policy reports of MoRST like the *Igniting the Future* document which signify that we need action on knowledge society. The action is publicised in this document in the form of the literal strategy of Three D's (Define, Design and Deliver)(MoRST, 2000).

Let us turn to some of the definitions of the knowledge society used in the discourse (see Table 6.11 in Appendix A). The actual wording of knowledge society in definitions is considered in relation to the meaning potential and micro-level semantic relations. Wording means how meaning is lexicalised; it is different from meaning potential and

semantic relation, which are features of word meaning (Fairclough, 1992). I have considered them together because aspects in definitions of knowledge society in the text relate both to word meaning and wording dimensions of texts (Table 6.11). As shown in the table, the definitions are of two types when considered in relation to higher level semantic relations (seen in relation to the document as a whole). Firstly, the most common form of higher level semantic relations is the problem-solution type. Problem-solution semantic relations are those that problemtise an issue and offer solutions. Definitions of this type assert the affinity of the author to particular aspects of knowledge society. They are realised as assertions (with high commitment to truth) and predictions (often enunciating what action is required). In contrast, the goal-achievement type of definitions rely on statements of fact, descriptions of processes and outcomes (Fairclough, 2003).

6.3.2.2.1: Rhetorical context of innovation, ICT and globalisation

I will end the section on micro-level analysis with a description of the contextual features of innovation, ICT and globalisation. As we have seen above, these concepts are explicitly or implicitly reflected at all levels of discourse (macro, meso and micro). Tables 6.12-6.14 (see Appendix A) show the purpose and context of usage of these concepts in the discourse.

6.4: Conclusion

The New Zealand knowledge policy aims at achieving a knowledge society by creating favourable internal conditions for change. As the external and internal environments change, the policy changes too. New policy actions are proposed in line with the changing political, economic and social conditions. However, the long-term objective and values underpinning the policy remain the same – to build and enhance a New Zealand economy, politics, environment and society based on knowledge.

The central characteristic of the New Zealand knowledge society discourse is that it is informed by an neoliberal economic ideology and governmental rationality. The discourse of the knowledge society reflects a continuous process of discursive enunciation of the ideology of neoliberalism with varied social consequences. Discursively, neoliberalism manifests as developmental governmentality – a set of economic rationalities that dictate policy. It is developmental in the sense that the ethos

of economic growth and progress and social change still undergird much of policy thinking.

In New Zealand, neoliberalism has softened since the election of Labour-led coalition government in 1999. The hard neoliberalism of the 80s and 90s has given way to the soft neoliberalism from the end of millennium onwards. Two factors have contributed to this change.

Firstly, the hard neoliberalism informing the Rogernomics reforms of the Labour government and subsequently the National governments in the 1990s had been widely attacked in academia and discredited in the public eyes. The Labour-led coalitions in the present decade have sought to address some of the criticisms of the previous policy regimes. However, the Labour agenda has been largely dictated by the New Labour and Third Way philosophy of governance and policymaking emanating from Western Europe, particularly UK. The Third Way philosophy encourages neoliberalism with a human face. This is achieved by means of increasing managerialism in policy administration and corporatisation of the policy institutions, in addition to some new social welfare measures aimed at family and work. Discourse is central to this form of governance as the state tries to balance neoliberal emphasis in the economic sector with its pro-social leanings.

Secondly, the increasing integration of New Zealand into the world economy and rapid technological advances have alerted successive governments to the need to expand the economic base beyond primary sector while keeping a check on the potential technological, social and economic divides in the country. In this endeavour they have chosen to emphasise the potential of the RS&T system for capitalising on knowledge and innovation. Reforms in the RS& T, higher education and economic sectors have been initiated to make New Zealand a knowledge society and economy. The soft neoliberal approach is well suited to this goal, as far as selling the message to the public while simultaneously facilitating the business is concerned. However, the potential for divides of capability still remains with these policies. Also, the knowledge society discourse being heavily weighed in favour of applied scientific and technological knowledge runs the risk of ignoring the contributions of basic knowledge as a societal resource.

The CDA reveals that neoliberal values permeate the New Zealand policy discourse in at least three ways.

Firstly, the ideological influence of the OECD discourse on the New Zealand discourse has been consistently strong over the last ten years. Though labels used by the two have varied over the time period, the underlying structure of the arguments and the emphases placed on particular solutions is similar. New Zealand discourse repeatedly shows a concern for maintaining its standing within OECD ranks.

Secondly, the way in which knowledge is conceptualised in the New Zealand discourse closely mirrors OECD thinking. Depending upon the context of policy documents the wording of the meaning of knowledge changes but its implications remain economistic. Semantically, 'knowledge' has been given a wide meaning potential ranging from, knowledge as a factor of production to knowledge as a resource to be managed, to knowledge as a vehicle for state policy - a broad idea under which a whole disparate set of policy objectives can be achieved. The discursive representation of knowledge as an economic activity, devoid of active social agents is a key feature of neoliberalism as an economic doctrine.

Thirdly, the governance issues emerging from the New Zealand discourse provide evidence for the kind of neoliberalism we encounter in knowledge policy. These include:

(1) An increasing role for the state in the knowledge society. The Labour government is for a greater state intervention to ensure inclusiveness and reflexivity, in contrast to the "hands off" approach of the previous National regimes. This signals a softening from the traditional neoliberal position of lesser government. Whether this leads to greater deliberation in policymaking is yet to be seen but as of now the government is using this greater role to sell the message of the knowledge society to the public with increased vigour.

(2) The managerial and technocratic style of policy administration - a key neoliberal trait - is evident in the New Zealand discourse. The value system that guides policy based on limited knowledge about the knowledge society leads to 'bounded rationality'. Bounded rationality combined with the 'instrumental rationality' prevalent in

bureaucratic institutions leads to a value system where certain values and beliefs come to dominate policy thinking which are different from rationality embedded in the social context. There is a risk of the limited incorporation of views of stakeholders who might have a different point of view that challenges the dominant viewpoint.

(3) The soft neoliberal state seeks to promote and reward those individuals that conform to its knowledge society vision. The New Zealander subject that is valued in the discourse is the one who has appropriate knowledge skills, supports the policy programme on knowledge society, seeks governmental leadership, values RS&T, is ready to change attitudes and embrace the knowledge age. Those who fit in these criteria are seen as winners who should be rewarded. This knowledge-skills-for-all-but-emphasis-on-winners approach is evident in the policy discourse spanning the two governments.

Chapter 7: Case study - Singapore

7.0: Introduction

Singapore or the Lion City (Singa – lion, pura – city) is a city-state which has made remarkable progress in the last two centuries as it has grown from a small fishing village to a country with the highest per capita standard of living in Southeast Asia. Its strategic location as a cross-road of one of the busiest sea and air ports in the world has remained the basis of its economic development. According to Huff, "the basis for the economic development of Singapore was – and for most of its history has remained – geography" (Huff, 1994, p. 7). Singapore lies at the base of the Malay Peninsula and is a junction point for regional and international trade. It connects the Indian Ocean to the Pacific Ocean and occupies a central place in a region that is rapidly developing. In knowledge policy discourse, geographical imperatives such as Singapore's strategic location figure prominently in arguments enunciating the vision for its future.

7.1.0: Macro-level analysis: The order of discourse

The sketch of the developmental history of Singapore over the last two centuries depicts how a port city dependent on its hinterland for trade in staple natural resources such as tin, rubber and petroleum has transformed into a thriving economy which in recent times has started to focus on the service sector as an engine for growth. Human resources have displaced natural resources as Singapore seeks to capitalise on favourable international economic conditions. The economic development of Singapore is no 'miracle' as in other countries in Southeast Asia. It grew because of its strategic location and favourable international economic forces. Huff (1994) argues that before World War II Singapore was considerably developed and there was considerable industrialisation between the two World Wars due to the development of infrastructure oriented towards the processing of natural resources for export. After the Second World War, Singapore continued to rise as a staple port while politically it enjoyed close relations with USA which led to Multinational Corporations (MNCs) establishing production operations in Singapore for export of cheap goods. In the period after 1965 when it became independent Singapore actively promoted an export-oriented industrialisation strategy with support of foreign direct investment (Alten, 1995). By the 1970s manufacturing replaced the port as the key economic sector in the Singapore economy. The rising demand by the west for cheaper goods assembled in places like Singapore was an international economic opportunity which afforded an engine of

growth for Singapore. By 1990 Singapore had established a niche for itself in the export of electronic goods and was ranked as the fifth largest exporter with 6.5 percent of world exports in electronic goods (Huff, 1994). According to Huff, "infrastructural development, government control of the labour market as well of savings, planning effected through efficient government and reliance of foreign multinationals attracted by low cost but highly productive labour, became hallmarks of the Singapore model of economic development from 1967" (1994, p. 37). The Singapore model accords an extensive role to the state in the social and economic sector via mechanisms such as tax incentives, encouraging private local and foreign direct investments, encouraging the import of science and technology from advanced countries and strict civic rules.

7.1.1. Knowledge policy: Timeline and structure

Singapore is a developmental state with high governmental intervention. In relation to knowledge policy, the Singapore government has been promoting knowledge management concepts in the public sector. One feature of the Singapore development model is that policy choices are necessary to maintain high growth in the economy. Singapore has a history of taking advantage of favourable international economic forces. Economic planning carried out by the Economic Planning Committee (EPC) has played a key role in the economic success of Singapore. The success of state intervention has also been due to the long history of one party rule. Political stability provided by the People's Action Party (PAP) has enabled economic planning to be strongly enforced over a long period of time.

Singapore's knowledge policy initiatives can be divided into two types based on the dominant though interrelated discursive foci – ICT-focused information economy initiatives, and development focused knowledge economy initiatives. The former enjoy discursive prominence compared to the latter. Another key difference between the two is that ICT-focused initiatives stem from specialist policy organs of the state with wide-ranging powers to implement change. The development-focused knowledge economy discourse obtained from expert committees specially setup to review social, economic and cultural policy and to re-orient people's mindsets and Singapore's image. The ICT initiatives are addressed largely to the public and private sectors, whereas the development discourse speaks largely to the people or the "Singaporeans".

ICT-focused knowledge policy initiatives in Singapore started seriously with the launch in 1992 by the National Computer Board (NCB) of "IT2000 Vision" for making Singapore an "Intelligent Island" (National Computer Board (NCB), 1992). The genesis of IT2000 lay in the 1985 economic recession, after which the government setup an economic committee to review Singapore's future direction (Teo & Lim, 1998). As Singapore is a city-state the concern was primarily for intelligent urban development with the help of information and communications technologies (Mahizhnan & Yap, 2000). The label "intelligent island" captures the aspiration of Singapore to be an information technology-based city-state. Likewise, it establishes the dominance of the knowledge/information economy viewpoint contra knowledge/information society. In Mahizhnan's view,

> the thrust towards IT in Singapore represents a strategic thrust that will be a determinant factor in its current and future well-being. In the case of Singapore, the economy of the pre-1960s could be characterised as a trading economy, and the economy of the pre-1990s as an industrial economy. What is emerging since the beginning of this decade is an economy that is perhaps best described as an information economy. It is the entry into this information economy that has prompted Singapore's conception of an Intelligent Island (Mahizhnan, 1999, p. 14).

Apart from NCB, Institute of Systems Science (ISS), a national R&D institution based at National University of Singapore played a key role in the conceptualisation of IT2000. Prominent personalities include Michael Yap from NCB and Juzar Motiwalla from ISS. In their view, the aim of IT2000 was to conceptualise ICT projects relating to four strategic objectives: development of Singapore as a global hub; boosting the economy; enhancing capabilities of individuals, and improving quality of life (Motiwalla, Yap, & Ngoh, 1993). National Information Infrastructure (NII) was the key organising concept behind IT2000.

> The purpose of the NII is to promote greater innovative use of information. The concept is established to make it easier for individuals and enterprises to provide information services and exchange of information, bringing Singapore closer to the enjoyment of the full benefits of the Information Age (Motiwalla, Yap, & Ngoh, 1993, p. 29).

IT2000 firmly established the dominance of ICT mentality in Singapore's knowledge policy. Subsequent initiatives too reflect the same tendency. It is not that the hegemony of ICT was uncontested. According to Mahizhnan and Yap (2000), the overwhelming emphasis on ICT in Singapore's policy in the 1990s led to concerns about gaps between

information-rich and the information-poor; intergenerational gaps between old and young; fear of a cultural onslaught of the West and erosion of Singapore's eastern values; fears of a greater governmental control and surveillance, and use of IT to sneakily collect revenues from the public. Further, Mahizhnan argues that despite these fears, a history of relatively debate-free and less confrontational policy environment in Singapore has enabled successive PAP governments to avoid serious debate in parliament. Mahizhnan and Yap attribute the economic success of Singapore to many factors, including:

> an able and agile leadership in government; the relative incorruptibility of that leadership; an efficient and clean civil service; an entrepreneurial and adaptive business community that is made up of both multinational and local corporations; and a hard-working, disciplined and compliant citizenry (Mahizhnan & Yap, 2000, p. 1755).

The policy environment in which IT2000 was conceptualised and implemented reflects a developmental and result-oriented focus of the state. The government was able to put forward the case for building Singapore as an intelligent island as beneficial to the public good and in the strategic national interest.

Recognising the need for greater convergence of IT with telecommunication, NCB was merged with the Telecommunication Authority of Singapore (TAS) to form the Infocomm Development Authority of Singapore (IDA) in 1999. IDA set in motion the Infocomm21 initiative in 2000 – an industry-focused five year programme to build Singapore as a tech-savvy city state in the "New Economy" (Infocomm Development Authority of Singapore (IDA Singapore), 2000b, p. 4). In 2003, IDA started "Connected Singapore" – a "re-visioning" of Infocomm21 (IDA Singapore, 2003, p. 7). The key difference with Infocomm21 was that in Connected Singapore IDA assumed the role of a "master planner" and shifted the focus of Infocomm towards the utilisation of ICT products and services by the people. Also discursively there was greater emphasis in Connected Singapore on new knowledge policy buzzwords such as creativity and innovation. In 2005 IDA introduced a new ten-year plan for Infocomm development titled, "Intelligent Nation 2015 (iN2015)". This master plan is a synthesis of all the development imperatives for Singapore in the next ten years. iN2015 is more detailed than the previous plans as it has reports on wide ranging issues such as broadband, innovation, infrastructure development, enterprise development, digital media, education, health, manufacturing and tourism. According to the iN2015 website (URL:

http://www.in2015.sg/about.html), "iN2015 is the blueprint to navigate Singapore's exhilarating transition into a global city, universally recognised as an enviable synthesis of technology, infrastructure, enterprise and manpower" (Para. 2). Discursively iN2015 is an attempt by IDA to bring together under one master plan wide-ranging reforms in people, public and private sectors.

In addition to infocomm development initiatives, some development-focused initiatives, espousing visions of knowledge economy have been promoted from the late 1990s onwards. In 1997, Singapore21 was launched aimed at harnessing the global knowledge economy and to effect a change in the mindset of Singaporeans in the 21st century (Singapore21 Facilitation Committee, 1997). Whereas IT2000 was motivated by the idea of the information economy, Singapore21 was motivated by the knowledge economy and globalisation. Based on the same approach, the Remaking Singapore initiative was launched in 2003 by the Remaking Singapore Committee under the auspices of Ministry of Community Development and Sports (Remaking Singapore Committee, 2003). In Remaking Singapore the aim of comprehensive value change is reflected in the names of some of the subcommittees, for instance, 'Beyond Condo', 'Beyond Credit Card', 'Beyond Car', 'Beyond Club', and 'Beyond Careers'.

A key development focused policy organisation which has played a key role in recent years is the Economic Review Committee (ERC) which was setup in 2001 as a policy think-tank within the Ministry of Trade and Industry (MoTI) to review current policies and suggest future directions for Singapore economy. The discursive domain of ERC is very wide and its many subcommittees have published reports and strategies relating to the creative industries, innovation, globalisation, competitiveness, science and technology and knowledge-based economy. Some of the strategies relating to the work of ERC include the Creative Industries Development Strategy (2002a); Singapore 2012 The Living Digital Hub (2002b), and Science and Technology 2010. In addition, MoTI is the main policy institution behind promoting the knowledge economy. A key example of this is the publication in 2002 of a special feature article titled, "Mapping Singapore's Knowledge-based Economy" in its quarterly publication "Economic Survey of Singapore" (Ministry of Trade & Industry (MTI Singapore), 2002b).

The timeline (see Table 7.1 in Appendix A) shows an increasing policy consciousness from the late 1990s onwards to create a new Singapore which uses ICT as a vehicle for

the development of a First World economy and society. Knowledge related policy visions span the domains ranging from ICT, economy, S&T and education. In terms of the power and influence of these fields, economy (MTI and ERC) and ICT (Ministry of Information, Communications and the Arts (MICA) and IDA) because of their respective wide niches have been able to dominate bulk of the policy discourse. Even in the knowledge policy hierarchy these fields enjoy prominence (see Figure 7.1 in Appendix B).

Knowledge policy initiatives in Singapore can be divided into four types based on the policy organisations tasked with achieving them. First is the IDA which is a statutory board under MICA and oriented towards ICT related aspects of knowledge policy. Second is the ERC – a policy planning committee within MTI which looks into the knowledge and creative economy aspects of knowledge policy. Third, the Remaking Singapore Committee of the Ministry of National Development is the social counterpart of the ERC and is tasked with reorienting the mindsets of Singaporeans in the 21st century. Fourth is the Singapore21 Facilitation Committee which is a committee of prominent public and private sector individuals coordinated by the Ministry of Defence. Singapore21 initiative reveals a striking feature of Singapore's knowledge policy - that Nexus (formerly the Central National Education Office) a public relations agency affiliated to the Ministry of Defence has been tasked to promote the Singapore21 vision which aims to turn Singapore into a knowledge economy. The predominant role of IDA and ERC in Singapore's knowledge policy is evident in the fact that they have greater regulatory and policymaking powers in infocomm and economic sectors respectively; the last two (Remaking Singapore and Singapore21 Facilitation committees) have a more pronounced public relations role.

7.1.2. Genre

Singapore's discourse shows multiple genre types. Text, speech and audio-visual (material on the Internet) are three types of genre employed in service of knowledge policy discourse. The most prevalent text genre are the policy reports prepared by expert committees in the Ministries. Most policy reports analysed here are of this type. The second text genre is the intermixture of the public relations genre with the policy report genre. The best example of this is the Singapore21 vision report prepared by a "Facilitation Committee" and its message amplified by the Nexus – the Public Relations

arm of the Ministry of Defence. A third type of genre is the published text of the Prime Minister's speech which promoted the slogan "Thinking Schools, Learning Nation". Though the audio-visual genre is not covered in this research, it is interesting to note how in some Asia-Pacific countries like Korea, Japan, Singapore and to a certain extent New Zealand, sophisticated audio-visual presentations of ICT-related policies have a prominent place in their websites. In the case of Singapore, Nexus has prepared logos, car stickers, computer screensavers, merchandise, videos, pamphlets and posters for the Singapore21 website as part of its "national education" campaign (Figure 7.2 in Appendix B). This is an example of the genre-mixture which Fairclough (2003) refers to, where the boundaries between distinct genres such as public relations and policy reports get blurred.

7.1.3. Discourse

The results of Leximancer for Singapore reveal the presence of politics, culture, geography, technology and economy-related concepts. Economic development and technological progress are the key concerns of the Singapore discourse. Of the twenty top concepts shown in Table 7.2 (see Appendix A), at least six are strongly semantically related to development. They are: 'development', 'industry', ''economic', 'companies', 'business' and 'growth'. At least four – 'Infocomm', 'technology', 'R&D' and 'research' – are semantically-related to technological progress. The remaining ten concepts concern politics (namely 'Singapore', 'Government', 'Services'' and 'Public'), culture ('Singaporeans', 'Creative', 'People' and 'Arts'), and geography ('Global' and 'local'). The politics, culture and geography cluster can equally be seen as falling in the semantic domains of economic and technological development. In the Leximancer concept map (see Figure 7.3 in Appendix B) most of these concepts are located near the concepts from economy and technology clusters. The only exceptions are two culture-related concepts – 'Singaporeans' and 'People' – which are located in the bottom of the map. Locational nearness on the map also signifies closer semantic and argumentative relationship. In terms of the connectivity of the concepts, dominant concepts such as 'Singapore' and 'development' are connected to most other concepts. The geographical distribution of concepts on the map shows that most are concentrated in the middle section (centre and centre-right) of the map. Prominent concepts in this densely populated agglomeration are shown in Table 7.3 (see Appendix A). Concepts in the centre and centre-right parts of the map being predominantly economic and technology-

related help in explaining the kind of issues that are raised in this context. The discourse centres on the core theme of the imperative of adopting new technologies in a knowledge-based economy. Concepts such as 'research', 'innovation', 'science', 'education', 'technology', 'digital media' occur alongside 'development', 'business', 'capital', 'market', 'financial', 'companies' which suggests a close semantic affinity between them. The presence of the concepts such as 'local, 'Singapore', 'global', 'Asia-Pacific', 'national' and 'international' suggests that economic and technological progress at national level is somehow linked to international, regional and global levels. The agglomeration category of 'knowledge economy' in the centre-right section of the map (see Table 7.3 in Appendix A) shows a close relationship between knowledge and culture related concepts. Culture concepts such as 'art', 'creative' and 'cultural' are clustered along with 'knowledge', 'knowledge economy', 'knowledge-based industries', 'new economy' and 'creative economy'. Concept clusters in other areas of the map include IT-related visions (Bottom Left), Infocomm (Top Left), Society (Bottom Right) and R&D (Top Right). Table 3 shows that five out of the six concept clusters on the map relate to economy and technology (especially ICT), whereas only one cluster can be identified as solely society-oriented. The map indicates that the discourse is biased towards economic and technological arguments for achieving a knowledge society.

7.1.4. Outstanding discourse feature: Location, location, location.

Singapore's knowledge policy order of discourse reveals a change of attitude about the influence of geography or space on development. While a deeply ingrained faith in the dictum, "geography is destiny" – that Singapore's lack of geographical resources cannot be addressed – still persists, increasingly the tone is upbeat about the potential of ICTs and globalisation to make geographical resource constraints obsolete. At this juncture when Asia-Pacific economies are developing rapidly, location is one of Singapore's strongest assets. Its location has played a great role in the way it has come to be seen as an ICT-savvy regional hub and a political ally of the west. For example, many MNC's have regional bases in Singapore; it is highly developed; it has highly developed technological infrastructure, and; it enjoys good connectivity and trade relations with most regions of the world. As the world system becomes more economically and geographically integrated, countries look inward for upgrading development and outward for markets. Likewise, while domestically Singapore seeks to enhance

development by focusing on ICT infrastructure, human and social capital, and empowering public and private sectors; internationally, Singapore seeks to maintain and enhance its regional hub status in Asia-Pacific by free trade agreements, export of services, education, tourism and travel and so on. Location has become a key discursive point for the knowledge and information economy arguments in Singapore.

7.1.5. Style

Singapore is one of the world's most disciplined societies in terms of demands for civic discipline. Singapore's penalties and punishments on graffiti and tagging are considered extreme by most advanced countries. It is little wonder that individuals have attracted a lot of attention in the knowledge policy discourse. This fact is borne out by the significance of the concept 'Singaporeans' in the policy documents. A prominent feature of the usage of the term 'Singaporeans' is its relationships with elements of neoliberalism. In the new Singapore of neoliberal economic regime, the relationship of state with its citizens assumes even greater importance. The public are required to support neoliberal policies as a duty to make Singapore economically prosperous and a key actor in Southeast Asia. The discourse attempts to shape the identity of the individuals congruent with the policy vision. The public is exhorted to share and help shape the future vision of Singapore.

The "Singapore 21" and "Remaking Singapore" initiatives contain numerous references to the term 'Singaporeans'. The Singapore 21 report of 1997 was the first most enthusiastic attempt at identifying the individual with the knowledge economy vision. The first chapter of the Singapore 21 document exhorts the public as follows:

> A new century, a new millennium. How new will Singapore be? How new should it be? How new must it be? These are important questions. They are questions not only for the Government, but for all Singaporeans. Like our founding generation of citizens, we must all put on our thinking caps together to find answers that will help make the Singapore of the 21st century the kind of home we want, for ourselves and our children (Singapore21 Facilitation Committee, 1997, p. 8).

Singapore 21 makes it clear that nothing less than a complete participation of the public is required in the knowledge economy. A good example of direct public appeal is the use of car stickers and decal prints shown in Figure 7.2 (see Appendix B). It is

interesting to note that the knowledge economy is postulated in terms of IT and networking and that,

> Singapore has no choice but to join the network. The nations that can ride the fast-moving waves of IT are the ones that will succeed. All Singaporeans will need to be prepared for the ride. It will be scary for some, exhilarating for others, but necessary for all (Singapore21 Facilitation Committee, 1997, p. 9).

Likewise, Remaking Singapore (Remaking Singapore Committee, 2003) aims to address the social, cultural and political challenges to Singapore in the new millennium. The document argues that the task of remaking Singapore involves remaking Singaporeans – "to remake Singaporean mindsets from one of expectation to one of aspiration" (p. 12).

> Expectation-oriented Singaporeans are passive and dependent on the system to deliver and measure their success. Aspiration-oriented Singaporeans drive themselves to achieve success, and are prepared to go beyond the comfort zone offered by a familiar system; …. Aspiration-driven Singaporeans will increase the dynamism of Singapore society. But they are also less likely to look to the government to improve their well-being. In such a situation, the relationship between the government and people will necessarily be reshaped. The government will play a less direct role in determining the well-being of Singaporeans, focusing instead on creating opportunities and facilitating the efforts of aspiration-driven Singaporeans to achieve success themselves. At the same time, some fundamentals of the relationship will remain: decisive government action, close people-government cooperation, trust, and open communication channels (Remaking Singapore Committee, 2003, p. 13).

Remaking Singaporeans therefore involves the rollback of the state in certain crucial areas of social policy – a key neoliberal prescription driven by the need to cut state expenditure in the social domain to hold the individual responsible for their success and failure.

From an economic policy perspective, the reports of ERC have noted the need for changed mindsets of Singaporeans in the knowledge economy. As shown on Map 1 above, concepts such as creativity and entrepreneurship repeatedly co-occur with knowledge economy. The 2003 report of ERC, "New Challenges, Fresh Goals" frames the role of Singaporeans in knowledge economy as follows:

> We must upgrade ourselves and make Singapore a knowledge economy powered by innovation, creativity and entrepreneurship. Apart from knowledge and technical skills, Singaporeans need the right mindset to thrive in an environment of rapid and unpredictable change. In particular, we need to nurture

> the spirit of entrepreneurship and creativity (Economic Review Committee (ERC), 2003, p. 10).

Further, it maintains the same line of argument in reference to social policies by arguing for minimising people's dependency on the State. "An individual's success must depend on his own efforts and abilities, rather than on handouts from the State" (p. 11). By making economic success the sole criteria for success in the knowledge economy this report is able to present arguments towards greater support for big and medium-sized business and foreign multinationals willing to setup operations in Singapore.

If the emphasis in social and economic policies has been towards remaking Singaporeans, the discourse of ICT policy (exemplified by the iN2015 vision of IDA) has talked of "retooling Singaporeans" (IDA Singapore, 2006, p. 34). iN2015 is the latest in a long line of infocomm-centred initiatives to transform Singaporeans lives and businesses. The aim of retooling Singaporeans requires informing them that ICT is crucial in the new millennium; that it matters in all spheres of life, and that it is an imperative in determining success and failure in a globalised world. According to Infocomm 21 – a five year plan to improve Singaporeans quality of life via infocomm, "Singaporeans will have to 'think global, act local', move at 'Internet speed' and compress 'time-to-market'" (IDA Singapore, 2000a, p. 5). Infocomm 21 adopted "Singaporeans Online (Dot-coming the people sector)" thrust area as it sought to become by 2005 one of the top five "infocomm-savvy societies in the world" (p. 6). The Infocomm 21 plan was aimed at promoting IT infrastructure creation and usage among the populace. The iN2015 plan also envisions a ubiquity of IT in all spheres of life. The iN2015 policymakers, "envisaged infocomm becoming even more accessible to everyone – to work, live, learn and play with" (IDA Singapore, 2006, p. 2). Such a vision required that Singaporeans must be co-opted in to ensure the development of an "inclusive digital society" which will further ensure the success of neoliberal knowledge economy policies.

We can see that the role accorded to the Singaporean in the policy discourse is one of a consumer of technological knowledge, services and products. An identity as a consumer stands to benefit him/her economically while reducing his/her dependency upon the state. Socially, the Singaporean is supposed to be a responsible citizen who in addition to being responsible for self, accepts the roles and responsibilities given to him/her by the state. The responsibility of being an IT-savvy being is one of the most crucial in

today's world. Singapore 21 reflects on what a Singaporean in 21st century looks like when it argues that,

> The Singaporean of the 21st century will be one who is comfortable living and working abroad, yet retains a strong emotional attachment to home …. Singapore, for all its constraints in size and resources, will offer him the best "total package" that will make this a good home – a good quality of life, a secure and stable place to bring up his children, a commitment to meritocracy and multi-racialism, and above all, a stake in a country he can call his own – which will rival life anywhere else in the world. Singapore will, in short, be his "best home".

7.2.0: Meso-level analysis

7.2.1. Interdiscursivity

Two types of interdiscursive influences are very strong in the argumentation of Singapore's knowledge policy discourse. They are – geo-economic determinism and technological knowledge (specifically infocomm) centred solutions. Geo-economic determinism here means the usage of a combination of geographical and economic factors in justifying a policy direction. Two features of Singapore's policy context bear this out – its economic success, and the use of public relations media to condition the people about what is required of them to maximise the economic benefits of Singapore's strategic location. Interdiscursive influences of the geo-economic and technological knowledge discourses are mediated through related neoliberal discourses of technological and economic globalisation, innovation and competitiveness, creative economy, and knowledge management. The arguments from these discourses combine to glue together the various strands of Singapore's knowledge society discourse. Interdiscursive chains can be observed where a discourse such as globalisation is linked to multiple discourses such as innovation, creativity, competitiveness, knowledge management and human capital. In Table 7.4 (see Appendix A), such triadic relationships can be seen among discourses. Discourse A is linked to discourse B but each of these is also related to discourse C. For instance, the globalisation discourse is invoked both in relation to the geo-economic as well as the technological knowledge discourse. In relation to the geo-economic influences on Singapore of globalisation, factors such as the strategic location of Singapore, its status as a global and regional focal point, its contiguity to nations severely impacted by the Asian Financial Crisis, the rise of China and China, the spread of SARS and the post-9/11 terrorism fears, figure at

different places in the discourse. In addition linkages of globalisation can also be found where geo-economic arguments intersect with discourses like innovation, human capital and so on. Likewise, the globalisation discourse apart from being invoked as an imperative in the technological knowledge discourse is also interdiscursively manifested in places where technological knowledge arguments intersect with innovation, creativity and human capital discourses. Table 7.4 (see Appendix A) gives some examples of this kind of chained interdiscursivity at work.

As can be seen in Figure 7.3 (see Appendix B), geography plays a crucial role in the construction of the Singapore discourse. Geographical concepts such as 'island', 'polis' 'city', 'global;', and 'local' are quite prominent in the discourse. The fact that Singapore is a small city state located on an island plays an important interdiscursive role in mediating the kind of policies it should have for graduating to a knowledge society. The geographical constraints and strengths always figure in one shape or another in the argumentation. For example, the use of the "Intelligent Island" metaphor in the IT2000 document can be seen as an attempt to expand the boundaries of Singapore by using new ICTs.

> The Vision of the Intelligent Island knows no boundaries. … The nationwide infrastructure has the ability to cross geographical and cultural boundaries so that Singaporeans will be able to see and talk to people around the globe -- from their home or office. People residing abroad, especially Singaporeans and friends of Singapore, will be able to access the nationwide information infrastructure to keep in touch with people and events in Singapore (NCB, n.d. para. 4).

Likewise the use of the term 'polis' in naming of policy initiatives relating to the S&T policy such as Fusionpolis and Biopolis (MTI Singapore, 2006) also suggests that geography influences policy thinking. Similarly, other vision statements also include usage of geographical terms such as 'hub' and 'city', as in 'New Asia Creative Hub', 'creative hub', 'digital hub', 'infocomm hub', 'global hub', 'global city' (see Table 7.5 in Appendix A). Such descriptors convey a sense that Singapore's economic and technological progress is closely dependent on how it leverages its strategic location with regional and global level factors (see Table 7.6 in Appendix A). Closely linked to geo-economic determinism is the deterministic emphasis on technology-centred solutions. Here too, the discourse invokes the need for keeping abreast of global trends in technology to compete in the world economy. Table 7.7 (in Appendix A) shows text samples where technology-centred solutions have been interdiscursively invoked.

7.2.2. Intertextuality

In this section I describe the two types of intertextuality commonly found in political documents – conceptual and political. Further, both these types rely on internal (domestic) and external (international) sources of intertextuality. In terms of conceptual intertextuality, the labels 'information society' and 'knowledge society' *per se* have not been used anywhere. However, World Bank and OECD terminology such as 'New Economy' and 'Knowledge Economy' seem to be the more preferred labels as they figure in many documents. Labels such as iN2015, Intelligent Nation, Intelligent Island, Singapore 2012 and Singapore 21 suggest a preference for terminology reflecting the uniqueness of Singapore. A key document highlighting conceptual and political intertextuality in Singapore discourse is the special feature article, "Mapping Singapore's Knowledge-based Economy", prepared as part of MTI's quarterly publication, "Economic Survey of Singapore" (MTI Singapore, 2002b). This document has been authored by a consultant (Prof. Toh Mun Heng) and two senior economists from MTI's Economics Division. Conceptually the article uses the definition of knowledge economy used by the APEC Economic Committee, and a schematic representation of knowledge economy capabilities published in the World Bank's (1999) World Development Report is used to elaborate on the definition. The article proposes a list of knowledge economy indicators based on OECD, International Labour Organisation, US Patent Office, Global Economic Forum, Infocomm Development Authority of Singapore and World Competitiveness Yearbook data. Based on this list, the article compares Singapore's record as a knowledge economy with the OECD and Newly Industrialising Economies (NIE). This article is an example of intertextual chaining of neoliberal sources of knowledge – international institutions championing the knowledge economy share common beliefs which percolate to domestic policy guidance institutions as conventional wisdom through officially funded policy research.

Internal intertextual features of other documents can be classed on the basis of the policy strategy and domain. Documents from the same strategy or domain are more likely to include earlier textual sources from the same strategy or domain. However, strategies and policy domains which are more central to the discourse as a whole are represented in other documents as well. For example, the data pertaining to ICTs from IDA documents is intertextually invoked in ERC strategy documents such as Singapore

2012. Also, arguments from the ERC discourse form an important part of Ministry of Community Development, Youth and Sports' (MCDS) Remake Singapore campaign. External intertextual relations in the discourse include allusions to the work of OECD, APEC and ASEAN. A particular source of external political intertextuality is the allusion to the International Institute for Management Development's (IMD) yearly World Competitiveness Report and the World Economic Forum's (WEF) Global Competitiveness Report. Starting from NCB's IT 2000 report (1992), many documents have pointed out Singapore's consistently high rank in the World Competitiveness Yearbook of the IMD. In 2000 and 2005, Singapore ranked fourth and third respectively. Likewise, WEF ranked Singapore as the seventh most competitive economy in the world in 2004-2004 and sixth in 2005-2006. The quotation of these high ranks exists in a self-congratulatory tone along with a reminder that more needs to be done to maintain this high rank. Since international institutions like WEF and IMD always encourage greater free-marketisation and liberalisation, the motivation for including such rankings in the documents can be called into question.

7.3.0: Micro-level analysis

7.3.1. The Construction of social identity: Modality of futurism

Futurism is a key feature of the knowledge society discourse worldwide. At least in the academic discourse it can be explained by the fact that groundbreaking theories in this area, such as Bell's post-industrial society thesis, were exercises in social forecasting. The trend of peering into the future has weakened in the social sciences but forecasting persists as a technique in policy analysis. The prefaces and foreword sections of the policy report genre are a rich source of beliefs of the policy elite. Often hyperbolic in character, prefaces and forewords represent one important source of value judgements and beliefs of policymakers regarding the plausibility, necessity and actuality of policy issues.

Though not all the documents under study have a preface or foreword section, some of the important ones do. iN2015, Singapore 21 and S&T Plan 2010 are among the eight documents with either a preface or foreword, or both. In addition to these sources, some documents have introductory sections beginning with letters and messages from policy elites. These too will be included as data for analysing modality. Table 7.8 (see

Appendix A) shows text samples from the Singapore discourse showing modality of futurism. In the text samples, both deontic (author's commitment to realisation of his/her propositions), as well as epistemic (author's certainty in the truth potential of his/her belief) modality can be observed. The future can be represented by clauses referring to concrete or abstract time or by metaphors.

7.3.2.0. The construction of social relations

'Word-meaning' and 'wording of meaning' are two tools among others used in CDA to analyse the construction of social relations, that is, how social relations in terms of ideas, concepts and beliefs are manifested in the text. I start by analysing the meaning potential of the term 'knowledge' as used in the policy labels prevalent in the Singapore documents. The labelling preferences of the various texts have already been described above. Thereafter, I will focus on the multiple ways a meaning is worded and how the terms 'knowledge', 'ICT', 'globalisation' and 'innovation' have been treated in the discourse. The focus here is on the modification, and concretisation or abstraction of meaning by use of literal strategies (for example, adjectives) and other lexical items.

7.3.2.1. The Meaning of 'Knowledge Economy' in the Singapore discourse

As pointed out above, despite the preference for indigenous labels for policy strategies in Singapore, the ideology of knowledge economy underpins much of the discourse. The label 'knowledge society' is conspicuous by its absence. Therefore, I will analyse the definitions of knowledge economy given in the documents. "Singapore 21" (Singapore21 Facilitation Committee, 1997) was the first document to mention Knowledge-Based Economy (KBE). According to Singapore 21,

> "KBE". This will be one of the most important acronyms of the next century. The "knowledge-based economy" is one in which information and knowledge, rather than material resources, drive activities. Knowledge knows no boundaries. In the future, it is no longer individual countries which are "knowledge economies". The whole world will be one big "knowledge economy", with countries linked to one another via fast growing information technology (Singapore21 Facilitation Committee, 1997, p. 9).

In the above sample, knowledge economy has been clearly identified as a new phase of development where knowledge and information (which have not been defined) are the

key drivers. Importantly in the second, third and fourth sentence, the main distinguishing characteristic of the knowledge economy is its construction as a global phenomena driven by ICTs. Later in the document, success in the knowledge economy is linked to "people who have ideas, enterprise and a spirit of curiosity and continual learning" (p. 36), and "social cohesion, political stability and the collective will, values and attitudes – the "heartware" that determines whether this knowledge can be harnessed for the good of all" (p. 55). The combined import of the meaning of knowledge economy given in Singapore 21 reflects four concepts which have been employed in neoliberal argumentation – globalisation, ICT, human capital and social capital.

The document, "*Mapping Singapore's Knowledge-based Economy*" (MTI Singapore, 2002b), deals at length with the knowledge economy. Recognising that there is no authoritative definition of the knowledge economy, it postulates that "it embodies the ability to constantly innovate through accessing, processing, using and creating knowledge" (MTI Singapore, 2002b, p. 57). Here too there is no clarification about what knowledge is? However, its significance for economic development is recognised explicitly as shown by the following,

> As the Singapore economy develops, it can no longer rely on the accumulation of capital and labour to sustain economic growth. Singapore needs to further develop its KBE, deriving its growth from the production, dissemination and application of knowledge (MTI Singapore, 2002b, p. 57).

The meaning of knowledge economy is predicated on three economic concepts – knowledge production, knowledge dissemination and knowledge application (See Figure 7.4 in Appendix B). The meaning of knowledge in the three concepts is based on technological knowledge. For example, knowledge production involves technology creation and transfer; knowledge dissemination involves usage of ICTs to create a "network effect" (p. 58), and; knowledge application entails constant innovation in production and, consumption of new goods and services by society. The economic benefits from applying new technological knowledge will provide feedback for new knowledge production. This virtuous cycle of knowledge production, dissemination and application is claimed to be an ideal recipe for continued technological and economic development.

Other key themes argumentatively related to the knowledge economy include:

(1) Competitiveness (ERC, 2003).

(2) Creative industries (ERC, 2002a).

(3) "innovation, creativity and entrepreneurship" (ERC, 2003).

(4) Infocomm as a key enabler in KBE (IDA Singapore, 2006).

(5) Media and entertainment industry (ERC, 2002a).

(6) People: e-learning and education (IDA Singapore, 2006), human and intellectual capital, and R&D capabilities (MTI Singapore, 2006)

(7) e-government (IDA Singapore, 2006).

(8) Regional economic competition (ERC, 2003)

(9) Innovation and business growth in Small and Medium-sized Enterprises (SME's) (MTI Singapore, 2006).

(10) Global knowledge economy (MTI Singapore, 2006).

The above linkages and definitions of the knowledge economy point to a multifaceted meaning of knowledge economy. Knowledge economy is related to a myriad of factors including S&T knowledge and innovation, globalisation, regional and global economic competition, human capital, business, ICTs and governance. When compared to other countries in Asia-Pacific there is a greater emphasis on concepts such as creativity, creative industries, and media and entertainment industry. This can be explained by the desire of Singapore's policymakers to see it developing as a hub for such industries. The hub-mentality is deeply ingrained in Singapore's policy psyche. It is found in most policy documents as a developmental imperative – that the success of Singapore depends on its central position in Asia-Pacific and a crossroads of the world. If it is able to portray itself as a successful media, S&T, art and culture, and infocomm hub, then it would have ensured itself success in the knowledge economy.

7.3.2.2.0. The Wording of meanings

In this section, the wording of meaning of the concepts of knowledge, globalisation, innovation and ICT are covered. The evidence that was gleaned from collocating phrases, words and adjectives is discussed below. The features of collocated words and phrases occurring before or after the concept in question have been identified. The word counts for each concept occurrence as calculated by Adobe Acrobat Index are also given. As the data pertaining to wording of meaning is quite large, it is not possible to

analyse each and every collocational phrase, word or adjective. However, description of their characteristic features helps in understanding the significance of the wording to their meaning.

7.3.2.2.1. Knowledge

Word Count: 500

The word 'knowledge' exists in all the Singapore documents under analysis. A key feature in wording of knowledge in Singapore's policy discourse is the evidence of nominalisations. According to Fairclough, nominalisations are a type of

> grammatical metaphor which represents processes as entities by transforming clauses into a type of noun. For instance, 'employees produce steel' is a non-metaphorical representation of a process, whereas 'steel production' is metaphorical, nominalised representation (Fairclough, 2003, p. 220).

Nominalisation creates new lexical items. Nominalisation also helps in generalising and are in Fairclough's view irreducible resource in academic and policy discourse. For example in the Economic Survey of Singapore (ESS) reports (MTI Singapore, 2002a, 2002b, 2003), nominalisations such as 'knowledge acquisition', 'knowledge creation', 'knowledge production', 'knowledge application', 'knowledge dissemination', 'knowledge-intensive', 'knowledge-based', and 'knowledge capabilities' help in generalising and suppress difference. The differences between who produces knowledge and who doesn't, who applies knowledge and who doesn't, etc. are hidden by such nominalisations. Though these nominalisations originate in academic discourse relating to economics and knowledge management disciplines, their transplantation into policy discourse results in masking of agency and obfuscation of responsibility of the state.

The meaning of knowledge is also impacted by contextual usage. In the Singapore discourse, multiple meanings of knowledge can be seen. Firstly, collocating words and phrases present knowledge as an activity and a process. For example in the quote below taken from the ESS article on knowledge economy (MTI Singapore, 2002b), the meaning of knowledge as an activity comes to the fore where knowledge creation, dissemination and application are activities which drive the economy.

> We need to quantify how knowledge <u>activities</u> are benefiting the economy, as these <u>activities evolve into</u> "the main driver of growth, wealth creation and employment across all industries" (MTI Singapore, 2002b, p. 57).

Knowledge creation, dissemination and application can also be seen as sub-processes in a larger process of change in a knowledge economy. The discursive appropriation of the meaning of knowledge by economic ideas results in the solidification of an economic conception of knowledge in such policy discourse. Other words which denote knowledge as an economics-driven activity and process in the wider Singapore discourse include, 'new', 'increasingly', converging', 'research-driven knowledge-intensive economy' (IDA Singapore, 2006, p. 35), level', 'more', 'latest', 'dynamic' and so on.

Secondly, knowledge has been presented as a present or a desired future state of being by collocational usage of words such as 'competence', 'skills', 'knowledge of infocomm developments' (IDA Singapore, 2006, p. 11), 'complete', 'up-to-date', 'knowledge of', 'knowledge in' among others. Thirdly, there is evidence of a distinction between types of knowledge as in 'technical', technological', medical', 'infocomm', 'global', 'local', and 'developed'.

The multiple meanings of knowledge are partly the result of knowledge being a word that fits into a lot of domains and contexts. Knowledge can be used in a general sense as a substitute for words such as 'information', 'data', 'skills', 'belief', 'competence'; and it can also be used in a specific technical sense as in the various nominalisations and types of knowledge. Singapore documents show both these tendencies in their wording of the meaning of knowledge.

7.3.2.2.2.Globalisation

Word count: Globalisation = 44; Globalization = 2

The concept of globalisation occurs most actively in the ERC and IDA documents. Globalisation is shown as an enabling process which drives the world economy. It is important for Singapore because it is one of an assemblage of factors which it faces going forward. The ERC document, "New Challenges, Fresh Goals" (ERC, 2003) attaches significance to globalisation considering factors such as regional and global economic integration, rapid technological advances, global threats and opportunities, competition for markets and talent, and the need to link with the developed economies.

IDA's iN2015 documents postulate globalisation with the increase in outsourcing, tourism and travel, and wave of economic liberalisation across the world.

The key features in the wording of globalisation in the Singapore discourse are:

(1) Collocation of globalisation as a process with words suggesting activity and purpose. Words and phrases such as 'embrace', 'process', 'demand', 'change', 'rapid', 'increasing', 'continuing', 'forces', 'challenges', and so on are used in sentences and clauses containing globalisation.
(2) Globalisation is used alongside neoliberal concepts such as 'economic liberalisation', 'market' and 'competition'.
(3) Globalisation is used in context of regional and global political issues such as terrorism and SARS.
(4) Globalisation is denoted as a force driving technological innovation, creativity, tourism and travel, market expansion, and competition for markets and human capital.

7.3.2.2.3. ICT

Word count: ICT = 249; IT = 252; Infocomm = 2107; Infocommunications = 6; Info-communications = 15.

ICT (and similar meaning concepts IT, Infocomm, Infocommunications, and Info-communications) are dominant concepts in the Singapore discourse. The locally preferred variant for ICT is 'infocomm' which is a combination of two words *info*rmation and *comm*unications. Infocommunications and info-communications have also been used in some places. Infocomm, IT and ICT are hyponyms for a range of activities including telecommunications, computing, digital media, bioinformatics and networking. The meaning of 'infocomm' is not homogenous across the discourse. Though generally infocomm refers to ICTs, in the iN2015 reports the term "infocomm industry" has been used with a specific connotation:

> enterprises that engage in the following main categories of activities (a) wholesale of infocomm products such as telecommunication equipment; computer equipment, hardware and software; office equipment etc; (b) retail sale of infocomm products; (c) telecommunication services; (d) computer and IT services; and (e) content services. Activities pertaining to the manufacturing of infocomm products are not included (IDA Singapore, 2006, p. 13).

This definition of ‘infocomm industry’ focused solely on commercialisation of infocomm products and services and de-links their manufacturing (knowledge creation) aspects from knowledge dissemination and application. Infocomm, according to iN2015 has three dimensions – industry, infrastructure and talent. Manufacturing, which is a key element of the product chain, has been excluded and instead emphasis has been placed on service aspects. This may be due to the perceived importance in the knowledge economy of commercialisation of infocomm products and services in contrast to the manufacturing which was of central importance in the industrial economy.

Argumentatively, ICT, like globalisation, is seen as an enabler of the knowledge economy. The purpose of ICT is to create a ICT-enabled society and economy characterised by its adoption and use by businesses, governmental organisation and the public. ICT concepts are collocated with words denoting time (‘age’, ‘era’, today’) and space (‘global’, ‘Singapore’, ‘hub’, ‘city’). Also there are repeated references to ICT as an activity (‘infrastructure’, ‘manpower’, ‘system’, ‘device’, ‘business’, ‘trade’, ‘competency’, ‘professionals’, ‘usage’). Discursive emphasis is accorded to utilisation and exploitation of opportunities stemming from the ICT revolution. ICT concepts are most commonly invoked in relation to the ICT-sector specific strategies such as IT2000, Infocomm 21, and iN2015. Other strategies such as S&T 2010, Remaking Singapore, Singapore 21, Creative Industries development Strategy also take note of the need to create synergies between (1) ICT and other new technologies such as biotechnology; (2) ICT and manufacturing; (3) ICT and financial services, and; (4) ICT and media, arts and creative industries. The Infocomm Development Authority (IDA) of Singapore is often an object of discussion in its interdiscursive referencing in documents from other domains.

7.3.2.2.4. Innovation

Word Count: Innovation = 400; innovative = 228

The noun ‘innovation’ and the adjective ‘innovative’ have a strong discursive presence in the more recent policy strategies. Innovation, along with internationalisation and integration, forms the backbone of the iN2015 strategy (see Figure 7.5 in Appendix B).

Increasing Singapore’s capacity to innovate technologies, products and services lies at the core of the meaning of innovation. Innovation assumes increased importance in light

of Singapore's thrust towards economic liberalisation, globalisation and technological advancement. Innovation is at the core of the virtuous knowledge cycle of knowledge creation, dissemination and application. According to iN2015 report,

> In this globalised economy, Singapore, with its limited talent and other resources, will not just concentrate on activities such as system integration or sales and marketing. Instead, its infocomm businesses and professionals will stride up the innovation curve, to provide new intellectual property and solutions (IDA Singapore, 2006, p. 13).

Grammatically innovation is a nominalisation. Innovation means to create something new. The usage of innovation as a nominalisation obfuscates agency (who innovates, who doesn't) and aim (what constitutes innovation, what isn't). By emphasising technological, particularly infocomm-focused innovation, many other kinds of innovation get relegated as not important. In the Singapore documents, innovation is collocated with words and phrases connoting activity and purpose ('foster', 'create', 'develop', 'allow', 'realise', 'through', 'support', 'sustain', 'driven', 'nurture', 'promote', 'exploitation', 'successful', 'catalyse', 'spur', etc.). Conceptually, innovation figures alongside words such as 'technology', 'knowledge', 'skills', 'ideas', 'application', 'products', 'services', 'organisational', 'creativity', 'human', etc.. The lexical relationship between technological innovation and knowledge-driven economic development is strong in the Singapore documents. In terms of argumentation, this relationship manifests as a call for greater policy emphasis on innovation fostering activities and domains. Since the wider policy emphasis in Singapore is on the infocomm-based knowledge economy, the meaning of innovation likewise is constrained within the boundaries of infocomm.

7.4: Conclusion

Singapore faces unique challenges to being a knowledge society. It is a small state, located at the crossroads of Asia, heavily dependent on global markets to sustain itself economically. The pressures of being competitive and relevant in the region are particularly severe for Singapore. Singapore is an example of the tendency of developmental states to use state interventionism for not only economic change but also to shape society and politics within their own visions. Singapore has outlined a vision to transform itself from a trade and investment hub of Asia to an innovation driven economy and a "connected" society. The state in Singapore is no different from other

countries in the region such as Malaysia, Korea, Taiwan and Thailand when it comes to the role of the state in development policy. Singapore has been heavily interventionist in economy though still neoliberal economically. Politically, Singapore, though a democracy, has been governed by a single party – the People's Action Party for much of the post-independence period. A lack of opposition has allowed successive governments to enshrine a highly regulative and civic authoritarian state. In 1997 Singapore was negatively impacted by the Asian Financial Crisis but the state was able to control the impacts and emerged relatively unscathed. The Asian Financial Crisis and factors such as increasing globalisation, the technological revolution, and the rise of China have enabled the policy elite to use the levers of the state to restructure the economy and orient the society towards a knowledge society. State intervention in Singapore's knowledge policy is seen in selective targeting of policy sectors. Simultaneously, Singapore is reframing itself as the knowledge, innovation, culture, and financial hub of the region. Politically the state has been able to maintain its heavy intervention in the economic and social life of its citizens. The knowledge economy discourse has enabled the state to reinvigorate itself and continue heavy state intervention by arguing that Singapore needs to excel in knowledge and innovation intensive activities. Considering all these factors, it is unlikely that Singapore will be a free market, in the neoliberal sense, in the near future, and instead the state will continue to exercise tight control over the society and the economy.

Chapter 8: Case study - Malaysia

8.0. Introduction

Malaysia, like Singapore, lies at the crossroads of major trade routes. Malaysia's land boundaries are shared with Indonesia, Brunei and Thailand. Its sea boundaries touch both the Indian and Pacific oceans. Ever since gaining independence from the British, it has grown rapidly economically and implemented social redistributive policies. In spite of affirmative action policies, Malaysia's record in controlling developmental disparities has been mixed. Nevertheless, Malaysia has done quite well in controlling ethnic tensions between Malays, Chinese and Indian ethnic groups. Malaysia's development history reveals a long period of sustained growth and a low level of foreign debt and aid leading to a sense of independence in global affairs. Though initially Malaysia concentrated on the development of the primary and secondary sector, since the 1990s the service sector has been the main area for development policy.

Malaysia is a multiethnic state, politically dominated by ethnic Malays (52% of population). Maintenance of national unity and identity is a key theme of Malaysian politics. The political history of Malaysia shows the significance of the ethnic factor. The Barisan Nasional (BN) is a political coalition dominated by the three main ethnic parties and has ruled Malaysia since independence in 1957. The three ethnicity based parties are the United Malays National Organization (UMNO), the Malaysian Chinese Association (MCA), and the Malaysian Indian Congress (MIC). The person who controls UMNO usually becomes the Prime Minister of Malaysia. Within this diversity, ethnic accommodation has been sought on the basis of affirmative action policies for the Malays and protection of the business interests of the Chinese business community. The Indian community has been successful in the professions. Islam, the religion of the Malays remains the official religion and Malay is the official language.

Observers have variously described Malaysia as an 'ethnic democracy', a 'consociational democracy', or an 'ethnocratic state' where the state plays an expansive role based on ethnicity (Haque, 2003). The rationales behind the affirmative action policies, according to Haque, were:

> (a) guarantee of equal representation of Malays in education and employment through preferential ethnic quotas; (b) eradication of poverty, especially among Malays, through various forms of economic assistance; (c) reduction in economic inequality among the major ethnic groups in terms of income and ownership through special preferences in business and industry; (d)

> enhancement of national identity or nation-building through education, language, and cultural policies; and (e) maintenance of political stability through all these measures adopted to reduce inter-ethnic inequalities and tensions (Haque, 2003, p. 252).

The outcomes of affirmative action policies in Malaysia, according to Haque, are ambiguous. Income inequality including intra-Malay inequality still persists, national unity and identity is still questionable, there are question marks regarding the economic performance, and the nature of democracy, and rising concerns about Malay chauvinism and ethnically-based patronage relations.

The question of inequality is an important one in the policy history of Malaysia. The implementation of the New Economic Policy (NEP) (1971-1990) has been credited with maintaining ethnic peace between the groups (Brown, 2005; Mohamad, 2005). Malaysian policy history points to the salience of binary thinking about inequality. The political discourse has solely focused on inequality between Bumiputera and other communities. It has not focused so much on intra-Malay, intra-Chinese and Intra-Indian inequality, nor has it dealt with spatial inequality. The binarial discourse has persisted even under the National Development Policy (NDP) (1990-2000) which was meant to change the focus from ethnicism to developmentalism (Loh, 2002). Commenting the impact of NEP and NDP on inter-group inequality, Mohamad (2005) observes that,

> Although both policies are meant to provide means of intervention or deregulation in the economic sphere, the implications for the political and social spheres are much more far-reaching. Politically, the approach has clarified Malaysia's model of power-sharing as essentially involving only two critical groups, Malays and Chinese, with the context of their inequality remaining unchanged. Nevertheless, the level of social integration between the two groups has increased as an outcome of the industrialization and urbanization process shaped by Malaysia's version of state capitalism. Although both groups are politically factionalized, there is enough of a critical mass on both sides to converge in sustaining a power-sharing model of governance. The other groups will find it difficult to break this power-base. Other forms of inequality will thus remain unrecognized and untouched by policies (Mohamad, 2005, p. 3).

An important shift accompanying the rise of the discourse of developmentalism was the concentration of power of the Prime Minister, especially during the twenty two years under Mahathir Mohammed's rule (1981-2003). As a result, the parliament has been rendered ineffective in policy debates. The policy structure is so top-heavy that "the political culture of obsequious deference to the prime minister has occasionally resulted in major policy shifts being taken, apparently, on the whim of the prime minister"

(Brown, Ali, & Muda, 2004, p. 8). A corollary of the centralisation of policy power in the executive branch has been that Mahathir was immune from criticism even in the media which was controlled by organisations affiliated to Barisan National.

In addition to centralisation of power, the prime ministership of Mahathir saw Malaysia adopt an activist stance internationally. Mahathir used his good communication skills to often taunt the Western industrialised countries over issues such as governance, trade, democracy, Islam and so on. No doubt part of this was for domestic consumption. Malaysia under Mahathir became a vehement critic of the West and often perceived Western criticism of his rule as interference and imperialist attitude. The following quotation from his book, "A New Deal for Asia" shows how, through his anti-Western commentary, he sought to project himself as a spokesperson for Asia and the developing world.

> It is impossible for our non-Asian foreign detractors to believe that Asian government leaders can be honest at all. If Asian leaders do anything at all for the good of their countries, it must be because they are corrupt and want to help their cronies and their families. Such prejudiced and stereotyped views will, I fear, persist for a long time to come. The people who espouse such views, it must be remembered, are the descendants of the old white-supremacist colonialists. We simply cannot expect justice and fair play for Asians and Africans; we have had to ignore all the prejudice and get on with rebuilding our economies (Mohammed, 1999, p. 3).

Finally, it is important to note here the importance of discourse in legitimising the political culture. Policy discourse is an important resource in political communication as a state seeks to embed its ideologies in the minds of people. In Malaysia the state has also used education for the purpose of political propaganda. Graham Brown (2007) contends that education serves two discursive purposes – (1) as a nation building tool, and; (2) as a tool for promotion of ethnic Malay interests. Students as 'ethnic citizens' are encouraged to uncritically revere "development symbols and unquestioning deference to political leadership" (p. 319). From his analysis of Malaysian education curricula Brown found that education combines a "positive social agenda of inculcating cultural and religious pluralism and tolerance with a political agenda that emphasises loyalty and obedience to the incumbent administration" (p. 327). The concept of ethnic citizen frames Malaysia's unity as under threat, a fact that draws attention to the requirement for Barisan Nasional as the defender of national unity.

In what follows I contextualise the above observations about the political culture of contemporary Malaysia in relation to its knowledge policy.

8.1.0. Macro-level analysis: The order of discourse

Malaysia follows a three-tiered planning model consisting of long, medium and short-term plans (Table 1). From 1971 when long-term planning started, it consisted of the ten-year Outline Perspective Plans (OPP) but since 1990 and coinciding with the Second OPP even longer term visions have been considered as part of long-term planning. Vision 2020 – a twenty year plan (1991-2010) and National Vision Policy (2001-2010) are examples of two such plans. The current Prime Minister, Abdullah Ahmed Badawi has been articulating two new long-term plans – Vision 2057 and National Mission Policy (2006-2020). Malaysia currently is in the third OPP. Starting from 1956, Malaysia has implemented nine five year plans known as Malaysia Plans. Short-term planning exists in the form of annual budgets and interim plans for emergencies such as the Asian Financial Crisis. Table 8.1 shows the three-tiered cascading planning model and the various plans implemented in the post-independence period.

Table 8.1: Three-tiered cascading planning model

Type of Plan	**Plans**
Long Term Planning	1. Vision 2020, 1991-2020 2. First Outline Perspective Plan, 1971-1990 3. Second Outline Perspective Plan, 1991-2000 4. Third Outline Perspective Plan , 2001-2010 5. National Vision Policy, 2001-2010 6. National Mission Policy, 2006-2020 7. Vision 2057
Medium Term Planning	1. Nine Five-year development plans, such as the Eighth Malaysia Plan (2001-2005), starting from the First Malaya Plan 1956-1960 2. Mid-term review (MTR) of the five-year Plans
Short Term Planning	1. Annual Budget.

Source: Adapted from Development Planning in Malaysia (Economic Planning Unit (EPU), 2004, p. 4).

The study of Malaysian economic policy has been largely approached from the perspective of the long-term policy shifts. Malaysia's post-colonial policy history can

be divided into four phases: Laissez-faire policy (1956-1971), New Economic Policy (1971-1990), National Development Policy (1990-2000), and National Vision Policy (2001-2010) (see Table 8.2 in Appendix A). Malaysian policy discourse has shifted from laissez faire in 1950s and 60s, to ethnicism under NEP, to developmentalism a la East Asian economies, to the statist neoliberal knowledge economy discourse. In all these phases the ethnic factor has been a core social feature of Malaysia's political economy. This underscores the fact that Malay politics has dominated the horizon of policy practice in Malaysia. Table 8.2 shows the major landmarks in Malaysia's policy history and their main discursive stances. It is notable that Malaysian economic policy has mirrored the general policy trends in South East Asia, including import substituted industrialisation and infrastructure development in 1950s and 60s, rising statist developmentalism combined with increasing liberalisation and privatisation in the 1970s to the 1990s, and finally an increasing emphasis on human capital, ICT, Foreign Direct Investment, and innovation in the new millennium as enablers of a knowledge economy.

Currently, Malaysia follows a form of state capitalism characterised by an enhanced role of the state in development policy intervention. Observers have even described Malaysia as a case of 'crony capitalism' (White, 2004; Yoshihara, 1988). Crony capitalism involves political and bureaucratic patronage of private-sector business people especially involving protection from competition, provision of government subsidies and licenses. Crony capitalism grew out of NEP whereby (1) many Chinese businesses developed close associations with Malay political and bureaucratic elites to maintain business; and (2) more governmental support for Malay initiatives led to many elites becoming involved in business (White, 2004). Crony capitalism and 'money politics' persisted even into the NDP period when it was further entrenched under Mahathir (Gomez & Jomo., 1997).

Barely two months into the post-NEP phase, Mahathir spelled out his 'Vision 2020' (Mohammed, 1991) – a plan for industrialisation, growth and modernisation of Malaysia - which according to Gomez and Jomo constituted a "policy volte-face from the NEP's redistributive priorities" (1997, p.169). The announcement of NDP, Second Outlook Perspective Plan (OPP2) and Sixth Malaysia Plan were aimed at complementing (in a medium-term) the long-term objectives set out in Vision 2020. With these concurrent policy initiatives announced in early the 1990s, Mahathir

institutionalised a statist form of neoliberalism whereby liberalisation, deregulation and privatisation was accompanied by state interference in key sectors such as education, science and technology, and ICT. Vision 2020 therefore became the philosophy behind NDP and other medium term plans which in essence helped transform the redistributive welfare role of the government into a partially laissez- faire and partly social justice oriented one. The meaning of social justice and social equity in Vision 2020 are tied to the ethnic question, while the meaning of modernisation of society is tied to neoliberal economic obsession for liberalisation, deregulation and privatisation. Gomez and Jomo (1997) observe that Malaysia's post-1991 policy based on a "growth and industrialisation fetish" (p. 172) has shifted "primary responsibility for human welfare back to the family" (p. 170), and has been legitimised in terms of the "imperatives of rapid modernisation, the promise of a better future, and the rapid growth and industrialisation record from the late 1980s" (p. 176).

8.1.1. Knowledge policy: Timeline

Malaysia has been one of the first countries to start thinking seriously about future vision policy. The genesis of its National Vision Policy (NVP) lies in the 28 February, 1991 speech to the Malaysian Business Council by the then Prime Minister, Dr. Mahathir Mohammed, titled, "Malaysia Vision 2020: The Way Forward" (Mohammed, 1991). Vision 2020 was conceptualised with the aim of transforming Malaysia from a developing to a "First World" nation by 2020. Vision 2020 was outlined in the context of the Sixth Malaysia Plan and the Second OPP both of which marked an important shift towards adoption of neoliberal economic policies. In calling for transforming Malaysia into a "fully developed country" Mahathir outlined nine challenges which needed to be overcome. The nine challenges include - apart from those relating to the need to build an ideal society, democratic polity and progressive economy:

> the need to establishing a scientific and progressive society, a society that is innovative and forward-looking, one that is not only a consumer of technology but also a contributor to the scientific and technological civilization of the future (Mohammed, 1991, p. 2).

Vision 2020 started the knowledge society thinking in motion and particularly the ICT policy was pursued with the aim to digitally modernise Malaysia. Vision 2020 led to the creation of the National Information Technology Council (NITC) in 1994, the adoption of the National Information Technology Agenda (NITA) and the establishment of the

Multimedia Super Corridor (MSC) in 1996. The Asian Financial Crisis and bursting of the dotcom bubble notwithstanding, NITC continued to vigorously pursue the ICT policies with the aim to develop a knowledge society. Malaysia was also active at the international stage in promotion of the knowledge for development paradigm. In 1998 Malaysia joined the Global Knowledge Partnership, a World Bank and Canadian government sponsored gathering of countries to share policy knowledge to promote the knowledge for development paradigm. In March 2000 Malaysia hosted the Second Global Knowledge conference, the theme of which formed the basis of its landmark document titled "Building Knowledge Societies: Access-Empowerment- Governance in the Information Age" (National Information Technology Council (NITC), 2000). The NITC document is a collection of invited essays by key opinion makers and shapers of Malaysia. It is also a document where Malaysia's knowledge society viewpoint is most clearly expressed. This document was targeted both at internal as well as international audiences. Two of the six essays in the report are devoted to non-western perspectives on global civil society and preservation of culture in an internetworked world. Table 8.3 (see Appendix A) shows the timeline of Malaysia's knowledge policy staring from Vision 2020 to the 2006 policy report from the Ministry of Higher Education (MoHE).

While NITC was espousing the vision of a knowledge society, EPU started the policy discourse of the knowledge-based economy which would later come to dominate the policy horizon in Malaysia. Coinciding with the beginning of the Third OPP (2001-2010) and the Eighth Malaysia Plan (2001-2005), the National Vision Policy (2001-2010)- spearheaded by the EPU - has promoted the idea of the knowledge-based economy or 'K-Economy'. In 2002, a steering committee in the Ministry of Finance with the aid of the Institute of Strategic and International Studies, Malaysia (ISIS Malaysia) published a report titled "Knowledge-based Economy Master Plan" (ISIS, 2002) which proposed 136 recommendations spanning seven strategic thrust areas, including: human resource development; building knowledge economy institutions; ensuring incentives and meeting infrastructure requirements for promoting knowledge-intensive industries; creation and application of S&T (including ICTs) across all sectors of the economy; promoting the interests of the private sector as the vanguard of the knowledge economy; developing a knowledge-based public sector, and; to bridge the knowledge and digital divide in society. The plan's sponsor, the Ministry of Finance, was also at this time headed by the Prime Minister, Dr Mahathir.

Other significant voices in the discourse are those of the MoHE and the Ministry of Science, Technology and Innovation (MoSTI). NVP values underpin the discourse of these ministries, in addition to their own sector-specific values. MoSTI has outlined a National Innovation Agenda focusing on enhancing the National Innovation System, commercialisation of R&D and development of S&T human capital. Likewise, recently MoHE has outlined a National Education Philosophy considering a range of internal and external imperatives such as ICT revolution, globalisation, and preservation of Malay culture to transform the higher education system of Malaysia into a values-based system.

8.1.2. Knowledge policy: Structure

The structure of Malaysian policy is top-down (see Figure 8.1 in Appendix B). The Prime Minister is the most powerful influence on policy. Executive dominance has made the role of parliament in policy very limited (Brown, Ali, & Muda, 2004). The centralisation of policy power intensified under the premiership of Mahathir Mohammed who has been the most important influence on Malaysia's knowledge society policy. His major strength lay in communication and this is evident in the immense popularisation of Vision 2020 both in Malaysia and at international fora. The most powerful policy planning institution in Malaysia is the Economic Planning Unit, which is a department within the Prime Minister's Office. EPU was setup in 1961 with the express aim of development planning and administration. EPU is responsible for developing the long and medium term plans. It acts as the government's main think tank on development policy issues. EPU is also the hub of a elitist, Malay-dominated bureaucracy.

The role of the MoHE as a policy lever is great because of its role in the materialisation of ethnic identities in Malaysia. Education policy has been a major source of affirmation action policies in Malaysia which have tended to favour the Bumiputeras. MoHE has emerged as a key player in the realisation of the NVP. Likewise, MOSTI, especially its organ NITC has been active in the knowledge society discourse, and which over the years seems to have been subsumed into the dominant K-Economy paradigm. Figure 8.2 (see Appendix B) shows the central players in Malaysia's knowledge policy discourse. The office of the Prime Minister coordinates and directs the knowledge policy of the principal actors.

8.1.3. Genre

The charismatic personality of Dr Mahathir Mohammed, the media, the education system, and the policy reports, have in combination been instrumental in discourse popularisation and its mainstreaming among the population. It is beyond the purview of this research to look into the role of media genre in the policy discourse. With regards to the policy report genre, three special types can be identified within the wider range of reports.

1. Planning Documents: Of the three types of planning in Malaysia, the long term plan documents such as the OPP and the National Vision Policy constitute a separate genre from the five year Malaysia Plans and the Annual Budget. The long term plans are most ambitious in terms of futuristic knowledge economy aspirations.

2. Expert Committee Genre: Three key documents under study directly relate to this sub-genre. The K-Economy Master Plan (ISIS, 2002), the NITC report on knowledge (NITC, 2000) and the MoHE report on the future direction of higher education (Ministry of Higher Education (MoHE), 2006) were produced by consultant institutions or invited authors.

3. Speech: Three speeches have been included as data for Malaysia. The 1991 speech by Mahathir to the Malaysian Business Council holds special significance in the discourse on knowledge as it is often cited as a landmark speech in contemporary Malaysian policy history. Two speeches by Dr Victor Lee are included. Lee held the position of Senior Director in EPU at the time when K-Economy discourse was starting to take shape. Many of Dr. Lee's speeches are available on the EPU website out of which two were chosen because they relate directly to the K-Economy concept.

8.1.4. Discourse: Leximancer results, outstanding discourse features

Leximancer results for Malaysia reveal two major concerns – technological progress and economic development. Six clusters can be identified from the concept map (See Figure 8.3 in Appendix B & Table 8.6 in Appendix A). Table 8.4 (see Appendix A) shows the top twenty concepts ranked in Leximancer. As in other Asia-Pacific countries, 'development' features as the top ranked concept for Malaysian documents.

At least six concepts in the top twenty relate to the theme of economic development, namely, ‘development’, ‘economy’, ‘plan’, ‘growth’, ‘products’ and ‘services’. Two concepts relate to technological progress, namely, ‘technology’, and ‘R&D’. Closely related to technological progress is the theme of education which is represented by five concepts - ‘education’, ‘research’, ‘public’, ‘knowledge’ and ‘training’. Likewise, ICT is represented by ‘ICT’ and ‘information’. The remaining six concepts can be related to any of the above mentioned domains but can also be included in a separate category named policy. The six concepts from the conceptual domain of the term ‘policy’ are ‘programmes’, ‘public’, ‘Malaysia’, ‘national’, ‘institutions’, and ‘management’. The dominance of the concept map by the concepts from the semantic domains of economic development, technological progress, ICT and policy shows a economics and technology dominated discursive stance on knowledge.

In addition to the top twenty concepts, it is also informative to look at some other concepts significant for this study (Table 8.5). The subject matter of these concepts is related to either one of the categories described above. These concepts often form the core of policy discourse relating to knowledge society. If we compare the Adobe word counts with ranking in Leximancer, we find that though knowledge society (Rank 31, count 29) is ranked higher than knowledge economy (Rank 34, count 412), the latter is has been used more frequently than the former. The label ‘information society’ ranks even lower (rank 66) than the other two labels. Another interesting aspect is that buzzwords such as ‘infrastructure’, ‘innovation’, ‘competitiveness’, ‘e-commerce’ ‘infostructure’, ‘governance’ and ‘information age’ get greater coverage than negative connotation words such as ‘liberalisation’ and ‘deregulation’. Table 8.5 also shows the status of Malaysian discourse specific vocabulary. Concepts unique to Malaysian discourse, namely, ‘infostructure’, ‘Multimedia Super Corridor’, ‘New Economic Policy’, ‘Vision 2020’ and ‘National Vision Policy’ receive great deal of attention in the discourse.

The spatial distribution of concepts on the concept map (see Figure 8.3 in Appendix B) reveals six agglomerations. These conceptual agglomerations are deduced from semantic and locational nearness of concepts in a section of the map. Table 8.6 (see Appendix A) shows the concept agglomeration based on six core issues of discourse –

research, science and technology, ICT and globalisation, knowledge economy, technological development, industry and economy.

Locational nearness on the map signifies semantic and argumentative nearness. The geographical distribution of concepts on the map shows many concepts in the central region (both to the left and right of centre). The centre of the map is dominated by two issues – technological development and knowledge economy. The technological development cluster overlaps with research, science and technology, and industry clusters. Likewise, the knowledge economy cluster overlaps with ICT and globalisation, and the economy clusters (for the concepts in these clusters see Table 8.6).

Two arguments can be deduced from the concepts in the central part of the map. Firstly, that Malaysia's transformation into a knowledge economy requires proactive policy and visionary outlook from the government to compete in the globalised world economy. Secondly, technological progress depends on how the government develops and manages the research, science and technology system. Both these arguments place the active interventionist role of the state at the centre of the knowledge economy debate. As pointed out earlier, Malaysia practices a form of state capitalism which is justified on the basis of domestic political economic factors such as the need to uplift Bumiputeras. Although over the years Malaysia has officially changed its policy stance from ethnicism towards a more developmentalist stance similar to other fast growing economies in East and South East Asia, some measure of ethnicist discourse still remains. Though not neoliberal in a textbook sense, Malaysian discourse nevertheless displays many features of neoliberalism in policy. Malaysia's knowledge for development paradigm has discursively helped to mask the neoliberal policies of privatisation, deregulation and liberalisation of economy pursued by Mahathir since 1990. In addition, state-directed planning in the form of long and medium term plans and policies have helped to legitimise the active role of the state in the knowledge policy arena.

8.1.5. Outstanding discourse features: 'Knowledge paradigm of development' and 'knowledge-value based society'

The outstanding discourse features that emerge from the analysis of the documents relate to the Malaysia-specific interpretation of the emergent knowledge paradigm for development. The upshot of this interpretation is that there is no standard solution to

achieving the knowledge society. Each country must adopt contextually suitable policies which need to be flexible in the face of the rapidly changing global environment. Although visionary thinking on the future course of development of Malaysia started in early 1990s with the enunciation of Vision 2020, it has been fairly recently that it has been refined and re-interpreted in accordance with the knowledge paradigm. Vision 2020 set the stage for the formation of NITC in 1994 and MSC in 1996. The Asian financial crisis in 1998 led to a conflict of opinion between the IMF and Malaysia over the causes and remedies for the financial meltdown. Malaysia did not heed the IMF advice and set in motion its own response measures for the crisis. On the knowledge policy front Malaysia increased its international activism via fora such as the GKP-II conference which was held in Kuala Lumpar in March 2000. NITC played a key role in setting forth Malaysia's viewpoint on knowledge policy. Malaysian initiatives such as the NITA agenda and the MSC were showcased to the world at large as examples of how developing countries can leap-frog into a knowledge society. Malaysia wanted to use the GKP-II conference to highlight the need for a better international governance regime for bridging the gap between the 'haves' and 'have nots' (NITC, 2000). Malaysia views the concepts of the knowledge society and economy through the twin prisms of its status as an Islamic society and Asian cultural values. It wants its knowledge society to recognise the Islamic roots of the majority of its population. Likewise, it wants its knowledge economy to embrace unique Asian values in commerce and polity. The emphasis on these two things is precisely because it feels that they are under attack from the cultural onslaught from the West and also since it feels that these values are not recognised in the global discourses on governance, knowledge management and economics. Malaysia blamed the ICTs for exacerbating the divide between the rich and poor countries but nevertheless also recognised their power as the main tool to leapfrog development. The Malaysian suggestion for a knowledge paradigm of development for poor countries is explained as follows:

> Clearly the greatest challenge of the 21st century will be narrowing the gap and ultimately eliminating poverty. Previous efforts to eliminate global poverty have not succeeded. What solutions avail themselves in the Age of Information? Ironically, ICT, the aggravator of the rich-poor gap today, also present a possible solution to the problem within the knowledge paradigm of development. The knowledge paradigm of development focuses on enhancing the human ability in using information and knowledge as the primary factors of change and value-creation. ICT, being a suite of technologies that can elevate people's ability to learn, to acquire new skills and to exploit new opportunities for self-improvement, serve as the vehicle for the desired empowerment and transformation of a person into a knowledge worker. At the level of the nation-

> state, a mass process of knowledge empowerment will theoretically enable a society or nation to leapfrog development stages and achieve knowledge society status where presumably the gap between the 'haves' and the 'have-nots' would decrease or cease to exist. Malaysia, en route towards achieving Vision 2020 goals, has accepted this knowledge paradigm of development as manifested by the creation of the National Information Technology Agenda (NITA) and the Multimedia Super Corridor (MSC). Both are initiatives designed to leverage on the potentials of ICT to create a knowledge society and economy so that Malaysia may prosper in the 21st century and beyond (NITC, 2000, p. vi).

It is in this light that the NITC document calls for a "knowledge and values-based civil society" to emerge. The editors of the NITC document explain Malaysian position in the following words:

> Development today is a highly complex matter, particularly when the end goal is a knowledge society. Many of us are unprepared for the needs, challenges and opportunities presented by the Information Age, and there are no ready or easy solutions. Uncertainty about the way forward means that we must experiment to determine our path towards the future. Not responding to the changing environment will only result in the stagnation of our nation. Part of the response entails revamping our education system to ensure competitiveness in the Information Age. The present education approach of regimentally scheduled learning must be replaced by a broad culture of lifelong learning. Another part of the response entails a soul search, a true understanding of who we are and what we stand for as a society. A knowledge and values-based Civil Society must be able to determine which values to accept, modify, and reject for its own sustainability and progress. We need to develop the tools to deal with the flurry of change catalysed by advances in technology. This applies not only to us, but also to the international community for the frightening reality is that existing world institutions are powerless to deal with current, let alone impending, crises. The institutions have no framework to deal with the changes of the Information Age. A new form of global governance is needed to address the new needs of the world, but no one yet knows what form this new form of governance should take. One thing is certain, the Internet will play a part in the formation of the new governance system as it is granting previously marginalised individuals and communities a voice through cyberspace. Out of the varied opinions and perspectives, perhaps consensus can be achieved on issues that really matter and this may form a foundation for Information Age governance. (NITC, 2000, p. viii).

The delineation of the Malaysian stand on knowledge society in the NITC document set the stage for other policy agencies to utilise such arguments in their respective domains. Malaysia's 'knowledge for development' and 'knowledge and value-based society' ideas though developed in its rhetorical encounter with powerful international actors in the background of the Asian Financial Crisis and the publication of the World Bank's 1999 "Knowledge for Development" report also served to reinterpret Vision 2020. This re-interpretation can be seen in the adoption of the knowledge economy focused NVP in

the first decade of the new millennium. Though the goal of the knowledge society persists, it has been largely subsumed in the goal of knowledge economy. Policy initiatives starting from the beginning of the millennium have veered towards the K-Economy goals as evident in initiatives such as the NVP and the K-based Economy Master Plan. The overriding motivation of Malaysia to tide over the negative effects of the Financial Crisis has resulted in the Ministry of Finance and the EPU seeking to legitimise knowledge economy policies according to Vision 2020. Vision 2020 in the 1990s was interpreted largely in IT infrastructure terms. If the post-1990 MSC were legitimised on the basis of IT imperative in leap-frogging to knowledge society, the post-2000 reinterpretation of Vision 2020 has largely been in economic terms.

8.1.6. Style

The style features of the Malaysian discourse relate to the construction of the public in the documents. In Malaysia's discourse, references to individuals are both as nationals ('Malaysians') and as members of the main ethic groups ('Malay' or 'Bumiputera', 'Chinese', and 'Indian'). The terms 'Chinese' and 'Indian' occur largely in statistical tables and related-discussions. The context of discussion is mostly to highlight the developmental disparity between the Bumiputera and non-Bumiputera communities. Special attention is paid to the Bumiputera community in almost all the documents, which is a reflection of the affirmative action policies and pro-Bumiputera bias in Malaysia's political economy. There is a special discursive emphasis on Bumiputera underdevelopment and the need for comprehensive development of the community. The term 'Malaysians' occurs mainly in arguments where the reference is to all social groups or where policy requires the participation of all Malaysians in building a knowledge society/economy.

The discourse imagines a condition which all Malaysians must aspire to achieve. The emphases vary according to the policy context. For instance, in relation to education, Malaysians are required to excel in science and technology knowledge, and be proficient in Bahasa Malayu (the Malay language). Likewise, in ICT Malaysians need to be proficient in IT knowledge and use, especially Internet technologies and services. Malaysian entrepreneurs and overseas Malaysian should contribute to Malaysia's progress.

In the context of the knowledge policy, Vision 2020 makes special reference to the role of all Malaysians in nation-building and development. Almost all of the nine pillars or challenges of the Vision 2020 have implications for the style dimension of the discourse. The nine challenges call for:

(1) “establishing a united Malaysian nation”;
(2) “creating a psychologically liberated, secure, and developed Malaysian Society”;
(3) “fostering and developing a mature democratic society”;
(4) “establishing a fully moral and ethical society”;
(5) “establishing a mature, liberal and tolerant society”;
(6) “establishing a scientific and progressive society”;
(7) “establishing a fully caring society” based on strong families and people’s welfare;
(8) “establishing a economically just society”, and;
(9) “establishing a prosperous society, with an economy that is fully competitive, dynamic, robust and resilient” (Mohammed, 1991, pp. 1-2).

For Malaysians the significance of the nine challenges is to reflect the values both individually and as a nation. The role of the individuals is to be nationalists in all their day-to-day endeavours. These challenges before Malaysians are also evident in other policy documents. The Eighth Malaysia Plan document includes as a key strategy the aim to “nurture and inculcate positive values and attributes among Malaysians through the education system, social and religious organizations and the media” (EPU, 2001a, p. 6). The Third OPP asks Malaysian to harness a “spirit of patriotism” and aims to “instil pride of being a Malaysian and in doing things and achieving successes as Malaysians” to withstand “negative fallouts from globalisation” (EPU, 2001b, pp. 8-9). The K-Economy Master Plan suggests measures aimed at luring Malaysians back from overseas, the need to inculcate scientific and technological sensitivity among Malaysians, harnessing the power of Islam to motivate Malays to be a hard working and learning-oriented community, and a multi-pronged public relations campaign to instil the values of knowledge, learning and education among Malaysians.

The above evidence points to a high premium placed by Malaysian policymakers on the need to transform the value system and mindset of the Malaysian people in line with the state’s conception of the knowledge economy and concurs with Brown’s (2007) findings in relation to education. Malaysia justifies such action based on its perceived

threats from Western dominated values and globalisation, apart from its need to compete with other Asian Tiger economies. The construction of the individual in Malaysian discourse shows a state that is defensive in nature and one that patronises its subjects and even tells them what and how to think. The use of the language of patriotism in the discourse signifies the exercise of power through policy discourse.

8.2.0. Meso-level analysis

8.2.1.0. Interdiscursivity

It is useful to distinguish between interdiscursivity of ideological policy beliefs and interdiscursivity of policy domains. Policy beliefs, concepts, ideas and values central to higher level policy strategies such as Vision 2020 influence the knowledge economy discourse. In other words there is interdiscursive embedding of existing policy values into subsequent discourse. Likewise, domains related to knowledge economy discourse such as ICT, S&T, economic development and higher education exercise interdiscursive influence in terms of their impact on conceptualisation, enactment and administration of knowledge economy strategy. The conceptual framing of knowledge economy in Malaysian policy discourse draws upon heterogeneous other discourses such as globalisation, development, national identity, ICT, and education. It is by drawing upon other discourses that Malaysian knowledge economy derives its unique meaning.

Existing policy values are interdiscursively embedded into emerging knowledge policy. In Malaysia some of the values which find expression in knowledge economy strategy are described in the following subsections.

8.2.1.1. Vision 2020 and Rukunegara values

Vision 2020 enjoys a paradigmatic status in Malaysian development policy. Ever since its enunciation its status has grown both through public relation promotion as well as due to its metamorphosis into the NVP in the new millennium. The core mantra of Vision 2020 is to set direction – “a way forward” for Malaysia. The nine core challenges of Vision 2020 mentioned above reflect nation-building and development beliefs. These beliefs have filtered into the knowledge policy discourse of NITC and EPU. The NITC vision of a ‘knowledge and values-based society’ and EPU’s ‘K-based

Economy Master Plan' both stress that a Malaysian knowledge economy should be consistent with values enshrined in Vision 2020. The NITC document states,

> The goal of the NITA is to bring into existence a Malaysian Civil Society or *Masyarakat Madani*, in keeping with Vision 2020. *Masyarakat Madani* means a principle- and value-based knowledge society (NITC, 2000, p. 12).

Likewise, the K-based Economy Master Plan places Vision 2020 prominently in its list of fundamental factors behind the drive to K-Economy.

> In charting the road to the K-based economy, Malaysia must take cognisance of several fundamental factors. These include: The aspirations of its people, as reflected in the Federal and State Constitutions, the *Rukunegara*, and Vision 2020 (ISIS, 2002, p. 27).

Rukunegara is an expression of national ideology and de facto Malaysian pledge of allegiance. It was adopted after the race riots in 1969. The wording of the Rukunegara is:

> OUR NATION, MALAYSIA, being dedicated
> to achieving a greater unity of all her peoples;
> to maintaining a democratic way of life;
> to creating a just society in which the wealth of the nation shall be equitably shared;
> to ensuring a liberal approach to her rich and diverse cultural traditions;
> to building a progressive society which shall be oriented to modern science and technology;
> WE, her peoples, pledge our united efforts to attain these ends guided by these principles:
> Belief in God
> Loyalty to King and Country
> Upholding the Constitution
> Rule of Law
> Good Behaviour and Morality (EPU, 2001a, p. iv, 2001b, p. 144; MoHE, 2006, p. 28).

As an expression of national ideology, Rukunegara has survived till today. It, along with Vision 2020, is alluded to in most knowledge policy documents as the guiding principles of state policy. The Rukunegara makes explicit the value system underpinning the political economy of Malaysia. These values include a desire to build a united, peaceful, democratic and progressive Malaysia based on a modern interpretation of Islam. The Rukunegara is intertextually invoked (by direct reference) at the beginning and end of the Malaysia Eighth Plan, and the third OPP, respectively. Among other places of its usage, mention must be made of its frequent usage in the

MoHE report (MoHE, 2006). The MoHE report makes it clear that the Rukunegara finds its fullest expression and clearest in Vision 2020.

Though it is clear that during the Mahathir era Rukunegara was interdiscursively present in all state policies, more recently the new administration of Mr. Abdullah Ahmad Badawi has started to promote "Islam Hadhari" or 'civilisational Islam' as a principle of development policy. Islam Hadhari aims to highlight the positive side of Islam, according to which values such as quality of life, development of the individual and the nation, and mastery of scientific knowledge are seen as consistent with Islam.

8.2.1.2. Analogical reasoning in the context of leapfrogging idea

The concept of leapfrogging development which is implicitly present in Vision 2020 was explicitly given shape in the NITC document (see Figure 8.4 in Appendix B), and the K-based Economy Master Plan. Leapfrogging is explained in the NITC document by analogy to quantum physics. Leapfrogging to the information age is analogous to fast leaping of the electrons in quantum physics. The analogy between leapfrogging frogging and quantum leaping is particularly stressed in relation to ICT and intellectual capital, meaning that these are enablers for leapfrogging.

> Intellectual capital, or sheer brain power, will join the ranks of traditional factors of economic competitiveness like land, labour and physical capital in the new millennium. That addition will result in the ability to produce quantum jumps in economic growth and value-added enhancements. Leaps from one level of effectiveness to a higher one, with no discernible time in transition, mark the well-researched phenomenon of quantum leaping. And what electrons are capable of doing between electron shells, countries also will be able to do in the Information Age. What is particularly intriguing is that quite apart from quantum leaping, quantum tunnelling described in quantum mechanics – which allows for transmission via shifts in probability functions as a surreptitious way of getting through a system – is also a fitting analogy for what is happening in cyberspace through ICT. Clearly, quantum theory and quantum effects exhibit a very strong parallel of what is happening in the information world. Trading opportunities globally will certainly make a quantum leap. For the ability to enhance intra-regional trade (between nations of the South) and global trade (between the North and the South) using e-commerce is staggering (NITC, 2000, pp. 4-5).

It is clear from the above quotation that by drawing an analogy from scientific discourse (quantum physics) the phenomena of leapfrogging is made to seem plausible.

The K-based Economy Master Plan also exploits the quantum leap metaphor. For example while advocating the development of National and State level K-based Economy Development Council (NKDC & SKDC) the Master Plan envisaged that the main function of these organisations would be to "champion, mobilise and drive the quantum leap to the K-based economy" (ISIS, 2002, p. 79).

Another notable analogy used in relation to leapfrogging are the "embankment" and "water mill" analogies used in the NITC document's chapter on governance by Dr. Jerzy Szeremeta. The argument is that the current global economic system is like a wild river which if left untamed would bring negative consequences for Malaysia and other developing countries. The argument is supposedly against unfettered neoliberalism-driven global economic order. It is argued that increased global cooperation prompted by the networking of individuals in the information age aimed at greater social good can act as embankment to tame capitalist greed. Similarly, the global competition for ICT-savvy and innovative individuals will prompt states to adopt information society policies which will act as watermills to regulate global capitalism. The river taming analogy argumentatively frames human capital and ICT as imperative policy solutions to the problem of underdevelopment in a rapidly globalising world..

> Let's talk about the water mills. I see two types of such institutions. The first one will come in the form of information societies. This tide is slow in rising, especially in the developing South. But the pressure of the global market will force national responses to the new developmental challenge that represent a much higher quality than the ones that we see today. A combination of the old response, i.e. macroeconomic reform and liberalisation of markets, with effective transition to the information society, constitutes such a high quality national response. This requires setting up systems for all to enjoy affordable access to education and ICT. This would enhance the level of the national historically inherited comparative advantage and allow nations to compete better and gain more from participation in the global market. ICT itself provides solutions for finding leapfrogging approaches in this transition. Its success may well allow countries to leapfrog stages of development. In the Information Age, the catch up game for national economies has become more interesting. Catching up by building people is quicker and less expensive than catching up by building physical capital. In information societies, more people will earn well above the poverty line. With more personal income they will be able to secure more human capabilities that can be obtained with money. The second type of a water mill-like institution will be 'liveable states'. Their existence is predicted on the basis of looking at the consequences of future global competition for human creativity. Please remember that as mentioned earlier, the leading factor of production – the leading factor of wealth creation – will be human intelligence augmented with information technology. When you compete for something that can walk out on you, you have to create conditions to attract and

> to keep it. Therefore, by exercising the option to walk away, the educated and skilled labour will force the states to start thinking and acting in ways that would result in living conditions attractive enough for people to settle down, raise kids, pay taxes (NITC, 2000, pp. 25-26).

8.2.1.3. Engaging Neoliberalism with Economic Nationalism: Global Imperatives and Malaysian Values

The neoliberal globalising tendencies are an important source of interdiscursivity in Malaysian policy discourse. Malaysian political rhetoric especially under Mahathir has made much of persistent developmental disparities in the world, the North-South development gap, and unfair distribution of power in the multilateral institutions. In light of growing economic globalisation, liberalisation, ICTs and free-market policies, Malaysia has sought to counter global neoliberalism headed by the powerful West with an alternative discourse of its own. This discourse privileges Malaysian culture and values and argues that Malaysia should aim to be a First World nation by facing the challenges of globalisation and liberalisation without compromising on its value system. The discursive strategy employed in the discourse is one where globalisation, liberalisation and ICTs are accorded great importance in policy while at the same time arguing that Malaysia will maintain its own style of democracy, affirmative action programmes, policy culture, and cultural values. This is achieved by invoking the knowledge paradigm of development. The knowledge paradigm that was suggested in the NITC document argues that ICTs will play a leading role in Malaysia's march towards a knowledge economy which is economically and technologically competitive in the world and is culturally unique at the same time. The aims of the knowledge paradigm of development were multifaceted: to enhance productivity, innovation, ICT utilisation, techno-entrepreneurship, a culture of science and technology, language and cultural development, and better governance. The discourse emphasises that Malaysia has no alternative but to imbibe the globally dominant economic policy paradigms such as productivity, competitiveness, ICT, innovation and globalisation. The knowledge paradigm of development of Malaysia is a classic case of mixing of economic nationalism with globally diffused economic values.

The paradox here is that Malaysia, despite the rhetoric of economic nationalism has continued to implement neoliberal reforms in the economy. Neoliberalism took root in Malaysia under Mahathir and has continued under Badawi. Pro-business policies,

privatisation, liberalisation, foreign direct investment, deregulation, and pro-Malay affirmative action policies reflect a state which is neoliberal while at the same time is explicitly anti-neoliberal. The failure to practice what it preaches highlights the bankruptcy of the economic nationalism project.

8.2.2.0. Intertextuality

Intertextuality in policy documents is based on both internal (domestic) and external (international) sources of political and conceptual forms of intertextuality. These sources are always prior texts. The mode of intertextuality can be either direct (as in direct quotation) or indirect (as in summarisation). Both internal as well as external sources of intertextuality are evident in the Malaysian documents. Main internal sources of intertextuality are 'Vision 2020', 'New Economic Policy', 'MSC', and 'NITC'. The main external sources of intertextuality are the OECD, the World Competitiveness Yearbook, the World Bank, WTO, IMF, UN, ASEAN and APEC. While the internal sources are usually referred (directly or indirectly) in arguments, the external sources are also cited as sources of statistical data, in addition to being invoked in text.

The NITC (2000) document, because of its quasi academic nature, is a rich source of intertextual material. Of the main figures from the academic discourse who are invoked in the NITC document include: Peter F. Drucker – 'information age'(p. 3); Amartya Sen – 'development of freedom', 'governance' (p. 18, 19); John Rawls – "justice as fairness' (p. 19); William Gibson – 'cyberspace' (p. 10, 71); Norbert Weiner – 'cybernetics' (p. 10).

Of the concepts which are intertextually constructed the major ones are the knowledge-based economy, information age, governance, and innovation. Of the two forms of intertextuality, conceptual intertextuality of knowledge economy-related concepts is stronger in the case of Malaysia as it forms the basis of political intertextuality – what actually occurs in policy texts. Malaysian policy discourse has engaged with academic discourses and discourses of OECD, World Bank and IMF via the concepts which themselves originated in these 'other' discourses. Conceptual intertextuality helps us to understand the way in which Malaysian policy texts draw upon other texts in their construction of myriad notions such as 'K-based economy', 'knowledge', governance, ICT, globalisation, and innovation, among others. This engagement gives these concepts a new identity and legitimacy in the Malaysian policy milieu.

In terms of conceptual intertextuality, concepts from academic and multilateral institutional discourse such as 'knowledge-based economy', 'knowledge society', 'innovation' and 'governance' have been used extensively in the Malaysian discourse. Below I describe the intertextuality of four key concepts in the Malaysian policy documents.

8.2.2.1. 'K-based Economy'

There are three external and one internal source of the label 'K-based Economy'. K-based economy started to appear in the Malaysian policy discourse around the year 2000. Both the NITC document (NITC, 2000, p. x) and the Master Plan document (ISIS, 2002, p. 1) provide the proof. However it was presented formally as the label in the K-Based Economy Master Plan (hereinafter 'Plan') document in 2002. The Plan implicitly accepts that the intellectual roots of the 'knowledge-based economy' concept lie in the OECD discourse of late 1990s. The Plan uses the OECD definition of the 'knowledge-based industry' as a starting point in its analysis of the knowledge economy. Following that it uses the notion of 'Total Factor Productivity' (TFP) as a critical indicator of knowledge economy. The Plan refers to the work of economists like Robert Solow and a World Bank study to explain this point. TFP is further is used to build the case for core concepts in the economic theory of knowledge – human capital, ICT, and innovation. The following sample is an example of this reasoning:

> TFP is vital because it reflects the increasing importance of knowledge, human capital, innovation and investments in Information and Communication Technology (ICT) in the K-based economy (ISIS, 2002, p. 27).

The ICT policy initiatives undertaken in Malaysia to enhance TFP such as NITC and MSC are cited as examples. In relation to building the human capital, the Plan uses data from UNESCO and OECD to highlight the status of Malaysian K-workers. OECD reasoning and data are repeatedly used to reinforce the arguments presented in the Plan.

8.2.2.2. 'Information Age'

The notion of information age in Malaysian policy documents is important because it marks the beginning of thinking about how Malaysia should develop in the 21st century. NITC took the lead in advocating Malaysia's view on the development issues in the

new era. The concept itself has been borrowed from Peter F. Drucker and from Manuel Castells (though he has not been referred to). The concept of information age is also intertextually related to the Global Knowledge (GK) conferences, the second of which was held in Kuala Lumpar in 2000. The NITC document was prepared as the official Malaysian document for the GK-II conference. There are two senses in which 'information age' is meant in the Malaysian discourse. Firstly, the information age is a slogan aimed at highlighting the need for international governance reform. The NITC document explains it as follows:

> In 1998, the NITC introduced the Virtual Commonwealth, a framework for dialogue on Information Age development concerns. …. The Virtual Commonwealth represents Malaysia's effort to explore the issues of building knowledge societies within the context of a borderless and Internetworked world. In 1998, the foremost concern at the Virtual Commonwealth was the issue of governance in the Age of Information (NITC, 2000, p. vii).

The NITC document explores the governance issues in detail, particularly the dominance of the multilateral institutions and regimes by the powerful Western countries, who use these avenues as platforms for cultural onslaught over the Global South. Secondly, information is a slogan for informatisation of Malaysia. The NITC document argues for a comprehensive framework for the development of Malaysia based largely around ICT infrastructure developments. Information and knowledge are used interchangeably in the discussions of the information age. For example the "knowledge paradigm of development" (p. vi) which undergirds the information age concept places ICTs at the top of the list of desirables.

8.2.2.3. 'Innovation': Adding meaning

Though the word 'innovation' occurs in prior texts, it got crystallised in the EPU document 'Knowledge Content in Key Economic Sectors in Malaysia 2004' (EPU, 2005). The concept of innovation in the Malaysian discourse is derived from two sources – (1) internal sources, particularly the Malaysian Knowledge Content Survey 2003 (MyKe), Science and Technology Policy, and National Innovation Survey of MoSTI and; (2) external sources, particularly the OECD. The MyKe Survey was sponsored by UNDP and designed and carried out by Georgia Institute of Technology, USA in collaboration with the EPU and Department of Statistics in 2003. Its findings were published by EPU in 2005. The EPU Knowledge Content document quotes the

definitions of innovation, product innovation and process innovation given by OECD and gives a rationale for adding to that definition. Whereas the OECD definition focused on technological improvements, the Malaysian definition adds the "organisational improvement" component to it (EPU, 2005, p. 72). However, the Oslo Manual published by the OECD forms the basis of the definition and methodology of innovation used by MoSTI in its National Innovation Surveys (p. 82).

8.2.2.4. 'Governance': Mixing academic and policy discourse

The NITC document (2000) is a good example of a mixture of academic discourse with political rhetoric. The end result is a document that combines hyperbolic policy language with arguments from social science, especially economics. The topical chapters in the document, all written by eminent academics engage academic arguments with the Malaysian view. Here are a couple of examples where eminent economist Prof. Amartya Sen is invoked in the argument about governance in the information age. The first quotation involves a direct quote (without reference source) from Sen where he discusses the need to involve institutions in development. The import of the quote is also given in the last section of the quote. Notice that the tone of the language changes when the meaning of the quote is summarised. The author transforms an argument from Sen into political language which in this context is about analysing the role of neoliberal, global governance institution in the information age.

> The new developmental challenge is the combination of the global manufacturing system and the Information Revolution. As any challenge, it requires a quality response. And too often, the current response is based on the old recipe: macro-economic reform and liberalisation of markets. … When we wish for the global Genie to be put into the global bottle, do we really know what we are wishing for? I would like to start here with a quote from Professor Amartya Sen: 'Individuals live and operate in the world of institutions, many of which operate across borders. Our opportunities and prospects depend crucially on what institutions exist and how they function.' What this quote means is simply this: It is absolutely pointless to debate rights, roles, responsibilities and relationships that pertain to the global governance system if this debate is conducted outside the context of the global institutions, formal or informal, as the case may be (NITC, 2000, p. 18).

The second example is a Chart (see Figure 8.5 in Appendix B) from the NITC document highlighting the purpose of governance according to eminent people including academicians - John Rawls and Amartya Sen; eminent figures – Pope John

Paul II, George Soros and Mahathir Mohammed, and; institutions – Atlantic Charter and UNDP.

The author questions whether quality of life can be considered as the common denominator of the perspectives given in the chart. It is also interesting to note that Soros, a wealthy currency trader-cum-philanthropist whom Mahathir blamed for playing a negative role during the Asian Financial Crisis figures in this chart (Mitton, 8 August, 1997). Soros charged Mahathir for being anti-semitic. Soros' role in promoting democracy in Asia through his Open Society Institute also irked Mahathir.

8.3.0. Micro-level analysis

8.3.1. The construction of social identity: The modality of futurism

Prefaces and Forewords are an important part of policy texts as they contain explicit positions taken by the author/s of the text. Often hyperbolic and aimed at selling the document, preface and foreword sections are often prospective in nature, in so much as their subject matter deals with the future enactment of a policy. In the knowledge society texts they are germane sources for analysing the modality of futurism. The introductory passages in Malaysian discourse are of four types: preface, foreword, editorial note, and message from the Minister. Table 8.7 (see Appendix A) contains analysis of selected samples. The focus on linguistic analysis here is on two types of modality – epistemic and deontic. The purpose of modality analysis is to show beliefs and the level of commitment authors have about particular aspects of policy in relation to the future.

8.3.2.0. The Construction of social relations

Social relations manifest in texts as ideas, concepts, and beliefs. 'Word-meaning' and 'wording of meaning' are two tools among others used in CDA to analyse the construction of social relations. Following the CDA procedure, firstly I will analyse the meaning potential of the term 'knowledge'. Thereafter, I will focus on the multiple ways a meaning is worded and how the terms 'knowledge', 'ICT', 'globalisation' and 'innovation' have been treated in the discourse. The focus here is on the modification and, concretisation or abstraction of meaning by use of literal strategies (for example, adjectives) and other lexical items.

8.3.2.1. The meaning of 'knowledge economy' in Malaysian discourse

The authors of the Malaysian policy texts show an overwhelming preference for the label 'Knowledge-based Economy' or its variant 'K-based Economy' as compared to labels 'knowledge society', 'knowledge-based society' and 'information society' (Table 8.8). It is notable that the label knowledge society has largely ceased to exist after the enactment of the big three plans – The Master Plan (ISIS, 2002), the Outline Perspective Plan (EPU, 2001b) and the Eighth Five Year Plan (EPU, 2001a). Knowledge society is used largely in the NITC document. Whereas 'knowledge-based economy' occurs in seven documents, 'K-based Economy' occurs just in the K-based Economy Master Plan. I will analyse the definitions of both variants of the knowledge economy label.

Table 8.8: Labelling preferences

Label	**Adobe Acrobat Word Count**	**Number of Policy Texts**
Knowledge-based Economy	353	7
Knowledge Economy	14	5
K-based Economy	453	1
Knowledge-based Society	13	5
Knowledge Society	13	4
Information Society	14	4

The following definition of knowledge-based economy given in the K-based Economy Master Plan document link three factors – knowledge, creativity and innovation – as the essential ingredients for economic growth.

> For Malaysia's purpose, it is proposed that a knowledge-based economy be defined as an economy in which knowledge, creativity and innovation play an ever-increasing and important role in generating and sustaining growth (ISIS, 2002, p. 1).

K-based Economy is distinguished from the "P-based Economy" or "production-based economy" on the basis of the critical role of knowledge. In the P-based economy

"knowledge plays a less important role in growth. Growth is driven much more by the accumulation of the factors of production of land, labour and capital (ISIS, 2002, p. 2). The Master Plan specifies Malaysia's thinking on the role of knowledge in economic development in a special section containing answers to key questions (see Figure 8.6 in Appendix B).

In the Figure 8.6 a clear definition of knowledge is missing. Knowledge is distinguished on the basis of the well known categories described by management thinkers – Polanyi (tacit and codified knowledge) and Drucker (know-what, know-how, know-who and know-why). Also missing in the Box is the often repeated truism – knowledge is a commodity – stated as follows elsewhere in the Master Plan.

> In a K-based economy knowledge is the most critical factor of production. It generates more wealth than the other traditional factors of production, land, labour and capital. It is also a commodity itself (ISIS, 2002, p. 1).

The Master Plan gives seven reasons for why Malaysia needs to develop a K-based Economy. These reasons reveal not only the motivations behind policy but also the meaning potential of the label "K-based Economy":

1. "Erosion in global competitiveness" (p. 2).
2. "Increasing Foreign Competition" (p. 4).
3. "The impact of globalisation and liberalisation" (p. 4).
4. "The need to seek higher value-added" (p. 4).
5. "The need to move into more profitable and wealth-generating stages of production" (p. 5).
6. "The need to seek new sources of growth" (p. 5).
7. "Meeting the challenge of enhancing total factor productivity" (p. 5).

The other main definition of knowledge economy is found in the Third OPP document which also considers knowledge from an economics viewpoint.

> The knowledge-based economy is one where the generation and utilization of knowledge contribute to a significant part in economic growth and wealth creation. …. While information technology (IT) will be the fundamental enabling tool, the nucleus of the knowledge-based economy will be human capital - essentially the capacity to create, innovate, generate and exploit new ideas as well as apply technology and exercise superior entrepreneurial skills.

…. Besides being a factor of production, knowledge will become a commodity to be traded (EPU, 2001b, pp. 119-120).

Characteristics of a knowledge economy according to Third OPP include: "abundant resources", "no location barrier", "a highly educated labour force", "high level of per-capita wealth", "open cosmopolitan society", "well connected to global knowledge nodes", "a shift from top-down hierarchical organizational structures to flatter shared-structures", "skills and knowledge are key assets", and "Information and Communications Technologies are pillars of the knowledge-based economy" (EPU, 2001b, p. 121).

The above discussion shows that Malaysia's conception of the knowledge economy is largely informed by the knowledge management and economic paradigms where knowledge is conceptualised as a commodity, as a resource, as being codified or tacit, and as a factor of production.

8.3.2.2.0. The wording of meaning

In this section, the wording of meaning of the knowledge, globalisation, innovation and ICT are covered. The evidence that was gleaned from collocating phrases, words and adjectives is discussed. The semantic features of collocated words and phrases occurring before or after the concept in question have been identified. The word counts for each concept are also given.

8.3.2.2.1. Knowledge

Word Count = 1945

Knowledge is a complex concept. Its meaning in sentences and clauses is largely shaped by its context of usage. In Malaysian policy documents a prominent feature of the wording of knowledge is use of grammatical metaphors or nominalisations. Nominalisations such as, "knowledge content measurement", "knowledge-driven outcomes" "knowledge enablers", "knowledge competencies", "knowledge leadership" "knowledge-driven", "knowledge intensive", "knowledge industries", "knowledge workers", "knowledge acquisition", "knowledge sharing" and so on, which are present in just one document (EPU, 2005) help to shape the meaning of the word knowledge. In nominalisations processes are represented as actually-existing entities resulting in high

level of generalisation and abstraction of meaning. The issue of who produces knowledge and for what purpose is largely hidden by such nominalisations. Other notable nominalisations in the Malaysian discourse include -

1. knowledge empowering industries, knowledge creation and diffusion, knowledge-empowered, knowledge creation, knowledge exchange, knowledge transformation in the Master Plan (ISIS, 2002), and;
2. knowledge-rich, knowledge-driven, knowledge absorption, and knowledge utilisation in the third OPP (EPU, 2001b).

Though knowledge figures largely either as a capability enhancing activity or a process, a dominant conception of knowledge is as a quantifiable entity. The notion of 'knowledge content' receives a significant amount of attention in the Malaysian policy discourse. A Malaysian Knowledge (MyKe) Content Survey was undertaken in 2003. The definition of knowledge content according to this survey was largely based on economic considerations, specifically the readiness of Malaysian industry to move into the knowledge economy era. Knowledge Content is

> the sum of human capabilities, leadership assets and experience, technology and information capital, collaborative relationships, intellectual property, information stocks, and capabilities for shared learning and utilisation that can be used to create wealth and foster economic competitiveness(EPU, 2005, p. 8).

The 2005 EPU document "Knowledge Content in Key Economic Sectors" used the methodology of the MyKe survey to propose a Knowledge-based Economy Development Index (KDI). A Knowledge Content Measurement Model (see Figure 8.7 in Appendix B) was proposed. The MyKe Survey introduced the notions of knowledge measurement, knowledge enablers and knowledge outcomes. Such terminology helps to enshrine an economic conception of knowledge in the policy discourse.

Other notable tendencies in the wording of the meaning of knowledge in the Malaysian discourse include its association with other rhetorical concepts such as ICT, globalisation, innovation and human capital. This brings to light the multiple contextual meanings accorded to knowledge in the policy discourse. Beyond the use of metaphors such as "knowledge is power" (NITC, 2000, p. xii), knowledge is posited as the "most critical factor of production" (ISIS, 2002, p. 1) and a "key to survival and empowerment" (p. 163).

8.3.2.2.2. Globalisation

Word Count: Globalisation = 88; Globalization = 52.

The concept of globalisation is important to the discourse of NITC (2000), EPU (2001a; 2001b) and MoHE (2006). Along with ICT, globalisation underpins the arguments of the NITC document. In a large part the NITC document describes what globalisation is and what it means for Malaysia's future. The increasing pace and widening scope of globalisation are the two planks on which the meaning of globalisation stands. The nature of globalisation is largely understood in economic terms – as economic globalisation. Malaysia's economic policy is justified in terms of the imperative of economic globalisation which necessitates liberalisation of the economy. The political effects of globalisation on Malaysia are also discussed. Globalisation is framed as both a blessing and a curse and it is imperative that Malaysia continues to play an activist role against the advantages enjoyed by the West in the current global economic regimes. The following quote succinctly illustrates Malaysia's thinking about globalisation.

> Roughly speaking, there are two paradigms of thought about the globalisation process. The dominant paradigm views it as a positive phenomenon. It opines the private sector as more efficient than the state, and that liberalisation will lead to greater global competition that in turn will cause national companies to become more efficient. In any case, globalisation is inevitable and unstoppable…. The other paradigm views globalisation as part of a process by which the rich North is attempting (very successfully so far) to retain the economic advantages and powers it enjoyed during the colonial era. …. the first paradigm is represented by the IMF and World Bank (although recently the bank's chief economist Joseph Stiglitz has increasingly spoken against the 'Washington Consensus' of laissez-faire policies), by most mainstream Western and Western-trained economists and Western think-tanks (notably the Institute for International Economics, Washington). The second paradigm has been represented by some United Nations agencies (particularly recent reports of the UN Conference on Trade and Development, and the UN Development Programme), the South Centre, the Third World Network, and a growing number of academics and thinkers (NITC, 2000, p. 33-34).

The challenge for Malaysia is to remain competitive in the face of rapid economic globalisation. This is the message of the Eighth Plan and Third Outline Perspective Plan documents. Competition for trade, investment, ICT, human capital, and technological knowledge is anticipated as globalisation accelerates. Seen from a knowledge policy angle globalisation is a key challenge which must be addressed.

Unlike in the case of the concept of knowledge, the wording of the meaning of globalisation is not dependent upon its context of occurrence. Globalisation is described as a process which necessitates liberalisation of the economy, a more active role for the private sector and a greater public-private partnership. In Malaysian discourse globalisation often features alongside the neoliberal concept of economic liberalisation. Also globalisation is depicted as a key factor in the Asian Financial Crisis. Finally, there seems to be a tendency in the discourse to apportion blame for domestic policy problems on globalisation.

8.3.2.2.3. ICT

Word Count: ICT = 935; IT = 174.

Both ICT and IT are important referents to the knowledge economy in the Malaysian discourse. In terms of usage, ICT is significantly more prevalent than IT. ICT is accorded prominence in the three plans – K-based Economy Master Plan, the Eighth Five Year Plan, and the Third Outline Perspective Plan. The significance of ICT to the knowledge economy was recognised right from the outset when the NITA agenda was outlined and NITC formed. The development of MSC as the centre-piece of the Malaysian knowledge economy approach is a testament to the significance of ICT in policy thinking. The NITC document identifies ICT largely with the development of Internet infrastructure which is termed as "infostructure". The boundless potential of ICT is discussed in glowing terms.

> ICT, embodied through the Internet, enable instantaneous and interactive global communication. Communication via the ICT medium can flow from one to one, one to many, many to one, and many to many at the press of a button, or the click of a mouse. Simultaneously, ICT enable the sharing of information and knowledge worldwide, which can potentially lead to a global 'democratisation' of information and knowledge. As more information and knowledge become more easily and swiftly available to more people, the velocity of the world's information creation, distribution and dissemination cycle will increase, thereby stimulating the growth of knowledge-creation and use globally. The implications of this for human development can be staggering. If we accept the premise that human society advances according to the level of its accumulated knowledge base, then imagine the possibilities for human advancement when the global knowledge base expands exponentially within a short period of time (NITC, 2000, p. v).

The Malaysian discourse also discusses at length the potential for a digital divide between the rich and poor countries and among the prosperous and backward communities within Malaysia, particularly the Bumiputera. Also on the negative side, ICT is also seen a controlling mechanism for human society (NITC, 2000).

The wording of the meaning of ICT is driven by many strands. ICT is considered to be (1) a driver of globalisation; (2) resource for advancement of human capital; (3) essential for the realisation of "smart schools" and "smart teachers"; (4) essential for the development of Malaysian national identity; (5) as a force for democratisation of knowledge; and (6) as an essential element of policy planning in the 21st century.

In terms of collocation, ICT is collocated with a variety of words signifying activity, process, space and, time. Some notable collocations include:

1. Activity: strategic, infrastructure, programmes, occupations, skills, education, courses, enabler, usage, services, e-commerce, curriculum.
2. Process: development, agenda, council, policy, utilisation, expanding, training, nurturing, promoting, penetration, integrate, driving force, management.
3. Space: global, local, Malaysia, multimedia hub, domain, virtual, cyber, convergence.
4. Time: first-wave, revolution, age, era.
5. Other: awareness, promote, impart, potential, knowledge, infostructure.

8.3.2.2.4. Innovation

Word Count: 475

Innovation is a ubiquitous concept in the knowledge economy discourse. Innovation is conceptually related to science and technology. In Malaysian discourse innovation figures mostly in discussion of science and technology. The discursive weight of innovation is strong in the documents of EPU (2001a; 2001b; 2005), MoSTI (2004) and MoHE (2006). The EPU survey report 'Knowledge Content in Key Economic Sectors in Malaysia 2004' (2005) devotes a full chapter to innovation. Likewise, the MoSTI document (2004) discusses innovation in the context of National Innovation System, National Innovation Council, National Innovation Summit 2004, National Innovation Agenda, and the National Science and Technology Policy. The significance accorded to

innovation can be gauged by the following quotation from the EPU knowledge content survey document,

> Innovation is the cornerstone of a nation's growth and progress. For Malaysia, it is central to the move towards a more technologically-driven economic future and remains vital in order to maintain its competitive edge. Innovation … is the catalyst that will set the tone and pace of this nation's progression to become developed (EPU, 2005, p. 71).

Likewise the MOSTI annual report highlights the importance of innovation as follows.

> During the Summit (National Innovation Summit) meeting, three major thrusts were outlined by the Prime Minister to push the National Innovation Agenda forward, namely developing a more focused research agenda based on the country's areas of competitive advantage, with an emphasis on commercialisation of output; developing intellectual capital in science and technology to propel the economy forward; and enhancing the country's NIS, a blueprint that aims to drive innovation into all aspects and dimension of our life. In an increasingly knowledge-driven global economy, invention and innovation are critical to Malaysia's long-term competitiveness. The NIS therefore will provide a more systematic and holistic approach in promoting the development of new technologies, applications, processes and products for successful commercialisation into the global market, hence contributing towards economic growth (Ministry of Science Technology & Innovation (MoSTI), 2004, p. 45).

The concept of innovation in the Malaysian discourse was developed in the MyKe Survey which added the "organisational improvement" focus to the technological improvement focus enshrined in the OECD discourse on innovation (EPU, 2005, p. 72). In the Malaysian innovation approach five focus areas are accorded priority: S&T, R&D, human resource development, financing by the state and development of ICT-rich environments like the MSC to foster technological and organisational improvements. The discourse showcases examples of innovation in industry sectors such as ICT infrastructure, medical sciences, housing, software for mapping assets and property according to Islamic principles, among others.

The wording of the meaning of innovation is driven by many discursive emphases:
(1) Innovation as an exemplar of knowledge utilisation and technological advancement;
(2) Innovation as the outcome of product and process innovation, and of knowledge management; (3) as the outcome of human creativity; (4) as a driver of high-end products and services for export; (5) as the principle focus of the S&T policy; (6) as an enabler of sustainable development; (7) as a target for affirmative action policies; (8) as a factor in competitive advantage; (9) as a resource to be nurtured, managed and

governed; (10) as an imperative linking commercial world to the research and higher education system, and (11) as a reflector of socio-cultural values.

In terms of collocation, the semantic domain of innovation includes words signifying progress of S&T knowledge, S&T policy, economic, and social development. Some collocated words according to these categories are:

1. **S&T knowledge**: know-how, new technologies, improving technologies, imagination, creativity, cutting-edge, product design, invention, discovery, adaptation, ideas, originality, technological progress, diffusion, ICT penetration, radical, evolutionary technologies, interdisciplinary, biotechnology, knowledge utilisation, knowledge networks, and information.

2. **S&T policy**: National Innovation System, techno-entrepreneurship, technology parks, MSC, indigenous, networks, R&D, centres of excellence, intellectual property rights/ IPR, innovation centres, innovation management, Technology Park Malaysia, research institution-university-industry collaboration initiatives.

3. **K-based Economy /Economic Development**: Entrepreneur/ial/ship, product development, market competitive/ness, enterprise, productivity, prudence, commercial rights, intangible assets, flexibility in financial systems, K-based economy, commercialise, economic growth, global economy, private sector, knowledge-based industries, firms, economic outcome, product and process, managerial, knowledge-driven performance, output, outcome, key industries, employee training, exports, business strategy, value-added, returns, special development budget allocation.

4. **Social development**: indigenous, sustainable development, human resources, learning culture, human capital, lifelong learning, out-of-the-box solutions, values, teaching-learning practices, change and restructuring of higher education, world class international researchers, affirmative actions, science, innovation and techno-entrepreneurship, human ingenuity, students, younger generation.

Metaphors such as ‘environment’ and ‘eco-system’ have been used in relation to the role of the state in innovation policy. Here are two examples of visual metaphors (see Figures 8.8 & 8.9 in Appendix B) for knowledge and innovation which utilise the

metaphor of switching on the light for innovation. Figure 8.8 shows an ignited light bulb held in hands. The bulb has a filament in the shape of a human face. Figure 8.9 shows a light bulb transposed onto a human brain.

8.4. Conclusion:

Malaysia is a developmental state in a different mould from Singapore and Korea. It shares some attributes of other states: (1) it has had a long history of ethnicist politics like in Fiji; (2) the Malaysian state is heavily interventionist as in Singapore and Korea, and; (3) it shares with India and Fiji a belief in an economic planning model aimed at redistribution of wealth within the economy and society. Malaysia is perhaps the only developing country to have a sophisticated and longstanding knowledge economy policy vision. Malaysia's knowledge economy policy is focused on achieving the main objective of a developed country status by by-passing the industrialisation stage. Vision 2020 and subsequent visionary policies have identified ICT infrastructure development as a key focus. However, there are fears that Malaysia might have put all its eggs in one basket and that, too, in a narrow strip of land called the Multimedia Super Corridor. The Corridor has been projected as a place where Malaysia meets globalisation. This might have severe repercussions for increasing the development disparities between the Kuala Lumpar metropolitan zone and the rest of the country. Malaysia's knowledge policy is a nation-building project. Vision 2020's modernising zeal has permitted the implementation of neoliberal economic policies while not compromising on the social-redistributive emphasis. It is the affirmative action initiatives in the knowledge policy which help to sustain heavy state interventionism. The liberalisation policies and foreign investment contributed to the major damage from the Asian Financial Crisis in 1997. Malaysia's rejection of IMF advice and the adoption of strict capital controls helped to minimise the damage. Post-Mahathir, Malaysia has sought to reengage with the world while still proclaiming the salience of Islamism to the Malaysian way of life. Its knowledge policy reflects a idiosyncratic mix of ideological influences ranging from Islamism, ethnicism, neoliberalism, and state developmentalism. Neoliberalism has not had a free reign in Malaysia and it is unlikely that it will in near future.

Chapter 9: Case study - India

9.0: Introduction

In the developing world, the genesis of neoliberal policies lies in the Structural Adjustment Programmes (SAP) and political and economic conditionalities of the international monetary and development institutions to which they have been subjected (Peck, 2001). India is no different, as it has been under this regime since the mid-1980s when policy changes occasioned by liberalisation and overseas financing in the consumer durables sector enabled it to reorient economic policy in line with prevalent trends at that time. These policies resulted in a balance of payments crisis as a consequence of debt-led growth which led to near bankruptcy by 1991 when full-scale neoliberal reforms were put in place at the insistence of the World Bank and the IMF. Other factors that compelled India to seek an integration with the world economy included the collapse of the Soviet Union, which was India's model of economic planning; rapid growth of its principle rival China, due to opening up of its economy; and the desire to emulate the example of the East Asian Tiger economies. The shift of focus from policies of self-reliance based on a state-led economic planning model to a policy strategy of integration with the world economy based on neoliberalism has been the principal change in India's political economy. Post-1991 different governments have not only maintained these policies but have accelerated the processes of liberalisation, deregulation and disinvestment. In combination with a spectacularly high economic growth rate second only in the world to China's, the Indian economy has seen a massive change built upon increasing Foreign Direct Investment (FDI), massive boom in the IT sector based on Business Process Outsourcing (BPO), and increasing foreign exchange reserves on the back of budgetary austerity and increasing trade. India is held up as an ideal example of a developing country espousing governance based upon democratic ideals and a forward-looking knowledge economy policy (Dahlman & Utz, 2005). Though, India's vast middle class and industrial sector has benefited from these reforms, on the flip side, worsening rich-poor, urban-rural, middle class-lower class gaps, and the widening digital divide across society has given rise to calls to address these issues.

These contradictions in the record of neoliberal policies have not escaped the attention of India's knowledge policy opinion makers and shapers. However, what they conclude from these problems is very important – that more in-depth reforms of the system combined with India's strengths in ICT and education, and an English-Speaking

workforce will inevitably close the gaps and enable India to leap-frog to a prominent position in the knowledge era (Dahlman & Utz, 2005). Knowledge society discourse in India is a by-product of the neoliberal reforms post-1991 whereby, as the crisis in the economy subsided and as the growth rate surged in the last years of the 20th century, the knowledge society became a symbol of the aspirations of a new, resurgent India. The vision of India as a knowledge society stands on the ruins of a statist, *dirigiste* policy regime that was replaced in 1991, with one hopefully more in tune with the times.

9.1.0: Macro-level analysis: The order of discourse

The trajectory of India's development policy manifests all the challenges of such a large and diverse country. At the time of its Independence from British rule in 1947, India inherited lopsided development with great regional and social inequalities but still a great economic potential. The spectre of industrialisation-led development that haunted India's leaders, created a consensus among them about the need to develop a vision of development based on socialism where all sections of society would be the target of socio-economic development, while embracing industrialisation at the same time. This consensus among the political and intellectual elite is reflected in the Constitution of India adopted in 1950. The sections of the Constitution dealing with Fundamental Rights and the Directive Principles of State Policy aim to promote the socio-economic development of all sections of society with a special emphasis on the poor - the Scheduled Castes and the Scheduled Tribes (Ministry of Law and Justice, 1950).

A key decision in the history of India's development relates to the adoption of the socialist model of planning based on a system of Five Year plans in early 1950s. Successive governments have maintained this system. So ingrained is this model in the system that even the demise of its inspiration, the Soviet Union, in 1990 and the implementation of the neoliberal reforms in 1991, did not result in their obsolescence. Instead the role of the principal planning organisation, the Planning Commission, has been instrumental in Post-liberalisation India. The history of the Planning Commission reflects some key events in the recent history of India. It was set up in March 1950 with the aim to "promote a rapid rise in the standard of living of the people by efficient exploitation of the resources of the country, increasing production and offering opportunities to all for employment in the service of the community" (Planning Commission, n.d.). Since 1951 when the First Five Year Plan (1951-1956) was

launched, there have been five instances when there were Annual Plans for various reasons instead of a five year one. There were three annual plans between 1966-1969 after the Third Plan (1961-1966) was disrupted due to the India-Pakistan conflict in 1965. “Two successive years of drought, devaluation of the currency, a general rise in prices and erosion of resources disrupted the planning process” (Planning Commission, n.d.). During 1990-1992 there were annual plans due to the severe balance of payments crisis in the economy. Five Year Plans were resumed in 1992 after the World Bank and IMF-imposed Structural Adjustment Policies were initiated as a conditionality for loans. Currently the Tenth Plan (2002-2007) is in operation, while planning is in full swing for the Eleventh Plan (2007-2012). As we shall see later, the Planning Commission being a nodal, multi-sectoral planning agency, has played a central role in the shaping of India’s knowledge policy.

In this section, I begin by describing the structural features of India’s knowledge policy along with its timeline, history and direction. The aim will be to contextualise the chosen policy documents within recent policy debates and to provide a background for examining the genre, discourse and style aspects of the order of discourse. Thereafter, I will examine the genre, discourse and style attributes of the knowledge society related policy documents.

9.1.1. Knowledge policy: Timeline

Major development policy initiatives in India stem from the Planning Commission. It is also the main avenue of policy research and evaluation. Though the Planning Commission is principally involved in the planning, monitoring and evaluation of the five year plans, it also appoints Task Forces and Working groups on topical issues relating to development. The working of the Planning Commission is dictated by the agenda of the incumbent government. Post-independence India has been ruled for the most part by the Congress Party (INC)). The first non-Congress government to come to power was in 1977 but it lasted just three years. The decade of the 1980s was for most part ruled by the Congress Party. During the period December 1989-June 1991, two short-lived Janata Dal regimes came to power. This was a period of heightened political instability due to multiple political, class, ethnic and sectarian conflict as well an acute balance of payments crisis. The imposition of the neoliberal economic policy when the Congress Party came to power on a thin majority in 1991 changed the political climate

in the country. The ethnic and sectarian conflicts slowly ebbed simultaneously with the onset of a new period of increasing and sustained economic growth. However by the end of its term, Congress had lost a lot of goodwill among the masses due to many corruption scandals in the wake of economic reforms and due to its own internal squabbles. When the elections of May 1996 produced a hung parliament, three different governments assumed leadership for short periods before fresh elections in March 1998 led to the formation of the Bhartiya Janata Party (BJP) led multi-party National Democratic Alliance (NDA) coalition assumed office but it too lasted just 13 months when it lost a motion of no-confidence. Fresh elections in 1999 again brought back the BJP-led NDA to power with an agenda of good governance and political, economic and regulatory reforms. Six years of rule by the two NDA governments led by Atal Bihari Vajpayee were very eventful. India became a nuclear weapon state, fought a brief border war with Pakistan, and deepened political, strategic and economic relations with a lot of Asian and western countries. There was a new found confidence among India's policy elite about its economic and strategic strengths. The economic growth rate and Foreign Direct Investment (FDI) was rising, as was the size of the educated middle class. The outsourcing of jobs during the Y2K problems and the IT boom alerted people in India and abroad to the unique role India played as the back-office of the world and key player in the development and utilisation of new technologies and services. This further motivated the government to start thinking seriously about how best to capitalise on new opportunities and maintain a competitive advantage over other countries in IT services and solutions. The NDA government set the policies in motion aimed to meet the goals. Knowledge became the new buzzword in the development policy discourse as we shall see later.

The 2004 election brought a Congress Party led coalition (UPA - United Progressive Alliance) to power with Mr. Manmohan Singh as Prime Minister. Manmohan Singh is an Oxford and Cambridge educated economist who in his career worked at many international bodies including the IMF, World Bank, Asian Development Bank and UN, apart from working in many important policy positions within India including Governor of the Reserve Bank of India, Deputy Chairman of the Planning Commission and as the Finance Minister responsible for ushering in the neoliberal economic reforms during the period 1991-1996. Like Vajpayee, Manmohan Singh enjoys a very clean public image and wide public support. Demise of the NDA government despite high economic growth was mainly due to its inability to control communal tensions and a perception

among the poor that the economic policy helped only the middle class. The present Congress-led coalition government came to power with the promise of development with a human face (Tribune News Services, 2004). This neoliberalism with some policies for the under privileged is a tricky agenda dictated by the nature of the coalition where pro-neoliberal Congress has had to compromise with anti-neoliberal leftist parties.

India's economy has continued to progress despite a change of government. The Congress-led coalition has maintained the knowledge discourse set into motion by the previous government with new facets such as the setting up of the National Knowledge Commission in 2005 and even bringing the knowledge discourse into its relations with countries such as the USA. For example, the US-India Joint Statement signed during the visit of President Bush to India in March 2006 included launching the "Knowledge Initiative on Agriculture" and a promise to work together in the area of "Innovation and Knowledge Economy" (Prime Minister's Office, 2 March, 2006). Also contributing to the knowledge discourse is the increasing attention to India from international media. For instance, the popular science magazine, *New Scientist*, devoted a special edition to the potential of India becoming a "knowledge superpower" (New Scientist, 19 February, 2005). While all this was good news for the economy and mainly urban people, there is still a sense that neoliberal policies are adversely affecting the poorest of the poor and large sections in the countryside. One of the main features, as we shall see later, of India's knowledge society discourse is its complete unanimity with the neoliberal economic policy agenda. Since economic policy has been single-mindedly aimed at harnessing the educational, economic and technological capital of the urban middle class, the knowledge policy too reflects this bias in its overemphasis of a neoliberal, ICT, and the science and technology paradigm. The marginalisation of the underprivileged in knowledge discourse is a significant policy issue.

Over the last 6 years the Planning Commission has played the biggest role in implementing the governments' intertwined economic and knowledge policy agenda. Its major contribution to policy thinking on the knowledge society was the appointment of the Task Force on India's Development as Knowledge Society in February 2000 under Deputy Chairman Mr. K. Venkatasubramanian, an economist, acting as its convenor. According to Venkatasubramanian, the knowledge taskforce was setup following the enunciation of a five-point agenda by the then Prime Minister Mr. AB Vajpayee which

he outlined in a speech to the Associated Chambers of Commerce and Industry of India (ASSOCHAM). In his speech Vajpayee, had declared that “a knowledge based society will enable us to leapfrog in finding new and innovative ways to meet the challenges of building a just and equitable social order and seek urgent solutions” (Venkatasubramanian, n.d.). The five-point agenda of Vajpayee included

1. Education for developing a learning society
2. Global networking
3. Vibrant Government-Industry-Academia interaction in policy making and implementation
4. Leveraging of existing competencies in IT, Telecom, Bio-technology, Drug Design, Financial Services, and Enterprise wide Management
5. Economic and Business strategic alliances built on capabilities and opportunities (Venkatasubramanian, n.d.)

At the same time as the taskforce on the knowledge society was constituted, a foresight exercise involving eminent scholars, technocrats and bureaucrats was initiated by the Planning Commission with a view to generating ideas of relevance to the development strategy in the new millennium. The foresight initiative - “India: Vision 2020”- was setup by the Planning Commission in the form of the Committee on Vision 2020 in June 2000. Other important Planning Commission endeavours which impinge on knowledge are the Tenth and Eleventh Five Year Plan related documents. These documents were published during the tenure of Vajpayee and Manmohan Singh governments respectively and show a continuity with some subtle changes in rhetoric on knowledge.

Apart from the Planning Commission, various other ministries, commissions, committee and central councils have contributed to knowledge discourse over the years. Table 9.1 (see Appendix A) shows the timeline, strategy and publishing authority of the 35 documents which have been included in this case study. Apart from the Planning Commission other organisations whose publications have contributed to the discourse on the knowledge society are the Ministry of Information Technology, the Ministry of Human Resource Development, the National Commission to Review the Working of the Constitution (NCRWC), the National Knowledge Commission (NKC), Indian National Commission for Cooperation with UNESCO, the Oversight Committee, the Department of Science and Technology (DST), Council for Scientific and Industrial Research (CSIR) and the National Council of Applied Economic Research (NCAER). These bodies represent the domains of ICT, S&T, human resource development (especially higher education), and law and governance sectors of policy. The bulk of the

documents are from the post-2000 period, reflecting the contemporary nature of the knowledge society discourse. However, some documents have been included from earlier period (1958-1999) to underscore some issues relating to the concept of knowledge. The earliest document is the 1958 Science Policy Resolution and the latest pre-2000 documents are the 1998 IT Action Plan of the Ministry of Information Technology and Higher Education in India report of Indian National Commission for Cooperation with UNESCO. Other significant pre-2000 documents include the Technology Policy Statement of 1983 enacted during the Indira Gandhi led Congress Government, and the National Policy on Education (NPE) 1992 which amended the policy enacted in 1986 by the Rajiv Gandhi led government. The NPE of 1992 stems from the post-liberalisation era and contains significant neoliberal prescriptions, as we shall see later.

9.1.2. Knowledge policy: Structure

India's policy structure accords greatest policy authority under the purview of the Prime Minister's Office (PMO) making it a top-heavy system. The Prime Minister (PM) is the Chairman of the Planning Commission. The plans devised by the Planning Commission have to be passed by the National Development Council comprising Chief Ministers of all the states which is again headed by the PM.

The structure of knowledge policy shown in Figure 9.1 (see Appendix B) has been developed on the basis of the policy institutions publishing the documents. The PMO, at the top of the hierarchy, develops and/or implements policy by five types of policy institutions:

1. **Cabinet Secretariat**: Coordinates policy with ministries. Ministries are divided into departments or divisions which further have their own commissions, councils and sub-divisions.
2. **National Commissions**: Two types of commissions, temporary and permanent, which work in coordination with the PMO. The Planning Commission is a permanent commission. Both, NKC and NCRWC are temporary. While NCRWC has already submitted its final report and been wound up, tenure of NKC is till 2008. The Planning Commission itself sets up taskforces, working groups and committees of its own on topical issues.

3. **National Taskforces**: Setup by the PMO and concerned ministries, the national taskforces are of a temporary nature and are oriented towards topical policy issues.
4. **Working Groups**: The working groups are expert groups set up by the PMO, are temporary and submit a final report to the PM.
5. **Committee**s: Committees, such as the Oversight Committee are setup in response to a policy question that requires guidance which may apply to more than one ministry or policymaking body.

These five types of policy organisations have contributed to the knowledge policy discourse of India. One organisation that has not been included in Figure 9.1 (see Appendix B) but plays a key role in informing the government on policy issues is the Indian National Science Academy (INSA), one of the four organisations of scientific professionals recognised by the government. INSA commissioned the 2005 National Science Report, which was prepared by members of NCAER - a policy think-tank with a deep and long standing record of advisory and consultancy relations to the Centre and States of India. In fact, as the foreword of the Science Report shows, it was the current PM (Manmohan Singh), who when he was the Leader of the Opposition in the Upper House (Rajya Sabha) of India's Parliament, suggested that INSA approach NCAER to prepare a report on the status and public understanding of science in India (National Council for Applied Economic Research & Shukla, 2005, p. i).

Another source that is not shown in Figure 9.1 is the President of India, who is largely a ceremonial figure with no policymaking role. Nevertheless, the President often propagates ideas and governmental policies in speeches to various fora in his/her capacity as the head of the state. The speeches of the current President have been included because he was involved in shaping India's S&T policy before he assumed the office. The current President, Mr. APJ Abdul Kalam was a space scientist and was instrumental in the development of India's missile, satellite launch and nuclear programmes. He has previously held numerous policy advisory positions in the S&T field such as the Principal Scientific Advisor to the Government of India, and Chairman of the Scientific Advisory Committee to the Cabinet. Mr. Kalam co-authored a book with eminent Indian educationist Y.S. Rajan in 1998 titled "India 2020: A Vision for the New Millennium" focused on making India a First World nation by 2020 (Abdul Kalam & Rajan, 1998). I have chosen three addresses that he delivered after he became President which reflect his thinking on the role of knowledge in India's development.

Following this preliminary description of the structure of knowledge policy, I turn to macro-level CDA, where I start with the genre, discourse and style attributes of the order of discourse.

9.1.3. Genre

India's knowledge policy documents represent a varied mix of genres. While all the documents are electronically sourced government documents, they can be categorised on the basis of their context. The following policy sub-genres constitute the discourse.

Table 9.2: India – Knowledge policy genres and sub-genres

Genre	Sub-genre
Policy Report	Plan Report Commission Report Task Force Report Working Group Report Committee Report
Policy Paper	Approach Paper Theme Paper Background Note Introductory Note Consultation Paper
Legislation	Parliamentary Resolution Policy Statement
Audio-visual presentation	Speech PowerPoint Presentation
Advisory	Recommendation

1. **Reports**: Reports are final documents produced by a policy organisation (commission, task force, working group, committee, ministry etc.). The contents of these reports may or may not reflect the final policy. While some documents of the Planning Commission, such as the Tenth Five Year Plan (2002-2007) are the final policy, others stemming from the work of its task forces and committees form the basis of policymaking at a later date. So, genre chains are evident in the reports genre as one report, while being itself a part of an earlier chain of policy events, has an impact on policy events further down the line.

2. **Policy Paper**: In policy, there are various kinds of documents named after their intent. White Papers are authoritative reports on topical issues of policy significance. Green Papers are consultative documents where the intent is to invite debate. Policy papers usually form the basis of policy at a later date. A different terminology used in India for the policy papers. The titles of documents indicate five sub-genres of policy papers – approach paper, theme paper, consultation paper, background note and introductory note. Since these papers stem from the work of policy expert groups such as task forces, commissions and working groups, the intent of these sub-genres is either to reflect consensus within the group on an issue or are used as consultative documents for debate within the expert group.

3. **Legislation**: The legislation genre refers to the documents which have finally been passed by the parliament and become law. A sub-genre within this includes the parliamentary resolutions (for instance, 1958 Scientific Policy resolution) which are proposed by the government and passed by the Lower House (Lok Sabha) of the parliament.

4. **Audio-visual Presentation**: The text of speeches of the Prime Minster, President and ministers have become important sources of policy viewpoint in the age of e-government. Government websites devote separate space to press releases, speeches, presentations, transcripts of press conferences, and so on. In the case of India these are crucial sources of policy discourse. For example, the Speech of Manmohan Singh on the setting up of the National Knowledge Commission (NKC) contains the rationale for why it was setup and what is expected of it. This speech is genre-chained to the PowerPoint Presentation of the NKC to the PM at the same event. The fact that both these are present in downloadable form on the NKC website is an indicator of their multipurpose value as e-governance, public relations and policy information tools.

5. **Advisory**: The advisory genre is most commonly found on the websites of external affairs ministries of countries regarding events of international political significance where it manifests as “travel advisory” to citizens asking them to avoid travelling to certain places. The genre I have termed as “advisory” is especially related to the work of the NKC which since its formation last year has (a) publicised a statement of its internal debate on the issue of reservations in central educational institutions due to which two

prominent members of the NKC had resigned, and (b) offered recommendations on the issue of e-governance.

9.1.4.0: Discourse

This section describes the nature and characteristics of the knowledge society discourse in India. What follows is a discussion of the major attributes of India's order of discourse seen in light of the discourse and its policy culture. I begin by discussing the results of the Leximancer analysis of the policy documents.

Development is the key concern of the documents under study (see Table 9.3 in Appendix A). Because India still preserves features of a planned economy, concepts relating to development planning such as Ninth and Tenth Plan are present in the discourse. Five out of the top 15 concepts relate to knowledge. They are knowledge, education, technology, research and R&D. At least three concepts are IT related namely information, services and software. Economy, social and population are three concepts which can be seen as equally related to development, knowledge and IT concept clusters. If we look at the actual concept map generated on the basis of Leximancer data, we find that knowledge, IT and development related clusters are closely located on the bottom right corner of the map (See Figure 9.2 in Appendix B).

In terms of connectivity of concepts, India, development, education, technology, information, services are highly connected to most other concepts on the map. This suggests that Leximancer analyses these as the most significant concepts both in terms of connectivity with other concepts and in terms of collocation (as they are all located in the bottom right half of the map). This locational and semantic nearness suggests a tight story is built around these concepts. If we look at the concepts in the vicinity of these highly connected concepts we find many concepts are agglomerated together. Prominent concepts in this dense semantic domain can be categorised as shown in Table 4 and include – knowledge, economy, communication, Vision 2020, ICT, Indian IT, academic, research, competitiveness, economy, global, World Bank, Business Process Outsourcing, Science, S&T, innovation, HRD and capital among others. Other sections of the map show concept agglomerations relating to Planning and Governance (top and bottom left of the map) and Work and Reservation (top right half of the map). Table 9.4

(see Appendix A) categorises the concept agglomerations based on the collocations on the map.

Concept agglomeration categories deduced from the locational nearness on the map result in seven categories which enable us to decode the map. They are- planning and governance, reform, reservation and work, S&T, development, ICT and services. These categories reflect the emphasis of the discourse. At least three of the seven categories, viz. planning and governance, reform, and development reflect the post-1991 neoliberal discourse in India. Three of these, namely S&T, ICT and services reflect the emphasis on economic exploitation of technological knowledge. Reservation and work category relates to the perennial issue in politics in India – the affirmative action programme for the socio-economic development of the underprivileged. The underprivileged in India include the constitutionally recognised Scheduled Castes (SC), Scheduled Tribes (S&T), Backward Classes (also known as OBC's or Other Backward Classes) and women. These seven categories help to understand the broader knowledge policy order of discourse in India.

In the following section, I will describe the salient features of discourse based on examples from the policy documents relating to the seven categories discussed above. The main features of India's KS discourse are: (1) Leap-frogging via knowledge: the articulation of India as a 'knowledge superpower'; and (2) A Litany of imperatives: the role of an assemblage of imperatives in the policy thinking on knowledge.

9.1.4.1. Leap-frogging via knowledge: Articulation of India as a "knowledge superpower"

India being the site of an ancient civilization has been a storehouse of knowledge of various kinds. Its diversity has been as much a source of knowledge as it has been a hurdle. One of the key developmental issues in India has been the inequalities that have persisted for thousands of years. Post-independence India has found it an upward struggle to level the playing field for all sections of society. Imaginative social reform movements from Buddha to Gandhi have made partial inroads into addressing the social problems of a hierarchical society. India today is the by-product of a complex mix of influences that includes the old India, the foreign values introduced first by Muslim Mogul rule and later the British rule and since Independence by its trysts with socialism,

neoliberalism and globalisation. All these influences signify continuity and change. Whether the Indian tradition has modernised, in what form and direction and how much is a perennial debate in Indian sociology. It is not that the society has not changed since the introduction of Western values and the system under the British colonialists. It has greatly changed. This change was one of the driving forces behind India's independence movement. The political elites felt that an Independent India would greatly benefit from the Western system. Western ideas of democracy, socialism, legal system, rights and the use of science and technology for industrialisation were instrumental in shaping India's formula for development and modernisation. Attaining its past glory and a rightful place as a powerful country in the world has been a key theme in India's drive for development. Self-reliance or swadeshi was a key slogan during the pre-1991 statist socialist planning era. The metaphor of "superpower" used in the title of the report of the Planning Commission Task Force on India's Development as Knowledge Society (Planning Commission, 2001b) encapsulates the long standing desire of India's policymakers to reclaim the past glory. The notion of the knowledge society is held forth as an inspirational slogan for contemporary India. In his Foreword, Mr. KC Pant the Deputy Chairman of Planning Commission writes:

> It is important to recognize that India today has a population of 700 million young people below 35 years. This is a magnificent force. How to ignite these young minds? Launching the vision of a knowledge society with which their future is vitally linked has the capacity of inspiring them (Planning Commission, 2001b, p. i).

The slogan of India as a knowledge superpower was first given during an address by the PM Mr. Vajpayee in an address at the annual meeting of ASSOCHAM on 18 December, 1999. In his speech, Vajpayee spoke of the need to prevent problems in economic growth due to a rapidly rising population. He said:

> Only a knowledge-based society will enable us to leapfrog in finding new and innovative ways to meet this crucial challenge and seek urgent solutions (Tribune News Services, 1999).

The leapfrogging metaphor is widely used in development policy literature along with other travel related metaphors such as 'catch-up' and 'frontrunner'. The leapfrog metaphor has also been used in the report of the Planning Commission. Leapfrogging is used as an answer in situations such as digital divide and rural-urban disparities in infrastructure. For example,

> A winning combination of physical and electronic connectivity can indeed enable our rural areas, which have been excluded so far, leap frog and be active participants in the knowledge revolution. Towards this end, a unique model called "Rurbanisation" has been suggested which advocates clustering of villages for establishing schools, health centres and service facilities and connecting them by road and Internet (Planning Commission, 2001b, p. 7).

Also leapfrogging is suggested as an opportunity to harness the knowledge era.

> We missed the industrial revolution but we should not miss the information and knowledge revolution. … Indeed, the nation has not secured the fullest returns possible from the industrial, electronic and computer revolutions. Leap frogging into knowledge era looks eminently possible today for our societal transformation in the twenty-first century, which is going to be the century of hope for India (Planning Commission, 2001b, p. 8).

It is argued that India can not suffer from a digital divide because India is a late-industrialiser.

> India is a late entrant and therefore, our investments have not been locked in old infrastructure and old technologies. We can take advantage of the frontline technologies, cost effective infrastructure and leap frog (Planning Commission, 2001b, p. 37).

Figures 9.3 and 9.4 (see Appendix B) from the Planning Commission report show the concepts of the knowledge society and knowledge superpower respectively.

There is a great optimism in this document about the benefits of focusing on the knowledge society initiatives that will in end benefit everybody apart from propelling India into frontline of countries of the world. But such an effort will require the total commitment of the whole population because a total transformation of the order is required. The three crucial elements essential to making India a knowledge superpower by 2010 are “societal transformation, knowledge protection and wealth generation” (Planning Commission, 2001b, p. 53). In the report, it is also mentioned that the knowledge society is the intervening and compulsory stage before realising the status of a knowledge superpower. The report recommends that:

> The task of implementing the national transformation to a knowledge society and thereafter to a superpower in about a decade, has to be carried out through establishing a proper mechanism. Towards this end a Cabinet Committee for Knowledge Society (CCKS) is suggested (Planning Commission, 2001b, p. 77).

The concepts of knowledge economy and national security are key to understanding the conception of knowledge superpower. Both, the knowledge economy and the knowledge society are very fluid concepts and are used interchangeably in discussions of almost every area of development. Take for instance, education. In the two samples below, the concept of human capital is explained with reference to knowledge economy and society

> A knowledge super power can only be built upon a foundation of a civil society that is nearly 100 percent literate and has a capacity to absorb new and relevant knowledge. People are the capital in a knowledge-driven economy. Therefore a constant development of human capital with thrust on skill upgradation, generation, assimilation, dissemination and use of knowledge needs emphasis (Planning Commission, 2001b, p. 9).

> In a knowledge society, only those people who are able to convert knowledge into skilled action become its real capital. Therefore, generation of trained and skilled human resources is a key challenge (Planning Commission, 2001b, p. 8).

Likewise, consider IT which is another key element in neoliberal discourse on knowledge.

> There are three basic constituents that shape the knowledge economy. These are computers, connectivity and content. Together, these generate knowledge that has to be made secure with a framework of laws, which will both foster and protect (Planning Commission, 2001b, p. 38).

> The core areas that will spearhead our march towards a knowledge society would be both technology as well as areas that are service-driven. The technology areas will include information & communication technology, biotechnology, oceanography, space technology, materials technology, environmental technology, etc. (Planning Commission, 2001b, p. 4)

While the knowledge society requires social transformation and wealth generation through the creation and use of knowledge, an added requirement for being a knowledge superpower is to protect knowledge (both traditional and new knowledge) through an Intellectual Property Rights (IPR) regime, enhanced measures to secure traditional cultural knowledge, and enhancing national security. It is in relation to knowledge superpower that the document interdiscursively invokes the national security discourse and in the process reveals its belief that economic development and national security are inseparable.

> A knowledge superpower needs to focus on the twin objectives of economic prosperity and national security. Thus national security concerns require utmost attention (Planning Commission, 2001b, p. 6).

The answer to the question why do we need a knowledge society seems to be because of economic prosperity and the attainment of a world power status. The goals of security and economic growth overrule the goals of development. This shows a belief in an international order based on politico-economic Darwinism – that only the rich and the powerful survive in an era of unbridled competition.

By introducing the metaphor of superpower, the whole development agenda has been discursively hijacked. Instead of focussing on inclusive development policies which would augment the capabilities of society as a whole, this document narrows down the emphasis to a few fields of technological knowledge in which India has some competitive advantage and subscribes to a view of development which is influenced by neoliberalism where the knowledge society serves as a proxy for knowledge economy. In the next section, I will discuss how the knowledge society is constructed as a response to imperatives which leave little choice but to pursue the proposed policy direction. I have described one such imperative in this section – the imperative of becoming a knowledge superpower and the role of selective policy choices made regarding national security and economic prosperity.

9.1.4.2. A litany of imperatives: The role of an assemblage of imperatives in the policy thinking on knowledge

Imperatives occur in discourse as modalities. By framing a solution or policy prescription as an imperative it is possible to direct resources to prevent or augment it. Imperatives necessarily are not bad; it is their framing that is the issue. What is needed are better frames for the imperatives enunciated in policy. India's policy documents enunciate multiple imperatives – occurring as threats or opportunities – which need to be addressed via its knowledge society vision. Neoliberal reforms are presented as necessary due to globalisation and the imperatives of harnessing knowledge. Neoliberalism promises development and is presented as a better system than statist, dirigiste planning. The 1991 liberalisation reforms were presented to the masses as a political imperative in the face of the near bankruptcy of the economy. Likewise, India's knowledge society policy discourse contains arguments regarding the multiple

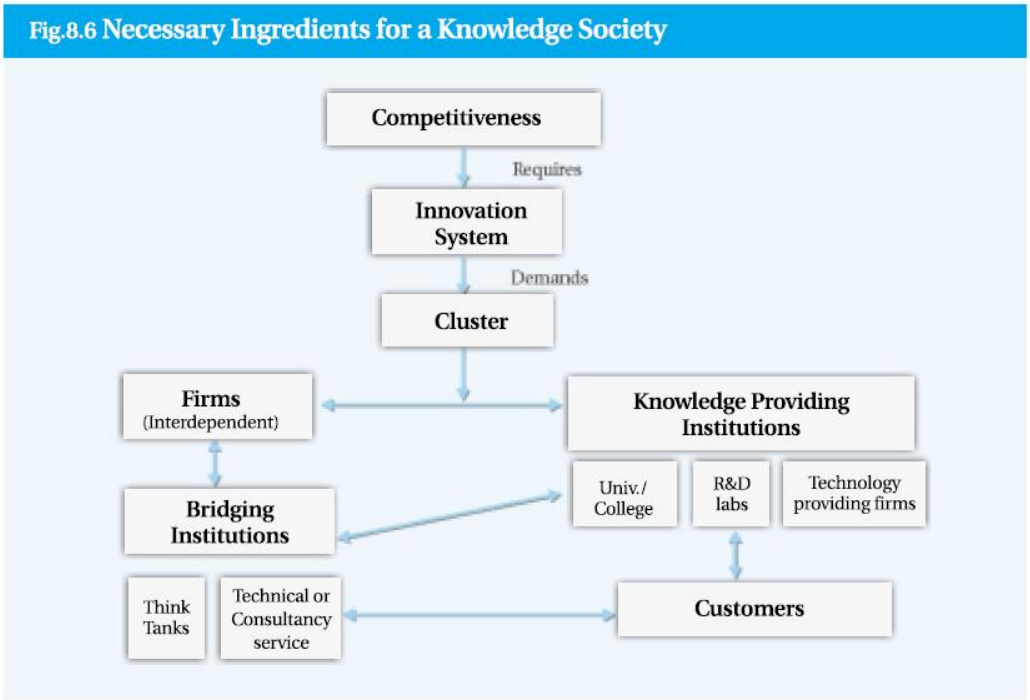
imperatives that need to be addressed through policy. The buzzwords relating to the knowledge society policy such as globalisation, ICT, innovation, IPR, and so on are framed in terms of their costs and benefits. Once the argument is made in these terms, then the neoliberal policy paradigm is presented as the policy model to achieve those objectives.

The Planning Commission document on India as a knowledge superpower argues for the need for knowledge management for wealth generation. Wealth generation and knowledge management are the imperatives for the knowledge society set out at the beginning of the quote. However, in the concluding sentence an additional imperative is added – that the state must facilitate the knowledge economy by regulatory reform. The quote begins with the argument that knowledge of all types is a key developmental resource which needs to be managed by the government. However, the way in which knowledge management, which is the discursive frame used in the following quotation, is utilised leaves out much of the knowledge that is not useful for wealth generation. By excluding non-productive knowledge the knowledge management frame is made to focus on knowledge creation and knowledge exploitation strategies.

> The need of wealth generation cannot be neglected while developing a knowledge society. Since knowledge of all types will be the engine of growth in a knowledge society, there is a need to manage this knowledge at the national level. A nation wide knowledge management framework is suggested …. Like knowledge management in organizations, Nation wide knowledge management involves a set of infrastructure, processes, policies and practices which will lead to an environment where knowledge creation is encouraged, nurtured, rewarded and finally exploited for achieving the nation's economic and societal objectives. Nation's S&T, fiscal, trade and industrial policies need to be evolved based on nation's strength, weakness, environmental threats and opportunities. The implementation of knowledge creation and knowledge exploitation strategies finally lead to wealth generation and improvements in national economic indicators. The seven strategies identified, three for knowledge creation, and four for knowledge exploitation are:
> i) Building up infrastructure for intellectual property rights (IPR)
> ii) R&D through R&D networks
> iii) Human Resource Planning and Development
> iv) Promoting Venture Capital
> v) National and International Market Development
> vi) Selected technology acquisitions
> vii) Infrastructure Development
> All the above strategies require changes in laws and regulations to facilitate the Indian knowledge economy (Planning Commission, 2001b, pp. 63-64).

The imperatives of a knowledge society are best explained in a Table (reproduced here as Figure 9.5) showing the requirements of a knowledge society which India's policy must address. It is noteworthy that competitiveness and innovation are the most significant requirement and that people are conceptualised as "customers". Here the innovation system is a proxy for the knowledge society.

Figure 9.5: Requirements of a knowledge society



Source: India as Knowledge Superpower (Planning Commission, 2001, p. 68).

Table 9.5 (see Appendix A) shows some of the imperatives used and the solutions offered in the discourse.

9.1.5. Style: The identity of the nation and that of an individual

India views itself as a key player in the world who has not been given its due importance. It sees its comparative advantage in IT-related exports as a key opportunity to not only gain economically but also to derive political power at the global level. It views its knowledge society vision as a vehicle to achieve the illusive superpower status. India's self-identity, as materialised in discourse, is that of a self-confident country which has successfully weathered the storms of geopolitical rivalries with China, Pakistan and the earlier Cold War rivalry between USSR and USA.

The Planning Commission report on India as a knowledge superpower captures the essence of this new found confidence when it argues that

> A view of the impressive achievements of the Indian civilization over three millennia reinforces the belief that India was a leading knowledge society in the millennia gone by. There was a continuous process of intellectual renaissance through some awe inspiring contributions by our saints, poets, philosophers, scientists, astronomers and mathematicians to new thoughts, principles and practices. The decline, especially during the colonial period, set India back. However, India has the potential to capture its past glory, learn the key role of knowledge in development and become a leading knowledge society. What gives us this confidence? … India has a number of strengths. India enjoys a broad based and diversified Science and Technology (S&T) infrastructure. Development of technology in space, defence and atomic energy in spite of regimes of denial and control by other nations, our achievements of self-sufficiency of food, the strong position of our drugs and pharma as a net exporter developed entirely on the basis of indigenous Research and Development (R&D) are some of the achievements that we can be truly proud of. It is the Indian minds today, which are making waves internationally in knowledge based industry; India having become the most sought after destination for software being just one example of this emerging scenario in this century (Planning Commission, 2001b, pp. 1-3).

Noting that ancient India was a leading knowledge society of its time, the role of the "Indian minds" is praised, in the above quotation, as being responsible for giving it the confidence to once again be a leading knowledge society. The individual figures in many descriptions. For instance in the following quotation it is argued that the knowledge society needs to be inclusive to make public the consumers of "knowledge products" and it particularly identifies farmers and housewives in this regard. Further the quotation distinguished between the "knowledge workers" who produce knowledge products and "enlightened citizens" who consume those products.

> A vibrant and dynamic knowledge society has to touch every member of the society, including the farmers and housewives. Therefore every strata of society should become consumer of knowledge products that will make them an integral part of a prosperous society. Thus, the basic constituents of the knowledge society would be the knowledge workers who create quality knowledge products and the enlightened citizens who consume such products. The knowledge society benefits by an appropriate level of feedback and driver mechanisms that contribute to the multiplier effect. This, in effect would demand the movement of our knowledge products towards those based on innovation and ultimately, wisdom (Planning Commission, 2001b, p. 8).

Knowledge workers are the "real capital' of the knowledge society as they have the "capacity to create explicit and tacit knowledge rich products" (p. 58). While India's

knowledge workers are lauded, its "scientific manpower", though being large is derided for being of poor quality (p. 10). The problem identified is the mismatch between the universities and the requirements of the society. Lifelong learning being a key feature of the knowledge economy, individuals need to be constantly upgrading their skills to be "relevant and productive" in their socio-economic environment (p. 14). In the knowledge society "intellectual assets" of individuals hold the key (p. 15). Intellectual assets of researchers and entrepreneurs are identified as key to individual and national wealth.

The ambitions of India as a nation are solely dependent upon the ability of the state to transform society members into highly productive, wealth generating knowledge workers. Since bulk of India's population resides in the countryside and are agriculture dependent which is riddled with efficiencies and low productivity, the government aims to reduce this dependency by encouraging farmers and rural women to be knowledge workers. This it intends to achieve by first introducing high technology in agriculture which will release surplus workers from agriculture who can then be upskilled in IT and other technology sectors.

> By focusing on all walks of life, be it a farmer or a rural woman or a customer, we can indeed make all of them knowledge workers. A farmer can be a knowledge worker… Our empowering him to use information and knowledge will make him a knowledge worker. These advantages unleashed by technology will enable gradual reduction in the number of farmers through the years, while maintaining the agricultural production at the required level. … In short, empowering every single Indian with knowledge in his or her respective sphere of action or influence will help in improving the 'national efficiency' in every single walk of life, ranging from agriculture to industry to knowledge based service industries. A new paradigm in the Indian social and economic transformation is thus entirely possible at a pace that has never been witnessed before in India (Planning Commission, 2001b).

The identity of the Indian public in the knowledge society is to be transformed by the actions of the government which it characterises as a government-directed social movement.

> Most of the social transformation takes place through public participation. Starting a government-supported but people driven movement **Marching towards knowledge society [**Emphasis in the original] can facilitate this. The leadership and active involvement of government, semi-government and non-government organizations is the key to the success of such social movements (Planning Commission, 2001b, p. 68).

By this social movement, the government aims to create awareness and demand for universal primary education, and healthy lifestyle. Further, boosting pride in India's ancient heritage and nationalism, social and community solidarity, and social and environmental responsibility were to pursued as a "value engineering exercise" (p. 68). It should be noted that boosting pride in ancient cultural heritage and knowledge are central components of the ideology of 'hindutva' (cultural nationalism based on Hinduism) espoused by the Vajpayee's BJP-led coalition government. The ideology of hindutva is motivated by what minority religions and leftists regard as the exclusionary idea of the primacy of Hinduism in Indian life.

Some additional features of the individual in the knowledge society can be deduced from Figure 9.6 (see Appendix B) which has been reproduced from the Planning Commission document on India as a knowledge superpower (Planning Commission, 2001b, p. 58). The 'empowerment' ideal given as the object of the knowledge society doesn't really answer how much empowerment and for whom? Allegedly, it includes everyone but in practical terms it would empower only those who have the capability to benefit from knowledge economy. Likewise, education is expected to focus on values including merit – something unattainable in India given the current affirmative action policies in education.

It is clear from the above discussion that the government at the time of publication of the document was clearly aiming to mount a social and political movement for the exploitation of knowledge, based on the neoliberal modalities of social engineering viz. reducing choice for the people on the margins and by removing their agency. Society, especially groups who are considered to be an obstacle or less productive such as rural folk or basic science students and personnel, are deemed as candidates for conversion to the new ideology.

9.2.0: Meso-level analysis

9.2.1.0. Interdiscursivity

Like New Zealand, India's knowledge society discourse is centred on technological knowledge-based solutions. Thus arguably it is influenced by discourses related to technologisation of society – which is a belief that technology can boost human agency, capabilities and development. These include the discourses of development economics

and knowledge management. Since politics is a key facilitator of these viewpoints, domestic policy relating to science and technology and human resource development also plays an interdiscursive role in the materialisation of knowledge discourse. I will explain these interdiscursive influences one by one.

9.2.1.1. Development economics

India is a country where development economics thinking has made a U-turn. The Nehruvian socialist model came to an abrupt end in 1991 with the implementation of liberalisation reforms. While the most obvious feature of socialism – centralised development planning – survived, it was mainly due to the determination of the planners to centrally direct liberalisation reforms. The era of socialist planning focused on basics of development and on self-reliance in essential products and services. Since India was not really developing despite self-sufficiency in many critical sectors such as food and industrial production, the sense that future economic growth depended on developing comparative advantage in niche areas gained momentum. The liberalisation era changed the orientation of the economy from inward looking to outward looking. What also changed was the emphasis on security in primary and secondary products to an emphasis on efficiency and quality of products that could compete internationally. This required massive investment in upgrading of industrial processes and infrastructure development in all sectors of the economy. As liberalisation proceeded in phases, the reliance on expert knowledge for guiding, conceptualising and monitoring reforms became pronounced. The focus in planning shifted from resource planning to reform planning as is evident in the discourse on the formulation of the Tenth Plan (Planning Commission, 2002a). The thinking was that higher economic growth rates have a higher chance of decreasing poverty levels.

The Approach Paper on the Tenth Plan "called for a shift from maximising the quantity of development funding to the quality of development outcomes, and towards increasing effectiveness of public service delivery" (Planning Commission, 2002c, p. 117). The opening of India's market to foreign companies in the consumer products and services sector enabled the rapid rise in ownership of consumer items. India's vast middle class became the target of new products and services. The development of ICT infrastructure boosted India's nascent IT exports sector, which received a further fillip with the onset on the dotcom bubble and the Y2K problem. ICT personnel from India

were in great demand in booming economies in the West, particularly in English-speaking countries. The growing integration of India into the world economy led by technology products and services convinced policymakers that this was a strategic sector to India's economic prospects in the medium to long term. Neoliberal notions such as efficiency, deregulation and development of the free market acquired central importance in development planning. As the Approach Paper to the Tenth Plan (2002-2007) noted,

> the broad strategy of the Plan will be to rely on a combination of increased investment and improvement in efficiency based on unlocking of hidden capacities in the economy, unleashing repressed productive forces and entrepreneurial energies and upgrading technology in all sectors, all of which will improve efficiency in all economic activities. This will require acceleration of the process of moving towards a market economy with rapid dismantling of policy constraints, procedural rigidities and price distortions. It will also require that the essential institutional structure necessary for the orderly operation of a market economy be strengthened significantly (Planning Commission, 2001a, p. 11).

While the general thrust on increasing reforms has been maintained in the Approach Paper to the Eleventh Plan (2007-2011), there is some discursive emphasis on pro-poor growth because government at this moment is supported by the Left parties.

> The 11th Plan provides an opportunity to restructure policies to achieve a new vision of growth that will be much more broad based and inclusive, bringing about a faster reduction in poverty and helping bridge the divides that are currently the focus of so much attention. … Rapid growth has to be an essential part of the strategy since it is only in a rapidly growing economy that we can expect to raise the incomes of the mass of the population sufficiently to bring about a general improvement in living conditions. … It is also possible to adopt policies that will ensure that this growth is broad based, benefiting all parts of the country, and especially the rural areas. … This must be accompanied by a major effort to provide access to basic facilities such as health, education, clean drinking water etc., to large parts of our population which do not have such access at present. These essential public services not only impact directly on welfare in the short run, they also determine economic opportunities for the future (Planning Commission, 2006b, pp. 1-2).

Technological knowledge and innovation are central components of India's developmentalist discourse. The neoliberal developmental strategy views these as drivers of change. The problem for any economy in relation to technology innovation is its financing. Since neoliberal regimes demand reductions of state sector enterprises in comparison to the private sector, it is considered imperative that finance come from non-state sources. The role of the state is to create facilitating conditions for innovations

to take place. These conditions relate to development of innovation clusters such as Technology Parks and allowing finance from home and abroad to come in. The concept of a national system of innovation described in the India as a Knowledge Superpower document (see Figure 9.5 above) emphasises the need for such facilitative policy interventions. Two financing mechanisms – venture capital and Foreign Direct Investment (FDI) are accorded great importance in India's development policy. The Planning Commission formed a Committee on Technology Innovation and Venture Capital in 2005 to examine the policy steps needed to motivate venture capital to flow into new ventures. The Committee report suggests that,

> The basic goal of policy must be to facilitate the emergence of such an ecosystem for innovation. At one end it must work at promoting excellence in education and research. This is the primary task of science and technology policy. At the other end it must establish a fiscal and regulatory framework that encourages risk taking by financiers. In between these two ends there is a role for public intervention in the incubation and nurture of technology start-ups so that they can be brought to a point at which market forces can take over (Planning Commission, 2006a, p. 6).

There are many technology incubators in India. For example most states now have Software Technology Parks which attract new start-ups as well as established overseas companies to setup R&D labs. in India. This scheme has been instrumental in attracting both venture funding for start-ups as well as FDI in R&D labs.

Since IT is the focus industry in India's new development policy, concepts from Information Systems science such as convergence are joined with neoliberal concepts including deregulation and competition to construct an argument that IT can only contribute to India's development if the government adopts a policy of infrastructure and regulatory development. During the formulation of the Tenth Plan, the Planning Commission appointed two Working Groups on Information Technology, and Convergence and E-governance to recommend policies that promote IT, convergence and e-governance (Planning Commission, 2001c, , 2001d). The recommendations of these working groups follow a pattern whereby they first place IT at the centre of policy based on India's recent successes and then identify the threats and opportunities facing Indian IT industry. The major threats relate to policy and infrastructural weaknesses, competition from other countries and lack of domestic penetration of IT. Based on these perceived weaknesses, new policy regimes are suggested which ask for greater

reform, liberalisation and deregulation. The following quotation is an example of a typical argument.

> Technological changes, convergence, and deregulation are taking place throughout the World. They have brought about rapid growth in several industry sectors, together with many challenging issues to address. Changes in markets have led to the convergence of ownership and services across national boundaries and have created gaps and contradictions in national policy. Driven largely by technological developments, which can be a boon or bane, for developing countries, the converging communication environment has profound policy implications. Visions developed for the future foresee the eventual emergence of an Information Society in India based on the Convergence of Telecommunication, Broadcasting, and Computers. … Information Technology and Bio-technology have now become the "drivers" of globalisation of the economy, with their complementarities of liberalisation, privatisation and tighter intellectual property rights. The global economic transformation is now intensifying and leading to rapid economic growth. Unlike most developing countries, India is expected to gain from the emerging "digital economy"… . (Planning Commission, 2001c, p. 3).

9.2.1.2. Knowledge management

In addition to the discourse of the new development economics, knowledge management is the other interdiscursive influence on India's policy. A basic proposition of knowledge management is the implicit-explicit knowledge distinction whereby the management of these is the most important role of any organisation. It is argued that competitive advantage provided by sound knowledge management practices leads to greater wealth and prosperity. Such knowledge management ideas have an important effect on the knowledge society policies because the aim of such policy is also wealth generation. India is no exception to this rule. In India's discourse of the knowledge society, knowledge management is a salient feature. The document, India as a Knowledge Superpower, argues that as in organisations there is a need to manage knowledge at the national level. It proposes a Nationwide Knowledge Management Framework (see Figure 9.7 in Appendix B) and states that,

> Like knowledge management in organizations, nation wide knowledge management involves a set of infrastructure, processes, policies and practices which will lead to an environment where knowledge creation is encouraged, nurtured, rewarded and finally exploited for achieving the nation's economic and societal objectives (Planning Commission, 2001b, p. 64).

Nationwide knowledge management which involves administration of knowledge creation and knowledge utilisation accords greater role to the state via its political and

administrative/bureaucratic machinery. Nationwide Knowledge management was to occur at two levels – (1) knowledge management for wealth generation and economic development which was deemed to be akin to "project management" and could be administered by planners and bureaucrats (p. 69), and (2) management of the "social revolution" which is "strategic change" requiring "high degree of leadership" for which a Cabinet Committee for Knowledge Society composed of top bureaucrats, experts and politicians was proposed (p. 69).

Other sites of knowledge management include (a) the Tenth Plan scheme to impart training to college lecturers in 3500 colleges on knowledge management so that they can act as "active catalysts and facilitators" for the knowledge society (Planning Commission, 2001d, p. 109); (b) knowledge management indicators to monitor "national knowledge performance" and "monitor and improve knowledge management in governance" in the National Knowledge Index proposed by the National Knowledge Commission (National Knowledge Commission, 2005a, p. 1), and; (c) a proposal for policy measures to enhance knowledge management in IT services during the Tenth Plan (Planning Commission, 2001d).

9.2.1.3. Reservation

A final interdiscursive influence relates to the more recently developing domestic political debate on the issue of affirmative action policies or "reservation" on the knowledge society discourse. The issue of reservation spans all areas of development in India but in relation to the knowledge society it has profound implications in the Human Resource Development (HRD) and S&T areas of policy. Reservation is a perennial issue in India's domestic politics and is enshrined in the Constitution. While the Constitution accords the right of equality in all respects, it has made special provisions for social, economic and educational advancement of backward classes. Places are reserved for Scheduled Castes (SC), Schedules Tribes (ST), and Other Backward Classes (OBCs) in higher educational institutions and public sector jobs in the Central Government and various states of India. The all India break-up of reservation policy is as follows: 12 percent for SC, 7.5 percent for ST and 27 percent for OBC. Various states of India devise their own quota based on the caste composition of the state. While the reservation for SC & ST categories have been generally accepted, the implementation of OBC reservation has been more difficult. The OBC reservation was

recommended by the Mandal Commission in 1980 but steps to implement it were only taken in 1990 by the Janata Dal government. Periodically, there have been mass agitations against the OBC reservation system. For instance, the Anti-Mandal Commission agitation against implementation of the 27 percent jobs and seats for OBC's in 1990 and more recently in 2006 the agitation by medical and engineering students against implementation of the OBC reservation in elite, central government-funded higher education institutions. These institutes which include among others, twenty Central Universities, Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs) and the All India Institute of Medical Sciences (AIIMS) were excluded for OBC reservation till the Manmohan Singh government in 2005 proposed to implement them. In 2006 the Ministry of HRD, on the basis of 93rd Amendment to the Constitution of India, took steps to implement 27 percent OBC reservation in the above mentioned institutes and also in elite private educational institutes and companies. These institutions which include medical, engineering and technology, central universities and management contain some "world class" institutions made prestigious by the extreme competition for entry, quality of curricula and research, and the status of their alumni. It was felt by the staff and students that more reservation would lower their prestige and undermine the principle of merit.

While discussing the issue, the National Knowledge Commission (NKC) recommended that the government should not go ahead with the decision and instead explore alternative policy options (National Knowledge Commission, 2006). The Minister of HRD reacted strongly to the suggestion and criticised the NKC for having no *locus standi* on the issue, upon which two members – Andre Bateille (the sole sociologist in NKC) and Pratap B Mehta (an academic who is a director of Centre for Policy Research, a private, public policy think-tank) – resigned in May 2006 (Mehta, 2006). Mehta in his resignation letter to the PM charged the government for abetting a "politics of illusion" and opined that reservations,

> violate four cardinal principles that institutions in a knowledge based society will have to follow: they are not based on assessment of effectiveness, they are incompatible with the freedom and diversity of institutions, they more thoroughly politicise the education process, and they inject an insidious poison that will harm the nation's long-term interest (Mehta, 2006).

Further, Mehta implies that in an era of globalisation, market and competition India can not achieve the twin objectives of social justice and economic development by employing affirmative action policies.

> I believe that the proposed measures will harm the nation's vital interests. … The Knowledge Economy of the twenty-first century will require participation of all sections of society. … globalisation requires us to think of old objectives in new paradigms: the market and competition for talent is global, institutions need to be more agile and nimble, and there has to be creativity and diversity of institutional forms if a society is to position itself to take advantage of the Knowledge Economy. I believe that the measures your government is proposing will inhibit achieving both social justice and economic well-being (Mehta, 2006).

The government reacted to the protests by assuring that student places and faculty numbers would be increased so that non-reserved categories do not suffer (Wikipedia, n.d.) and appointed an Oversight Committee (Oversight Committee, 2006a) with a mandate to monitor the implementation of OBC reservation and to suggest infrastructure and other changes required so that general category seats are not reduced. The Oversight Committee in a theme paper (Oversight Committee, 2006b) and its final report (Oversight Committee, 2006a) framed the issue of OBC reservation in terms of equal opportunity in a socially inclusive knowledge society which would require an expansion of seats in premier educational institutes.

> If India has to face the challenge of the 21st century and find a place for itself in the community of nations, we need to build a knowledge society. To realize that, we have to increase opportunities in education and enhance the capacity of institutions of higher learning. A knowledge society will have to be built up on the foundations of inclusion, (equal opportunity) expansion and excellence. Equal opportunity, expanded opportunity and excellence will create an inclusive society and an environment of vast areas of knowledge. Equal opportunity is at the heart of the matter. Equal opportunity will provide a fair chance to everyone to participate productively in the creation of a knowledge society and add to its excellence by expanding the talent pool (Oversight Committee, 2006b, p. 1).

The whole issue of OBC reservation arose out of the present government's election pledge to formulate pro-poor policies. The conflict between the policy aim to improve social, economic and educational status of the backward classes with the neoliberal policy imperatives on the knowledge society highlights the incompatibilities between the two models of development. A knowledge society based on policies that exclude amelioration of the backward classes as its objective is a recipe for disaster; and a modification of pro-middle class policy sends wrong signals to the world. The

government is caught in a dilemma. While it wants India's middle class-led IT revolution to prosper, it can only do so if it ignores the interests of poor at the cost of political misfortune. The problem actually lies in the way in which Indian knowledge policy is built around its IT prowess. This narrow conceptualisation discursively propped by the neoliberal developmental model leads to further deepening of long-standing socio-economic disparities. By its interdiscursive introduction into the knowledge society discourse, the discourse of reservation itself has changed apart from changing the parameters of the knowledge society discourse. As is evident from the Oversight Committee report and the deliberations of the NKC, reservation and knowledge policy discourses can no longer exclude each other. They have become intertwined and in the process lost its original potency. It will no longer be possible to isolate the neoliberal knowledge society discourse from the reservation issue. Likewise, no longer will reservation policy remain unquestioned. Both policies will have to change and accommodate each other.

While the present government was forced to open the Pandora's Box of reservation based on its alliance with Left parties, the previous government under BJP completely ignored it. The word "reservation" does not appear even once in the *India as a Knowledge Superpower* document of the BJP-led government. This is because BJP saw the knowledge society through the discursive lens of cultural nationalism or *hindutva*. Based on this ideology, India had to become a knowledge superpower to regain its ancient glory and it found in the neoliberal model a fast way to achieve it. Congress, being the oldest political party in India, has always tried to adapt according to the situation. While in 1991 it introduced liberalisation to reverse an old system which had a reached a crisis point, in 2004 it sought to moderate existing liberalisation policies citing the disparities they were causing. Reservation being the cornerstone of the pro-poor agenda in Indian policy was re-politicised discursively, this time in the context of the knowledge society. The inter-party differences in interdiscursive preferences are motivated by the politics of "vote bank" as the character of the major parties is dictated by their caste, class, ethnic, ideological, regional and religious inclination. For example, BJP is a Hindu nationalist party catering to the interests of the upper caste Hindus; Congress is a centrist party with a long standing record of targeting significant minorities like Muslims and class groups like middle and upper class; Left parties follow communist ideologies ranging from Marxism-Leninism to Maoism and are

openly anti-capitalist. This panorama of India's political elites deploys interdiscursivity on issues based on their electoral/political interests.

However the interdiscursive influence of domestic political discourses such as reservation has not reduced the centrality of the neoliberal developmental model. The only political parties, such as Left parties, that directly oppose liberalisation do not have enough electoral success to change policy. They are able to affect policy only indirectly such as when they support a government from outside or through an alliance. As a result, in the last 15 years, neoliberal development economics has been able to entrench itself in the policy fabric of India.

9.2.2. Intertextuality

As in interdiscursivity, intertextual relations in India's knowledge society discourse in-effect largely work to corroborate the neoliberal development theory and practices. India's knowledge policy discourse relies on both foreign and domestic intertextual sources. India's development policy has always looked outside for inspiration. For example, the socialist planning model was based on the Soviet model. Even India's constitution combines ideas from USA, UK, and Ireland, among others. Policy ideas, events such as meetings, and data originating from international organisations and forums such as UN, WTO, World Bank and IMF are often incorporated in the policy documents. There is also evidence of reverse intertextuality where international agencies such as the World Bank construct their India-specific knowledge discourse on prominent reports such as the India as a Knowledge Superpower report (Planning Commission, 2001b) (see for example the World Bank report on India's knowledge economy (Dahlman & Utz, 2005)). Domestic sources include experts and political figures consulted or quoted in the text, data from topical surveys, and other policy and legal reports.

The political intertextuality of texts can be explained by the governmental structure which produces policy knowledge. The structure of India's policy discourse derives from its policy structure. The Planning Commission is the main policy research organisation in India. It collects vast amounts of data on all aspects of policy. This data is presented in Approach Papers, evaluations, mid-term plan appraisals and the Plan documents. The Approach Papers which begin the planning exercise for a five year plan

evaluate the previous plan and include the political ideology of the incumbent government. The approach papers to the Tenth and Eleventh Plans (Planning Commission, 2001a, , 2002a, , 2006b) are evidence of this political intertextuality. The Approach Paper to the Eleventh Plan prepared under the present government argues the need for inclusive growth while aiming for a higher growth rate in line with its professed political ideology. The Approach Paper to the Tenth Plan prepared under the BJP government argued for facilitative reforms to achieve an 8 percent growth target.

The Planning Commission, being a government think-tank, appoints expert committees and working groups on topical issues. Considering that the aim of BJP government (1999-2004) was for a higher growth rate amidst facilitative reforms, the motivations for all the expert groups during its tenure reflected this aim. The Task Force on Knowledge Society is part of this intertextual chain of documents referring to other domestic and international sources. It contains references to other related task forces such as the IT Task Force (National Task Force On Information Technology And Software Development 1998). Likewise, it contains references to best-practices abroad in countries like Australia, USA, Ireland, Singapore, Malaysia and China. The Tenth Plan document invokes WTO Doha round meetings and what India should aim at in terms of Intellectual Property Rights (IPR) (Planning Commission, 2002c).

The Vision 2020 report (Planning Commission, 2002b) likewise includes arguments and data from the World Development Report and World Development Indicators reports of the World Bank, quotations about India from an 1835 debate from British Parliament, an extended discussion of a visionary poem by India's Poet Laureate Rabindra Nath Tagore, and comparisons with Japan, Asian Tigers and upper-middle income countries such as Chile, Argentina, South Africa and Mexico. As we can see from some of the important reports of the Planning Commission discussed above, political intertextuality in India's discourse consists of both domestic as well as international relations.

In terms of conceptual intertextuality, direct references to scientific sources in relation to the concept of 'knowledge society' are absent in India's discourse. The *India as a Knowledge Superpower* document contains a reference list at the end largely consisting of documents by members of the Taskforce. This document gives its own definition of the knowledge society. Many of the assertions such as, "Twenty first century will be the century of knowledge" (Planning Commission, 2001b, p. 1) or "a knowledge society is

a learning society" (p. 6) are so commonplace in many international policy as well as academic documents that they have almost become truisms.

The term "knowledge superpower" is an example of two concepts being intertextually hybridised – the concept of knowledge and the concept of power. The word superpower is widely used in international security discourse. Its collocation as a metaphor with knowledge suggests an attempt at framing knowledge as vital for India's security and international standing. The superpower metaphor semantically transforms knowledge into a central position in the power game between nations. Security related concepts such as rivalry, assets, deployment, deterrence, security and balance of power transform the meaning of the word knowledge. As knowledge comes to be seen as a supreme asset in national security, the notion of superpower is also changed – from one based on military prowess to one based on knowledge. This transformation of the meaning of superpower is evident in the following quote:

> Tomorrow's world will be driven by superiority of intellectual assets, and not merely by superiority in military arms, natural resources, or any of the other traditional areas of power (Planning Commission, 2001b, p. 15).

The conceptual intertextuality of 'knowledge superpower' can be established with other documents from India. The genesis of the superpower metaphor can be traced to the 1998 report of Taskforce for Information Technology and Software Development where superpower has been collocated repeatedly with words 'IT' and 'software' (National Task Force On Information Technology And Software Development, 1998). It has also been repeatedly used in relation to IT (as "Global IT Superpower") in the Planning Commission Working Group Reports on E-governance and IT and in the DIT's IT Taskforce reports (Department of Information Technology, 2003, p. 1; Planning Commission, 2001c, p. 39, 2001d, pp. 2,6,15,18). The Tenth Plan document shows evidence for use of superpower in relation to both knowledge (Planning Commission, 2002c, pp. 58,64) and IT (p. 1029, 1111).

The superpower metaphor can be found only in the documents published by the BJP-led governments and is absent in the discourse of the Congress. This lends credibility to the argument that BJP being a right-wing Hindu nationalist party had been convinced that the future of India lay in being a superpower and ICT was one of its tools to achieve that goal. It should be remembered that it was BJP which eventually forged ahead to conduct the nuclear tests in 1998 and announce to the world it was a nuclear power.

In concluding the section on intertextuality, I end by stating that the role of knowledge in India's policy is a reflection of the key changes in its political economy. The rising influence of its ICT industry, expansion of military power, the adoption of neoliberal reforms, and the consistently high rate of economic growth in the last decade has led to a greater integration of India with the world. As a result of these changes in political economy which have bearing on one another, new meanings have come to be attached to the concept of knowledge in policy. These meanings are shaped by the intertextual transfer of concepts from one sphere of politics to another. The metaphor of 'superpower' is an example of intertextual meaning transfer in relation to concepts such as IT and knowledge. In the next section, I will explore the meaning dimension in greater detail.

9.3.0: Micro-level analysis

In the micro-level analysis of India's knowledge policy, I begin by analysing the construction of social identity in relation to modality and topic control. Thereafter, I analyse the construction of social reality in relation to word meaning and the wording of key concepts in the knowledge society discourse. The first focus on the modality dimension of texts highlights the construction of 'publics' or subjects and its salience in the order of discourse. The construction of the public aspect of modality has been discussed under the discussion of style in the order of discourse above. In the section of modality below I will restrict myself to a discussion of influence of the modality of futurism on the discourse. The second focus on word meanings and wording is particularly significant in answering questions relating to what does the knowledge society mean in the policy discourse? In the text samples used in micro-level analysis, key words and phrases have been underlined and paragraphs have been eliminated to enable easy reading.

9.3.1.0. The construction of social identity: Modality

There are seven documents with Forewords and five with Prefaces in India's documents under study. Table 9.6 (see Appendix A) shows text samples from Prefaces and Forewords representing expressions of modality. In the text samples, both deontic (author's commitment to realisation of his/her propositions) as well as epistemic

(author's certainty in the truth potential of his/her belief) modality can be observed. Future is the subject matter of the samples. Future is expressed in various ways. It is expressed directly with reference to concrete time ("before the end of the second decade of this new century", "over the next two decades"), or with vague reference to time ("The coming decades"). Likewise, future can be expressed indirectly using metaphors ("dawn of the knowledge era") or by reference to a future space-time ("India's emergence as a nation to assume the role of knowledge superpower").

9.3.2.0. The construction of social relations

Word-meaning and wording of meaning are two dimensions which CDA uses to grasp how social relations in terms of ideas, concepts and beliefs are manifested in the text.
In this section, first I will focus on the word meaning dimension where I will describe the meaning potential of the word 'knowledge' as it is used in relation to policy labels relating to the knowledge society prevalent in India's policy discourse. I will focus on the labelling preferences of the various texts. Second, I will focus on the multiple ways a meaning is worded where I will describe how certain meanings of the word knowledge are changed by the use of literal strategies (for example, adjectives) and how rhetorical policy concepts such as 'globalisation', 'ICT' and 'innovation', used in context of the policy labels, can change the meaning of the knowledge.

9.3.2.1. Meaning of knowledge society and knowledge economy

Although four labels – the knowledge society, knowledge economy, information society, and IT-driven society - have been used in the documents, the knowledge society is the most frequently used label. Also, it is the only label that has been defined; while others have been discussed in context but not defined. Therefore, I will analyse the definitions of the knowledge society given in the documents and some of the contextual characterisations of knowledge economy, and information society. On the surface the documents give an impression that the meaning of policy labels – the knowledge society and knowledge economy- is distinct from each other and from other related labels such as information society and IT driven society. However on comparing their meanings, they are largely found to be referring to the same thing. In the *India as a Knowledge Superpower* report (Planning Commission, 2001b), the knowledge society and

knowledge economy repeatedly co-occur within the same sentence signifying they are two different things.

The most comprehensive definition of the knowledge society is given in India as a Knowledge Superpower report of the Planning Commission. The definition identifies distinct characteristics which are largely the major topics discussed in the report – empowerment, societal transformation, learning society, creation of economic wealth, protection of knowledge, and the integral view of knowledge stemming from Indian history, philosophy and religious thought.

> What is a knowledge society? It has the following distinct characteristics.
> i) It uses knowledge through all its constituents and endeavours to empower and enrich its people.
> ii) It uses knowledge as a powerful tool to drive societal transformation.
> iii) It is a learning society committed to innovation.
> iv) It has the capacity to generate, absorb, disseminate and protect knowledge and also use it to create economic wealth and social good for all its constituents.
> v) It enlightens its people to take an integrated view of life as a fusion of mind, body and spirit (Planning Commission, 2001b, p. 1).

This definition is repeated at the end of the document as a free flowing text in the conclusion.

> Knowledge Society is one that uses knowledge, through all its constituents and endeavours, to empower and enrich its people to drive the process of societal transformation and to enlighten its people to take an integrated view of life. It is a society that is committed to innovation and learning and has the capacity to create, absorb, disseminate and use knowledge to generate economic wealth and societal good for all its people. It is thus recognized that for a Knowledge Society three important components are mutually interacting from national point of view - societal transformation, wealth generation and knowledge protection (p. 71).

Some of the usages of the knowledge society in relation to policy issues in the same document in addition to the above include: core competencies in IT, Biotechnology and other new technologies; ancient Indian civilisation; software development; knowledge management structure; learning society; human capital; agriculture, women and rural development (“rurbanisation”); education; information security; Personal Computers and the Internet; online and distance-learning; e-governance strategies; products and services; Knowledge Development Index; knowledge workers; innovation system, and; R&D and S&T. (Planning Commission, 2001b).

If we compare this multi-faceted meaning of the knowledge society with contextual characterisations of knowledge economy in this document we can surmise that perhaps its usage in relation to disparate issue serves an ideological purpose. For example:

> There are three basic constituents that shape the knowledge economy. These are computers, connectivity and content (p. 38).

Other contextual usages of the knowledge economy in the same document include: "knowledge industries" and "intellectual capital" (p. 9); "knowledge creation", "knowledge exploitation", and " changes in laws and regulations" (p. 64); "job creation by providing avenues for the agricultural sector" (p. 64); "agri-processing and agro-industries" (p.65); "capacity building" and "R&D based innovations" (p. 66); "biotechnology promotion", "knowledge-based service industries", "Packaging and marketing our ancient scriptures and traditional knowledge, especially in medicine", and "capacity building" (p. 75).

Other major source of knowledge economy arguments are the documents from the National Knowledge Commission (NKC) and the Planning Commission. In the NKC documents 'knowledge economy' has been promoted as a policy aim in discussions relating to: human capital (National Knowledge Commission, n.d.); higher education (National Knowledge Commission, 2005b), and ; National Knowledge Index, human capital and prioritising core competencies (National Knowledge Commission, 2005a). Evidence from the Planning Commission reports points to its usage in relation to: telecommunications infrastructure and globalisation (Planning Commission, 2001a) and; IT-enabled services and outsourcing, ICT in secondary and technical and vocational education (Planning Commission, 2006b)

The contextual uses of the label the knowledge economy and the knowledge society shown above are characterised by semantic relations of purpose, i.e. that the issues that are talked about are needed in the knowledge economy. The issues included in discussions of the knowledge economy relate to the spheres of IT, new technologies, education, R&D and industry – which are also attached to the discussions of the knowledge society. It can be concluded that though the semantic domain of knowledge society is wider than knowledge economy, there is considerable overlap in meaning of the two labels. This overlap is an important characteristic of knowledge society discourse generally in other Asia-Pacific countries. This lack of clear cut distinction

between the two labels in discourse usage suggests that they are prone to fuzziness. The high level of abstraction of meaning has been identified by Fairclough (2004) as one of the features of the discourse of neoliberalism.

9.3.2.2.0. Wording of meaning

Let me turn to the wording of meaning dimension of CDA. In this section, the wording of meaning of the concepts of knowledge, globalisation, innovation and ICT are covered. The evidence that was gleaned from collocating phrases, words and adjectives is discussed below. The features of collocated words and phrases occurring before or after the concept in question have been identified. The word counts for each concept occurrence as calculated by the Adobe Acrobat are also given. As the data pertaining to wording of meaning is quite large, it is not possible to analyse each and every collocational phrase, word or adjective. However, description of their characteristic features helps in understanding the significance of the wording to their meaning.

9.3.2.2.1. Knowledge

Word Count: Knowledge (1319)

I will start with the wording used in the meaning of knowledge in the main document in India's knowledge policy – 'India as a Knowledge Superpower' (Planning Commission, 2001b). Firstly, in this document process and activity denoting words such as, 'build', 'use(s)', 'create', 'protect(ion)', 'assimilation', 'dissemination', skill(ed)', 'safeguard', 'leading', 'new', 'intensive', 'growing', 'quickly', 'potential', and 'dynamic' repeatedly co-occur with 'knowledge'. Secondly, a trend of distinction between various kinds of knowledge can be observed. For example, 'traditional' co-occurs with 'new', and 'genomic'; 'collective' with 'proprietary'; 'explicit' with 'implicit'; 'practical' with 'basic'; 'individual' with 'community' and 'society'; 'oral' with 'paper', 'formal' with 'informal' and so on. Thirdly, there is evidence of collocation of the term 'knowledge superpower' with terminology such as 'societal transformation', 'wealth creation', 'knowledge protection', 'economic prosperity', 'national security', 'this decade', '2010', 'knowledge era', 'information revolution', and 'knowledge revolution'. Fourthly, there is an evidence of collocation of knowledge with words and phrases relating to economic development. Such words and phrases include, "role of knowledge in development" (p. 2); "making waves internationally in knowledge based industry" (p.

2); “national growth”, “knowledge industries”, “knowledge intensive sectors” (p. 5); “knowledge-based products” and so on.

Among other sources, including NKC, Planning Commission, the Oversight Committee, and Speeches of the President of India show evidence of the use of wording and terminology largely similar to those in India as a Knowledge Superpower report. The rest of the sources, significant among them Ministries of IT, Law and Justice, and HRD have used policy-sector specific terminology. In relation to knowledge, some wording of meaning features of these documents include:

(1) Collocation of knowledge with words denoting foresight. For example, “The future of the world is knowledge based and knowledge driven” (Ministry of Law and Justice, 2002, p. section 2.1.2).

(2) Collocation with issues such as reservation (section 9.4.3), higher education and ‘higher knowledge’ (Indian National Commission for Cooperation with UNESCO, 1998), S&T (Department of Science & Technology (DST), 1958; 1983; 2003), IT (Department of Information Technology, 2003; Ministry of Information Technology, 2000; National Task Force On Information Technology And Software Development 1998), and public attitudes to science(National Council for Applied Economic Research & Shukla, 2005).

(3) Collocation with words denoting distinctions and types of knowledge. Words such as ‘traditional’, ‘technological’, ‘indigenous’ ‘scientific’, ‘general’, ‘specialised’, ‘international’ and ‘global’ have been repeatedly collocated.

(4) There is evidence of collocation of knowledge with sector-specific terminology. For example, ‘cyber’, ‘security’ and ‘multimedia application’ in the case of the Ministry of Information Technology; ‘synthesis’, ‘higher’, ‘teaching’, ‘skills’, ‘literacy’, ‘attitudes’, ‘languages’, and so on in the discourse of the Ministry of Human Resource Development.

9.3.2.2.2. Globalisation

Word count: Globalisation (48), globalization (22)

When compared to the concept ‘knowledge’, the incidence in discourse of the concept ‘globalisation’ is small. The Plan-related documents of the Planning Commission are the most active users of the concept of globalisation. Other sources for globalisation include the India: Vision 2020 report of Planning Commission, Ministry of Law and Justice, and the NKC. In the Planning Commission discourse, the wording of ‘globalisation’ highlights it as a process vital to integration into the world economy. In the quotation below the wording of globalisation shows how its meaning is reduced to its economic dimension. Conceptually, the terrain of globalisation is dominated by concepts such as liberalisation, international economic relations, production, investment, trade, finance and technology. However the argument as a whole suggests the fears of policymakers regarding the negative impact of globalisation on the power of developing countries to face up to the advanced countries and institutions controlled by them. In terms of grammar, terminology used in this quotation reflects emphasis on process and structure related metaphors, words and phrases such as ‘shaping a new system’, ‘changing pattern’, ‘global span’, ‘dominant’, ‘increased interaction’, ‘accelerating pace’.

> The twin processes of globalisation and liberalisation are shaping a new system of international economic relations in which the changing pattern of investment, production and trade, the global span of finance and the central role of technology are dominant. The increased interaction with the world economy is expected to be facilitated by the overall reduction in the cost of transaction and communication. The accelerating pace of liberalisation and globalisation in the world economy has increased opportunities for growth and development, but it has also added new complexities and risks in the management of global interdependence. The ability of the developing countries to influence the pace and direction of global policy initiatives is still weak, while their vulnerability to the economic policy decisions taken by major developed countries, and more so by major market institutions, has increased (Planning Commission, 2002c, p. 97).

In the globalisation discourse of the Planning Commission, the key features that can be observed are:

1. Collocation with words and phrases denoting activity and purpose. Steps that need to be taken for the growth of the Indian economy are justified with globalisation. Words and phrases such as ‘process of’, ‘trend of’, ‘benefit from’, ‘impact of’, ‘acceptance of’, and so on, are prefixed before globalisation.

2. Globalisation co-occurs with neoliberal concepts such as ‘liberalisation’, ‘privatisation’, ‘opening of the economy’, ‘lowering of tariff barriers’ in disparate arguments ranging from promoting IT infrastructure and services, S&T, and trade liberalisation and regional trade blocks. Globalisation is, as *Vision 2020* claims, an engine for growth that is “opening up new markets” (Planning Commission, 2002b, p. 18)

3. Globalisation is not only an enabling activity, it is perceived to be a threat as well. Potential threats such as the patenting of traditional knowledge (Planning Commission, 2001b), and the protection of culture, livelihood and knowledge of India’s remote tribes (Planning Commission, 2002c) are highlighted.

9.3.2.2.3. ICT

Word Count: IT, ICT and Information Technology (2660)

ICT is not just a policy concept but also a domain of policy. As an economic sector it has recently acquired great significance in India. These are the principle reasons for its frequent usage in India’s policy discourse. ICT (also referred to as ‘IT’ and ‘information technology’ in the discourse) is linguistically a hyponym for information technology (IT), IT-Enabled Services (ITES) and information and communications technology. The wording of the meaning of ICT in India’s discourse reflects strong lexical relations with words and phrases such as ‘sector’, ‘for the masses’, ‘industry’, ‘enabled services’, ‘software and services’, ‘products and services’ and ‘growth’. ICT is ubiquitous in all the documents under study. Argumentatively, ICT is a key developmental imperative and is related to issues such as, improving governance through e-governance, convergence of technologies, development of infrastructure, utilisation and diffusion, export of services, education and IT security, among others. For example in the Planning Commission documents (Planning Commission, 2002c) it is seen as a key driver of globalisation and liberalisation; venture capital and foreign direct investment; developmental leap-frogging; Business Process Outsourcing (BPO); S&T; service-sector employment, and good governance.

9.3.2.2.4. Innovation

Word Count: 177

Like ICT, innovation is ubiquitous in India's policy discourse. Two broad meanings can be identified. First, innovation is considered to be synonymous with the facilitative policy reform in the Plan-related documents of the Planning Commission (Planning Commission, 2002c, , 2006a). In this sense, it is used in relation to developing product and service innovations in the financial sector, encouraging the innovations of public administration personnel, and; encouraging product and process innovation and creativity in the export sector. Second, the general policy usage of innovation – technological innovation in the S&T system. In the second sense it is lexically related to a variety of words and concepts. The list below, categorised on the basis of major sources of the innovation concept, shows that lexical relations of innovation differ by document source. Lexical relations of innovation in the Planning Commission documents show a preponderance of neoliberal economic concepts; the NKC discourse on innovation – which is of a technocratic character – emphasises policy aims of monitoring and measuring innovation. Finally, in the India as a Knowledge Superpower document, the meaning of innovation is recontextualised in terms of the knowledge society.

1. Plan related Documents: 'public and private expenditure on R&D', 'IT', 'biotechnology', 'venture capital', 'capital markets', 'commercialisation', 'market', 'risk-taking', 'ecosystem', 'investment finance', 'patents', 'Internet', 'deregulation', 'competitiveness', 'small and medium enterprises (SME's)', 'Industrial Cluster Development Scheme', 'IT in HRD initiatives', and 'management'.

2. NKC Documents: 'competitive and globalised international environment', 'National Innovation Foundation', 'National Knowledge Index', 'ICT infrastructure', and 'Knowledge Competitive Index'.

3. India as a Knowledge Superpower: 'knowledge society', 'learning society', 'traditional knowledge', 'knowledge products', "Traditional Knowledge Digital Library', 'curriculum', and 'innovation system'.

The above examples show a lexical relationship between technological knowledge-driven innovation and socio-economic development. The under-girding feature of this semantic relationship is that since innovation is a key driver of development, policy

should aim to (1) enhance S&T knowledge through a facilitative, neoliberal regime, and (2) monitor the impact of innovation on the knowledge society.

9.4: Conclusion

Three lessons can be drawn from this Chapter. Firstly, the self-image of the state is an important variable in knowledge policy discourse. Ever since independence in 1947, India has sought to shed the post-colonial image by recourse to first a socialist and more recently a neoliberal model of development. A self-image of a resurgent India is very important for the state. The second lesson is that India has not been able to fully exploit its potential as a democracy due to legacies of past such as caste and religion, many of which were sharpened by its colonial experience. Thirdly, India's knowledge policy discourse is inextricably linked to developmental-neoliberalism. India, being an interventionist state, has used knowledge policy to argue that a strong-state is needed to harness the potential of neoliberal policies.

India is emerging as an important source of new technologies such as computer software and biotechnology. India's encounter with neoliberalism and knowledge policymaking is motivated by a combination of developmentalism and self-perception of the state. Starting from the Independence in 1947 till the mid-1980s India's approach to knowledge policy had been towards indigenisation and self-sufficiency through state production and regulation of the private sector. This was the era of techno-nationalism. India started flirting with liberalisation and overseas investment in the mid-1980s under the Rajiv Gandhi government. One focus of the liberalisation of the 1980s was to modernise the telecommunications infrastructure as a basis of export-led development. The rationale was that infrastructure development could help India to leap-frog into the information age. Thus started the era of techno-populism and this formed the basis of the first phase of outsourcing which started in the 1980s. The economic crisis of 1991 led to the introduction of wide ranging neoliberal reforms of the economy. The 1991 reforms showed that fifty years of socialist idealism had become intellectually bankrupt. If socialism was unsustainable in the Indian context, neoliberalism is even a more far-fetched utopia. Though rapid economic growth since 1991 is cited as a proof of success of neoliberalism, this growth has largely by-passed a large section of the society as is evident in worsening disparities along rural-urban, rich-poor, technological-non-technological fault lines. Development in India is a perennial hostage to the nature of

the Indian state. Though India is a democracy, many institutional oversight mechanisms and institutional safeguards to keep a tab on the politics of vested interests and populism are missing. Once elected, the governments are free to pursue their agenda, often ignoring civil society stakeholders. The lack of dialogue between the state and many self-identified stakeholders with competing visions of development is a problem. Another problem is the practical matter of an equitable distribution of wealth and welfare across a mass of over a billion people. Affirmative action policies, targeting nearly half of the population, have had an undesired negative impact – the rise of identity politics along caste, religion and class lines, something which is exploited to the hilt by the mainstream political parties. This type of identity consciousness is an impediment to a well-functioning democracy and policy process. In India many public sector departments reflect the mindset of caste. The caste factor is evident in recruitment, promotion and daily routines of administration.

At the international level, India has been obsessed with a self-image of being an important power player. The discursive shift from the frame of self-sufficiency to that of untapped potentials across a range of policy sectors have served to reinforce the geopolitical visions of the Indian state. India's knowledge policy has served to refashion it from a technology demonstrator to a knowledge superpower. India is happy to adopt neoliberal knowledge and economic policies if they improve its geopolitical power capabilities. Neoliberalism is promoted as a popular choice nowadays in the media and government discourse along with new imaginaries of the tech-savvy citizen such as the "Global Indian" or "Generation X". The populist nature of India's knowledge discourse in the mid-1980s laid the groundwork for even more populist knowledge discourse at the turn of the millennium. A decade after India officially enshrined neoliberalism, when glaring disparities stared it in the face, the state popularised the knowledge discourse to emphasise that neoliberalism is the most appropriate way need to meet the development-enhancing imperatives of globalisation and technological revolution. At this moment developmental-neoliberalism has a sway and has given the state fresh cause to intervene in the society and economy.

Chapter 10: Case study – Fiji Islands

10.0: Introduction

The Republic of the Fiji Islands (hereinafter Fiji) is an archipelago consisting of 320 islands with a population of 8,46085 in 2005 (Fiji Islands Bureau of Statistics, 2006). Indigenous and Indo-Fijians represent approximately 55 and 38 percent of Fiji's population respectively. While Indigenous Fijians are of the Melanesian stock, the Indo-Fijians are descendents of indentured labour brought in by British colonialists in the nineteenth century. Fiji attained independence in 1970 and its post-independence political economy history has been one of ethnicist politics and missed opportunities for ethnic accommodation. Though violent ethnic conflict has been largely absent, ethnic tensions have peaked during times of political instability. The land ownership, economic, religious and socio-cultural differences have contributed to ethnic tensions. (de Vries, 2002). While Indo-Fijians protest that they should be allowed to own more land, Indigenous Fijians are wary of the economic dominance of the Indo-Fijians. The Constitution promulgated in 1990 enshrined affirmative action policies for Indigenous Fijians and barred non-Indigenous Fijians from holding the posts of the Prime Minister and President. Whereas the obstructions to non-ethnic Fijians having high political office were removed in the amended 1997 Constitution, the affirmative action policy was further entrenched by new measures. Also the 1997 constitution institutionalised the right of Indigenous Fijians to communally own 85% of the land. The Great Council of Chiefs (GCC) was institutionalised with the power to elect the President and to nominate 14 out of 32 senators. The GCC, comprising highest ranking members of the traditional chief system, plays a major role in the polity because they acquire great importance during times of political crisis like the coups. In April 2007, the GCC was dissolved by the current military regime of Commodore Voreqe Bainimarama.

10.1.0: Macro-level analysis: The order of discourse

Though Fiji has one of the most developed Pacific Island economies, its economy is still highly dependent on the primary sector and tourism. In the farming sector, sugar cultivation is controlled by Indo-Fijians. Sugar is one of Fiji's major exports and it has access to preferential quotas of the European Union. All these factors have contributed to the development of ethnic supremacy aspirations among the Indigenous Fijians. These aspirations have contributed in one way or another to the four military coups in post-independence Fiji. The first two coups occurred in 1987, the first of which in May 1987 was carried out by Sitiveni Rabuka to overthrow an Indo-Fijian dominated and

supported Labour government of Timoci Bavadra. Bavadra's government was seen as undermining the pro-Indigenous Fijian ethnicist political agenda that had hitherto before been exploited by the institution of the Chiefs. The second coup in September 1987 was carried out by Rabuka and revoked the constitution and declared Fiji an Republic. The period after the 1987 coups resulted in Fiji becoming an ethnocratic democracy as in Malaysia. Also the 1987 coups resulted in mass emigration of Indo-Fijians to New Zealand, Australia, USA, and Canada. The third coup took place in 1999 after the Mahendra Chaudhary led Labour government was overthrown after a coup led by an ethnic Fijian nationalist. The reason for the coup was again the perceived domination of Indo-Fijians. The last coup took place in December 2006 after Laisenia Qarase's government was overthrown by Commodore Bainimarama on the issue of corruption and the anti-Indo-Fijian bias of the government. The impact of the first three coups had been an entrenchment of the Indigenous-Fijian agenda of an ethnically-based affirmative action programme. The long-term implications of the 2006 coup on the ethnic question are still not clear. One of the implications of the last coup has been that it has put a question mark over the future of the long-term plans. The documents under analysis were published during the term of the Qarase regime.

Political and economic instability have affected each other in Fiji. The state has always played a strong, interventionist role in Fiji. In the economy the state implemented planned development in the form of "Development Plans". The development strategy under these five year plans called for import substitution; a state guided import-export regime; an emphasis on maintaining a high wage rate, sugar cultivation, tourism, and rural development; public enterprises; and protection of "native land" interests of ethnic Fijians. Elek, Hill and Tabor (1993), argue that heavy and inefficient state interventionism led to the economic crisis in the mid-1980s. Not only did economic performance falter, social development levels have also decreased. Diminishing economic performance exacerbated the divide between Indo-Fijians and Indigenous Fijians, and between the rural and urban areas.

Economic decline and social disparities were exacerbated by the two coups in 1987, when many Indo-Fijians emigrated or remitted money abroad. Tourism was affected due to cancelled bookings. Trade was affected due to embargoes and the sugar harvest was delayed by predominantly Indo-Fijian workers. The 1987 crisis led to a complete rethink of the development strategy. Import substitution was replaced by an export-

oriented and liberalised regime. The garment industry was a major winner from this policy (Chand, 2001). In light of this shift, Elek et al. (1993) observe that,

> Significantly for the longer term, the crisis induced a thorough reappraisal of the microeconomic philosophy and framework which had underpinned Fiji's economic policy making ever since independence. For the first time, there was a significant shift in the government's strategy from pervasive intervention and promotion of import substitution toward a less regulated, outward-looking approach (p. 756).

Although the liberalisation drive prompted initial economic recovery the general growth rate had been sluggish till 1999 when the third coup took place. However during this period the discourse of affirmative action took hold. In 1990 the "Nine Point Plan" was formulated as a first comprehensive affirmative action policy aimed at empowering Indigenous Fijians. This was followed in 1995 by the "Ten Year Plan for Fijian Participation in Business" (Ministry of Finance & National Planning (MFNP), 2002a). Affirmative action alone can not account for the ethnic supremacy aspirations of the Indigenous Fijians. There is a perceived ethnic distance between the two groups which manifests at election time. The 1999 election which brought an Indo-Fijian to power was perceived as a social-psychological blow to perceived right of ethnic supremacy (de Vries, 2002). During 2000-2006 when Qarase was in power, the affirmative action was given a fresh lease of life with the 20 Year Development Plan.

Even with liberalisation, the quality of life has gradually eroded since 1997 according to the Human Development Index (HDI). Fiji's HDI fell from 44th in 1998 to 66th in 2000 and 81st in 2003 and 92nd in 2005 (International Telecommunications Union (ITU), 2004; MFNP, 2006). In addition to the affirmative action policy, the long and medium term development of Fiji is tied to reducing ethnic distance (de Vries, 2002), and on greater focus on human development (Jayaraman & Choong, 2006). Jayaraman and Choong (2006) note that

> Development of human capital needs further strengthening through increased access to education, improvements in labour productivity and raising skilled labour force so that human capital would complement physical capital to promote high rate of growth in the Fijian economy. In the context of current steady level of migration of skilled labour to greener pastures, it will be a real challenge for policy-makers (p. 442).

After the 2006 coup optimism for any such shift is indeed hard to fathom.

10.1.1. Knowledge policy: Discourse, timeline and structure

Fiji, like many small island economies was a latecomer to the knowledge society discourse, and like many other developing, and small island countries its knowledge policy discourse has manifested in the shape of an integrated, ICT-inclusive approach to development. In addition, the development discourse itself has been shaped with input from international development organisations, regional associations, and experiences of other countries such as India and Malaysia. Knowledge-related policy thinking started with the 20 Year Development Plan in 2001 but the emphasis here was on protection of indigenous knowledge through education rather than on promotion of technological knowledge. For instance, IT and ICT do not figure in this document.

Fiji's engagement with information society discourse has been largely in the international arena, especially through the Pacific Islands Forum (PIF), University of the South Pacific (USP), and the World Summit on Information Society (WSIS), 2002. Information and Technology Service (ITC), a division within the Ministry of Finance and National Planning (MFNP) has been a key player in promoting knowledge-policy related ideas. ITC, established in 1966, is largely responsible for e-government strategy which was launched in 2001 (Information Technology & Computing Services (ITC), 2001). ITC has also been involved in representing Fiji at international forums such as WSIS and PIF. In its representations to WSIS and at the WSIS regional preparatory forum in Tokyo, Fiji lobbied for special mention of needs of small island states.

Fiji is a signatory to the "Vision for the Pacific Information Economy" adopted at the 1999 Pacific Islands Forum Summit which seeks to regulate the telecommunications market in the region. Likewise, it is party to the Pacific Islands ICT Policy and Plan (PIIPP) 2001, and Pacific Regional Digital Strategy 2006, both of which are plans aimed at utilising ICT for development. Telecommunications policy reform is a major discourse feature of the regional ICT initiatives. The argument is that Pacific Island economies must implement reforms aimed at breaking monopolies of telecommunication carriers, developing infrastructure, and introducing competition with the objectives of reducing costs for customers and provision of ICT services to all the Islanders. This idea finds prominence in Fiji's domestic policy documents such as the Telecommunications Road Map 2005 (Wirzenius, 2005), the Strategic Development Plans (MFNP, 2002b; 2006), and e-Fiji Plan (Department of Communications (DoC),

2004). The Strategic Development Plan documents (MFNP, 2002b; 2006) have special sections dealing with ICT.

External organisations such as UN bodies, World Bank, and Asian Development Bank (ADB) have played an important role in policy formulation. For example, the e-Pacifika project of the UNDP provided policy guidance for the formulation of the e-Fiji Strategy. Likewise, the Millennium Development Goals (MDG's) of the UN have been incorporated in the Strategic Development Plan documents. ADB is helping Fiji in meeting the MDG's through economic policy advice, physical infrastructure, alternative livelihood opportunities, water and sanitation services, and institution building. The World Bank has carried out policy evaluation of the telecommunication sector and its recommendations are reflected in the Strategic Plan documents.

Fiji's knowledge-related discourse is largely constrained to the MFNP, ITC, Department of Communications (DoC), and Ministry of Information, Communications and Media Relations (MICMR) (see Table 10.1 in Appendix A). The common link joining these institutions is the issue of ICT for development. In terms of emphasis the documents focus on: (1) Indigenous Knowledge (MFNP, 2002a); (2) ICT planning (Department of Communications (DoC), 2004; Information Technology & Computing Services (ITC), 2001, 2002, n.d.; MFNP, 2002b, 2006), and telecommunications reform (Wirzenius, 2005).

Also significant for knowledge-related discourse are the speeches of policy elites including the former Prime Minister, Laisenia Qarase (Qarase, 2004; MFNP, 2002b, 2006), and Abel Caine, Fiji's representative to the WSIS 2002 Summit (Caine, 2002). Both Qarase and Caine were instrumental in the direction of knowledge-related policy at the national and international levels. The present research does not include the post-2006 coup policy documents such as the *Road to Democracy* and *People's Charter for Change and Progress* which have potential implications for the affirmative action policy.

The structure of knowledge-related policy in Fiji is hierarchical. Power is concentrated in the office of the Prime Minister in normal circumstances (see Figure 10.1 in Appendix B). In the past coup leader have appointed themselves the heads of government. The current Prime Minister, Commodore Voreqe Bainimarama assumed

this office when he dismissed the previous government. National strategy originates in the two strategy setting bodies, the DoC and the National ICT Council. The DoC prepared the e-Fiji Plan under direction from the National ICT Council. MFNP and its subsidiary ITC have a role in formulating national development plans, and directing the strategies relating to the 20 Year Development Plan, Strategic Development Plan and the e-Government Strategy. MICMR, which oversees the telecommunications reform and IT infrastructure development aspects, has developed the Telecommunications Roadmap with help from a World Bank-financed consultant, Mr. Arno Wirzenius.

10.1.2. Genre

Fijian policy documents can be categorised into four genre types – planning documents, ministerial reports, memoranda, and speeches. Most documents fall in the planning documents genre.

Planning Documents: Most of the policy reports under study fall into this genre. Under the planning document genre, the four MFNP documents form a chain. At the top is the 20 Year Development Plan (MFNP, 2002a), followed by two Strategic Development Plans (MFNP, 2002b, 2006), and finally the 2005 Corporate Plan (MFNP, 2005). ITC policy reports of this genre include the e-Government Strategic Plan, and the IT Policies and Principles documents (Information Technology & Computing Services (ITC), 2001, n.d.). Other documents of this type are the *e-Fiji* vision document of Department of Communications (DoC, 2004), and the *Telecommunications Roadmap* of MICMR (Wirzenius, 2005).

Ministerial Reports: The only report of this genre is the 2002 Annual Report of ITC Services (2002).

Memoranda: Memoranda as tools of communication follow a specific format based on the requirements of the institution the document is submitted to. Fiji's official response to the Prepcom meeting of WSIS was submitted by Mr. Abel Caine of ITC Services. This memorandum has been included in this research because it represents an official view on the issue of information society (Information Technology & Computing Service (ITC), 2002).

Speeches: Speeches are a very important policy genre because they represent the policy elites use of their rhetorical skills on a issue. PM Qarase's speech at the launch of the

Fiji Institute of Information Technology and Abel Caine's PowerPoint presentation at WSIS are two instances when policy elites reflected on the information society issues.

10.1.3. Discourse: Leximancer results and outstanding discourse features

Leximancer results reveal a single major concern in Fijian discourse – development policy. Like most other case studies, 'development' is the most important concept. Table 10.2 (see Appendix A) shows the top twenty concepts ranked in Leximancer. At least ten concepts relate to development policy – 'development', 'government', 'policy', 'services', 'sector', national', 'plan', 'management', 'system', and 'access'. The remaining concepts relate, directly or indirectly, to development policy. Two concepts relate to population – 'indigenous' and Fijians'. At least four relate to geography – 'Fiji', 'areas', 'rural', and 'resources'. Three relate to economics – 'economic', 'private' and 'growth', and one to management – 'management'. The dominance of development policy related concepts in the top twenty concepts shows their discursive centrality in the discourse (See Figure 10.2 in Appendix B)..

If we consider the significant knowledge policy related concepts outside the top twenty we see a detailed picture of the kinds of issues underpinning the development policy cluster (see Table 10.3 in Appendix A). The list of concepts in Table 10.3 can be divided according to the policy domain. Concepts such as 'affirmative', 'ethnic', 'Indo-Fijians', and 'assistance' reveal an affirmative action emphasis in the discourse. Likewise, 'business', 'industry', 'sustainable', 'market', 'commercial', 'liberalisation', and 'deregulation' have a strong linkage with economic policy. The ICT policy is represented by concepts including, 'information', 'telecommunications', 'technology', 'ICT', 'ITC', and 'innovation'. Education-related concepts include 'training', and 'knowledge'. The remaining concepts, namely 'Pacific' and 'globalisation' are of a general nature and can be included in either of the categories.

The Leximancer concept map (see Figure 10.2 in Appendix B) shows nine agglomerations. These concept agglomerations have been deduced on the basis of semantic and locational nearness on the map. Table 10.4 (see Appendix A) describes physical locations of concept agglomerations made by the nine core issues of the development policy discourse – ICT, Ethnic Groups, Education, Services, Business, Economy, Development, Policy, Governance, and Fiji. Location of the map reveal concept clustering based on semantic and argumentative nearness. In the map most of

the concepts are located on the centre and right sections consisting of development policy, Fiji, economy, and governance clusters. Upon decoding, the map reveals two arguments. Firstly, that Fiji's socio-economic development and governance are interrelated. To develop Fiji needs strong intervention by the state in the form of governance mechanisms such as affirmative action for the Indigenous Fijians, e-government, liberalisation and deregulation of the economy, ensuring protection of indigenous knowledge, people's rights and ecological resources, promotion of the sugar industry, and growth in the private sector. Secondly, Fiji needs to promote infrastructure development with a special emphasis on rural areas in ICT, education, and services such as health, water, and telecommunications. Both these argument require a strong and interventionist role of the state. In contrast to Malaysia, Fiji's discourse has moved away from a developmental to an ethnicist emphasis. In relation to neoliberalism, although some of the core neoliberal concepts such as liberalisation and deregulation are present in the discourse, this discourse is accompanied by heavy state intervention which dilutes its potency.

10.1.4. Style

Construction of the individual is a key feature of policy discourse. Public policy constructs the notion of public morality to which citizens must adhere as they participate in civic life. The style features of Fijian discourse relate to the references to individuals both as nationals ('Fijian') and as members of the main ethnic groups ('Indigenous Fijian', 'Chinese', and 'Indo-Fijian'). There is not much data in the documents relating to the construction of the public with reference to the information society. ICT-policy discourse does not reveal much data on the construction of the public. In relation to the public, a major concern of the ICT policy is on developing the skill base among the people so that they can use it in employment and daily life. In relation to the potential of Fiji to exploit the benefits of ICT, PM Qarase sounds an optimistic note.

> A key factor in any development of this remarkable business is the availability of a skilled manpower base, which Fiji can develop. We already have a second prerequisite in place. The vast capacity of the Southern Cross Cable lies ready and waiting to use. Provided our young people can be taught the necessary skills, there is nothing to stop our country joining India, and the Philippines, as one of the world's acknowledged IT service providers (Qarase, 2004, p. 1).

By and large, evidence for constructions of the public is found in plan documents where the constructions of the public are found in discussions of the affirmative action policy. Though Fiji is a multicultural society, the state does not adhere to principles of multiculturalism. Fiji's history of coup and ethnic tensions has increased this tendency of the state to appease Indigenous Fijian aspirations at the cost of other communities. The discourse of ethnically based affirmative action policy means that Indigenous Fijian (which include ethnic Fijians and Rotuman Islanders) identity is promoted and protected in policy. Two features of style in relation to Indigenous Fijians are important. Firstly, the discourse portrays past attempts at socio-economic modernisation of Fiji as having been at the cost of Indigenous Fijians. This is evident in numerous arguments in the discourse where comparisons have been made between the socio-economic developments of Indigenous Fijians versus the rest. A key complaint is that colonial era paternalistic native policies resulted in accentuation of ethnic and developmental gaps. For example the 20 Year Development Plan argues that during colonial times,

> Indigenous Fijians felt threatened because of the realisation that they did not have the necessary skills, expertise, capital and technology to compete on a level playing field with other ethnic groups in the money economy. This feeling of inadequacy was a direct result of the paternalistic native policy to which they were subjected. A consequence of the native policy was that it retarded indigenous Fijian participation in commerce and business because it locked the era into the village-based subsistence sector under a codified and rigid communal scheme. This in turn marginalised Fijians from the mainstream money economy wherein other ethnic groups were actively involved (MFNP, 2002a, p. 36).

To redress socio-economic disparities, a policy quid-pro-quo is suggested whereby other ethnic groups must accept affirmative action for Indigenous Fijians in a "spirit of goodwill and trust" and any opposition to such policies would be "tantamount to supporting a system which perpetuates inequality" (MFNP, 2002a, p. 22).

Secondly, the discourse argues that other groups hold negative stereotypes as reasons for the lack of socio-economic development of Indigenous Fijians. It argues these stereotypes have been internalised by some Indigenous Fijians. The following quotation argues that the "Fijian Psyche" has been a prevalent negative stereotype reflective of the attitudes of other groups towards indigenous Fijians.

> Confidence building is an important psychological activity within the affirmative action programme, because it provides the necessary moral boost and will for change. The low self-esteem often found amongst indigenous

> Fijians, especially in relation to commerce and business, has resulted to a large extent, from the patronising colonial system of control, under the rigid communal structure, as well as the stereotypes that other ethnic groups have of indigenous Fijians being "lazy" and incapable of commercial thinking. Over the years, many indigenous Fijians have internalised these stereotypes and have treated them as part of their "Fijian psyche". This has been a fundamental stumbling block to indigenous Fijian socio-economic development. The Plan attempts to address these perceptions by providing strategies both for psychological empowerment and the restoration of confidence and self-esteem, in order to develop an impetus for participation and advancement in the socio-economic sphere. Low self-esteem can lead to frustration and anger, which can be politically mobilised and re-directed towards other ethnic groups, causing tension and instability (MFNP, 2002a, p. 23).

We can conclude from the above discussion that the construction of the public and the individual reveals that the state places a high value on the need for the non-indigenous public to accept the affirmative action policy in the name of development, national unity, peace, and reconciliation. Also evident is the paternalistic tone of the contemporary state on issue of Indigenous Fijian development.

10.2.0: Meso-level analysis

10.2.1.0: Interdiscursivity

Interdiscursive influences on Fiji's policy documents appear as imperative. There is interdiscursive embedding of existing policy values, ideas and concepts into subsequent discourse. Some of these interdiscursive influences include:

10.2.1.1: Affirmative action policy as cornerstone of development

Affirmative action for indigenous Fijians (Fijians and Rotumans) has been enshrined in Fiji constitution since 1990. The revision of the constitution in 1997 expanded the purview of this policy to "disadvantaged groups". The 20 Year Development Plan (MFNP, 2002a) includes an affirmative action plan aimed at mitigating socio-economic disparities. The affirmative action plan is far-reaching as it demands that sectoral plans must adhere to its objectives. Fiji's knowledge policy discourse is deeply influenced by the affirmative action plan. One of the four key objectives of the e-Fiji Plan relates to formulating special strategies for indigenous Fijians (DoC, 2004).

10.2.1.2: Indigenous Fijian knowledge and values

One implication of the affirmative action policy is that the conception of knowledge has been impacted. As we shall see later, knowledge has been conceptualised as being of two types – indigenous and modern/secular. Affirmative action policy requires that indigenous Fijian knowledge, wisdom and values be protected and promoted. The e-Fiji plan is impacted by this provision. According to the e-Fiji plan, the National ICT Training Agenda must aim to bridge the digital divide by developing a knowledge base (DoC, 2004).

10.2.1.3: The UN discourse

Fiji is a signatory to United Nations (UN) conventions, including the World Summit on Social Development. The Strategic Development Plan (2007-2011) document legitimises affirmative action policy, based on UN conventions relating to indigenous populations. The UN Millennium Development Goals (MDGs) are often invoked in the 20 Year Plan document. The document explicitly links affirmative action to MDGs. For example,

> The affirmative action programmes will address the needs of various disadvantaged groups and promote achievement of the first three MDGs: eradication of extreme poverty and hunger (MDG 1), universal primary education (MDG 2), and gender equality and empowerment of women (MDG 3) (MFNP, 2006, p. 106).

10.2.2: Intertextuality

Intertextuality in policy documents is based on both internal (domestic) and external (international) sources of political and conceptual forms of intertextuality. These sources are always prior texts. The mode of intertextuality can be either direct (as in direct quotation) or indirect (as in summarisation). Both, internal as well as external sources of intertextuality are evident in the Fijian discourse. Internal sources of intertextuality include the discourse of marginalisation of indigenous Fijians. External sources include the United Nations, the Asian Development Bank (ADB), and the Pacific Islands Forum (PIF).

The 20 Year Development Plan and the Strategic Development Plan (2007-2011) documents are a rich source of intertextual material. These documents develop their arguments around core discourse of marginalisation of the indigenous Fijians. In this endeavour they deploy external sources of intertextuality both directly and indirectly.

Indirect intertextual linkages can be seen in the following quotation where the notions of 'international community' and 'right of indigenous people' become the source of intertextuality.

> Within the international community, there is increasing recognition of the right of indigenous people to determine their own pace and direction of development and to have access to opportunities and benefits of development. The disadvantaged position of indigenous Fijians has, to a large extent, resulted from the colonial structures and policies, which locked them into a rigid subsistence system, while other ethnic groups enjoyed the benefits of direct participation in the mainstream money economy. This historical reality has always placed indigenous Fijians in a disadvantaged position, and makes the notion of a "level playing field", which assumes "equal competition", a futile one. This has been a fundamental source of frustration for indigenous Fijians; expressed widely in political grievances and acts of instability. As long as such disparity exists, it will continue to be used as basis for political mobilisation (MFNP, 2002a, p. 21).

To solve the problem of marginalisation, direct intertextual links are made with reports, declarations and convention from international sources such as the UN. For example, in the following quotation, legitimation for affirmative action is sought by presenting it as in the spirit of the UN Declaration of Human Rights (1948) and the International Covenant on Civil and Political Rights (1966). The internal source of legitimation is the Constitution of 1997.

> The United Nations Universal Declaration of Human Rights (1948) and International Covenant on Civil and Political Rights (1966) both possess specific significance for indigenous peoples. The Declaration provides a universal standard of human rights for all peoples and nations, and proclaims the importance of traditional, political, and civil rights, as well as basic economic, social and cultural rights. The Covenant is concerned with civil and political rights based on the Declaration. This Plan does not in any way infringe on the political and civil rights of members of non-designated categories (MFNP, 2002a, p. 27).

Statistical data sources are also employed to legitimise the same policy. Internal sources of statistical data in this regard include the Fiji Bureau of Statistics and the Inland Revenue Department. External source of statistical data include the 1997 UNDP Fiji Poverty Report. Based on this knowledge the 20 Year Development Plan concludes that

> The socio-economic disparity between indigenous Fijians and other ethnic groups is a reality and requires particular attention. As the chapter has demonstrated, in some cases the disadvantaged position of indigenous Fijians in relation to other ethnic groups is as high as 1: 5 in terms of comparative ratio. In other cases, indigenous Fijians are only marginally disadvantaged. However, the overall ratio confirms the distinct disadvantaged position of indigenous Fijians.

> Disparity in various education professions and income levels remain significant and justifies particular attention in this Plan (MFNP, 2002a, p. 58).

Similarly, the Strategic Development Plan document utilises the UN discourses of human development and Millennium Development Goals to argue for the need for foreign aid to implement affirmative action policy. Projects funded by donors such as ADB, AUSAID and NZAID are mentioned.

In a nutshell, intertextuality in Fijian policy documents is largely centred on the core issue of marginalisation of indigenous Fijians. This intertextuality is especially strong in the case of MFNPs strategy documents. Plans such as e-Fiji do not include much explicit intertextual material, but links are implicitly present in the documents.

10.3.0: Micro-level analysis

10.3.1: The construction of social identity: Modality of futurism in introductory sections of documents

The introductory passages in Fijian documents show that in most cases Forewords and Prefaces are not present. Out of the eleven documents only three have a Foreword and there are no instances of a Preface. Table 10.5 (see Appendix A) presents an analysis of selected text samples from Foreword sections of the documents. The focus on linguistic analysis here is on two types of modality – epistemic and deontic. The purpose of modality analysis is to show beliefs and the level of commitment authors have about particular aspects of policy in relation to the future. A key aim in this phase of CDA is to explore the issue of futurism in knowledge policy texts as knowledge policy discourse is almost inevitably future-oriented. The modality of futurism helps to reveal the utopia of the future in the eyes of prominent figures in policymaking.

The analysis presented in Table 10.5 (see Appendix A) reveals a key feature of modality. Most of the sentences analysed above are of the deontic type and the subject matter of these relates to the affirmative action policies in Fiji. The author believes passionately in the pro-indigenous Fijian affirmative action policy. As a matter of fact, the author who was until recently the Prime Minister of Fiji had made the development of indigenous Fijian population the highlight of his rule. The divisive nature of these policies was one of the major reasons behind the late 2006 military coup.

10.3.2.0: The construction of social relations

Social relations manifest in texts as ideas, concepts, and beliefs. 'Word-meaning' and 'wording of meaning' are two tools among others used in CDA to analyse the construction of social relations. Following the CDA procedure, firstly I will analyse the meaning potential of the term 'knowledge'. Thereafter, I will focus on the multiple ways a meaning is worded and how the terms 'knowledge', 'ICT', 'globalisation' and 'innovation' have been treated in the discourse. The focus here is on the modification and, concretisation or abstraction of meaning by use of literal strategies (for example, adjectives) and other lexical items.

10.3.2.1: The Meaning of the 'information society' in Fijian discourse

In the Fijian policy discourse, ICT related labels viz. 'information society', 'information economy' and 'e-Fiji' are more prevalent than 'knowledge society' (see Table11. 6 below). The reason for this can be attributed to the fact that the ICT policy sector of Fiji is more pronounced than science and technology, and education policy sectors which usually are progenitors of knowledge related labels. Another reason could be that Fiji has engaged actively at the WSIS conference on behalf of the small island states. According to Abel Caine, a former director at ITC Services in Fiji responsible for formulating the ICT policy, and its lone representative at WSIS Geneva Summit in 2003, Fiji lobbied hard for small island states at the Tokyo WSIS regional conference and at the WSIS Geneva. Two full sentences from the Fiji submission (Information Technology & Computing Service (ITC), 2002) were included verbatim in the final WSIS declaration (Caine, 2004). Fiji has also been active in formulation of the Pacific Regional Digital Strategy as part of the Pacific Plan.

Table 10.6: Labelling preferences

Label	Word Count	Number of Policy Texts
Knowledge Society	1	1
Information Society	5	3
Information Economy	11	1
e-Fiji	12	1

Fiji's vision for information society and economy is set out in the e-Fiji vision statement. The vision is

> to harness Fiji's ideal geographic location, competent workforce and world-class information technology infrastructure to promote Fiji's international competitiveness and create a dynamic, vibrant and well connected e-society (DoC, 2004, p. 3).

The ICT Policy document (DoC, 2004) sets out the following core objectives of information economy: promoting utilisation of ICT, bridging the digital divide, "joining the world scene" (p. 3), making strategies for indigenous Fijians, and maximising economic and market opportunities. Fiji's information economy vision and its objectives reveal that its knowledge paradigm is ICT-centric. The social aspects of information economy are not spelled out with any clarity. Figure 10.3 (see Appendix B) shows the stakeholders in Fiji's information economy where the public is presented as a consumer of ICT products and services and is subject to global trends.

A key tendency in the discourse is to bracket knowledge and information together. The only instance where the label 'knowledge society' has been employed conflates knowledge with ICT. The former Prime Minister, Laisenia Qarase in his speech says,

> In today's knowledge society, managing information efficiently is critical. This is what has made Information and Communications Technology, or ICT, one of the fastest growing industries worldwide (Qarase, 2004, p. para. 1).

The label 'e-Fiji' is the name given to Fiji's information economy vision. The futuristic emphasis is encapsulated in its slogan "e-Fiji – the future online" (DoC, 2004, p. 2). ICT development is the information economy incubating bedrock of the e-Fiji vision. As outlined in the ICT Development Policy document:

> From Government's perspective, desirably, the outcome of information and communication technology development is the realization of "e-Fiji, the future on line". This realization will enable for our people three key functionalities (possibilities), namely, e-Government or Government on-line, e-Business or business on-line and e- Community or community e-empowered (DoC, 2004, p. 5).

e-Fiji has a explicit pro-business, pro-community, and pro-governance orientation. The meaning potential of e-Fiji can be deduced from the desirable outcomes it seeks to achieve (see Figure 10.4 in Appendix B). In terms of the three objectives, the meaning of e-Fiji is that policy should implement strategies such as e-government, e-

procurement, creation of a National Information Infrastructure, facilitating a business-to-business knowledge-transfer program targeting Singapore, Malaysia, India, and Australian companies, liberalisation of telecommunications market, attracting Foreign Direct Investment (FDI) in the ICT sector, promotion of e-commerce, promotion of ICT R&D in the private sector, target ICT use among community, developing National ICT Training Agenda for education sector, and creating an ICT savvy workforce.

The meaning potential of e-Fiji suggests wide ranging reform with elements of neoliberalism such as liberalisation of telecommunications and targeting of FDI. If we add to these the pro-indigenous Fijian affirmative action programmes envisioned in the ICT sector, we arrive at a complex picture of a future information society characterised by a transplantation of the current political economy in a ICT saturated environment.

10.3.2.2.0: The wording of meaning

In this section, the wording of meaning of the knowledge, globalisation, innovation and ICT are covered. The evidence that was gleaned from collocating phrases, words and adjectives is discussed. The semantic features of collocated words and phrases occurring before or after the concept in question have been identified. The word counts for each concept are also given.

10.3.2.2.1: Knowledge

Word Count: 43, information (293)

The meaning of ‘knowledge’ has been worded in two ways – modern and traditional. The main distinction that can be deduced from the discourses is between modern knowledge and indigenous knowledge. The features of modern knowledge include scientific and technical skills and knowledge, curricular knowledge, statistical knowledge, and other such knowledges and skills. Indigenous knowledge includes Fijian indigenous cultural knowledge and practices, ecological knowledge, Christian knowledge and values. The discourse emphasises that preservation and promotion of indigenous systems of knowledge should be accorded greater importance in policy. Indigenous Fijian and Rotuman populations get special mention in this regard. One implication of this emphasis is that Indo-Fijians are marginalised contributing to the

ethnic divisions within Fiji. The following quote is an example of the indigenous knowledge frame.

> It is important that the curriculum reinforces the systems of knowledge, wisdom and values of students of the nation, particularly for indigenous Fijians who make up a very small proportion of the world's population. The formal schooling system is a permanent fixture in Fiji and occupies the bodies and minds of students for a large part of each school day. It is imperative, therefore, that the knowledge and values inherent in the Fijian cultural system are not left to chance but become part of formal instruction (MFNP, 2002a, p. 86).

The following list gives some examples of the collocations and lexical items relating to traditional and modern knowledge. The meaning of traditional knowledge includes phrases such as 'Fijian knowledge system', 'indigenous knowledge', 'traditional knowledge', and 'local ecological knowledge and traditional management practices'.
The meaning of modern knowledge is worded as 'official knowledge system', 'knowledge, skills and attitudes', 'entrepreneurial knowledge, skills, and attitudes', 'knowledge-transfer', 'knowledge-base', 'knowledge-based industries', 'information and knowledge', 'sporting skills and knowledge', 'work knowledge', 'statistical knowledge', and 'knowledge society'. It is clear from the wording that Fijian discourse mixes both the traditional conception of knowledge as cultural wisdom with the modern technological knowledge paradigm.

10.3.2.2.2: Globalisation

Word Count: 4
Globalisation has been used in arguments relating to reform of IT management in government organisations, and in arguments about structural reform to promote trade competitiveness. In all four occurrences, globalisation is shown as a process impacting Fiji. For example, 'globalisation of the organisations', 'globalisation of world markets and organisations', 'increasing globalisation and erosion of trade preferences', and 'globalisation of trade'.

10.3.2.2.3: ICT

Word Count: Information technology = 50, Information and Communication Technology = 19, IT = 169, ICT = 127
ICT, used in full and abbreviated forms, is an important concept in the discourse. The word counts show that the term 'information technology' or 'IT' has been used more

than ‘information and communication technology’ or ‘ICT’. The significance of ICT to Fiji is evident in the fact all its knowledge policy initiatives (including e-Fiji and e-government) relate to this sector. In addition, Fiji played an active role in the small state section of the World Summit on Information Society conference. The main features of the wording of ICT include (1) collocation of ICT with words and phrases relating to governance, and (2) construction of ICT as an economic process. Table 10.7 (see Appendix A) shows the sector-wise collocations for ICT (including all its variants). In Table 10.7, we can see that most of the collocations in the ICT policy documents relate to governance aspects of ICT, while in the MFNP documents the emphasis is on the economic aspects of ICT.

10.3.2.2.4: Innovation

Word Count Innovation = 3, innovations = 7

Like the term globalisation, the word count for ‘innovation’ and ‘innovations’ is numerically insignificant. The term innovation has been used in arguments relating to (1) promotion of ICT in the private sector, (2) promotion of tourism, and (3) reforms in competition policy and the financial sector. The collocating phrases and words include ‘private sector’, ‘creativity’, ‘ICT’, ‘lower costs’, ‘greater efficiency’, and ‘community development projects’, among others . The wording of the meaning of innovation shows that it has been used in a wider context than seen in other case studies where innovation features largely in science and technology context.

10.4: Conclusion

Fiji, being a small island state, is a special case in the knowledge society policymaking. The challenges for Fiji are many and relate to problems of knowledge development in small island contexts. Fiji lacks both political stability and cross-sectoral policy mechanisms needed for knowledge policy development. Fiji’s knowledge discourse is largely restricted to developing the ICT infrastructure for development, whereas its larger development emphasis has been on redistributory policies for Indigenous Fijians. Fiji remains dependent on foreign aid and preferential quotas for Sugar exports. Overseas aid is accompanied by overseas ideologies, which in Fiji’s case ask it to liberalise the economy and the telecommunications market. Liberalisation, introduced in the wake of the 1987 coups has not led to much improvement either in economic growth or in redistribution of wealth. With continuing political instability in the wake of the

2006 coup, it is unlikely that in the near future Fiji can overcome the multiple developmental problems relating to geography, distance from markets, ethnic group based disparities, and lack of infrastructure.

Chapter 11: Conclusion

11.0: Introduction

This study was conducted with the aim of addressing some questions about the policy discourses of the knowledge society in six Asia-Pacific countries. The corpus of policy documents included 116 official documents in English spanning the period 1992 - 2006. CDA methodology was employed to elicit answers to seven core questions:

1. What sorts of knowledge about the 'knowledge society' are at work in the Asia-Pacific policy communities? How is knowledge society conceptualised?
2. What are the salient features of the discourse about the knowledge society?
3. What metaphorical and literal strategies are deployed to engender certain effects and meanings as opposed to others? What "facts" are fabricated in this?
4. What rhetorical use are concepts like "globalisation", "ICT" and "innovation" put to?
5. Do policy documents favour particular solutions about the knowledge society?
6. Are the conceptions about knowledge society similar in the different countries?
7. What shape and form does neoliberalism, as instantiated through knowledge policy documents, take in different countries?

The theoretical framework used in this thesis identified four critical components contributing to the neoliberalisation of knowledge policy in the Asia-Pacific. The four components relate to four aspects of policy at the national-level: discourse, context, ideology (the relationship of the state ideology to the ideology of neoliberalism), and temporality (the evolution of policy with changes in discourse, context and ideology). This research aimed to explain that the impact of neoliberalism on knowledge policy is the result of the dialectical interplay - over time - between the discursive constructions of the knowledge society, the national, socio-political context, and the ideology of neoliberalism.

In this chapter, I begin by outlining some general conclusions of this thesis. In the following sections, cross-country comparisons are made in relation to the major themes of knowledge policy, followed by comparisons of the analytical aspects of policy discourse across the case studies. The last section of this chapter deals with the prospects for the knowledge society as a policy issue. I start with the major conclusions of this thesis.

11.1: Major conclusions

Firstly, in this thesis the CDA has shown that *knowledge society*, *knowledge economy*, *information society*, and related terms are not merely academic umbrella terms characterising rapid social, economic, and technological changes in the period since the 1960s, but in policy they have attained an exalted status whereby they are routinely used to express particular policy visions of the future. The transformations which these umbrella terms refer to have been partly made imperative by means of policy discourse. The academic conceptualisations of these changes are varied and have been differently theorised along disciplinary lines. However, the policy discourse does not reflect the full diversity of the academic views on knowledge/information economy/society but instead has picked and chosen them according to necessity or by design. As a result, there is limited overlap between the academic and policy discourse on these issues. The overlap involves identification of knowledge sources, creation, production, diffusion, and management of knowledge. Perhaps the most important effect of this partial overlap has been exclusion of non-scientific sources of knowledge as practicable policy solutions. Consequently, the evolving knowledge society discourse in policy is not based on a robust theoretical framework but on loosely joined-up ideas and arguments about the role of knowledge in contemporary society and economy.

Secondly, this study has emphasised that the knowledge society has become both a label for policy discourse, and an issue for academic inquiry. As a policy discourse, the knowledge society is an imperative new stage in social development characterised by a revolution in the social sphere based on new technologies which necessitates a redefinition of the contract between the state and the individual, individual and individual, and individual and society. Countries that embrace this change and formulate policies to maximise its impact are in a position to make their citizenry capable of integrating in a globalised world, reap dividends in the economic sphere, and ensure general progress. As an issue for academic inquiry, the knowledge society has triggered ample interest across many fields, wherein there is a fierce debate between its admirers and harsh critics; between those that view it as an historical discontinuity and those that believe it represents a sea change in the organisation of society, and between those that view knowledge as a valuable resource to be managed and those that point out the fragile, risky, ideological, socially-constructed, and fragmented nature of knowledge.

Thirdly, this study has argued that the technocratic bent of knowledge policy is counterproductive to the aims of an inclusive knowledge society. Technocratic policy takes policy problems and constructs solutions by utilising scientific tools. A core concern in knowledge policy discourse in all my case studies is with the question – how does knowledge work in contemporary society? In answering this question knowledgeable, technocratic experts construct a meaning of knowledge based on the narrow instrumental aims. Technocratic policymaking has meant that economics and management science views of knowledge have dictated the policy meaning of knowledge, whereby it is considered to be a factor of production rather than a common good manifesting in the social interactions of individuals.

Fourth, this thesis has shown that knowledge policy is an emergent policy domain with shifting boundaries. The four-pronged theoretical framework adopted in this thesis, focusing on critical dimensions of policy - discourse, context, ideology and temporality – is useful in accounting for the diversity of knowledge policies in the Asia-Pacific. The case studies have shown that both international and domestic policy actors are the key players in the discursive construction of knowledge and knowledge society. These constructions are context and path-dependent whereby the dialectical interplay between the national-level policy context, ideology and knowledge-related discourse determines the evolution of the knowledge policy.

Fifth, CDA has shown that the trajectory of knowledge policy in Asia-Pacific is driven by neoliberalism. Neoliberalism is the leading ideology behind policymaking in these contexts. As a policy ideology it has two overarching propositions: (1) the freedom of the market forces is non-negotiable, and; (2) macro-economic, institutional and social reforms are mandatory. In knowledge policy this manifests as (1) utilisation of knowledge for enabling freedom of the market forces, and (2) promotion of market forces in knowledge enhancing activities. The first emphasis leads to the creation of knowledge legitimising liberalisation, deregulation, and privatisation in social and economic policy spheres. The second emphasis leads to the commercialisation of knowledge and knowledge creating institutions such as universities. These two emphases can be called *knowledge in politics* and the *politics of knowledge* respectively.

The field of policy is characterised by a contest of ideas. Ideas that become dominant must have the support of "scientific" models and theories in addition to the support of powerful group interests and capital. Neoliberalism is the dominant ideology in mainstream development policy today. The ideology of neoliberalism has co-opted, mutated, and subsumed the theory of the knowledge society. The theory of the knowledge society is the staple on which neoliberalism, at least as far as knowledge policy is concerned, feeds. As I pointed out in Chapter 2, knowledge policy is the combination of fragments of the sociological, management and economic views of knowledge. Powerful global and national actors produce policy knowledge about the knowledge society which displaces rival policy ideas and knowledge. The political economy of policy knowledge creation must be understood to grasp the role of knowledge in policymaking. The role of knowledge in policymaking is one of institutionalising policy by the practice of scientific knowledge.

The politics of knowledge concerns the legitimisation of scientific knowledge by means of policy practice. Politicised knowledge is used to legitimise policy. Scientific paradigms are used in policy rhetoric and discourse as populist buzzwords. Though the theory of the knowledge society is incompatible with much of neoliberalism, it is nevertheless co-opted in the discourse. The politics of knowledge entails the discursive construction of an idealised knowledge society that justifies the social and economic theory backed by powerful epistemic communities. As was discussed in Chapter 3, the role of the epistemic communities in the policy arena is to create and sustain 'regimes of truth' backed by research and technocratic expertise. Policy documents are discursive tools of popularising and legitimising these regimes of truth. Policy documents are essential to the proliferation of neoliberalism-inspired solutions and critical to the sustenance of the neoliberal conscience. Knowledge policy documents package neoliberal solutions as imperatives in most cases. Backed by the co-option of the theory of knowledge by the global neoliberal ideology, policy documents portray neoliberal solutions as the imperative panacea.

11.2: Neoliberalism and knowledge policy: Major themes

Policy is a dynamic field characterised by a constant cycle of change from identification of policy problems leading to new solutions which lead to new problems at a later stage. Policy is the result of a chain of events in the political economy where multiple,

dialectically-related elements materialise as discourses. New issues emerge from the dialectics of policy which depending on their salience gives rise to new policy domains. The dialectics of the discourse of the knowledge society has given rise to a new policy domain – knowledge policy. The domain of knowledge policy has its origins in the advanced, industrialised societies where it was meant to provide solutions to the economic downturn since 1970s. Many scholars have described the period since 1970 as a crisis of capitalism in Atlantic Fordism (D. Harvey, 2005; Jessop, 2000, 2006). Atlantic Fordism was a spatio-temporal fix of capitalist accumulation since the early twentieth century. A key issue in the discursive construction of the knowledge policy domain in advanced industrialised societies has been how to better utilise science and technology knowledge for sustained economic growth. The knowledge policy domain has assumed greater significance since 1990s onwards when coupled with the rise of neoliberalism in global policy institutions and the increasing pace of globalisation and technological innovations, governments around the world started showing sensitivity to its key proposals. The global spread of knowledge policy proposals was aided by the emergence of neoliberalism as the successor to Atlantic Fordism. Neoliberalism as a spatio-temporal fix is aimed at regulation of the recent crisis of capitalism through global expansion into new markets and temporal deferment of the resolution of crisis tendencies in capitalism. The knowledge policy prescriptions of global policy institutions have played a key intermediary role in the discursive and material realisation of neoliberalism as a spatio-temporal fix.

This research has argued that the differences in policy institutions, paradigms, and context result in cross-country variances in the conceptualisation of the knowledge society. Likewise, neoliberalism is mutated by these differences.

The proliferation of knowledge policy discourse is due to two concurrent influences: (1) crisis, restructuring and reform, and (2) trans-nationalisation of the “knowledge for development” discourse. Asia-Pacific’s rise as an economic powerhouse signals an important shift in the global economy. Policy streamlining in the context of increasing globalisation and technological advance is the main driver of this change. Restructuring has been a common theme in the six case studies. In the period since 1990, Asia-Pacific has witnessed the highs and lows of economic growth. Economic and technological globalisation has played a key role in Asia-Pacific during this period. Three related events, the Asian Economic Miracle, the Asian Economic Crisis, and the post-crisis

revival have exercised the minds of academics and policymakers alike. A major debating point has been the role played by policy reform and restructuring in the chain of events. These events and the policy response to them have helped to shape the destiny of Asia-Pacific societies. Countries deeply affected by these events such as South Korea, Singapore and Malaysia have framed reform in terms of the knowledge society. Knowledge society discourse, like technological and economic globalisation discourses, is co-opted by neoliberal ideology. The trans-nationalisation of neoliberalism in the garb of knowledge for development has been the work of global institutions such as IMF, OECD, World Bank, WTO, and the UN. Global issues such as the environment, development, and trade are utilised as vehicles for transfer and advocacy of neoliberalised policy knowledge from global institutions to local contexts. National policymaking is under constant assault from global, regional and national level think-tanks. A key motivation of the neoliberalised policy transfers is to enable restructuring from state-led to market-based systems, and a reform of practices according to "best practices" promoted by global, regional and national think-tanks. The OECD has been a significant influence on Korea and New Zealand, both of which are its members. The World Bank has offered policy advice to India, Korea and the Fiji Islands. Singapore and Malaysia have looked towards global think tanks and other countries for policy ideas.

CDA has shown that local political economic contexts play a key intervening role determining how neoliberalism actually manifests itself. The political economy of many East and South East Asian countries is hinged on the paradigm of developmentalism where the state legitimises heavy intervention on the logic of late development. Late developing countries typically aim to avoid the initial problems faced by advanced industrialised countries by recourse to deliberate concentration of efforts in selected policy sectors. Democracy and deliberative policymaking are subordinated to the vested interests of business and political elites. Political economies of Malaysia, Singapore and Korea display these characteristics of developmental states at various stages of maturation. The state continues to play a central role in directing their knowledge policy paths and ensuring state-directed development matters. A strong state has a capacity to absorb external pressures by highlighting unique local policy issues. In three countries, India, Malaysia and Fiji, affirmative action policies have been used as discursive tools to enshrine state-guided neoliberalism.

The results of CDA show that while there are diverse knowledge policy paradigms in the case studies, they share a common emphasis on promotion of ICT knowledge. The salience of ICT in visions of the knowledge society does not merely reflect the dictates of global policy institutions but is based on context-specific needs. For example, India promotes ICT for development because of its success with the outsourcing of ICT services. Likewise, Malaysia argues that achieving a developed society status is dependent on cutting-edge ICT infrastructure. Fiji aims to use ICT to reduce the effects of geographical isolation and distance. The concern with ICT in the case of developed nations like Korea, Singapore, and New Zealand is not so much with building infrastructure as with increasing the utilisation of ICT-based products and services, and with modernising governance through e-governance.

CDA has shown that globalisation, innovation and ICT play an important rhetorical role in constructing the narrative of the knowledge society. These concepts have a greater discursive presence in documents from Korea, Singapore and New Zealand. In these three countries, there are also other, emerging rhetorical categories such as “creative industries” and “sustainability”. Globalisation is conceptualised as economic and technological competitiveness and is divorced from social aspects of globalisation such as the mobility of people and ideas. Likewise, innovation is restricted to science and technology innovation.

The thesis has shown that knowledge policy discourses can exist in countries with different notions of democracy and deliberation. As noted above, countries such as Singapore, Malaysia, and Fiji have questionable democratic credentials. Also deliberation in the knowledge policy styles in all case studies is restricted to the nexus of business, elite intellectuals, and government bureaucracies and think-tanks, rather with broader society-based stakeholders.

Finally, the CDA has shown that knowledge policy provides foresight for development policy. In the case of India, Korea, Malaysia, Singapore, and New Zealand, the notion of the knowledge society was instrumental in the development of futuristic visions. Apart from New Zealand and India, knowledge society thinking was added to strengthen already existing policy visions. For example, Vision 2020 of Malaysia, Intelligent Island vision of Singapore, and informatisation vision of Korea, did not refer to the concept of the knowledge society but was added later as the visions matured and

as knowledge discourse was popularised by global policy institutions. In case of New Zealand the knowledge society discourse arose in tandem with that of the OECD, in the case of India the first attempt at developing knowledge society discourse occurred after it had become mainstream in global policy institutions.

11.3: Cross-country convergences and divergences

Neoliberalism is contextual. Though neoliberal discourse assumes a functional relationship between liberalisation reforms, transition to liberal democracy, and good governance, these assumptions are not borne out in the Asia-Pacific. In the case of Asia-Pacific economies, the Asian Financial Crisis in 1997 was supposed to bring an end to state interventionism in development policy. The post-crisis behaviour of states like Korea, Malaysia, and Singapore did not do much to build any confidence in the neoliberal assumptions. In contrast, state intervention increased, and illiberal forms of democracy and governance have largely persisted. In case of Korea, which accepted the IMF bailout package, there has been a lot of rhetoric about government for the people, and reduced support for Chaebol, but in practice the old system has been able to maintain itself. In the case of Malaysia, which did not accept IMF terms, the state was able to stem the crisis by increasing interventionism. Likewise, in Singapore, strong state intervention during the crisis seemed to be popular with the people. These three examples show that neoliberal agendas of global policy institutions are not enforced in letter and spirit but they are selectively appropriated by states. The Asia-Pacific region shows the emergence of strange hybrids of neoliberalism and local knowledge discourse. This section describes why this has been the case in Asia-Pacific and how different paths to neoliberalism relate to the knowledge society visions.

The case studies show both patterns of divergence and convergence in relation to the adoption of neoliberal reforms. Neoliberal reforms such as liberalisation, privatisation and deregulation require the state to create free market conditions. In fast developing economies of Asia, liberalisation and deregulation have been attempted with a strong state presence. In all the case studies, liberalisation, privatisation and deregulation reforms have been accepted in principle as essential to the knowledge society development though they differ in interpretation of how they ought to be attempted. For example, the liberalisation of telecommunications is a major issue in knowledge policies of the six countries but it has been attempted differently and at different speeds. In the cases of Korea, Singapore, Malaysia, and India, the liberalisation efforts in the

telecommunication sector which began in the 1990s are still not complete due to domestic political and regulatory issues, and due to the fact that new technologies of telecommunication such as Broadband, Internet and mobile telephony have emerged on the horizon. So strong role of the state is maintained due to fast changing technologies. In case of New Zealand, liberalisation and deregulation of fixed-line telecommunication happened quickly during 1987-1989 but liberalisation and deregulation of mobile and Internet policies has only recently happened.

The major cause of divergence in the adoption of neoliberal reforms is different conceptions of the role of the state in relation to transformation from a state-led to a market-based system. The developmental states of Asia-Pacific, while approving of the need for liberalisation are not convinced of the need to reduce state guidance of the economy. This is due to domestic political economies which in the case of Korea, Singapore, and Malaysia means that domestic ideologies of development which favour strong state-business linkages, do not allow wholesale reduction of state intervention. In the case of India, an entrenched economic planning machinery sees itself as indispensable to managing liberalisation reforms. In New Zealand, where liberalisation was fast and deep, the state has been able to retain a steering role for itself though the prevalent ideologies of governance such as whole-of-government approach, and the provider-customer model. The impact of neoliberalism assumes greater importance in countries like New Zealand with a long-standing social policy model based on Keynesian welfarism. Neoliberal reforms have been more broad based in New Zealand because of the simultaneous and surgical structural transformation in multiple sectors like health, work and welfare, education, economic development, and research, science and technology.

Just as the knowledge society visions are contingent on domestic constraints relating neoliberal policy reforms, the relationship between global knowledge for development discourse and domestic political contexts exercises an important influence on the development of knowledge society visions. It has been shown in this study that the discourse of global policy institutions is never transplanted wholesale into the domestic context. Countries as self-interest driven actors on the international stage selectively interpret the discourse. The self-image of a state is a factor in how global discourses are domesticated. Even a small country like Fiji voices concern at the insensitivity of global discourse to conditions of small island developing states. Malaysia, an Islamic country,

perceives the global discourse as driven by Western notions of knowledge, governance, and development. Though Malaysia accepts that science and technology knowledge is necessary, it rejects the demands for greater democracy and good governance on the grounds that these notions do not accept the Islamic and Asian notions of democracy and governance, and ignore the legacies of colonialism which many countries have to endure. The reasons for self-centric visions of Korea, Singapore, and to a certain extent India, lie in their perception of themselves as important players in regional and global political scenes. Singapore perceives itself as a regional hub, Korea as an emergent global technological power, and India has started to project its power into South Asia and its neighbourhood. New Zealand has repositioned itself as a South Pacific nation whose future is increasingly tied to engagement with Asia, while highlighting its European traditions of culture, policy, and governance. The calls for restructuring are given an emotive tone by use of self-referencing terminology such as “catch-up”, “leader”, “frontrunner”, “laggard”, “superpower”, and “hub”.

Despite these self-perceptions, the policies of these countries share interdiscursive space with the global and regional policy institutions. A key characteristic of knowledge policy is the transnational nature of the discourse. Global institutions such as the UN, UNDP, OECD, IMF, and World Bank, and regional institutions like ADB, APEC, UNESCAP, South Pacific Forum, and ASEAN are important sources of ideas contributing to the knowledge society visions. The influence of the OECD is particularly strong on its two member states – Korea and New Zealand, and also on India and Singapore. India and Korea have been the subject of exemplar case studies conducted by the OECD and World Bank. Korea and Singapore have been very active in the APEC discourse on the knowledge economy. Malaysia has engaged with the UNDP, UNESCAP, APEC and ASEAN. Finally, Fiji has been actively raising small island states issues at WSIS.

The knowledge paradigms emerging out of the hybridisation of global neoliberalism and domestic political economies exhibit the following core issues of convergence in all the case studies: (1) ICT and S&T as vehicles for knowledge-based development need to grow in an enabling policy environment; (2) the twin imperatives of globalisation and the technological revolution mean that knowledge policy should have a competition and innovation orientation; and (3) ever changing technologies and the global economic situation require continuous readjustment to policy strategies. The discursive impact of

these issues has been to enact a new relationship between state and society, and knowledge and society. As a discourse, knowledge policy documents attempt to reframe, legitimise, and contextualise policy decisions into technocratic pressures. In this discourse, the role of science and technology knowledge in development, and globalisation appear as an inductive logic for the enactment of liberalisation, refashioning of government as governance, and construction of the public as a self-responsible, rational, knowledge agent. A consequence of the reframing of state-society relations is the subordination of individual welfare to the goals of national competitiveness. In the discourse, knowledge becomes synonymous with science and technology. The reframed knowledge and society relationship means subordination of individual capabilities to the needs of the national system of knowledge-based innovation.

In addition to these core attributes there are two major issues of divergence, namely: (1) emphasis on affirmative action in India, Malaysia, and Fiji and; (2) the promotion of cultural production and creative industries in Singapore, New Zealand and more recently Korea. The affirmative action emphasis in Malaysia, India, and Fiji shows the integration of domestic political discourse into the knowledge society agenda, whereby populist, redistributory policies are added as new imperatives. In Malaysia, *Bumiputeraism* is a key issue in almost every policy. Likewise, the reservation for Schedules Castes and Tribes in India is a constitutional obligation of the state. In Fiji the Indigenous Fijians are accorded preferential treatment in state policy.

The promotion of culture and the creative industries in more developed countries of Asia-Pacific reflects a discursive strategy of integration of a sustainable development paradigm into the knowledge society agenda. The creative industry focus stems from the belief that cultural content can be an important source of comparative economic advantage and that it can be nurtured as an emerging industry by governance mechanisms similar to R&D. Film, television, music, art, computer games, software, advertising, and cultural events are promoted in a creative industry focus. Singapore envisions that a creative industries focus will enhance its hub status whereas New Zealand aims to benefit by being a film destination which will enhance its tourism potential as a side impact.

11.4.0: Cross-country comparison: CDA features

It is worthwhile to remember at the outset that there exist very wide differences between countries in Asia-Pacific in their levels of social and economic development, and in the levels of policy infrastructure. In Asia-Pacific we see highly developed countries with sophisticated policy institutions such as Japan, South Korea, Singapore, Australia, and New Zealand and poor countries like North Korea, Laos and Cambodia. In the region there are also fast developing transition economies with significant population proportions living in poverty such as India, Indonesia, Vietnam, and China. There are also middle-income countries like Malaysia and small island developing states like Fiji. There are differences in the pace and direction of neoliberal structural adjustment policies, effectiveness of social protection policies, and levels of democratic polity. The most populous democracy (India) struggles on the social protection front, as the gap between rich and poor has been accentuated by neoliberal reforms since 1991. Contrast this to the most populous communist country (China) where the spectacular economic growth in the cities since the liberalisation reforms of 1978 is not matched by the rural areas where people are marginalised. The gradual dismantling of the socialist social protection regime has increased inequality between the rich and poor, and urban and rural society in China.

Parallel to the political, social, and economic diversity in the Asia-Pacific region, there exists a discursive diversity in knowledge policy discourses. Within this reality there is a twin paradox: (1) that while there is discursive diversity, national level discourses operate within parameters set by globally dominant discourses, ideologies, institutions and actors, and; (2) the influence of global neoliberalism at state level is constrained by local political economic contexts and it has to contend with the historical baggage of social welfare; state-owned ICT, education, and health infrastructure; employee unionism; affirmative action, and so on. With regards to the first paradox, the globally dominant discourse is informed by the ideology of liberal capitalism which in recent times has been called neoliberalism. Global neoliberalism determines social and political regulation in nation states. Intra-state policies and institutions impacted by neoliberalism include a wide variety – social policy; trade policy; governance mechanisms; regulation of finance, and telecommunications; industry, science and technology, and innovation system; education and health system; employment relations, and; political participation. Globally dominant actors and institutions provide discursive

legitimacy and politico-economic conditions for the production of neoliberal knowledge policies in Asia-Pacific states.

The origins of knowledge policy across states lie in the concern of global policy institutions about closing the gaps in adoption and use of ICTs, and about creation and commercialisation of S&T knowledge. Behind the greater policy sensitivity to ICTs and S&T is the discursive attention given to globalisation. Resultantly, the knowledge society has come to be constructed as a policy problem, even described and understood in terms of an urgency in meeting the globalisation imperative. All the important segments of the knowledge society – ICT, S&T innovation, education, and creative industries – are problematised in policy in terms of the globalisation imperative. Through the looking glass of globalisation, knowledge is no longer a public good but is given a conflated meaning as an economic good, a creative "experienced" good, and a manifestation of human, social, economic and cultural capital. In terms of the second paradox, the actual manifestations of neoliberalism in states negotiate a delicate balance between the local political economic reality and the demands of global neoliberalism. This manifests as ideological diversity in knowledge-related policy in the case studies, described in the previous section. Under the following sub-headings in this section, I compare the six countries with reference to the indicators of discursive construction of the knowledge society, namely differences and similarities in construction of the public, policy construction, construction of futurism, and construction of meaning of knowledge, globalisation, innovation, and ICT.

11.4.1: Style

Construction of the public is an indicator of the status of the individual vis-à-vis state and knowledge. People are important because the ultimate impact of neoliberalism and knowledge-related policy is on the daily lives of common people. The main construction of the public in the six countries is as existing or aspirational technologically-savvy individuals and communities. The increased mobility of people, ideas and capital coupled with new information and communication technologies have given rise to expanded personal, economic and social spaces. The imperative, then, is to produce subjects predisposed to understand the world through the eyes of technology. The discourse posits that familiarisation with technologies shall make people free and enhance their productive capacities. The identity of the subject as a being immersed in technologies is most pronounced in Korean policy documents due to their focus on

ubiquitous technology. In the cases of India, Fiji and Malaysia, the expectation of the individuals are more modest in the sense of being users of technology. Singapore and New Zealand fall somewhere in the middle of these two extremes. An interesting point relating to the construction of the public is the implied emphasis on nationalism. The tech-savvy subject is a contributor to the national cause of building a knowledge society. Knowledge workers are lauded as winners. Overseas diaspora working in the science and technology field are exhorted to contribute to national efforts. This thinking is most prevalent in the documents of Korea, India, Singapore, New Zealand and Malaysia.

11.4.2: Intertextuality

Both, conceptual and political forms of intertextuality are prevalent in the Asia-Pacific policy discourse. In terms of conceptual intertextuality, Korea has borrowed the concept of information infrastructure from the US policy discourse. Conceptual intertextuality in New Zealand discourse is mixed. There is evidence for both domestic and international sources. New Zealand's conceptualisations share a sameness with those of other English-speaking countries such as Australia, Canada, the UK, and to an extent the OECD. Academic discourse has also been referred to in some documents. Singapore which is not an OECD member but is a developed country relies on international sources like the OECD and World Bank for concepts like 'New Economy' and 'Knowledge Economy'. Malaysia's discourse draws upon a wider idea base including organisations such as the OECD, World Bank, WTO, IMF, UN, ASEAN and APEC. A significant influence on the discourse has been the ideas of its long time PM, Dr. Mahathir Mohammed, whose ideas are discussed alongside those of John Rawls, Amartya Sen, and George Soros. India's discourse, like Malaysia's, draws upon a wide international spectrum including the World Bank, IMF, WTO, and UN. Comparisons have been made with other developing and developed countries especially in relation to ICT policy. Malaysia, India, and Fiji have affirmative action as a common and vital plank in their knowledge society policies.

In terms of political intertextuality the relationship of discourse to external political sources is considered. Korea is interested in spreading its informatisation vision to other countries. The Korean discourse emphasises its leadership in forums such as APEC, WSIS, and ASEAN. New Zealand discourse emphasises linkages with APEC and OECD. In the cases of Malaysia, India and Fiji, there are intertextual interlinkages on

the issue of affirmative action, whereby they cite each other as examples where such policies are being followed. Malaysia, Singapore, and Korea are also interlinked on the issue of the 1997 crisis. The results of intertextual analysis highlight multiple -- country-institutional, country-country and cross-sectoral linkages which signifies that the knowledge policy field is highly inter-networked and enmeshed.

11.4.3: Interdiscursivity

Interdiscursivity entails the existence of other knowledges and discourses in argumentation. The interdiscursive analysis of the six countries shows some common and some differing themes. The common interdiscursive themes are: globalisation and ICT discourses, the economics of development, and knowledge management discourse. These influences, which are discourses in their own right at the global level, undergird the knowledge policy discourse. To enhance their competence at the global level, governments in Asia-Pacific have tried to identify policy arguments and management initiatives from elsewhere to provide legitimacy to local policy solutions and public management. Interdiscursive influences unique to each of the case studies are shown in Table 11.1.

Table 11.1: Interdiscursive influences unique to each country

Country	**Interdiscursive Influences**
Korea	Neoliberal imperative post-1997 crisis New Economy & IMF Discourse
New Zealand	Political and Nationalist discourse
Singapore	Geo-economic Determinism
Malaysia	Vision 2020 & Rukunegara Leapfrogging Economic Nationalism & Malaysian Values
India	Affirmative Action Geopolitical discourse
Fiji	Affirmative Action Indigenous Knowledge & values UN Discourse

Interdiscursive influences unique to each country are discourses occurring in national socio-political and socio-economic environments of each country respectively. It is notable that affirmative action appears in three countries – Malaysia, India and Fiji. Nationalist discourses of various kinds are appropriated in New Zealand, and Malaysia. Geopolitical and geo-economic imperatives are used in two cases – India, and Singapore. Finally, local values discourse is influential in Malaysia and Fiji. Korea is

unique in the sense that a discourse of necessary changes in the aftermath of the 1997 Crisis, especially measures in response to criticism from IMF is particularly strong. Results of this interdiscursive analysis highlight the fact that the discourses of the six countries share some common features while maintaining their uniqueness. The complexity of interdiscursivity is a result of sameness and differences of neoliberalism across the six case studies.

11.4.4. Modality of futurism

The analysis of modality in this study is based on constructions of futurism in preface and foreword section of documents. Two types of modality were considered – epistemic and deontic and their results are shown in Appendix A. Epistemic modality – a form of modality where the author shares evidence as a reason for his/her belief is more prevalent than the deontic modality which shows the author's commitment to propositions. This means that in the preface and foreword sections, which bear the signature of the policy elite, the beliefs relating to the knowledge society are constructed on the basis of specific reasons which are also given. Most often cited futuristic beliefs relate to: references to the impending information age, the knowledge society, digital revolution, 21st century, and so on; reference to utility of ICT, S&T, and education in the future, and; references to the utility of particular strategies for meeting the knowledge needs of the future. Longer sentences can have both forms of modality, but these are relatively few.

11.4.5. Wording and wording of meaning

The focus on the wording and meaning dimension in this study was on four main concepts: knowledge, globalisation, ICT, and innovation. Country-specific policy labels, such as knowledge economy, the knowledge society, e-Fiji, e-Korea, and so on were also considered. In relation to concepts, each country has a different word count depending on the number of documents and emphasis. The word knowledge occurs most often in India, and considerably less in Korea, New Zealand, and Singapore. This maybe due to the fact that these countries, with the exception of New Zealand, place a greater importance on the concept of information and also because of their tendency to use local policy labels. Generally speaking the concept 'ICT' is the most dominant of the four, where as surprisingly globalisation occurs markedly less frequently. The reason that globalisation occurs markedly less in all the case studies can possibly be that

often words from the same semantic domain such as ‘global’ are used in arguments instead of ‘globalisation’ per se.

In relation to policy labels it was found that there was little or no attempt at explicit definition of the main concepts and policy labels. The meaning and wording was of a more implied, taken-for-granted nature. There was also conflation of knowledge with science and technology knowledge and a tendency towards loose usage. Such usage reflects rhetorical and literal uses of the knowledge society and related concepts as buzzwords. For instance, in one paragraph there might be three different labels used interchangeably.

11.5: Discussion: Whither knowledge society?

What is the legacy of the knowledge society and where is it going? Is the discourse of the knowledge society dying a slow death, as it is superseded by new discourses of structural transformation of economies and societies under new labels? Critical policy perspectives have pointed out that the knowledge society discourse is about much more than legitimisation of science and technology knowledge. As this study has pointed out, as a discourse it is marked by a set of core features including: an emphasis on economics of knowledge and knowledge management; valorisation of ICT and S&T knowledge, and; an emphasis on continuous structural reform. The optimism of the the knowledge society policies badly needs a reality-check. Recent developmental experience of Asia-Pacific countries points to diverse landscapes of affluence and poverty amidst varied ecologies of political power, social hierarchies, and knowledge. The search for new paradigms and policy structures to usher in knowledge societies are contingent upon contextual political-economic and socio-historical environments. The discursive construction of the knowledge society is largely dependent upon the relationship between the political economic contexts and the core features mentioned above. For instance, the relative emphasis on ICT and S&T knowledge is dependent upon a country’s level of development, recent economic history, the planning model, the level of infrastructure, and the degree of their perceived utility. Likewise, the knowledge society policies can only be introduced within the context of existing policy reform. Considering that neoliberal reforms of various degrees were already in place in the six countries when the knowledge society policies were introduced, the resultant discourse has been neoliberalised. Accordingly this thesis has argued that the knowledge society discourses only mirror and extend what is already in place. The

reason that the discourse becomes problematic is because it is not feasible to achieve an equitable and just knowledge society under neoliberal policies. For example, though countries officially state that the strategic aim of S&T policy is no longer simply economic growth but harnessing of science and technologies for enhancing human potential, it is strange that the strategies that are supposed to achieve this continue to display the neoliberal flair for marketisation, productivity, management, efficiency, quality, outcomes, and selective promotion of "knowledge" activities.

The problematic nature of the knowledge society discourse can be understood as essentially due to the following: (1) the logic of economic reductionism, knowledge management, and techno-determinism in knowledge policy; (2) the missionary zeal of the policy to refashion the citizen as a consumer of "knowledge" products and services; and (3) the marginalisation of social knowledge in the neoliberalised notions of knowledge, knowledge creation, and knowledge management. The proliferation of the problematic knowledge society discourse has consequences for society as a whole, as well as for socio-economic development. In Asia-Pacific the marriage of state interventionism and knowledge politics will give rise to not only lopsided development, perpetuate illiberal democracy and governance, but it will also marginalise knowledge itself. If this diagnosis of the problematic nature of the knowledge society discourse is right then we need more analysis of why and how the core features of the discourse impact particular sectors of knowledge policy – education, S&T, and economic policy? Also we need to ask what is the real impact of knowledge society policies on society? Is the knowledge society a cause or a solution?

11.6: Conclusion

In concluding this chapter and thesis, I focus on three matters: distinguishing features of this research, potential limitations of this research, and suggestions for future directions of research. Knowledge society policy, actually-existing neoliberalism, knowledge, globalisation, ICT, and innovation have been the major themes of this thesis. They are inseparable and essential to understanding the status of knowledge in the world that we inhabit. The regional focus on Asia-Pacific has helped to contextualise these themes in the most economically and technologically dynamic, and most culturally diverse and populous region of the world. Despite overwhelming optimism in Asia-Pacific policy discourses, the inter-mixture of neoliberalism with the knowledge society has become

problematic and the subject of apprehension within academia about its real impact on society, culture, politics, economy and most importantly the status of knowledge itself.

First, the distinguishing features of this research are that it: (1) utilises a cross-disciplinary emphasis spanning the disciplines of sociology of knowledge, sociology of development, Science and Technology studies, social policy, and political geography; (2) examines case studies which explain the policy structure and history as comprehensive overview of diverse countries; (3) shows that computerised CDA can be used to study a large corpus of documents; (4) utilises a strong theoretical argument based on relating neoliberalism with knowledge policy discourse in a dynamic region of the world; (5) shows that neoliberal policies and ideas impact on knowledge policy in all the case studies; (6) shows that knowledge management and neo-classical economic theories impact on governance, S&T, higher education and industry policies; (7) shows that global policy institutions have been influential actors in the region especially during the 1997 crisis; (8) recognises the increased role of the state under the current phase of neoliberalism and; (9) affirms the existence of varieties of neoliberalism in context of the knowledge society policies in Asia-Pacific.

Second, the nature of the topic forecloses many avenues which other scholars might feel as being essential. Though the knowledge society and neoliberalism are being extensively researched these days, there is a dearth of comparative studies. The potential limitations of this study relate to the fact that: (1) as a result of the dearth of comparative academic material on the region, I might have overlooked some important issues in each of the six case studies; (2) the subject matter of the knowledge policy reports is too wide and it might have been fruitful to focus in-depth on some aspect of knowledge policy across the region; and (3) CDA methodology is still developing and is still unwieldy. Consequently, it is not yet a very precise instrument, though the template used in this research comes close to a good instrument.

Finally, further research on this topic could address the following issues. First, the knowledge society policy discourses worldwide are at different stages of maturity. In Asia-Pacific, the knowledge society policies have shifted to second or third generation depending upon implementation of reforms. It will be fruitful to investigate impact of the prior generation of policies. Second, at this moment there are a limited number of critical policy studies that question the relationship between neoliberalism and

knowledge society policies. It will be fruitful to investigate emergent questions such as, why and how does neoliberalism impact on constructions of knowledge in particular sectors of policy – education, S&T, and economic policy? What is the real impact of the knowledge society policies on society? Is the knowledge society a cause or a solution? Third, at this point in time there are few studies that question the relationship between the indicators used to measure the knowledge society and the empirical reality. This issue can be investigated further. It seems for every positivist piece of research on the knowledge society there is a critical work (theoretical or empirical). While critical studies such as this one are necessary to find out the core values of the discourse and what needs to be done, there is also a need to move away from mere criticism to concrete proposals for conceptualisation and empirical measurement of the knowledge society using knowledge indicators that echo concerns raised in critical studies.

A just and equitable knowledge society is the need of the hour. But at the current juncture, governments in Asia-Pacific cannot see beyond economic growth as they piece together the knowledge society puzzle. It is important that policy research should point out the lacunae in current conceptions of knowledge policy and point the way forward. It is also important that governments should read critical policy analyses in addition to positivist ones, so that the knowledge society conceptions could be based on research and deliberation rather than narrow ideologies.

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Appendices

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APPENDIX A: TABLES

Table 2.1: Three potential sources of value in knowledge production

Source Of Income	**Rent**	**Wage**	**Profit**
Frame of Reference	"Science" (a body of knowledge)	"Scientist" (the professional)	"Scientific" (the character of things)
Knowledge Is ...	What you build on	What you do	What you provide
Virtue of Knowledge	Authority	Craft	Efficiency
Epistemology	Foundational	Practical	Instrumental
Aim of Knowledge	Power through craft	Craft at the expense of power	Power at the expense of craft
"Division of Labour" Means	Expert deference	Team cooperation	Comparative advantage
Labour Market Strategy	Restricted entry	Promote entry and restrict exit	Promote exit
Payment For Knowledge	Grant (for past performance)	Salary (for ongoing work)	Prize (for finished product)
"Progress" Means	Completing a world-picture	Refining a tradition	Diffusing an innovation
"Nature" Means	Property to be staked out	Raw material to be shaped	Obstacle to be overcome
The Effect of Codification On Knowledge	Adds value by explaining craft	Orthogonal to craft's tacit nature	Subtracts value by cheaply replacing craft
Economic Abstraction	Tribute	Labour	Utility
Limit Concept	Credentials	Artisanship	Automation

Source: Fuller (2001a, p. 198).

Table 2.2: Knowledge society and related policy labels

Label Used	**Knowledge Society Knowledge Economy**	**Information Society Information Economy**	**Other labels and country using them**
Inter-governmental forums/ Multilateral institutions	APEC Reports, UN: UNESCO, UNDP country reports, UNCTAD, OECD, World Bank, European Commission: Sixth Framework Programme	UN World Summit on Information Society, ITU, Economic Commission for Africa, Pacific Island Forum, EU.	**ASEAN**: E-ASEAN **APEC**: New Economy, e-APEC **OECD**: Digital Economy, Information Society, New Economy
Countries/ Governmental Initiatives	India, Malaysia, New Zealand, Ireland, UK, Scotland	Japan, Korea, Australia	**Singapore**: Intelligent Island, Connected Singapore **Korea**: e-Korea, u-Korea **Japan**: u-Japan, e-Japan **USA**: National Information Infrastructure **India**: Vision 2020

Table 3.1: Factors relating to the rise of neoliberalism in policy

Domain	Factors contributing to neoliberal ascendancy since the 1970's
Social	1. Perceived negative impact of Keynesian social welfare policies on economy. 2. The rise of the "post-industrial" society. 3. The "McDonalisation" of society
Cultural	1. The increasing global influence of the Western culture and ways of life. 2. The onset of postmaterialist values and culture putting greater value on environment and well-being
Political	1. Rise of conservative regimes in Europe and other advanced countries. 2. The demise of Soviet Union. 3.Restructuring projects in advanced countries: Thatcherism, Reaganism, Rogernomics, Third Way, etc.
Economic	1. Spectre of globalisation and its challenges. 2. The "Oil Shock" of the 70's 3. Increasing control and influence of the World Bank, IMF and US Treasury over the economic policies poor countries through Structural Adjustment Programmes. 4. Economic stagnation. 5. The rise of Japan and Asian Developmental states as a new pole of competition. 6. Increasing economic clout of big industrial corporations.
Technological	1. The rise of ICTs (phone, internet and PC) 2. Increase in mobility due to technological advances. 3. Increasing uptake of new technological innovations.
Educational	1. The increasing commercialisation and internationalisation of universities. 2. The increasing premium on applied research.
Academic	1. New Growth theory in economics. 2. Institutional analysis in policy sciences.

Table 3.2: Strategies to promote or adjust to global neoliberalism

Neoliberalism 1. Economic Liberalisation 2. Deregulation 3. Privatisation 4. Market proxies in residual public sector 5. Internationalisation 6. Lower direct taxes
Neostatism 1. From state control to regulated competition 2. Guide national strategy rather than top down planning 3. Auditing performance of private and public sectors 4. Public-private partnership under state guidance 5. Neomercantilist protection of core economy 6. Expanding role for new collective resources
Neocorporatism 1. Rebalance competition and cooperation 2. Decentralised "regulated self-regulation" 3. Widen range of private, public and other "stakeholders" 4. Expand role of public-private partnerships 5. Protect core economic sectors in open economy 6. High taxation to finance social investment
Neocommunitarianism 1. Deliberalisation – limit free competition 2. Empowerment – enhanced role of third sector 3. Socialisation – expand social economy 4. Emphasis on social use-value and social cohesion 5. Fair Trade not free trade; Think Global Act Local 6. Redirect taxes – citizens' wage, carers' allowances

Note: From "Liberalism, Neoliberalism, and Urban Governance: A State-Theoretical Perspective," by B. Jessop, 2002, Antipode *34*(3), p. 461. Copyright 2002 by the Editorial Board of Antipode.

Table 3.3: Neoliberalism at individual, social group, national and global levels

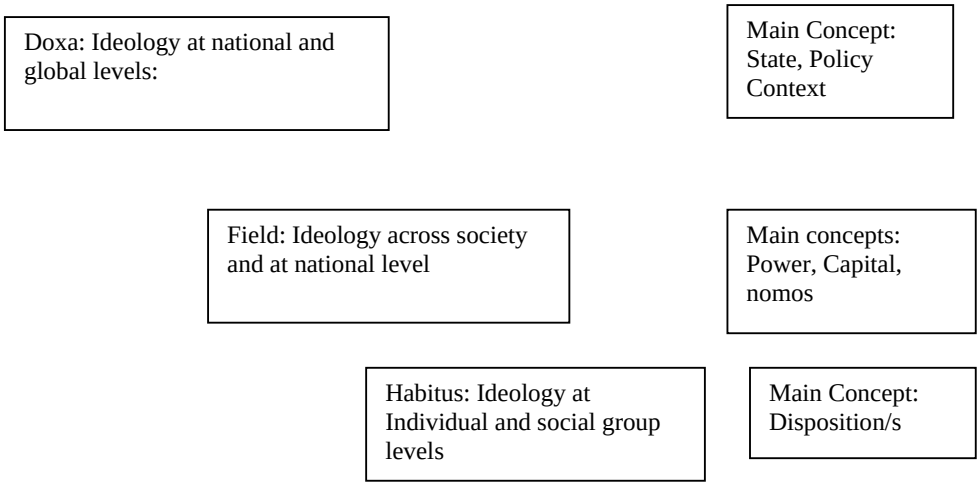


Table 4.2: The three dimensions of discourse

Discourse Dimension	**CDA Focus**	**Social Theory**	**Perspective**
Social Practice	The order of discourse	Bourdieu's Field; Foucault's orders of discourse; ideology	Macro level, Eagles Perspective
Discursive Practice	Intertextuality and Interdiscursivity	Bernstein's Recontextualisation; Gramsci's Hegemony	Meso level, Honey Bee perspective
Text	Linguistic and discursive features	Futurism, nominalisation	Micro level , Ants perspective

Korea

Table 5.3: Timeline of knowledge related policies, visions, and strategies

Policy Organisation	Strategy, idea, Vision	Documents
National Computerization Agency (NCA) now called National Information Society Agency (NISA)	Korea Information Infrastructure	1994. Informatization White Paper. 1995. Informatization White Paper. 1996. Informatization White Paper.
	Master Plan for Informatisation Promotion	1997. Informatization White Paper. 1998. Informatization White Paper. 1999. Informatization White Paper.
	Cyber Korea 21	2000. Informatization White Paper. 2001. Informatization White Paper.
	e-Korea Vision 2006	2002. Informatization White Paper: Global Leader e-Korea. 2002. Korea Information Infrastructure: Broadband In Korea.
	Broadband IT Korea Vision 2007	2003. Informatization White Paper: e-Korea. 2004. Informatization White Paper: Broadband IT Korea. 2004. Korea Internet White Paper.
	IT839 Strategy	2005. Informatization White Paper: Broadband IT Korea. 2005. Korea Internet White Paper.
	u-Korea	2006. Informatization White Paper.

Policy Organisation	Strategy, idea, Vision	Documents
Ministry of Information and Communication (MIC)	e-Korea Vision 2006 Broadband IT Korea Vision 2007 IT839 Strategy u-Korea	2002. e-Korea 2006: The Third Master Plan for Informatization Promotion. 2003. Broadband IT Korea 2007. 2003. White Paper: Broadband IT Korea - Connecting You to the Digital World. 2004. IT839 Strategy: A Leap to Advanced Korea based on IT. 2004. IT839 Strategy: The Road to $20,000 GDP/capita. 2004. White Paper: Dynamic Digital Korea - IT839 leading to u-Korea. 2005. White Paper: Dynamic u-Korea – IT839 leading to u-Korea.
Ministry of Science and Technology (MoST)	Vision 2025	2000. Science and Technology Policy in Korea: Vision and Strategies for the 21st Century. Vision 2025: Korea's Long Term Plan for Science and Technology Development. New Vision, Fresh Start: Mission of the 2nd S&T Deputy Prime Ministry. Science and Technology in Korea. Science and Technology Policy for the 21st Century.

Policy Organisation	Strategy, idea, Vision	Documents
Ministry of Education and Human Resource Development (MoE & HRD)	Brain Korea 21	Brain Korea 21: a project for Nurturing Highly Qualified Human Resources for the 21st Century Knowledge-based. Education in the Information Age. Human Resource Development Policy. 2004. White Paper 2004: Adapting Education to the Information Age.
Ministry of Commerce, Industry and Economy (MoCIE)	Towards 2010	2005. Toward 2010: Industry Policies
Ministry of Government Administration and Home Affairs	e-Government	2005. Annual Report for e-Government.
Korea's Submission to APEC Ministerial Meeting, Seoul.	ICT for all	2000. Discussion Paper: Preparing Korean Education for the Knowledge-Based Society

Table 5.4: Leximancer results for top 20 concepts

Lexi-mancer Rank	Concept	Seeds used as positive weights in Leximancer	Weight in Leximancer	Adobe Acrobat Word Count
1	Information		1624	6861
2	Internet		1518	5545
3	Government		1441	4237
4	Service	Service, services	1370	7474
5	System		914	3043
6	Development	Develop, developed, development, developing	753	1745
7	Market		745	2084
8	Korea		726	5161
9	Technology		582	2297
10	Network		564	2560
11	Informatization		500	2335
12	Education		500	1666
13	Growth		426	1487
14	Mobile		408	1561
15	MIC	Ministry of Information and Communication, MIC	404	929
16	Public		373	1230
17	Companies		291	1020
18	International		282	1055
19	Management		278	1292
20	National		272	1919

Table 5.5: Leximancer results other important concepts

Lexi-mancer Rank	Concept	Seed words used as positive weight in Leximancer	Weight in Lexim-ancer	Adobe Acrobat Word Count
26	R&D		229	678
27	Communicati on		222	1622
28	Users	Users, user.	204	1249 (Users = 916,User = 333)
29	ICT	ICT, IT, Information and Communication Technology	180	3979 (ICT= 418, IT= 3534, Information and Communication Technology = 27)
32	Economy		144	343
38	OECD		96	264
39	Science		93	817
40	Personal		88	356
41	NCA	NCA, National Computerization Agency	82	507 (NCA = 259, National Computerization Agency = 248)
44	Trade		74	376
45	Science & Technology	S&T, Science and Technology.	73	724 (Science and Technology =378, S&T= 346)
46	Telecommun-ications	Telecommuni-cation, telecommuni-cations.	70	Telecommunications = 406, Telecommunication = 732
48	Culture		62	323
49	KII	KII, Korean Information Infrastructure.	61	KII = 266, Korean Information Infrastructure = 24
52	Finance		58	267
53	IT839		54	219
54	E-Learning		53	241
55	Innovation		51	446
56	APEC		43	131
57	Ubiquitous		38	240
58	Knowledge		32	444
59	Science & Technology Innovation Headquarters		31	48
60	E-Gov		28	27
61	Koreans		28	48
62	E-Commerce		26	532
63	Cyber Korea		21	54

Lexi-mancer Rank	Concept	Seed words used as positive weight in Leximancer	Weight in Lexim-ancer	Adobe Acrobat Word Count
64	Regulations	Regulations, regulation.	20	Regulations = 146, Regulation = 99
65	Government Innovation		16	80
66	Digital Divide		11	224
67	WTO		7	29
68	IMF		7	10
69	E-Korea		2	43
70	Globalization		1	61

Table 5.6: Concept agglomerations based on core issues

Physical Location on Map	**Agglomeration Category based on core issue**	**Concept List**
Centre Left (overlap with RS&T cluster)	Globalisation	Globalisation, APEC, WTO, International, Country, Investment, Korea, NCA, MIC, IT839, OECD, and cooperation.
Bottom Left	Internet & E-Commerce	E-commerce, growth, market, companies, mobile, subscribers, Internet, Service, Koreans.
Top Centre (overlap with Governance and Informatization Promotion clusters).	Research, Science and Technology	ICT, Government Innovation, Science, Technology & Innovation Headquarters, e-learning, R&D, Digital Divide, education, policy, project, **concepts shared with Globalisation** (cooperation), **Governance** (resources, knowledge, national), **and Informatization Promotion** (development, research, innovation, science & technology) **clusters**.
Top Right & Centre (overlap with Research, Science & Technology and Informatization Promotion Clusters).	Governance	e-Korea, system, regulations, **concepts shared with Research, Science & Technology** (resources, national, knowledge), **and Informatization Promotion** (e-gov, informatization, management, government, KII, Cyber Korea, Information, administration, finance, protection, public, security) **clusters.**
Centre Right (overlap with Research, Science and Technology, and Governance clusters)	Informatization Promotion	Ubiquitous, IMF, network, communication, personal, telecommunications, home, trade, economy, office, organisations, culture, promotion, electronic, **concepts shared with Research, Science & Technology** (development, research, science, innovation, science and technology, resources, national, knowledge) **and Governance** (e-gov, informatization, management, government, KII, information, Cyber Korea, public, security, protection, administration, finance) **clusters**.

Table 5.7: Modality dimension of Korea's knowledge policy texts

Document Details	Text sample	Modality
White Paper 2003: Broadband IT Korea - Connecting You to the Digital World Type: Message from the Minister Name: Daeje Chin, PhD. Designation: Minister for Information and Communication.	Digital revolution has heralded the era of a knowledge-based economy with new opportunities. The key drivers of the information society are invisible factors like knowledge, information and cultural creativity. Therefore, whoever has the right skill to utilize digital technology can create new wealth. In keeping up with the digital age, Korea has broken away from conventional thinking and practices, and made every possible effort to have an economic structure and mind-set fit into a new paradigm. … . With the dawn of the information society, Korea will commit itself to harness the power of IT to bring down the walls dividing regions, classes, generations and nations, and to realize a society with equal digital opportunities. (MIC, 2003, pp. i-ii).	The first three sentences show epistemic modality. The word 'heralded' in the first sentence indicates the future 'knowledge-based economy'. Whereas the first two sentences show the author's objective assessment of the 'digital revolution' and what impact it has for information society, the third sentence introduces conditionality ('whoever') meaning that whoever can harness the key drivers of information society can become wealthy. The fourth sentence contains Korea's anticipatory policy response to an future imperative ('digital age'). The last sentence shows deontic modality as the author as the author expresses his desire and commitment to realise the information society.

Document Details	Text sample	Modality
White Paper 2004: Adapting Education to the Information Age Type: Foreword Name: Byung-Young An Position: Vice Prime Minister and Minister Ministry of Education & Human Resources Development	The dawn of a new e-Learning era will increase the use of new kinds of infocommunication-based tools that will help bring the existing school system into the Information Age. e-Learning will also cultivate creative, self-motivated students and provide students from low-income families and farming and fishing villages with educational opportunities equal to those of students in urban areas. e-Learning is creating an education welfare system and a more cohesive society. Korea was able to open a new e-Learning era ahead of other nations due to the successful completion of two phases of the "Comprehensive Development Plan for Adapting ICT into Education," which laid the foundation of the most developed ICT infrastructure in the world (MoE & HRD, 2004, p. i).	In the first two sentences, epistemic modality can be seen in the futuristic prediction (repeated use of 'will') made in context of the 'information age'. The third sentence, also showing epistemic modality, situates the subject matter ('e-learning') in the present ('is'). The last sentence is also epistemic but it situates the subject matter in the past ('was', 'laid the foundation'). Considered together, the four sentences describe the past, present and future of e-learning (which it must be recognised is shown as something vital for Korea's education policy in the information age). Therefore, there is an underlying deontic modal tone to the four sentences.

Document Details	Text sample	Modality
MIC: Broadband IT Korea Vision 2007: The Third Master Plan for Informatization Promotion. Type: Preface Name: Ko Kun Designation: Prime Minister of Korea	To begin with, we will be promoting the realization of knowledge & Information society through the introduction of Ubiquitous information society where people can enjoy the service of e-medicine and e-commerce anytime and anywhere. In addition, we will make an effort to reform the government process and enhance the civil services through informatization. A new driving force in IT will also be developed and fostered as a means to create jobs for our economy. … For this purpose, Korea needs to firmly establish itself as an advanced nation of the global information society by utilizing North-east Asia as a launching point. Already, we have taken a new step towards our future. In fulfilling "Broadband IT Korea Vision 2007, I firmly believe that Korea will become a global leader of the information age in the 21st century and will be recognized as a strong IT country with gross domestic product reaching $20000 per capita. Let us strive forward with strength to pass down abundant and proud "Korea" to our descendants (MIC, 2004a, pp. 1-2).	We can discern an explicit argumentation style in this quote, especially when we look at the beginning of the sentences (‘To begin with’, ‘In addition’, ‘For this purpose’). The argumentation style represents deontic beliefs. In the first sentence, ‘knowledge and information society’ is clearly identified as the society of the future which Korea must aspire for through its ‘ubiquitous information society’ policy. The second and third sentences show deontic modality. The fourth sentence shows deontic modality as the author argues based on previous three sentences to establish Korea as “an advanced nation”. The fifth sentence, situated in the past but pointing to the future (‘Already, we have taken a new step towards our future’) shows epistemic modality. The sixth sentence is strongly epistemic (as shown by the declarative ‘I firmly believe’). The last sentence is deontic in the sense that the author exhorts the public to share his vision. The exhortation (‘Let us strive forward with strength’) indicates the author’s commitment to the propositions made in the policy document.

Document Details	Text sample	Modality
MIC: Korea Internet White Paper 2000. Type: Foreword Title: Vision through the Internet Name: Ang, Byong-Bug Designation: Minister of Information and Communications.	By 2005, Korea will complete the construction of Information Infrastructure and provide high speed network services nation-wide. In addition to realizing the free access services of the Internet for the elementary, middle and high schools, the government provides the education to ten million people who are not able to use the Internet. Efforts are being made to protect online privacy and to counter cyber terrorism over the Internet. With all these measures in place, the Internet becomes a convenient, secure and useful environment. On the vision of Cyber Korea 21, all people can use the Internet to get the knowledge and information and enhance the quality of life. And we will continuously endeavor to take the leap forward to the leading country in the networked world (NCA, 2000, p. i).	The first sentence shows epistemic modality as the author expresses his certainty that in future ('By 2005') Korea 'will' have an advanced infrastructure. The second and third sentences show deontic modality as the author conveys his commitment to the realisation of the assertion made in sentence one. The fourth and fifth sentences show epistemic modality as the author concludes that policy measures will pave the way for a better Internet use environment and to realise the Cyber Korea 21 vision. In the last sentence the author reverts to deontic modality in conveying his commitment to achieving the vision.
MIC: Korea Internet White Paper 2002 Type: Foreword Title: Global Leader e-Korea. Name: Yang, Seung Taik Designation: Minister of Information and Communications.	In this 21st century, individuals and corporations cannot have a bright future if they don't know how to use computers and the Internet appropriately. Therefore, we need to have a comprehensive understanding for the information-based society. More importantly, we need to gain insight through an analysis of the development stages and current trends of Internet technology so that we can predict what the future has in store for us (NCA, 2002, p. 1).	All the three sentences in this quote show epistemic modality. The first sentence has a passive tone ('cannot have a bright future if they don't know'). This is deliberate as the author seeks to highlight the utmost significance of knowing computers and internet, and of understanding the 'information-based society'. However, in the last sentence, there is some sense of deontic modality as well, especially in the beginning of the sentence ('More importantly, we need to').

Document Details	Text sample	Modality
MoST: Vision 2025. Type: Preface Name: Jung Uck Seo, PhD. Designation: Minister for Science and Technology.	We are standing at a turning point in history. We have just crossed the threshold into a new millennium. Futurists have given us many different pictures about what the world would be like in the 21st century. They all agree, however, that science and technology (S&T) will be the driving force behind the changes and developments that shape our new world. In fact, even at this very moment, brilliant scientific discoveries and technological innovations are providing us with new opportunities and challenges that fill us with new hopes and dreams (MoST, 2000, p. i).	The subject matter of this quote is futurology itself. The first two sentences show strong epistemic modality ('turning point in history') based on a fact ('new millennium'). In sentences three and four, the author corroborates (by referring to the 'Futurists') the reasons for the epistemic beliefs shown in first two sentences. Sentences three and four are deontic as they convey the necessity for focusing on S&T. The last sentence shows epistemic modality as the author provides evidence for his assertions in sentences three and four.
NCA: Informatization White Paper 2005: Broadband IT Korea. Type: Message from the President. Name: Chang-Kon Kim Designation: President of NCA	Not only in establishing the world's top-level IT infrastructure, but also in utilizing IT has Korea drawn the world s attention and become the IT power. This is attributed to the composition of government-led policies to foster IT sector, will of the businesses to invest into IT infrastructure, and the capability of the people to keenly adopt and recreate new technological trends. Korea has witnessed its potentiality for transformation and innovation of the society through informatization. And encouraged by this fact, Korea is taking meaningful steps to realize a knowledge-based and advanced Korea by actively utilizing ubiquitous technology (NCA, 2005a, p. 1).	The first three sentences show epistemic modality as the author asserts the reasons for the success of the informatisation policies. The author is certain that Korea is a world leader in development and utilisation of IT. The last sentence concurs with the above logic and includes deontic modal language ('encouraged by this fact') in arguing the necessity to believe in the knowledge society project.

Table 5.8: NCA's informatization white papers

Year	Lexical items and nominalisations relating to Knowledge
1995-1998	Knowledge-based industry (1995, 2000), knowledge processing (1995, 1996), knowledge-infrastructure (1996, 1997, 1999), application knowledge (1996), high-tech knowledge industry (1997, 1998).
1999-2006	Knowledge-based society (1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006), knowledge-based economy (1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006), knowledge-based information society (2000, 2001, 2002), knowledge information resources (2001, 2002, 2003, 2004, 2005, 2006).
1999	Construction of knowledge-based economy, knowledge-based infrastructure deployment advanced knowledge-based country, utilisation of knowledge, rapid realisation of knowledge-based society, knowledge-based informatization, and advanced knowledge-based society.
2001	National knowledge management, national knowledge & information resource management, knowledge commerce.
2002	Foundation of knowledge-based economy.
2004	Knowledge and information resources, upgrading future knowledge information base, knowledge sharing, knowledge government.
2005	Knowledge-based and advanced Korea, management and utilisation of knowledge information resources, knowledge-based government, information and knowledge utilisation.
2006	Customised knowledge service, future knowledge-based society.

Table 5.11: Collocations of 'IT' & 'ICT'

Document	Words and phrases collocating with 'IT' & 'ICT'
NCA's Informatization White Papers (1994-2006)	training, field, professionals, industry, foster, investment, human resources, network/s, new, advancing, infrastructure, expansion, nurturing, developing, technology, evolution, services, outcome, researchers, products, use, equipment, policies, specialised, foster, sector, systems, broadband, utilisation, educate, information superhighway, projects, jobs, literacy, government, deployment, expenditure, international cooperation, strategy, device production, broadband, capital, exports, global IT competitiveness, staff, organisation, equipment industry, service industry, leader, global IT power, new growth engine, new IT markets, world's best, cutting-edge, u-IT leader, indicators.
MIC's White Papers (MIC, 2003, 2004b)	industry, infrastructure, diffusion, standardisation, competitiveness, SME's and Start-ups, motor, advanced, finance, environment, people, equipment, growth, sector, government, R&D, adoption, global, prosperous, sound, service, policy, clusters, international, manpower, professionals, education, study, overseas, venture companies, investment, enterprise, market, HRD, growth engine, R&D, cooperation, vehicles, home appliance, IT hub of Northeast Asia, u-IT, ethics, export.
MIC's e-Korea, Broadband IT Korea, and IT839 visions	industry, next-generation, experts and professionals, companies, products, ventures, IT hub of Northeast Asia, utilise, prosumer, strategic, develop, education, job training, field, spending, electronics, cyberspace, security, curricula, exports, fusion, social sciences, foreign universities, institutes, labour force, workers, facilitate, distance learning, global, trade, account surplus, share of GDP, broadband, ubiquitous, high-tech, hub base, u-IT, player, device sector, domestic, convergence, IT culture, digital lifestyles, nano/bio, clusters, usage, world famous, powerhouse, IT SoC (System on Chip).
NCA & NIDA Korea Internet White Papers 2000-2006 (NCA, 2000, 2001, 2002, 2003, 2004, 2005b, 2006).	industry, activities, promotion, Y2K, service, specialists, high-speed, manpower, developing, cooperation, education, infrastructure, service providers, users, ethics, networks, efficient, global IT leader, sagging, consultants, skilled, volunteers, IT bubble, investment, powerhouse, applications, experts, outsourcing, products, devices, convergence, advanced, education, webcasting, exports, universities.
MoCIE 2010 Vision (MoCIE, 2005)	advanced strategic technologies, biotechnology and nanotechnology, new technology sectors.
MoE & HRD (2004)	rapid adaptation, e-learning, infrastructure, leading IT country.
MoST (n.d.)	IT power country, production, industry, infrastructure, use, broadband, adapting, using, education.
2nd APEC Education Ministerial Meeting	ICT for All, use, education, literacy, university, young, volunteer, skills, environment, training, usage, integrating, course, subject, equipment.

New Zealand

Table 6.1: New Zealand knowledge policy timeline

Policy Organisation	Strategy, idea, Vision	Documents
Ministry of Commerce	Bright Future	1999. Bright Future: Making Ideas work for New Zealand.
Ministry of Research, Science & Technology	Foresight Blueprint for Change Picking up the Pace	1998. Building Tomorrow's Success 1999. Blueprint for Change. 1999. Following the Blueprint. 2000. Igniting the Future: Strategic Directions 2000-2003. 2001. Statement of Intent 2001-2004 Igniting the future. 2005. Anchor Paper for Picking Up the Pace. 2005. Research, Science and Technology in New Zealand: Picking up the pace (Summary). 2005. Statement of Intent: 2005-2008 Igniting the Future.
Ministry of Education	Tertiary Education Strategy	2000. Shaping a Shared Vision. 2001. Shaping the Funding Framework. 2001. Shaping the Strategy. 2001. Shaping the System. 2002. Tertiary Education Strategy 2002/07. 2003. Priorities: Statement of Tertiary Education Priorities 2005. Tertiary Education Strategy, 2002/07: Baseline Monitoring Report.
Ministry of Economic Development	Digital Strategy	2005. The Digital Strategy
Office of the Prime Minister	Growth and Innovation Framework	2002. Growing an Innovative New Zealand

Policy Organisation	Strategy, idea, Vision	Documents
HUMANZ Report to the Ministry of Research, Science and Technology.		2000. Knowledge, Innovation, and Creativity: Designing a Knowledge Society for a Small, Democratic Country
ITAG		1997. ImpacT 2001: Learning With IT. 1999. The Knowledge Economy.

Table 6.2: Leximancer ranked top 20 concepts

Rank	Concept	Seed words used in Leximancer	Absolute Count	Adobe Word Count
1	Education		2927	5820
2	New Zealand		1229	2450
3	Research		1207	3604
4	Development	Developed, development, developing, develop	1015	2633
5	Funding		1004	2222
6	Commission		992	1824
7	Knowledge		743	1917
8	Maori		689	753
9	Students		647	1156
10	Learning		503	1355
11	Government		481	1636
12	Economy	Economic, economy	430	1341
13	Information		405	1082
14	Technology		369	1300
15	Innovation		318	845
16	Skills		314	820
17	Society		305	798
18	Training		283	1130
19	Policy		281	783
20	Work		275	756

Table 6.3: Leximancer ranked other important concepts

Rank	Concept	Seed words used in Leximancer	Absolute Count	Adobe Word Count
21	New Zealanders		275	361
22	People		275	724
23	Investment		260	610
25	Industry		234	862
26	Future		226	654
28	Business		216	571
29	Science		206	915
30	Universities		193	424
31	Science Technology	S&T, Science and Technology	190	515
32	Outcomes		171	462
33	OECD		168	325
36	Growth		160	483
42	Capital		127	388
45	Culture		110	219
46	ICT	IT, ICT Information Technology, Information and Communications Technology	107	585
48	Academic		100	284
51	Market		94	265
53	Management		90	373
54	Financial		88	323
60	Competencies		59	146
61	Governance		54	175
62	Foresight Project		52	80
66	Employment		47	203
67	FRST		47	46
68	Infrastructure		46	195
69	Digital Strategy		34	94
70	Competitive		25	128
71	Knowledge Society		23	392
72	Regulatory		20	73
73	GIF	GIF, Growth & Innovation Framework	18	42

Rank	Concept	Seed words used in Leximancer	Absolute Count	Adobe Word Count
74	Higher Education		15	111
75	Globalisation		7	32
76	Knowledge Economy	Knowledge-based Economy, Knowledge Economy	1	193
77	Liberalisation		1	3

Table 6.4: Concept agglomerations based on core issues

Physical Location on Map	Agglomeration Category based on core issue	Concept List
Top Left (overlap with Tertiary Education, Development and Knowledge Economy clusters)	Research, Science and Technology	Foresight Project, Science and Technology, FRST, Government, Investment, GIF, Capital, outcomes, policy, research, infrastructure, private, science, universities, goal, market, business, technology, regulatory, management, report, and innovation.
Bottom Left (overlap with Research, Science and Technology cluster)	Tertiary Education	Financial, Funding, costs, governance, academic, universities, staff, polytechnics, accountability, commission.
Top Centre (overlap with Knowledge Society, Research, Science and Technology, and Development clusters)	Knowledge Economy	OECD, knowledge economy, innovation, goal, market, competitive, New Zealand, products, economy, world, future, knowledge, culture
Centre (overlap with Research, Science and Technology, Development, Knowledge Economy, Knowledge Society, and Skills and Training clusters)	Development	Goal, market, competitive, future, culture, knowledge, globalisation, competencies, society, liberalisation, information, literacy, employment, teachers, community, work, development, resources, working, industry, international, social, vision, global, services, technology, business, regulatory, management, and report.
Top Right (overlap with Knowledge Economy, and Development clusters)	Knowledge Society	Digital Strategy, New Zealanders, world, knowledge, society, globalisation, growth, ICT, Knowledge Society, competencies, and people.
Bottom Right (overlap with Development cluster)	Skills and Training	Ministry of Education, education, training, programme, world, liberalisation, information, employment, teachers, community, skills, literacy, learning, school, achievement, Higher Education, students, and Maori.

Table 6.5: The construction of New Zealanders in the discourse

Beliefs prescribed of New Zealanders	Text Sample
New Zealanders appreciate the value of RS&T	New Zealanders' relationship with science and technology is complex. Some aspects of science and technology offer a source of fascination and opportunity that is grasped with enthusiasm. Others are a source of concern over ethical issues, environmental risks and equity of benefits. … If New Zealand is to reap the potential benefits of RS&T, society needs confidence in the opportunities RS&T can provide. … Where the community is uncomfortable about research directions, new ways of communicating will be required – based more on building relationships than simply providing information (MoRST, 2005c, p. 29).
New Zealanders want action on knowledge society	During the past three years New Zealanders have moved from asking: what is a knowledge society and should we become one, to asking how do we become a knowledge society? In response the Ministry of Research, Science and Technology (MoRST) is shifting its main emphasis from analysis and awareness-raising to action (MoRST, 2000, p. 4).
New Zealanders need governmental leadership	Our mission defines a clear direction for everything we do. To inspire and assist New Zealanders to create a better future through research and innovation (MoRST, 2000, p. 8).
New Zealanders need to change their attitudes	Central to this process of national transformation will be highly skilled and adaptable people and institutions, who collaborate and network to act globally. Ultimately our successful evelopment as a prosperous and confident knowledge society will depend on the attitudes of our people. All New Zealanders will need to view themselves as part of an economy and society that plays a vital role on the world stage (Ministry of Education, 2005, p. 14). One attribute that is important to growing innovation is our collective willingness to take risks and reward effort and success. New Zealanders will need to take such attitudes to heart if we are to reach our potential as a knowledge society (Science and Innovation Advisory Council, 2001, p. 14).
Overseas New Zealanders should support governmental efforts	We want to encourage successful New Zealanders who are currently overseas to return home. If they remain abroad, we want them to maintain links and networks with New Zealand and share their knowledge of international markets, latest innovations and business opportunities(Ministry of Commerce, 1999, p. 62). Government will…… Build networks with New Zealanders currently working overseas to encourage them to contribute knowledge and ideas (PMO, 2002, p. 7).

Beliefs prescribed of New Zealanders	**Text Sample**
New Zealanders must embrace the knowledge age	If New Zealanders do not seize the opportunities provided by the knowledge economy, we will survive only as an amusement park and holiday land for the citizens of more successful developed economies (Information Technology Advisory Group, 1999, p. 2). In this time of rapid and unprecedented technological change, we need to work together to harness it and create a digital future – for all New Zealanders (MoED, 2005, p. 2). Target Outcome Statement: People with knowledge, skills and ideas. New Zealanders embrace the knowledge age. They actively pursue knowledge and the development of ideas and skills required for New Zealand's success as a society and economy (MoRST, 1999, p. 23). New Zealanders must recognise the role of innovation and knowledge creation in improving our quality of life (Science and Innovation Advisory Council, 2001, p. 2).
All New Zealanders have to be included	We look forward to a future in which New Zealanders. … Celebrate those who succeed in all walks of life and encourage those who fail to try again (PMO, 2002, p. 12). The central challenge is to ensure New Zealanders, in all their diversity, are valued and included as part of our knowledge society. We cannot afford and must not tolerate waste of human talent (Ministry of Education, 2002, p. 12).

Table 6.6: Modality dimension of the New Zealand knowledge policy texts

Document Details	Text Sample	Modality
Document: Building Tomorrow's Success (MoRST, 1998) **Author:** Maurice Williamson, Minister of Research, Science & Technology	We are on the brink of a period of profound change for our society. All that we do, all that we make, and all that we earn will be altered by new knowledge and technological change. Knowledge differs from other resources - each new discovery provides a platform for further discoveries. The Foresight Project is focused on exploiting knowledge for our future prosperity and well-being, and our development as a knowledge society… Through the Foresight Project, the Government's investments will be managed in a more enabling, and less prescriptive, way. Your partnership with the Government can help shape the new investment approach (MoRST, 1998, p. 4).	This sample reflects both epistemic and deontic modality. The first sentence shows epistemic modality and is declarative in nature ('We are..). The Minister explains the desirability of visionary thinking, where foresight "involves constructing a vision of a desirable future, and then identifying strategies to take you there" (p.4). The emphasis on prediction ('on the brink of', 'will be') and concern with citizen ('you') and society ('our') is visible in these quotes. Here the authority figure (the minister) is making assertions which are predictive as well as making prescriptive demands of readers. At the end of the quotation, the minister is making a prediction as a promise and a demand in the form of a request.
Document: Bright Futures (Ministry of Commerce, 1999) **Author:** Max Bradford, Minister for Enterprise and Commerce.	Why don't you become part of this vision the Government has for New Zealand? It's your future too (Ministry of Commerce, 1999, p.11).	This sample shows deontic modality as the author shows a high level of commitment to the proposition. Here the author makes a request on the citizens to be part of the government's vision in the form of an interrogative question and then making it imperative for them to agree by means of a prescription.

Document Details	**Text Sample**	**Modality**
Document: Shaping the System (TEAC, 2001c) Author: Steve Maharey, Associate Minister for Tertiary Education	*Shaping a Shared Vision,* argued that the challenge of ensuring all New Zealanders have access to lifelong learning in a knowledge society would require new ways of organising, delivering and recognising tertiary education and learning. This Report, *Shaping the System*, ….. makes clear that if we are to be a knowledge society we need mechanisms, policy instruments and structures that will allow the tertiary education system to be 'steered' more effectively. The changes proposed will place our tertiary education system at the very centre of our nation's drive to be a knowledge society. It will be the focus of our hopes and ambitions. This is an enormous responsibility. I am confident the tertiary education community will meet this challenge (TEAC, 2001c, p. i).	This quotation exemplifies deontic modality and follows the demand-as-request style of proposition. The minister uses the metaphor of a "challenge" to predict that what is proposed in policy is imperative ('would require'). The minister uses the driving related metaphors ('steered' and 'drive') to prescribe what needs to be done to meet the imperative. Finally, the minister demands that the tertiary sector meet the 'challenge' of this 'enormous responsibility' because it is the 'focus of our hopes and ambitions'.
Document: Shaping the Funding Framework (TEAC, 2001a) Author: Steve Maharey, Associate Minister for Tertiary Education	The broad aim in establishing the Commission was to identify how New Zealand can develop a more cooperative and collaborative tertiary education sector that will better assist us in becoming a world-leading knowledge economy and society. Lifelong learning is the lifeblood of a knowledge economy and society, and the Commission is committed to the development of a tertiary education system that is capable of fulfilling that vision. I endorse that commitment (TEAC, 2001a, p. i)	This quotation shows epistemic modality as the author expresses the necessity of building a knowledge society and economy. Here the prediction about the knowledge society is backgrounded by reference to the past (the setting up of TEAC). The metaphor of 'lifeblood' is used to convey that what is required for the future.
Document: Growing an Innovative New Zealand (PMO, 2002). Author: Prime Minister, Helen Clark	All this work confirms the need to continue to transform the New Zealand economy. We need to become a more innovative, more confident, more flexible economy which is able to compete successfully on the international scene (PMO, 2002, p. 5).	This quote shows deontic modality with a high level of commitment. The Prime Minister initially spells out a desire to continue to reform the New Zealand economy. The rationale for the GIF is given in this quotation.

Document Details	Text Sample	Modality
Document: Picking up the Pace (MoRST, 2005b) Author: Julian Williams, Ministry of Research, Science & Technology	The Government's goal is to create a dynamic, knowledge–based economy that is sustainable and supports the economic, environmental and social wellbeing of all New Zealanders. Over the last six years New Zealand's GDP growth rates have been running above the OECD average and we now high levels of participation in the workforce. That achieved, the focus now is on increasing the productivity of each worker, rather than relying on more people working longer hours. Science and innovation will be absolutely critical to achieving this goal (MoRST, 2005b, p. 2)	This quote has both epistemic and deontic modality. The first sentence shows deontic modality as the author expresses a high level of commitment to his belief. In the last sentence as well, the author shows a high level of commitment to truth ('will be absolutely critical') in making the assertion on the value of innovation for creating a knowledge-based economy. In the second sentence, epistemic modality can be seen as the minister relates New Zealand situation to the OECD.

Table 6.7: Adjective use in relation to policy labels

Report	Label	Adjectives
TEAC – 1st Report	KS	"open, innovative, sustainable' (pages. 4 & 10), inclusive (p. 14), global (p. 14) true (p. 32), world-leading (p. 32)
TEAC 2nd Report	KS	world-leading (p. 1), inclusive (p. 4, 6)
TEAC 3rd Report	KS	World-leading (p. 7), distinctive (p.8)
TEAC 4th Report		high-quality (p. 47) vibrant and innovative (p. 83), prosperous (p. 155) dynamic and progressive (p. 157)
Ministry of Education (2002)– Tertiary Education Strategy 2002-2007	KS	prosperous and confident (p. 10, 14)
MoE (2003) Statement of Tertiary education Priorities	KS	Inclusive (p.8)
Ministry of Commerce (1999) Bright Future	KE	vibrant (p. 7),
ITAG(Information Technology Advisory Group, 1999) The Knowledge Economy	KE	emerging (p. 8, 22),
(Information Technology Advisory Group, 1997) Learning with IT	KS	Competitive (p. 26)
(Ministry of Research Science and Technology, 1999a) Blueprint for Change	KS/KE	vibrant and thriving (p. 14) global (p.7, 11) used in context of KE, 'knowledge-led-innovation (p.17), 'knowledge-based enterprises' (p.20), 'networked, knowledge-based society' (p.22)
(Ministry of Research Science and Technology, 1999b) Following the Blueprint	KS	'emerging' (p. 4),
(Ministry of Research Science and Technology, 1998) Building tomorrow's success	KE	, 'successful' (p. 9), vibrant and thriving (p. 12), 'Through knowledge-based technological' (p.8), 'knowledge-based' (p. 8), 'new' (p.30, 31)

KS = Knowledge Society

KE = Knowledge Economy or Knowledge-based-Economy

Table 6.8: Metaphors and literal strategies in education discourse

Report	Label	Metaphor	Literal Strategy
TEAC – 1st Report "Shaping a shared vision" (2000)	KS		"Lifelong Learning for a Knowledge Society"
Ministry of Education (2002)– Tertiary Education Strategy 2002-2007	KS	Creation, creating (p.12), development (p. 13), develop (p. 14)	**The Imperative for Change** "Five frogs are sitting on a log; four decide to jump off. How many are left? The answer is five. Why? Because there's a difference between deciding and doing." – A riddle. (p. 15)

Table 6.9: Metaphors and literal strategies in the MoED discourse

Report	Label	Metaphor	Literal Strategy
Ministry of Commerce (1999) Bright Future	KE	Recipe (p.7), investment (p. 8), incubator (p.9)	"In creating a vision for New Zealand we need a sharp focus and the determination to advance. That is what 5 Steps Ahead is all about. It is the key to a brighter future" (p. 7). 'our tall poppies' (p. 10) 'The Government wants tall poppies to bloom' (p. 62)
ITAG(1999) The Knowledge Economy	KE	gold standard (p. i), racing (p. 8).	"here the term 'competitor' is used broadly, to include all developed nations with knowledge economy strategies" (p.8). Definition of competitor
ITAG (1997) Learning with IT	KS	'threshold '(p. 8)	"academic "tall-poppies"" (p. 43)
MoED (2005) The Digital Strategy	KS	'journey to create a Knowledge Society' (p.1) 'we are heading in the right direction' (p.1), 'take us forward to the Knowledge Society' (p.6):	The three enablers Information + Communication = Knowledge Society (p. 6)

Table 6.10: Metaphors and literal strategies in the MoRST discourse

Report	Label	Metaphor	Literal Strategy
(HUMANZ Knowledge Policy Research Group, 2000) Knowledge, Innovation and Creativity	KS/KE		Subtitle: 'Designing a Knowledge Society for a small democratic country'
(MoRST, 1999a) Blueprint for Change	KS/KE	'development' (p. 4, 5, 7), 'develop' (p. 5)	
(MoRST, 1999b) Following the Blueprint	KS	"Going after a knowledge society" (p. 3)	Knowledge-based future" used in foreword
(MoRST, 1998) Building tomorrow's success		'development' (p. 4, 5, 9), 'evolution' (p. 8)	'Towards a knowledge society' (p. 5) "• *Possum in the glare* • *Shark roaming alone* • *Nga Kahikatea reaching new heights" (p. 18)*
(MoRST, 2000) Igniting the Future: Strategic Directions 2000-2003		Igniting (used often), 'wow' (p. 5), '*switch on to science and technology' (p. 5)*	"I invite you to work with us in igniting New Zealand's knowledge future" (p.2_. Define, Design Deliver (3D's) (p. 12)

Table 6.11: Linguistic features in definitions of knowledge society & knowledge economy

Document	Definition	Wording features	Meaning Potential
(HUMANZ Knowledge Policy Research Group, 2000) Knowledge, Innovation and Creativity	"The term 'knowledge society' identifies the dominant feature of the social transformations associated with *globalisation* as the world-wide integration of economic activity, *information* as the raw material of production, and *communication* through electronic networks as a global medium of social exchange" (p. 3).	Grammatical Metaphor: 'social transformations', 'integration', 'raw material', 'medium of social exchange'	Emphasises knowledge society as a dominant feature of three processes – globalisation, information, and communication. Meaning shows that it is an outcome relating to these three processes.
(MoRST, 1999b) Following the Blueprint	"Knowledge society: A society in which creating, sharing and applying knowledge are key factors in prosperity and well-being" (p. 8)	Adjective Metaphor: 'creating, sharing and applying'	This definition emphasises that any society that accords priority to creation, sharing and application of knowledge for development purposes is a knowledge society.

Document	Definition	Wording features	Meaning Potential
(MoRST, 2000) Igniting the Future: Strategic Directions 2000-2003	"The term "knowledge society" recognises the key role of knowledge – the creation, sharing and use of it – in ensuring the prosperity and well-being of a society's people. New Zealand's move to create a knowledge society will need to: • use research and innovation to add value to our traditional industries • overcome barriers of distance from global markets; and • create new knowledge-based businesses" (p.6).	Metaphor: 'move', 'barriers',	Same as above definition but stresses what New Zealand needs to do in order to 'create' a knowledge society.
(MoRST, 2005) SOI (2005-2008)	"A knowledge society is one in which the design of workplaces, housing, health services and communities is informed by information about alternative organisational forms and their impacts. This form of social innovation is as important as economic innovation" (p.55).	Metaphor: 'design'	This is a radically different definition but must be seen in the context in which it was stated. The context of its occurrence relates to the 'social' research goal of MoRST investments.

Document	Definition	Wording features	Meaning Potential
TEAC – 2nd Report "Shaping the System" (2001)	"Knowledge and learning have always been of central importance to society; and in today's modern economy the tertiary education system plays a pivotal role in meeting the nation's knowledge needs. But changes in the nature of knowledge production – that is, changes in who 'creates' knowledge and where – have the potential to reshape our society and economy. The 'knowledge society' refers to this profound change, similar in scope to the expansion of literacy in the wake of the printing press." (p. 14)	Process Metaphor: 'pivotal', 'potential'	Compares the impact of knowledge production on knowledge society to the impact of printing press on literacy. The process metaphors from the mechanical domain such as 'pivotal' are used to signify transformation and movement.
Ministry of Education (2002) Tertiary Education Strategy 2002-2007	"In a knowledge society, all New Zealanders will require enhanced access to relevant education and training (and career and academic advice and guidance) throughout their lives" (p. 18).		Predicts what is required in knowledge society

Document	Definition	Wording features	Meaning Potential
Ministry of Commerce (1999) Bright Future	A knowledge economy is one that places a premium on constant innovation, skill and use of the latest advances in communications and technology. Most of all, value lies in knowledge and fresh ideas (p. 12). What distinguishes the knowledge economy from earlier eras is the speed and scale of change underway and the sophistication of the consumers. The cumulative effect of change and innovation on all fronts amounts to a revolution in the way we work and live. The knowledge economy calls for: • an open and competitive economy • a highly skilled and flexible workforce • ready access to investment capital • robust links between industry, education and researchers • ease of communication and transportation • a culture of innovation and success" (p. 12).	Metaphor: 'revolution'	Describes the present – knowledge economy as it exists today. Also, it compares the present to the past and advocates the policy goals that are required.
ITAG(1999) The Knowledge Economy	"The foundation stones of the knowledge economy are human ingenuity and skill and a commitment to innovation through research and development" (p. ii).	Metaphor: 'foundation'	It describes the present and what is required for achieving it.

Document	Definition	Wording features	Meaning Potential
(ITAG, 1997) Learning with IT	"In ImpacT 2001, the "knowledge society" was defined as one where the workforce is largely composed of a wide variety of "knowledge" workers, i.e. workers using their minds and IT tools to convert information into useful products and services" (p. 5).	Metaphor: 'composed'	Shows how under the National government, knowledge society was defined in terms of the OECD notion of 'knowledge-based economy'
(MoED) The Digital Strategy: Creating our Digital Future	Information + Communication = Knowledge Society (p. 6)	Mathematical argumentation	Knowledge society is an aggregation of information and communication.

Table 6.12: Innovation

Rhetorical Feature	Innovation
Purpose	Appears mostly in MoRST documents. GIF and MoED reports also make use of this concept quite a lot
Context	Used predominantly in context of KE, knowledge production, research, funding, governmental investment, business, RS&T, R&D, input-output, technology, science, social and economic transformation **Innovation** – creating opportunities and solving problems through discovery and creation. This can occur in the research lab, work place, school, home or environment and can apply to products, processes and systems. **Innovation system** – the full range of people, organisations, institutions and networks that interact to enable innovation to occur. (SOI, 2001, p. 3)

Table 6.13: ICT

Rhetorical Feature	ICT
Purpose	As a vehicle for KS. Appears in most types of discourse – eco development, ICT, GIF, MoRST and Education
Context	Used in relation to infrastructure, emerging focus areas for governmental investment, growth, business, management, globalisation, as a core skill for KS, and provision of services, transformation of governance, economy and communities, enhance all aspects of life, content, confidence and connection, ICT-literacy,

Table 6.14: Globalisation

Rhetorical Feature	Globalisation
Purpose	Appears often in the Foresight Project, ITAG, and TEAC. Also in and MoED document (Digital strategy)
Context	Used in relation to world economy, knowledge revolution, ICT, export, open society, disease and pest risks, risk to communities fragmentation, demographic changes, e-commerce, international students, perfect competition in world market, economic globalisation, capital flows, identity

Singapore

Table 7.1: Timeline of knowledge-related policy discourse

Policy Organisation	**Strategy, idea, Vision**	**Documents**
National Computer Board (NCB)	Intelligent Island	1992 IT2000 – A vision of an Intelligent Island
Infocomm Development Authority (IDA) - a statutory board under MICA.	Infocomm21. Connected Singapore. Intelligent Nation (iN2015).	2000 What is Infocomm21? 2000 Singapore: Where the Digital Future is. 2003 Connected Singapore. 2006 Innovation, Integration, Internationalisation. 2006 Empowering Learners and Engaging Minds through Infocomm. 2006 Growing to Go Global. 2006 Drive the Future. Be a Player. Go Infocomm. 2006 Totally Connected, Wired and Wireless.
Ministry for National Development: Remaking Singapore Committee	Remaking Singapore	2003 Changing Mindsets, Deepening Relationships.
Ministry of Information, Communications and the Arts (MICA)		2006 Annual Report

Policy Organisation	Strategy, idea, Vision	Documents
Ministry of Trade and Industry (MTI): Economic Review Committee	S&T 2010 Singapore2012 imagination Dynamic, Global City ©reative Industries Development Strategy. Economic Survey of Singapore. Singapore – A competitive knowledge economy. Singapore – Towards a developed nation.	2005 S&T 2010 Plan. n. d. The Living Digital Hub. 2002 A new agenda for a creative and connected nation. 2003 New Challenges, Fresh Goals. 2002 Propelling Singapore's Creative Economy. 2002 Mapping Singapore's Knowledge Economy. 2002 Economic Contributions of Research and Development in Singapore. 2003 Economic Contributions of Singapore's Creative Industries. 1998 Executive Summary. 1991 The Strategic Economic Plan.
Prime Minister	Thinking Schools, Learning Nation.	1997 Speech by Prime Minister Goh Chok Tong.
Singapore21 Facilitation Committee.	Singapore21	1997 Singapore21

Table 7.2: Top 20 concepts and their word count

Concept	Seed Words accorded positive weights in Leximancer	Absolute Count	Adobe Acrobat Count
Singapore		2099	3879
Development	Develop, developing, developed.	801	1256
Industry		736	1118
Infocomm		624	2107
Services		604	1383
Singaporeans		518	726
Economic	Economy	511	842
Government		431	1020
Technology	Technologies	396	939
Companies	Company	357	751
R&D		305	724
Research		291	738
Creative		282	856
Public		279	640
Global		273	669
Local		273	561
Business		271	672
Growth		261	647
People		248	586
Arts		242	700

Table 7.3: Concept agglomerations based on core issues

Physical Location on Map	Agglomeration Category based on core issue	Concept List
Centre	Economic and technological progress	Singapore, development, business, technology, services, companies, local, research, global, industry, growth, education, financial, national, manpower, science, management, Asia Pacific, capital, international, governance, innovation, mediapolis, agencies, policy, market, enterprises, digital media, products
Bottom Left	IT Visions	Infocomm 21, iN2015, IT2000, government, work, help, students, Intelligent Island, future, Singapore 21, home, global city, Intelligent Nation
Top Left	Infocomm	Reform, igov2010, wireless, broadband, National Infocomm Infrastructure, mobile, medical, Digital Concierge, network, liberalisation, Infocomm, IDA, Internet, professionals, programmes, information, system, applications, digital, services infrastructure, exploit technologies.
Bottom Right	Society	Singaporeans, ERC, society, life, people, ASEAN, talent, Community, world, vision.
Top Right	R&D	R&D, R&D in Singapore, Fusionpolis, MTI
Centre Right	Knowledge Economy	Economic, arts, cultural, creative, Media 21, creative economy, knowledge economy, GDP, US, knowledge-based industries, creative cluster, creative people, connected nation, Connected Singapore, competitiveness, New Economy, knowledge.

Table 7.4: Samples of interdiscursivity, according to discourse

Discourses	Interdiscursive Chains in the Geo-economic and Technological knowledge discourse
Technological and Economic Globalisation	Globalisation requires us to think of Singapore beyond its physical territory (Remaking Singapore Committee, 2003, p. 20). It is more critical than ever for countries to be plugged into the global grid. … The alternative, to opt out of globalisation and get off the treadmill, no longer exists (ERC, 2003, p. 33). Globalisation and technological advances open up tremendous opportunities for Singapore. Physical size and natural resources become less of a constraint as we tap markets in the global economy to broaden the basis of our prosperity. Technology itself is a powerful force. The US economy shows just how powerful it is, coupled with the flexibility and dynamism of free markets (ERC, 2003, p. 32).
Competitiveness and innovation	Powerful trends in globalisation, technology and economic liberalisation are accelerating the pace of competition across the world (IDA Singapore, 2006, p. 70). Regionally, we must continue to work with our ASEAN partners toward closer economic integration and strengthen our competitiveness as a group. And we must strengthen our hub status within our wider hinterland, which encompasses a radius of seven hours' flying time from Singapore, spanning India to Northeast Asia and Australia (ERC, 2003, p. 2). Singapore's infocomm enterprises and talent, together with a first-class infocomm infrastructure, can support and enable innovation in all the country's economic sectors and society (IDA Singapore, 2006, p. 7) Globalisation and rapid technological advances have changed the way we live and conduct business. Market conditions are constantly changing. Competition for talent and investment is intense (ERC, 2003, p. 2).
Creativity and Human Capital	By remaking and upgrading ourselves, we will make Singapore a leading global city, a hub of talent, enterprise and innovation. Singapore will become the most open and cosmopolitan city in Asia, and one of the best places to live and work (ERC, 2003, p. 5). For the longer term, our basic strategy is to upgrade ourselves and make Singapore a knowledge economy, banking on creativity and innovation to power the economy and tapping the potential of IT in all areas. For a small, resource scarce country like Singapore, this is our only option to survive (ERC, 2003, p. 54).

Discourses	Interdiscursive Chains in the Geo-economic and Technological knowledge discourse
Knowledge management	Singapore is participating in a global paradigm shift in manufacturing, from the process oriented improvements of kaizen to a Silicon Valley style innovation, out of the box, breakthrough ideas that don't just reengineer and streamline processes, but replace them completely. As a consequence, global companies are seeking a new kind of base, one that enables them to operate lean and efficient enterprises, remain totally connected, facilitate knowledge management, environmental sustainability and perhaps most importantly, to exploit technology to its full potential (ERC, 2002, p. 7).

Table 7.5: The use of 'hub' and 'city'

Policy Domain/Strategy	Hub	City	Polis
IT2000	Global Hub		
Infocomm 21	Infocomm hub		
iN2015	Innovation hub, manufacturing hub, business, hub, services hub	Global city, media city	
Singapore 21		Thriving city	
Remaking Singapore	Talent hub, events hub, educational hub		
Creative Industries Development Strategy	New Asia Creative Hub, global design hub,	Renaissance City, global city, vibrant city	Mediapolis
Singapore 2012	The living digital hub,		
S&T21	Biomedical Science Hub, IP hub,		Fusiopolis, Biopolis

Table 7.6: Examples of geo-economic determinism

Singapore must aspire to be one of the great global centres where people, ideas and resources come together to spark new opportunities. Every great city has a hinterland from which it naturally draws in talent. Singapore, with only three million people and no natural hinterland, needs to look beyond its shores for the human talent that can help generate the extra spark. Only in this way can more opportunities be created for us all to enjoy (Singapore21 Facilitation Committee, 1997, p. 32).
Too small to rely on its own resources, Singapore has always plugged into global networks. The Intelligent Island vision will help turn Singapore into a highly efficient switching centre for goods, services, capital, information and people. Singapore will be further developed as a hub for business, services and transportation. Companies with global operations and specialists who want to market their expertise worldwide will find Singapore an attractive base. Knowledge and information-intensive services can be provided from Singapore to points around the globe (NCB, n.d. para. 1).
Knowledge knows no boundaries. In the future, it is no longer individual countries which are "knowledge economies". The whole world will be one big "knowledge economy", with countries linked to one another via fast growing information technology (Singapore21 Facilitation Committee, 1997, p. 9).

Table 7.7: Examples of technological determinism

The ICT industry is an important sector that will continue to power Singapore's economic growth. Singapore can capture global opportunities in the ICT space by differentiating itself from the competition. ICT will also be an integral part of the economy and society. Pervasive adoption of ICT will have an important multiplier effect for the economy through transforming the way people live and boosting the way companies and industries do business. Singapore can re-capture global mindshare for its ICT industry by positioning itself as a vital Living Digital Hub where innovative and complex ICT solutions are created, tested, commercialised and deployed. Going forward, Singapore must also extend its reach to new markets and move up the value chain in its usage of ICT solutions. This will enable us to achieve our economic targets of: growing ICT contribution to GDP from 7% to 10% and more than doubling employment opportunities (ERC, 2002c, p. 2).
The ICT revolution has vastly expanded the frontier of possibilities for the KBE by enabling existing and new knowledge to be disseminated at ever faster speed, larger volumes and lower costs. Moreover, the usefulness of knowledge-intensive products such as software is subject to network economies, i.e. they become more useful as the user-base increases. The culmination of these developments is the "network effect" which multiplies the benefits of a fixed knowledge base many-fold through dissemination (MTI Singapore, 2002b, p. 58).
Singapore is already an Intelligent Island with an excellent infocomm infrastructure and a liberalised telecoms market. Now, Singapore is transiting beyond physical ICT achievements, towards ICT-savvy businesses, a smart workforce and a well-connected society to become an Intelligent Nation. … 'iN' is an abbreviation of 'Intelligent Nation', with a play on the character 'i' that identifies with 'infocommunications'. The vision from this 10-year masterplan will culminate in 2015. This also marks Singapore's 50th anniversary of its independence and nation building (IDA Singapore, 2005, p. 1).

Table 7.8: Modality

Document Details	Text Sample	Modality
Singapore 21 (Singapore21 Facilitation Committee, 1997) **Preface:** Author Unknown	Singapore 21 is what Singaporeans want for the future of our nation. The Singapore 21 Committee was launched by Prime Minister Goh Chok Tong in August 1997 to strengthen the "heartware" of Singapore in the 21st Century. "Heartware" refers to the intangibles of society – social cohesion, political stability, and the collective will, values, and attitudes of a people. … The five ideas form a vision for the future. They are ideals that we strive for, to add to the timeless ones we already hold as a nation – meritocracy, clean government, racial and religious harmony. They recognise that every Singaporean, male or female, young or old, has a role to play in helping to make Singapore our best home. This book serves as a compass to navigate towards those ideals (p. i).	This sample reflects both epistemic and deontic modality. The first sentence shows epistemic modality and is declarative in nature ('Singapore is..). The author highlights the relevance of Singapore 21 to the future. The 'future' is clarified in the second sentence as '21st century'. Sentences 3, 4, 5 and 6 reflect deontic modality. The author shows high commitment to his/her beliefs about the five 'heartware' propositions. The term "heartware" is a play on ICT-related term "hardware. The last sentence shows usage of transportation metaphors ('compass to navigate').
S&T Plan 2010 (MTI, 2006) **Foreword**: Lim Hng Kiang, Minster, MTI	SINGAPORE is at an exciting phase of growth as we face new challenges to sustain economic growth and prosperity. While we will continue to build on our existing strengths of an efficient workforce, clean government and world-class infrastructure, we need new strategies to differentiate ourselves and develop peaks of excellence in selected areas where we can build a sustainable comparative advantage. We should leverage on our tradition of excellence in science, mathematics and technology to grow a strong base of scientists, researchers and technologists who will provide the leadership in the next phase of knowledge- and innovation-driven growth. … The Science and Technology Plan 2010 will anchor	The first sentence shows epistemic modality. The future in sentences 1 and 2 is presented abstractly ('exciting phase of growth', 'we will continue to build'). Second 2 and 3 show epistemic modality ('we will', 'we need', 'we should'). Since the author is a minister responsible for the S&T 2010 Plan, sentence 4 should be seen as reflecting deontic modality – his commitment to realisation of propositions set out in sentences 1, 2 & 3. Sentence 4 shows usage of a shipping metaphor ('anchor') for S&T 2010 Plan's importance for knowledge economy.

Document Details	Text Sample	Modality
	our transition into a knowledge- and innovation-driven economy. This will help to fulfil the strategic thrusts identified above, which are critical in enabling us to achieve a sustainable competitive advantage for long term growth and prosperity (p. i).	
iN2015 (IDA, 2006, p. 2) **Foreword:** Dr Lee Boon Yang, Minster MICA	Infocomm is one of our strategic advantages in economic competition. Our strong standings in international competitiveness rankings year after year reflect this. However other countries are also recognising the strategic significance of infocomm. We cannot afford to slow down or we will be overtaken. The challenge now is to raise our infocomm competencies by several notches so as to stay ahead of competition. … We envisaged infocomm becoming even more accessible to everyone – to work, live, learn and play with. Indeed, by developing an inclusive digital society, we will ensure continued growth and vitality of our knowledge-based digital economy. This master plan – Intelligent Nation 2015 or iN2015 – has been drawn up with precisely this vision in mind. It is a bold and exciting plan to prepare us for the future. I am confident that by harnessing the power of infocomm, we will achieve the vision of Singapore as a prosperous and vibrant global city with exciting and rewarding opportunities for all Singaporeans (p. 2).	Sentences 1 and 2 show epistemic modality. Temporal reference 'year after year' in sentence 2 suggests that strong performance in the past can continue to the future. Sentences 3-8 show deontic modality. Sentence 3 is a warning; sentence 4 is an imperative, and; sentence 5 qualifies the declarations made in sentences 6, 7 & 8. Sentence 9 shows epistemic modality as the author explicitly states his confidence ('I am confident') in the truth potential of propositions set out in iN2015 masterplan.

Document Details	Text Sample	Modality
iN2015 (IDA, 2006, p. 3) **Preface:** Author Unknown	Innovation, Integration and Internationalisation. These are the key themes to iN2015's vision of "An Intelligent Nation, a Global City, powered by Infocomm." They are simple themes, but they encapsulate what iN2015 sets out to do. Because at the fundamental, they represent the promise of infocomm for Singapore. iN2015 sets out to deliver on this promise of infocomm for every individual and business in Singapore. To do this, infocomm must not only be easy to use, it needs to be intelligent enough to cater to the needs of every user. It needs to be intelligent enough to cater for the infocomm-savvy computer graduate or the elderly, who may have in the past, have had less interaction with infocomm. But we cannot stop there. Singapore's success has always been due to our relevance in the global ecosystem and over the next decade, Singapore's world will become flatter. Already, other economies, starting from a number in Asia, are in high–gear to further use infocomm to better serve their citizens and key economic sectors. These efforts, be it in next-generation networks, manpower or digital inclusion, are expected to transform their societies and economies. In the process, this will open up new needs, new services, new markets, new partnership opportunities and new capabilities accessible by infocomm. This is a tremendous opportunity for Singapore. Beyond the domestic benefits, iN2015 will keep Singapore plugged in to this global framework to fully realise the benefits of infocomm. Only then, can we realise our vision of "An Intelligent Nation, a Global City, powered by Infocomm" (p. 3).	This sample starts with three nominalisations ('innovation, integration and internationalisation') referring to the imperatives ('key themes') for the present and future which iN2015 seeks to address. Both epistemic and deontic modalities can be seen in sentences 2-4. Sentences 5-7 show deontic modality as the author is keen to stress conditions to the realisation of his propositions ('must not only be', it needs to be', but we cannot stop there'). Sentence 6 & 7 are epistemic ('has always been', 'over the next decade', 'Singapore's world will become flatter'). Sentence 8 is deontic ('are expected to'). Sentence 9-12 are again epistemic as shown by the reference to the present scenario ('is') and its future bearings ('will').

Document Details	Text Sample	Modality
Connected Singapore (IDA, 2003, p. 2) **CEO's Message:** Tan Ching Yee, CEO IDA	Technological change and business innovations will continue to shape the growth and development of infocomm. Singapore needs to respond nimbly and flexibly (p. 2).	The two sentences show epistemic modality. The first sentence is declarative and describes the future scenario ('will continue to shape the growth and development') marked by emphasis on technological change and business innovations. The second sentence is a request ('nimbly and flexibly') couched in language of an imperative ('needs to respond').
Annual Report '06 (MICA, 2006, p. 4) **Permanent Secretary's message:** Tan Chin Nam, Permanent Secretary, MICA**.**	Apart from being a trusted infocomm technology hub, Singapore is also fast becoming a knowledge hub. … As with innovation, the creation of intellectual capital is a critical success factor in the competitive knowledge-based economy. … Success in the next generation economy necessitates a deep transformation of Singapore. … To cope with the changes, Singaporeans need to be more open, resilient and self-reliant. Together as a gracious, compassionate and cohesive society rooted in the same vision, we can build a brighter future for Singapore in the next generation economy (p. 4).	The first four sentences are epistemic in nature. The author is certain that his beliefs are true. The future is referred to in terms of the 'next-generation economy'. The last sentence contains deontic modality as shown by his commitment ('together', 'we can build') to the cause of the 'next generation economy'.
Speech: Thinking Schools, Learning Nation. **Speaker:** Prime Minster Goh Chok Tong (1997) **Date:** 2 June 1997 **Event:** International Conference on Thinking	A nation's wealth in the 21st Century will depend on the capacity of its people to learn. Their imagination, their ability to seek out new technologies and ideas and to apply them in everything they do will be the key source of economic growth. Their collective capacity to learn will determine the well-being of a nation. We know three things about the future. First, it will be an intensely global future, with diminishing barriers to the flow of goods, services and information. Competition between cities, countries, sub-regions and regions	This sample from the speech genre shows repetitive use of two words ('will' and 'future'). The subject matter of this sample is the '21st century'. In the first 13 sentences, the speaker expresses his epistemic beliefs about critical policy considerations for the future. This can be seen in his assertion - 'we know three things about the future' and the repeated use of 'will' in the statements. The last sentence is of deontic modality as it exhorts Singaporeans ('ourselves') for a 'bracing future'. The use of the

Document Details	Text Sample	Modality
	will be intense. No country or region will have permanent advantages. There is no guarantee that it will always retain its competitive edge. Second, knowledge and innovation will be absolutely critical. The recent victory of the computer Deep Blue over chess champion Gary Kasparov was not a triumph of machine over man but the triumph of human innovation, of organised human mastery of technology. Companies and nations which organise themselves to generate, share and apply new technologies and ideas more quickly than others will, like the early bird, catch the worm. The third defining feature of the future is that it will be one of change, and increasingly rapid change. It will be change as a permanent state, not change as a transition to some known, final state. Change will be unpredictable but it will affect everything we do at work, in society and at home. We have to prepare ourselves for a bracing future - a future of intense competition and shifting competitive advantages, a future where technologies and concepts are replaced at an increasing pace, and a future of changing values (paras. 2-6).	term 'bracing' shows a very positive mood.

Malaysia

Table 8.2: Significant policy landmarks/shifts

Policy	Main discourse stances
1956-1971 Laissez Faire Policy	Laissez faire style of economic management; open, export-oriented economy characterised by continual reliance on plantation agriculture and tin mining, and diversification into palm oil and cocoa production; import-substituted industrialisation based on tariff protection, tax benefits, infrastructure and credit facilities to foreign companies; government expenditure on infrastructure development; less support for domestic Chinese businesses; export-oriented industrialisation began to replace import substituted industrialisation in late 1960 (Gomez & Jomo, 1997); increased ethnic discontent due to lack of Malay development resulting in ethnic riots in 1969.
1971-1990 New Economic Policy	Change from laissez faire to state directed economy. Emphasis on national unity based on economic justice - ethnic redistribution, and rising Bumiputeraism. Greater state intervention based on the objectives of state leading the market, complete eradication of poverty, eradication of link between poverty and ethnicity, Redistributory policies aimed at empowerment of Bumiputeras. Discourse of ethnicism.
1990-2000 National Development Policy	Discourse of developmentalism, emphasis on balanced development, and modernisation; policy of industrialisation and liberalisation of economy, and attracting Foreign Direct Investment (FDI). Some accommodation of aspirations of the Chinese business community. Reduced state intervention - market leads but state intervenes in important sectors such as education. Malaysia Inc. policy, Industrial Master Plan, following the example of other NIC's in Asia. Post-1990 entrenchment and consolidation of Mahathir style statist neoliberalism, and anti-Western rhetoric; articulation of in Vision 2020; establishment of NITC in 1994, adoption of National Information Technology Agenda (NITA) and the creation of Multimedia Super Corridor (MSC) in 1996.
2001-2010 National Vision Policy	Discourse of K-economy, "building a resilient and competitive nation" (Economic Planning Unit, 2004, p. 19), emphasis on service sector, human capital, balancing indigenous investment with FDI, flexible, pro-business outlook of the government, Knowledge-based Economy Master Plan. Post-Mahathir, Badawi era emphasis on Islam Hadhari (modernity, quality of life, knowledge and development according to moderate Islamic tenets). Badawi's five principles of policy – competitiveness, innovation, transparency, social equity and national unity. Emerging discourse of the National Mission Policy (2006-2020) and Vision 2057 as extension of Vision 2020.

Table 8.3: Knowledge policy timeline

Policy Organisation	Strategy, idea, Vision	Documents
Economic Planning Unit	Eighth Malaysia Plan	2001. Eighth Malaysia Plan (2001-2005).
	Third Outline Perspective Plan	2001. Third Outline Perspective Plan (2001-2010)
	K-Economy	2004. Knowledge Content in Key Economic Sectors in Malaysia.
Ministry of Finance	Knowledge-based Economy Master Plan	2002. Knowledge-based Economy Master Plan.
Ministry of Higher Education (MoHE)	Towards Excellence	2006 Report by the committee to study, review and make recommendations concerning the development and direction of higher education in Malaysia.
Ministry of Science, Technology & Innovation (MOSTI)		2004 Annual Report
National Information Technology Council, MOSTI	Building Knowledge Societies.	2000 Access, Empowerment and Governance in the Information Age.
Department of Science and Technology, MOSTI	S&T Policy.	Malaysia's S& T Policy for the 21st Century.
Speech by the Prime Minister Mahathir Mohammed	Vision 2020.	1991. Vision 2020 – The Way Forward.
Speeches by Dr. Victor Wee, Senior Director, Economic Planning Unit	K-Economy	2001. K-Economy: Basis for Malaysia's Economic Transformation.
	K-Economy	2001. Imperatives for K-Economy: Challenges Ahead.

Table 8.4: Leximancer results top 20 concepts

Lexi-mancer Rank	Concept	Seed words Used as Positive weights in Leximancer	Weight in Leximancer	Adobe Acrobat Word Count
1	Development	Develop, development, developing, developed	1940	4515
2	Malaysia		1062	3801
3	Economy	economy, economic	936	2439
4	Technology		453	1602
5	Education		659	2095
6	Programmes		577	969
7	R&D	R&D, Research & Development	419	838
8	Research		379	1068
9	Public		545	1251
10	Knowledge		520	1945
11	ICT	ICT, IT, Information Technology, Information communication technology	560	1281
12	Plan		602	3429
13	Growth		547	1129
14	Services		523	1312
15	National		283	1268
16	institutions		412	931
17	training		410	1036
18	information		271	909
19	products		389	612
20	management		279	760

Table 8.5: Leximancer results other important concepts

Lexi-mancer Rank	Concept	Seed words Used as Positive weights in Leximancer	Weight in Leximancer	Adobe Acrobat Word Count
31	Knowledge Society	K-society, Knowledge-based society, knowledge society	140	29
34	Knowledge Economy	K-economy, knowledge-based economy, knowledge economy	125	412
38	Infrastructure		130	419
47	S&T	Science and technology, S&T	109	474
48	Competitive-ness		75	310
53	Governance		71	277
54	Infostructure		65	234
55	E-Commerce	e-commerce, electronic commerce	45	160
56	Information Age		59	83
57	Globalisation	Globalisation, globalization	32	140
58	Vision 2020		41	61
59	Multimedia Super Corridor		38	48
60	New Economic Policy	NEP, New Economic Policy	19	40
61	National Vision Policy	NVP, National Vision Policy	14	49
62	Innovation		29	422
63	Liberalisation	Liberalisation, liberalization	20	92
64	Reform	Reform, reforms	6	57
65	Global Civil Society		21	24
66	Information Society		5	14
67	Deregulation		2	10

Table 8.6: Concept agglomerations based on core issues

Physical Location on Map	Agglomeration Category based on core issue	Concept List
Centre Left (overlap with RS&T and industry clusters)	Technological Development	Research, government, technology, management, state, R&D, S&T, development, infrastructure
Bottom Left	Industry	Industry, projects, water, services, companies, Plan, oil, products
Top Left	Research Science and technology	Innovation, study, school, learning, education, institutions, training, universities, public, programmes, agencies, health, science, system, national, and concepts from the Technological development cluster.
Bottom Right	Economy	Rate, growth, capital, trade, economy, infostructure, liberalisation, Vision 2020, and concepts in the Knowledge Economy cluster.
Top Right	ICT & Globalisation	Reform, information, international, global, society, world, knowledge, ICT, information society, culture, governance, global civil society, information age, Internet, and concepts in the Knowledge Economy cluster.
Centre Right (overlap with ICT & Globalisation, and economy clusters)	Knowledge Economy	Knowledge economy, knowledge society, globalisation, deregulation, New Economic Policy, National Vision Policy, Multimedia Super Corridor, Malaysia, e-commerce, competitiveness

Table 8.7: Modality

Document Details	Text Sample	Modality
NITC (2000). Access, Empowerment and Governance in the Information Age. Type: Editorial Note Authors: Rinalia Abdul Rahim & K.J. John. Designation: NITC Secretariat	Clearly the greatest challenge of the 21st century will be narrowing the gap and ultimately eliminating poverty. Previous efforts to eliminate global poverty have not succeeded. What solutions avail themselves in the Age of Information? Ironically, ICT, the aggravator of the rich-poor gap today, also present a possible solution to the problem within the knowledge paradigm of development. The knowledge paradigm of development focuses on enhancing the human ability in using information and knowledge as the primary factors of change and value-creation. ICT, being a suite of technologies that can elevate people's ability to learn, to acquire new skills and to exploit new opportunities for self-improvement, serve as the vehicle for the desired empowerment and transformation of a person into a knowledge worker. At the level of the nation-state, a mass process of knowledge empowerment will theoretically enable a society or nation to leapfrog development stages and achieve knowledge society status where presumably the gap between the 'haves' and the 'have-nots' would decrease or cease to exist. Malaysia, en route towards achieving Vision 2020 goals, has accepted this knowledge paradigm of development as manifested by the creation of the National Information Technology Agenda (NITA) and the Multimedia Super Corridor (MSC). Both are initiatives designed to leverage on the potentials of ICT to create a knowledge society and economy so that Malaysia may prosper in the 21st century and beyond (p. vi).	The policy imperatives for the future are set out in this quotation. The quotation starts with a sentence reflecting epistemic modality. The second and third sentences build the case for deontic modality shown in sentence four. Sentences five, six and seven elaborate on the epistemic reasons for deontic modality shown in sentence four. They are epistemic to a limited degree as they are qualified with words like 'can', 'will theoretically' and 'presumably'. The quotation ends with last two sentences (eight and nine) showing a return back to the theme of future ('Vision 2020' and '21st century'). Sentence eight shows epistemic modality as the author is providing evidence ('NITA' and 'MSC') for his judgement. Sentence nine rounds up the discussion with deontic modality reflected in the author's commitment to the previous propositions.

Document Details	Text Sample	Modality
NITC (2000). Access, Empowerment and Governance in the Information Age. Type: Foreword Author: Abdul Halim Ali, Designation: Chief Secretary, Government of Malaysia.	1. In the Information Age, knowledge is power. Vision 2020 encapsulates Malaysia's desire for knowledge empowerment. However, given the state of the changing world, the goals of Vision 2020 can only be achieved if we are all willing to harness the full potential of information and communication technologies (ICT). Indeed, it is becoming clear that knowledge, imagination, innovation and new technologies may well form the key strategic ingredients for our nation's success in the 21st Century (p. xii).	1. In the first sample, Vision 2020 is shown as synonymous with the information age. The first sentence shows epistemic modality. The second and third sentences show deontic modality. In the second sentence Malaysia's commitment to knowledge empowerment is highlighted. The third sentence qualifies that commitment ('can only be achieved') with a need to harness ICT's. The final sentence returns to the future theme with a proposition based on epistemic belief.
	2. It is no secret that Malaysia hopes to leapfrog conventional development stages through the extensive application of ICT with information and knowledge serving as the primary factors of change and value creation (see Chart 1). Knowledge-based development with the help of ICT has become our development imperative. Hence our preoccupation with everything IT or ICT (p. xii).	2. The first sentence is a mixture of epistemic ('It is no secret') and deontic modality ('hopes to leapfrog'). The second and third sentences are strongly deontic ('our development imperative' and 'our preoccupation with').
	3. Established with the vision of creating a knowledge and values-based civil society in line with Vision 2020, the NITC believes that information and knowledge will serve as the nation's most valuable assets in the new millennium. The NITC seeks to achieve her objectives by generating ripples of ideas, which in turn are anticipated to grow into tidal waves of positive change (p. xiii).	3. The first sentence shows a combination of deontic and epistemic modality. The sentence starts with a deontic proposition ('Established with the vision of') and finishes the sentence with the epistemic belief of NITC. The second sentence is strongly metaphorical ('tidal waves of ideas' and 'tidal waves of positive change') interspersed with a deontic commitment ('NITC seeks to achieve').

Document Details	Text Sample	Modality
ISIS (2002). Knowledge-Based Economy Master Plan. Type: Foreword Author: Dr. Mahathir Mohammed. Designation: Prime Minister & Finance Minister.	Knowledge is increasingly driving growth and transforming nations and the way of life. The frontiers of knowledge are boundless, producing wealth for both entrepreneur and economy for knowledge creation, commercialisation and innovation. The dictates of the environment characterised largely by technological advancements, greater market integration and globalisation, heightened competition as well as the increasing creation and use of knowledge, necessitate a paradigm shift and that Malaysia reengineers herself to meet these challenges (p. i).	The first two sentences of this quotation show epistemic modality. The author shows high level of certainty about the statements. The first sentence is a good example of high level of certainty in epistemic belief. The second sentence highlights the author's belief as he uses hyperbolic language ('The frontiers of knowledge are boundless'). The last sentence includes elements of both epistemic belief ('largely … knowledge') as well as deontic modality ('dictates of the environment' and 'necessitates a paradigm shift and that Malaysia reengineer herself').
Economic Planning Unit (2001). The Third Outline Perspective Plan (2001-2010). Type: Foreword Author: Dr. Mahathir Mohammed. Designation: Prime Minister.	We are entering another important and challenging phase in the development of the country, and our policies have accordingly to address these concerns. Today, the forces of globalization, liberalization and information and communications technology (ICT) have fundamentally changed the rules and nature of global trade, resource flows and competition. Clearly, countries that are able to rise to the challenge will grow in success and prosperity, while those failing to do so will be marginalized and languish in the backwaters of development. Our track record, coupled with the resolve and ingenuity of the Malaysian people, gives us confidence that we can successfully face the challenge provided we equip ourselves adequately, shore up our national resilience, and enhance our competitiveness in the global marketplace (p. vi).	The modality of futurism is evident in the first and last sentence. In this quotation, the author presents the future as a imperative challenge which must be met ('challenging phase', 'rise to the challenge', 'face the challenge'). The statements show epistemic modality consisting of a mix of certainty ('We are entering', 'have fundamentally changed') and conditional judgement ('our policies have accordingly to address these concerns', 'those failing to do so', 'languish in the backwaters of development' and 'provided we equip ourselves adequately').

Document Details	Text Sample	Modality
Economic Planning Unit (2001). Eighth Malaysia Plan (2001-2005). Type: Foreword Author: Dr. Mahathir Mohammed. Designation: Prime Minister.	The recent financial crisis clearly demonstrated the need for resilience, both economically and socially. It served to remind us that we can no longer depend on past formulas for our future success. During the Eighth Malaysia Plan period, we will be faced with even greater challenges from globalization and liberalization as well as the rapid development of information and communications technology. We will have to enhance the competitiveness of the economy, strengthen our economic resilience and improve our total factor productivity. To do that, we will have to shift the growth strategy from being input-driven towards one that is knowledge-driven. Emphasis will be given to improving management and organizational techniques, upgrading R&D and science and technology, as well as strengthening innovative capacity. This will enhance potential output growth and accelerate structural transformation within the agriculture, manufacturing and services sectors (p. v).	In this quotation, the author Dr. Mahathir Mohammed invokes the past ('recent financial crisis') to rationalise using deontic modality the future course of action ('we can no longer depend on past formulas for our future success'). The future ('Eighth Malaysia Plan') is a 'challenge' in the shape of 'globalisation and liberalisation' and 'rapid development of information and communication technology'. The deontic modality is also evident in the author's desire for new policy responses ('we will have to') and changed policy emphasis ('emphasis will be given to'). The last sentence concludes with a epistemic judgement about a growing and transformed economy in the future ('This will enhance').
Ministry of Higher Education (2006). Towards Excellence. Type: Minister's Message. Author: Dr. Shafie Bin Haji Mohammed Saleh. Designation: Minister of Higher Education.	The Government of Malaysia is firm in its resolution to ensure the re-emergence and continuance of excellence in higher education in the country, so that institutions of higher learning are capable of producing cohorts of quality human capital, who are fully competent to make outstanding contributions to the development of the nation….. In order to succeed in this endeavour, there is need for a sea change in the way we currently manage the higher education enterprise. We require, in the words of the Right Honourable Prime Minister, an "education revolution". This revolution commenced when the Ministry of Higher Education was created and I have the honour and privilege of being the first Minister of this new Ministry (p. xv).	This quotation is deontic in modality. The author shows high level of commitment to the realisation of the "education revolution" in future. The author's commitment is evident in phrases like 'firm in its resolution', 'there is need' and 'we require'.

India

Table 9.1: Timeline of knowledge-related policy

Policy Organisation	**Strategy, Idea, Vision**	**Documents**
Planning Commission	1. India as a Knowledge Superpower 2. India 2020 3. Tenth Five Year Plan 4. Eleventh Plan	1. June 2001. India as a Knowledge Superpower: Strategy for Transformation. 2. December 2002. India: Vision 2020. 3. 2001. Approach Paper to the Tenth Five Year Plan (2002-2007) 4. 2002. Tenth Five year Plan (2002-007). 5. 2006. Annual Report 2005-2006. 6. 2002. India Economic Road Map: The Next Five Years 2002-2007. 7. 2006. Report of the committee on Technology Innovation and Venture Capital. 8. 2001. Report of the Working Group on Convergence and e-Governance for the Tenth Five Year Plan (2002-2007) 9. 2001. Report of the Working Group on Information Technology for the Formulation of the Tenth Five Year Plan. 10. 2006. Towards Faster and More Inclusive Growth: An Approach to the 11th Five Year Plan.
Ministry of Information Technology	1. IT Action Plan 2. IT for Masses	1. 1998. IT Action Plan. National Task Force On Information Technology And Software Development. 2. 2000. Report of the Working Group on Information Technology for Masses. 3. 2003. Background Note for Task Force on HRD in IT
National Commission to Review the Working the Constitution.	Constitutional Reform	1. 2002. Report of the National Commission to Review the Working the Constitution. 2. 2002. Consultation Paper on ‘Pace of Socio-Economic Change under the Constitution’ 3. 2002. Consultation Paper on ‘Literacy in the context of the Constitution of India’

Policy Organisation	**Strategy, Idea, Vision**	**Documents**
National Knowledge Commission	To devise and guide reforms that will transform India into a strong and vibrant knowledge economy.	1. 2006. Recommendations on e-Governance. 2. 2005. National Knowledge Index. 3. 2006. Statement on Reservations in Central Educational Institutions. 4. 2005. Prime Minister Manmohan Singh‘s speech at the launch of the NKC. 5. 2005. NKC Presentation to the PM: Agenda for Discussion. 6. n.d. Focus Areas 7. n.d. About NKC 8. 2006. Release of e-Governance Recommendations
Oversight Committee	Reform of the policy on reservation in higher educational institutions	1. 2006. Final Report of The Oversight Committee on The Implementation of The New Reservation Policy In Higher Educational Institutions. 2. 2006. Oversight Committee National Consultations Theme Paper
Ministry of HRD	Education Policy	1992. National Policy On Education (NPE) 1986 (With Modifications Undertaken In 1992)
DoE, Ministry of HRD	Education in 10^{th} Plan	n.d. Approach Paper on Education for Inclusion in 10th Plan.
Indian National Commission for Cooperation with UNESCO, Ministry of HRD	Higher Education Policy Vision	1998. Higher Education in India: Vision and Action
DST	S&T Policy	1. 1958. Scientific Policy Resolution. 2. 1983. Technology Policy Statement. 3. 2003. Science and Technology Policy.
CSIR	CSIR 2001	1996. CSIR 2001: Vision and Strategy
National Council of Applied Economic Research	Human capital and Public understanding of science	2005. India Science Report: Science Education, Human Resources and Public Attitude towards Science and Technology
President of India	India as a Knowledge Hub, Vision 2020	Speeches

Table 9.3: Top 15 concepts in Leximancer and their word count

Concept	Seed Words used as positive weights in Leximancer	Adobe Acrobat Count	Leximancer Absolute Count
India	Indian	3139	2117
Development	Develop, developing, developed	4018	1598
Education		3438	1115
Tenth Plan	Tenth Five Year Plan	1349	881
Services		2454	875
Technology		2611	677
Economy	Economic	695	514
Ninth Plan	Ninth Five Year Plan	691	440
Software		1230	409
Information		1958	404
Social	society	1309	393
Research		1339	392
Knowledge		1319	363
R&D		613	343
Population		1132	341

Table 9.4: Semantically categorised concept agglomerations

Physical Location on Map	Agglomeration Category based on core issue	Concept List
Top Left	Planning & Governance	Eleventh Plan, deficit, regulation, revenue, government, central government, state government, ninth plan, tenth plan, governance, Planning Commission, recommendations, IMF, power
Bottom Left	Reform	Knowledge society, knowledge economy, agriculture, infrastructure, convergence, regulatory, deregulation, software development, information technology, Foreign Direct Investment (FDI), internet, globalisation.
Top Right	Reservation & Work	Poverty, implementation, employment, initiatives, rural, training, health, social, groups, women, children, reservation, workers, Scheduled Castes (SC), Scheduled Tribes (ST), Backward Classes, population.
Bottom Right	S&T	Education, students, education, academic, research, science, S&T, R&D, knowledge, innovation, HRD.
Bottom Right	Development	Development, support, World Bank, economy, Vision 2020
Bottom Right	ICT	Information, communication, technology, emerging
Bottom Right	Services	Services, products, world, ICT, global, capital, software, Indian IT, IT services, BPO, WTO

Table 9.5: Knowledge society imperatives and neoliberal solutions

Imperative	Argument (Imperatives, Reasons and Solutions are in Bold Capitals)
To develop as a knowledge society	When the world transited from an agrarian to an industrial era, developed civilisations like India did not recognise the transition and lost most of its civilisation's knowledge. A timely effort to convert its palm leaf and word of mouth based knowledge into paper form would have preserved its wealth of knowledge. Western civilisations at that time were nascent and did not have much to lose. Similar situation exists today. It is imperative that a national effort is needed to capture all our knowledge **IMPERATIVE** – both formal such as Ayurveda and informal such as Indian herbals be made digital with an appropriate value addition and protected dissemination. **SOLUTION** This can constitute a much needed wealth for the knowledge society **REASON** (Planning Commission, 2001a, p. 41).
To be a knowledge superpower	For India to become an IT superpower **IMPERATIVE** , it is necessary that an integrated approach that boosts the hardware and software sectors, strengthens manufacturing and lays emphasis on education, R&D and generation of IPR is evolved and implemented **SOLUTION** (Planning Commission, 2002b, p. 1111). A knowledge superpower needs to focus on the twin objectives of economic prosperity and national security. Thus national security concerns require utmost attention. **IMPERATIVE** Our electronic communication network and information generators need to be protected from electronic attacks, including in cyberspace, through surveillance/monitoring and building technologies that are developed and deployed indigenously **SOLUTION** (Planning Commission, 2001a, p. 6).
To promote technological orientation in the liberalisation era	The developmental strategy with technological-orientation should focus on meeting the needs of the nation, including industry, and encompass a wide spectrum of activities, namely basic research, applied research, technology transfer, design, development, fabrication, tests and trials, manufacturing, marketing, maintenance and product support during the life cycle. **IMPERATIVE** In the present liberalised environment, industry should pay much more attention to external sources and upgrade its technology through radical technology jumps. It should anticipate and take advantage of technological changes , acquire appropriate new technology depending on its business strategy and commercially exploit it to develop and produce new products for the competitive markets **SOLUTION** (Planning Commission, 2002b, p. 1110).

Imperative	Argument (Imperatives, Reasons and Solutions are in Bold Capitals)
To mitigate problem relating to, and maximise advantages from economic globalisation through regulatory instruments	There is a point of view which holds that the exchange rate is not only an uncertain instrument of export promotion but it also has the negative effects of generating cost-push inflation and retarding external capital inflows, and that greater reliance should be placed on increase in efficiency and improvements in quality, productivity and technology for attaining greater international competitiveness. **REASON** While it is no doubt true that in the longer run there is no substitute for efficiency, quality, productivity and technology, these take time to develop and may not be directly affected by public policy during the short to medium run. These attributes are expected to develop steadily over time in the Indian economy as a normal consequence of increased competition and greater integration with the international economy, and the government can play only a facilitative role. **SOLUTION** The immediate imperative is to encourage a greater degree of outward orientation through policy initiatives, for which the exchange rate is the principal instrument **IMPERATIVE** (Planning Commission, 2002b, p. 115).
To foster competitiveness through technological innovation	India is a member country of World Trade Organization and we are required to implement its industrial and trade liberalization policies. **REASON** In the liberalized scenario, it has become imperative for us to develop technologies, products and services of international quality to remain competitive. **IMPERATIVE** We also need to strategize to become a global leader at least in some selected fields. Research and Development is the only way for us to meet this challenge. However, we have to be careful not to fritter away our scarce financial and human resources by trying to tackle all areas. The study team deliberated on various approaches. The broad consensus was that for India to become a leading global player, it is necessary that we, in the long term, focus on key emerging technologies such as nano-technologies which are expected to be all pervasive and would impact everything. In the medium-term we should focus on current technologies such as Wireless technologies, Next Generation Internet etc., which have mass deployment potential and would create necessary infrastructure for achieving accelerated growth. This would also enable us to apply these technologies for development of new applications and to upgrade them at a much lower cost as compared to imported technologies. This would also enable India to become a global supplier of these equipment and services. The study team was also of the view that the Government R&D should enhance its focus on large and complex projects **SOLUTION** (Planning Commission, 2001c, p. 195).

Imperative	Argument (Imperatives, Reasons and Solutions are in Bold Capitals)
To foster S&T	Science and technology (S&T) is widely recognised as an important tool for fostering and strengthening the economic and social development of the country. India has made significant progress in various spheres of science and technology over the years and can now take pride in having a strong network of S&T institutions, trained manpower and an innovative knowledge base. Given the rapid pace of globalisation, fast-depleting material resources, increasing competition among nations and the growing need to protect intellectual property, the importance of strengthening the knowledge base is an important issue that needs to be recognised during the Tenth Plan. **IMPERATIVE** Recognising the global economic order, the focus of the Tenth Plan in the science and technology sector would be to: strengthen application-oriented research and development (R&D) for technology generation; promote human resource development, especially in terms of encouraging bright students to take up science as a career; encourage research in and application of S&T for forecasting, prevention and mitigation of natural hazards; integrate the developments in science and technology with all spheres of national activities; and harness S&T for improving livelihood, employment generation; environment protection and ecological security **SOLUTION** (Planning Commission, 2002b, p. 1081).
To protect Indigenous Intellectual Property	There is also a move to bring out a very comprehensive Intellectual Property Right bill **SOLUTION** that will protect the intellectual property generated in the country and also ensure that no undue exploitation of India by advanced countries takes place **IMPERATIVE**(Planning Commission, 2001a, p. 37).
To bank on IT services	The advances in Information Technology and the advent of internet and e-commerce have resulted in the knowledge products forming a substantial portion of the economic growth of many countries. **REASON** Countries that master the techniques of creating, managing and protecting their knowledge and information products would emerge as the superpowers in the ensuing knowledge era. **IMPERATIVE** In this chapter, we discuss the efforts that are needed to provide a strong and secure foundation to the digital economy. The emergence of India as a cost-effective destination for software development for worldwide needs is very well known. The well articulated policies of the Government to leverage on this foundation and to make the Information Technology capabilities of India as a vehicle to propel itself as a strong Knowledge Super Power in the coming years are also very well publicised **SOLUTION** (Planning Commission, 2001a, p. 35). The Government's hitherto hands-off policy with regard to the IT sector would continue in the Tenth Plan **SOLUTION**. It will confine itself to being a facilitator and a catalyst for accelerated growth of the sector **IMPERATIVE** (Planning Commission, 2002b, p. 809).

Imperative	Argument (Imperatives, Reasons and Solutions are in Bold Capitals)
Social transformation through knowledge and reform	This report also discusses the type of empowerment needed to usher in a societal transformation in our society. **IMPERATIVE** Evolution of innovative administrative procedures and policies, change in mindset at all levels, changes in regulatory regimes to create a 'hassle-free' environment in which the society and business can function, identification and clustering of partners and most importantly, creation of young and dynamic leaders are essential fundamental prerequisites of this transformation **SOLUTION** (Planning Commission, 2001a, p. 4).
Planning Imperative	We missed the industrial revolution but we should not miss the information and knowledge revolution. **IMPERATIVE** This can happen only if we properly synergise our competencies with innovative planning, use all our natural endowments and leverage these by the use of IT. **SOLUTION** Indeed, the nation has not secured the fullest returns possible from the industrial, electronic and computer revolutions. Leap frogging into knowledge era looks eminently possible today for our societal transformation in the twenty-first century, which is going to be the century of hope for India **REASON**(Planning Commission, 2001a, p. 8).

Table 9.6: Modality

Document Details	Text Sample	Modality
India as Knowledge Superpower (Planning Commission, 2001a) Type: Foreword Author: KC Pant Designation: Deputy Chairman, Planning Commission	India is well placed at the dawn of the Knowledge era. We should not miss this opportunity. Our culture and civilization have been enriched over the ages by great thinkers who have always taken an integrated view of life as a fusion of mind, body and intellect. Their vision of knowledge has blossomed in the form of many spiritual centres and epics. The coming decades will see a confluence of civilizational and modern technological streams. … This report … shows the path. It is now for all of us to jointly make it into an Action Plan that will take the country forward in all spheres of Knowledge Economy and the Knowledge Society in a balanced manner and with great speed (p. iii).	Epistemic modality is expressed in this sample. At the sentence level, the first sentence is a declarative statement ('India is..'). The second sentence contains an imperative ('We should not…). The third and fourth sentences are declarative statements. The fifth sentence predicts ('will') the future. The sixth sentence is declarative again. The final sentence is a imperative couched as a wish. At verb level, the modal verbs 'should' and 'will have been used.
India: Vision 2020 (Planning Commission, 2002a) Type: Foreword Author: KC Pant Designation: Deputy Chairman, Planning Commission	Its central conclusion is that India has the opportunity to emerge as one of the world's leading economies over the next two decades, provided her citizens have the self-confidence, the self-reliance, the will and the determination to realise their individual and collective potentials (p. iv).	At the sentence level, the statement is a deductive inference qualified by some imperative conditions.

Document Details	Text Sample	Modality
Tenth Five Year Plan (2002-2007) (Planning Commission, 2002b) Type: Foreword Author: AB Vajpayee Designation: Prime Minister	I have a vision of an India free of poverty, illiteracy and homelessness – free of regional, social and gender disparities – with modern physical and social infrastructure – and a healthy and sustainable environment. Above all, an India which stands tall and proud in the comity of nations, confident in her capability to face all possible challenges. In short, I dream of an India which is counted among the ranks of developed nations before the end of the second decade of this new century.	Deontic modality is shown in this sample. The three sentences are declarative statements and express the high degree of commitment of the author to the propositions contained in them. The first sentence specifies the imperatives of development. The second sentence amplifies the commitment of the author ("Above all.."). The final sentence concludes with a firm and time based commitment to realisation of the goals set out in the above statements.
Report of the Working Group on Convergence and e-Governance for the Tenth Five Year Plan (2002-2007) (Planning Commission, 2001b) Type: Foreword Author: RP Sinha Designation: Chairman of the Working Group	In the realm of E-governance, we are at a stage where technology is not a major problem. Every "solution" is not a technological issue and it would be wise to leave the market and the private sector to take care of solutions for which technology is established. The role of the government should be to facilitate 'choice' to the industry and the user and fill in the gaps where technology is too expensive to acquire on commercial terms and a 'variant' that is locally developed may be more useful.	The first sentence shows Epistemic modality as the author is certain about the truth of his belief. The second sentence reflects deontic modality as the author is expressing a desire as a command ("it would be wise.."). The third sentence contains epistemic modality as the author is expressing a demand ("should be") based on his judgement of the truth potential of his belief.
India Science Report (National Council for Applied Economic Research & Shukla, 2005) Type: Foreword Author: RA Mashelkar Designation: Chairman INSA	India's prowess in Science & Technology was recognised just last month in a first ever cover page story on an Indian S&T by New Scientist. India's emergence as a nation to assume the role of knowledge superpower is being recognised all over the world. India is becoming a major global knowledge production hub with over 150 foreign companies setting up their R&D centres in India.	Epistemic modality is contained in the three sentences. The author makes a declarative statement in the first sentence. The second sentence provides evidence for the argument made in the first sentences. The third sentence is a statement of author's belief of which the fourth sentence is the evidence.

Document Details	Text Sample	Modality
Final Report of The Oversight Committee on The Implementation of The New Reservation Policy In Higher Educational Institutions (Oversight Committee, 2006) Type: Preface Author: M Veerappa Moily Designation: Chairman, Oversight Committee	Originality is the one thing which unoriginal minds cannot understand. "All good things that exist are the fruits of someone's originality and a lot which still remains to be discovered will require originality. This brings us to the ultimate aim of education, i.e., to foster innovation and to generate wealth in the form of intellectual property in a Knowledge Society." Higher Education, therefore, has a social purpose of bringing the individual in harmony with society and getting citizens to perform to the best of their potential. Equally, Education enables the individual to expand himself and it brings out the best in him. Education empowers him to be original, creative and inventive. As Carl Jung has said, "the creation of something new is not accomplished by the intellect but by the play instinct acting from inner necessity. The creative mind plays with the objects it loves". Creativity and innovativeness are at a premium in a knowledge society. The difference between a knowledge society and a typical capitalist society is that "Knowledge expands as it is shared" whereas "Capital shrinks with sharing". Collaboration and not competition, thus becomes the keystone in a knowledge society and it is in this sense that the knowledge era is also called the era of networked intelligence.	This extended sample of text shows epistemic modality based on, assertions that author feels are true, and based on quotations that the author gives as evidence. Of the four direct quotations given in this sample, only one is ascribed to an actual person (Carl G Jung). The role of the quotations is to provide evidence and amplify the effect of epistemic beliefs of the author. The assertions that the author makes serve to justify the main argument of the report, i.e., to show that OBC reservation policy is good for India.

Fiji Islands

Table 10.1: Knowledge policy timeline

Policy Organisation	Strategy, idea, Vision	Documents
Ministry of Finance and National Planning (MFNP)	20 Year Development Plan	2001. 20 Year Development Plan (2001-2020). 2006. Strategic Development Plan (2007-2011). 2002. Strategic Development Plan (2003-2005). 2005. Corporate Plan (2005)
Information Technology & Computing Service (ITC)	Submission to the World Summit on Information Society (WSIS), 2002. e-Government	2002. Invitation to WSIS Prep-Com 2 and Comments on Action Plan and Declaration. 2001. e-Government Strategic Plan. 2002. Annual Report 2002: Creating a Better Future through IT. n.d. The FIJI Government Information Technology Policies and Principle.
Department of Communications (DoC)	e-Fiji	2004. ICT Development Policy: e-Fiji - The future online.
Ministry of Information, Communications and Media Relations (MICMR)	Telecommunications Roadmap.	2005. Telecommunications Road Map.
Presentation: Abel Caine, Head of ITC Services	Speech to WSIS, Geneva 2003.	2002. The Special Needs of Island States.
Speech: Laisenia Qarase, Prime Minister		2004. IT can power the Economy.

Table 10.2: Leximancer results - top 20 concepts

Lexi-mancer Rank	Concept	Seed words Used as Positive weights in Leximancer	Weight in Leximancer	Adobe Acrobat Word Count
1	Development	Development, develop, developing, developed.	1718	1741
2	Government		1044	1220
3	Fiji		893	995
4	Indigenous		887	1096
5	Fijians		870	885
6	Policy		793	530
7	Areas		749	475
8	Services		713	674
9	Sector		713	764
10	Rural		700	635
11	Private		598	303
12	Economic		500	555
13	National		466	520
14	Plan		451	698
15	Education		446	407
16	Management		436	547
17	System		420	318
18	Growth		417	434
19	Resources		358	391
20	Access		334	364

Table 10.3: Leximancer results - other important concepts

Lexi-mancer Rank	Concept	Weight in Leximancer	Adobe Acrobat Word Count
21	Business	321	419
23	Affirmative	311	237
25	Training	294	303
26	Information	289	293
27	Industry	273	309
28	Sustainable	269	260
32	Market	231	250
40	Commercial	191	209
42	Ethnic	185	137
48	Assistance	160	181
51	Pacific	152	159
53	Indo-Fijians	150	116
54	Telecommunications	148	155
55	Technology	143	160
58	ICT	134	127
63	ITC	111	164
69	Knowledge	38	43
70	Liberalisation	30	14
71	Globalisation	17	4
72	Deregulation	6	6
73	Innovation	4	3

Table 10.4: Concept agglomerations based on core issues

Physical Location on Map	Agglomeration Category based on core issue	Concept List
Top Left (overlap with Services and Governance clusters)	ICT	ITC, mail, software, system, network, information, ICT, concepts shared with Governance cluster (globalisation and telecommunications), and Services cluster (department, services, technology).
Bottom Left	Ethnic Groups	Fijians, Indigenous, Indo-Fijians, ethnic, groups
Bottom Centre Left	Education	Knowledge, assistance, training, population, school, education, scheme.
Top Centre Left	Services	Access, local, ministry, projects, health, areas, rural, urban, management, water, and concepts shared with ICT cluster (department, services, technology)
Centre Left	Business	Business, company, commercial
Centre Right ()	Economy	Private, market, sector, growth, sustainable, liberalisation, industry, sugar, production, economic.
Centre	Development Policy	Policy, human, rights, strategies, affirmative, action, land, plan, people, national, country, development, resources, goals.
Top Right	Governance	Deregulation, innovation, governance, and concepts shared with ICT cluster (telecommunication, globalisation)
Top Centre	Fiji	Fiji, Pacific, world, international, outer, islands, objectives, environment.

Table 10.5: Modality dimension of Fiji's knowledge policy texts

Document Details	Text sample	Modality
Document: Strategic Development Plan 2003-2005 (MFNP, 2002b). **Type:** Foreword. **Author**: Laisenia Qarase **Designation:** Prime Minister	**1.** The Government came to office on a pledge to build a better Fiji. "A Peaceful and Prosperous Fiji" is Government's shared vision and commitment to advancing the country socially and economically. The aim is to forge a unified Fiji, to rebuild confidence for stability and growth. This is essential to ensure that development serves the needs of this generation while conserving resources for the future (Ministry of Finance & National Planning (MFNP), 2002b, p. i). **2.** Fiji has had many challenges since Independence over 30 years ago. We have made some progress and rank well compared to other developing countries. The Strategic Development Plan is the key to a new future. It is a platform for the people and the Government to stand together and create a society where peace, stability and the rule of law prevail, and where there are fair and equitable development opportunities for everyone (Ministry of Finance & National Planning (MFNP), 2002b, p. i).	**1.** The first sentence shows deontic modality as it expresses the author's desire "build a better Fiji". The second sentence shows epistemic modality as it provides evidence of a vision ('A Peaceful and Prosperous Fiji') to achieve the desire expressed in sentence one. Sentence three and four explain the rationale for the vision and show deontic modality as the author explains the rationale in his own judgement. Sentence four explains the future in terms of an imperative ('conserving resources for the future'). **2.** The four sentences in this sample show deontic modality as the author argues that "Strategic Development Plan is the key to a new future". Futurism is evident in the manner in which the arguments are made. The first two sentences are past-oriented and build the foundation for the future imperative presented in sentence three.

Document Details	Text sample	Modality
Document: 20 Year Development Plan (MFNP), 2002a). **Type:** Foreword. **Author**: Laisenia Qarase. **Designation:** Prime Minister & Minister of Fijian Affairs	Two coups have happened, in 1987 and 2000, and these have had serious and tragic consequences for our country. It has caused irreparable damage to race relations and to our country's economy. If we are to learn from them, and take pre-emptive action to forestall and prevent any future occurrence, the full acceptance of this plan and its implementation are vitally important. The Government's most important policy objective is to promote stability in our multi-ethnic and multi-cultural society, and through it, to restore and rebuild confidence among its citizens and communities and to strengthen the foundation for economic growth and prosperity for all in Fiji. The Fijians are the majority community in Fiji, both numerically and as the landowners in the country. By addressing their concerns, Government would also be investing in the future stability of Fiji (Ministry of Finance & National Planning (MFNP), 2002a, pp. i-ii).	Sentence one is a mix of both deontic and epistemic modality. The first part of the sentence includes evidence (epistemic modality) which leads the author to express a strong deontic belief ('serious and tragic consequences'). In sentence two the author provides evidence of the impact of coups. Sentence three is deontic because in it the author demands that the 20 year plan be fully implemented. Sentence four and five are epistemic because the author gives reasons behind the demand expressed in sentence three. In sentence six, the author presents the deontic requirement for affirmative action policy in the future as a justified action.

Table 10.7: Sector-wise collocations of ICT

Policy domain & Documents	**Words and phrases collocating with ICT**
ICT Policy Documents (Department of Communications, 2004; ITC, 2001, 2002, n.d.; Qarase, 2004; Wirzenius, 2005).	Organisation and management, business and environment, policies, strategic, facilities, development, staff, people, organisation, planning, users, vendors, service, development, future, literate, government, corporate, spending, quality, investment, equipment, best practice, service providers, schools, curriculum, educator, certifications, International IT hub of regions, strategy, plan, developing, e-government, environment, strategic plan, operational plan, utilising, utilisation, initiative, knowledge-based industries, promote, professionals, experience, skills, review, budget, solution, growth, potential.
National Planning (MFNP, 2002b, 2005, 2006).	Essential, potential, adoption, use, services, sector, development, policy, future growth, technologies, training, business skills, promote, employment, competitive.

APPENDIX B: FIGURES

Figure 4.1: Applying step 2 of Fairclough's CDA framework

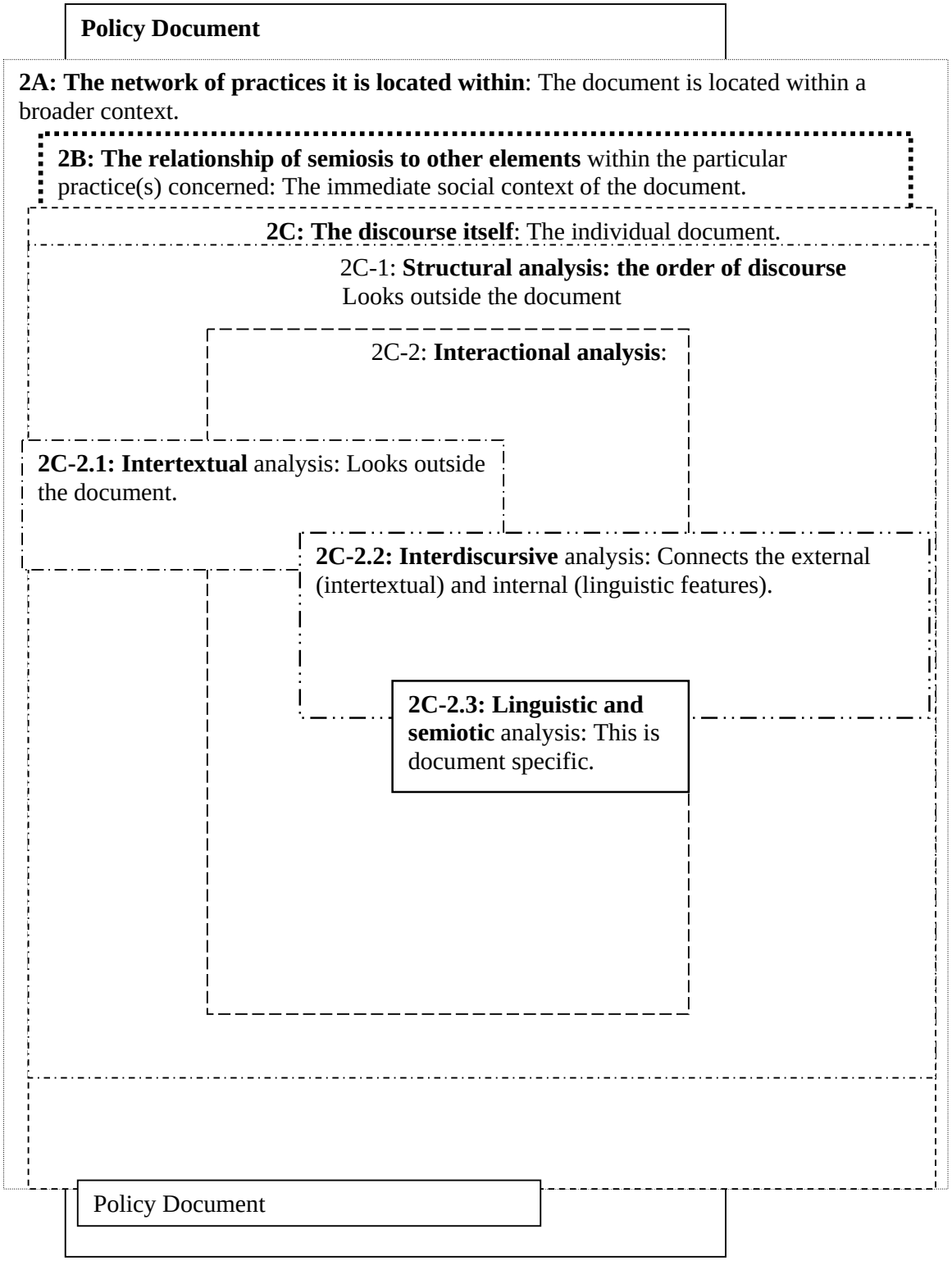


Figure 4.2: Step 2 of Fairclough's CDA analytical framework

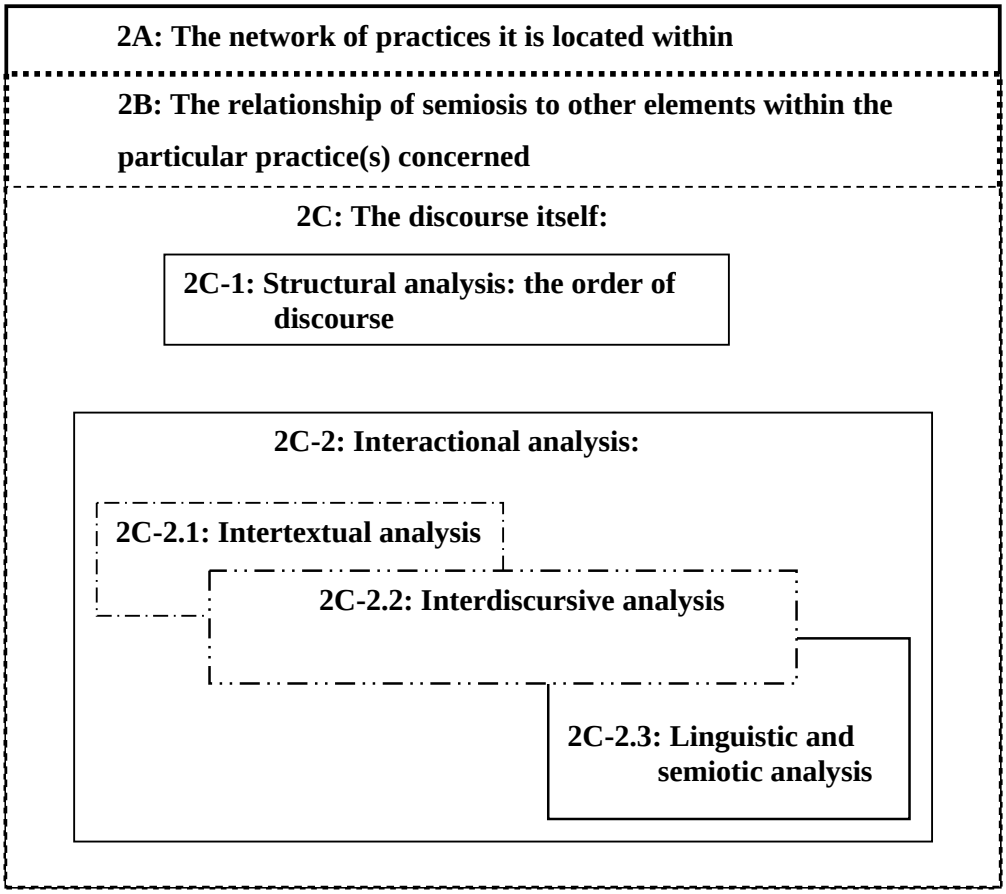


Figure 4.3: CDA framework used in this research.

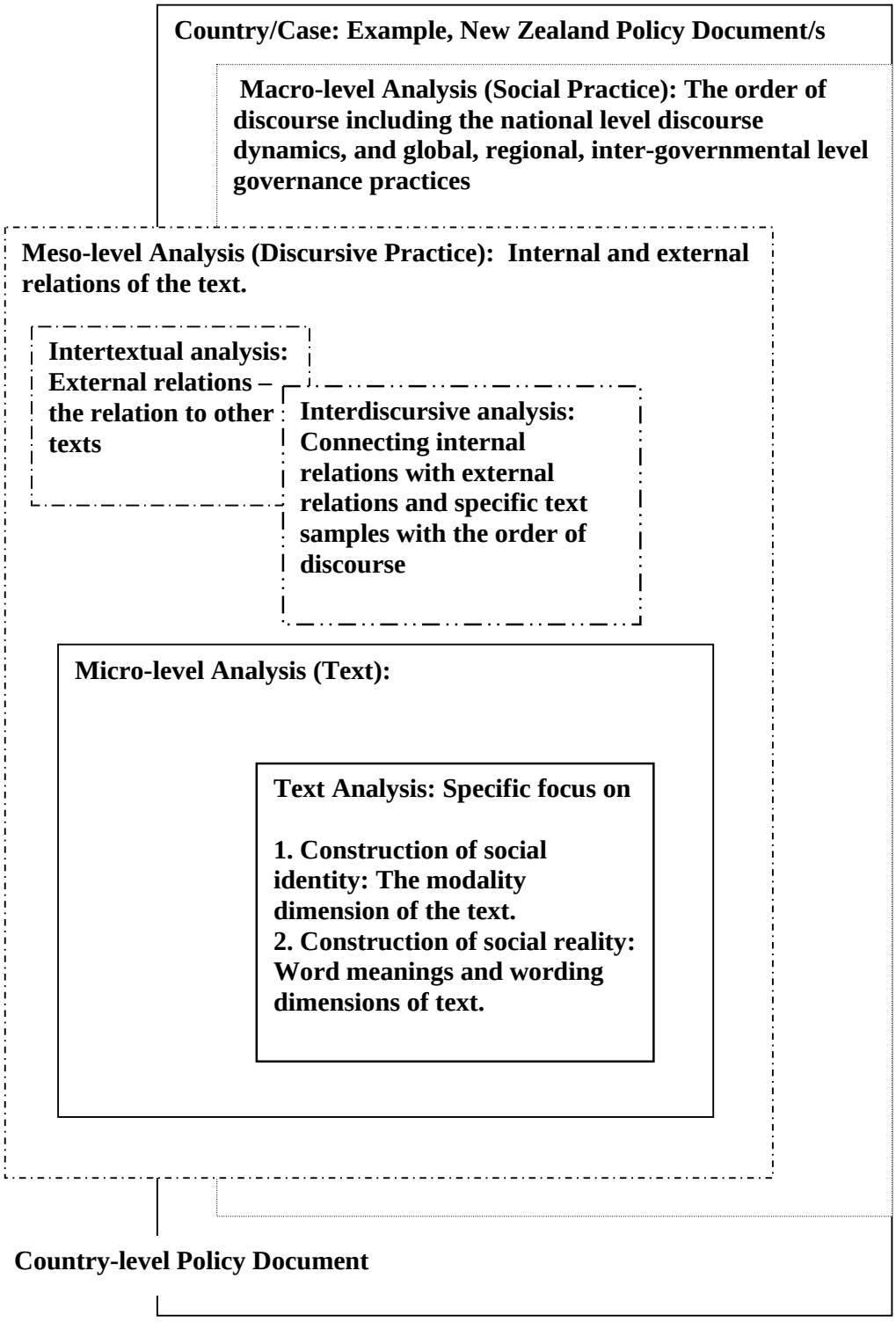
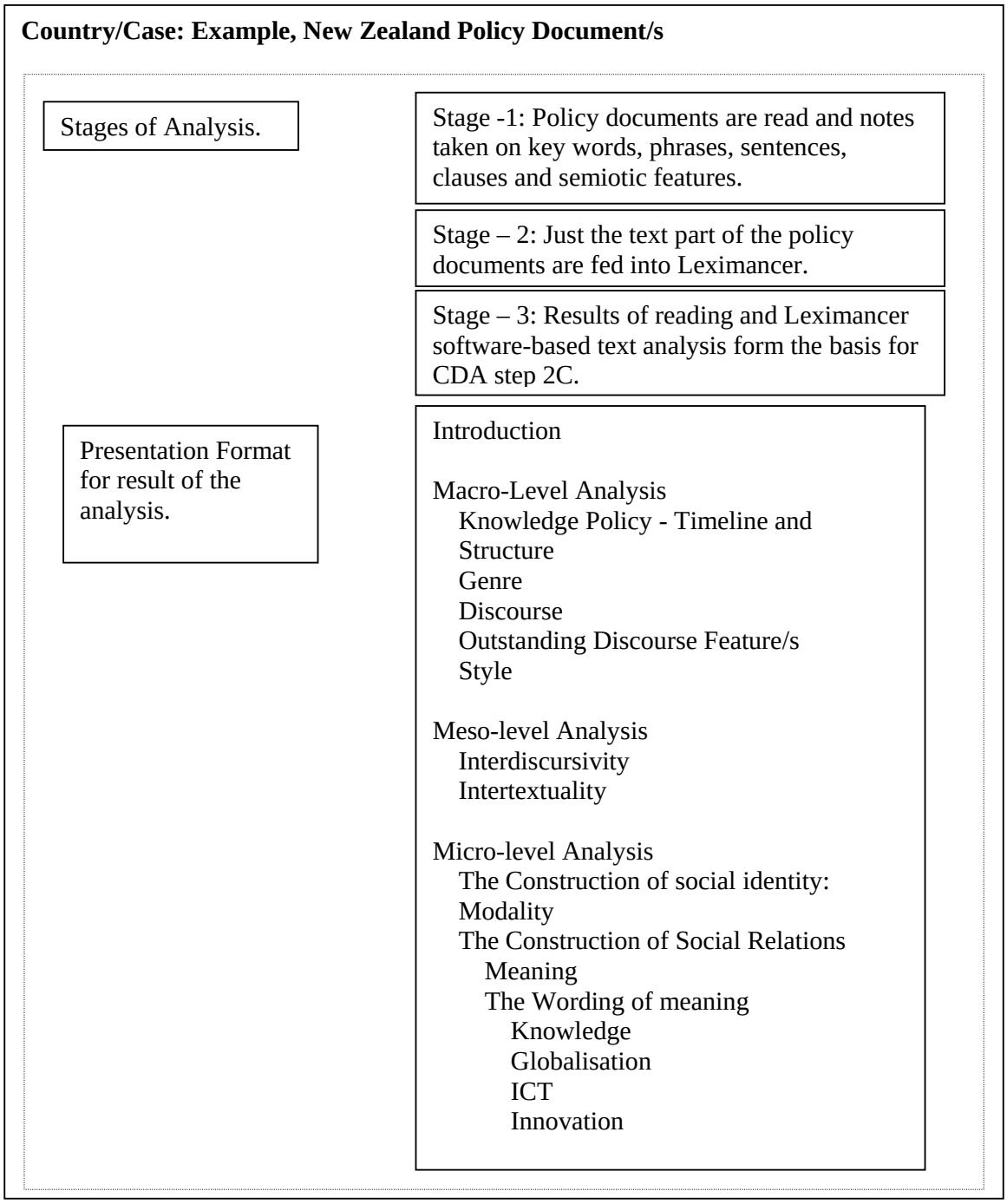
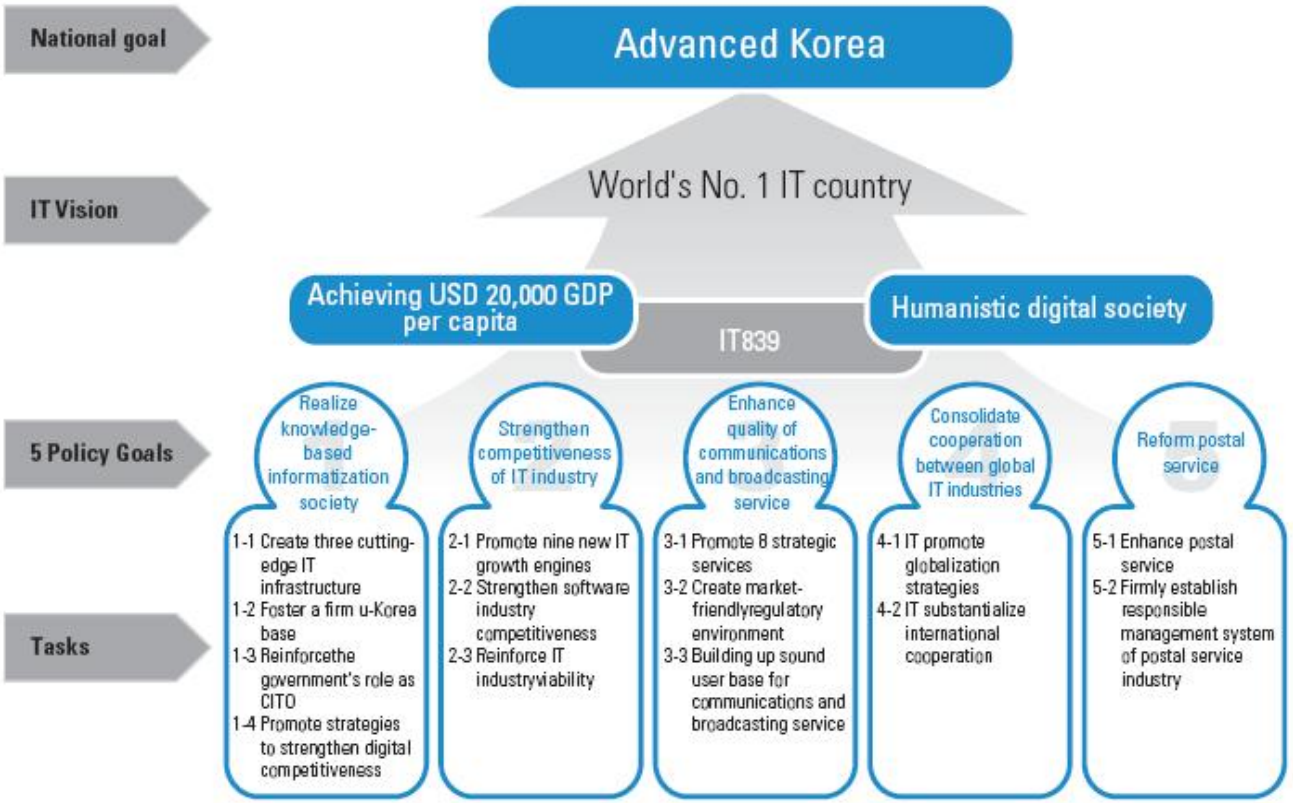


Figure 4.4: CDA framework - Data analysis and results presentation.



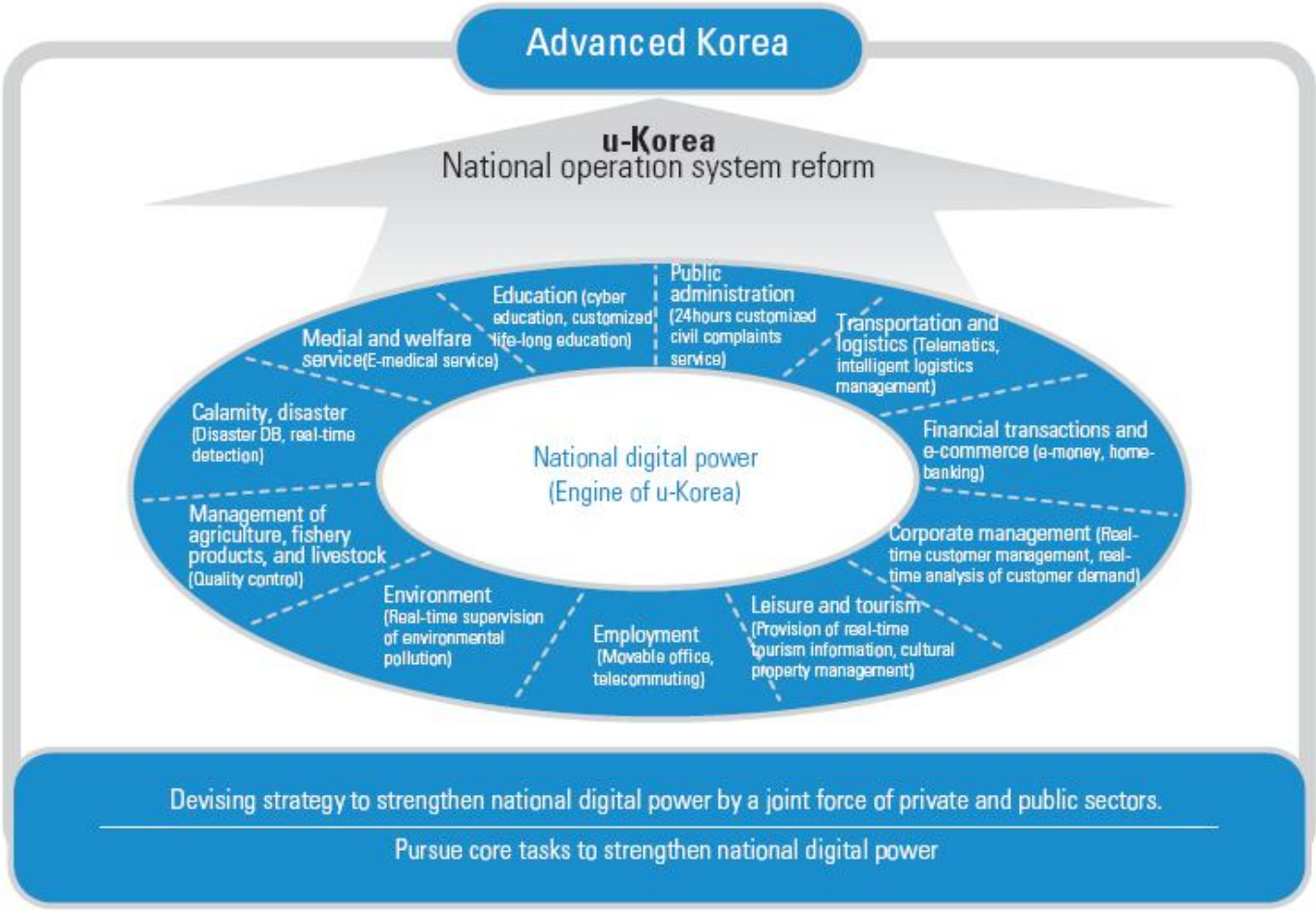
Korea

Figure 5.1: Goals of IT839 and u-Korea



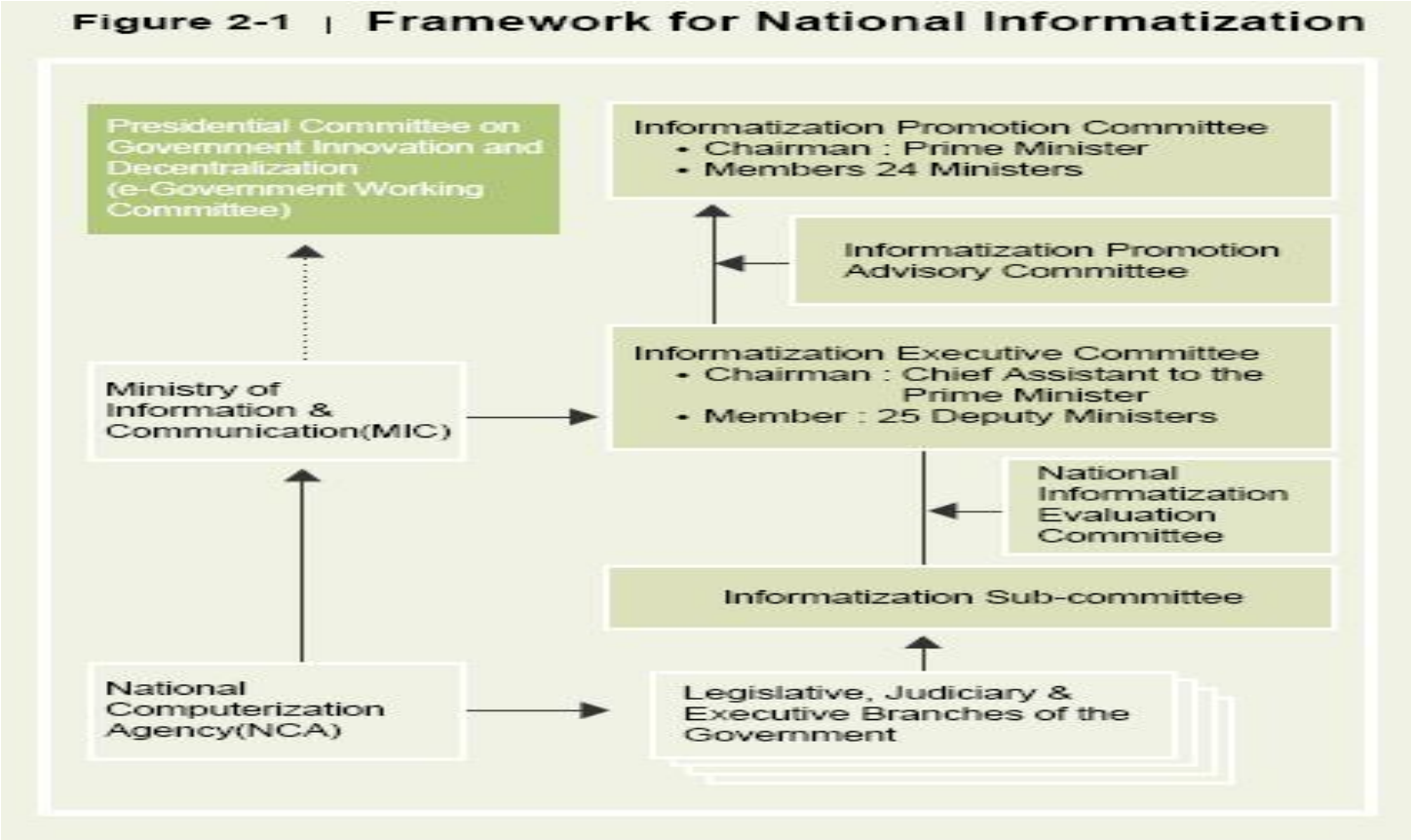
Source: Reproduced from MIC White Paper 2006 (MIC, 2006, p. 10).

Figure 5.2: u-Korea policy direction.



Source: Reproduced from MIC White Paper 2006 (MIC, 2006).

Figure 5.3: National informatisation framework.



Source: NCA Informatization White Paper: Broadband IT Korea (NCA, 2004, p. 8).

Figure 5.4: Knowledge policy structure

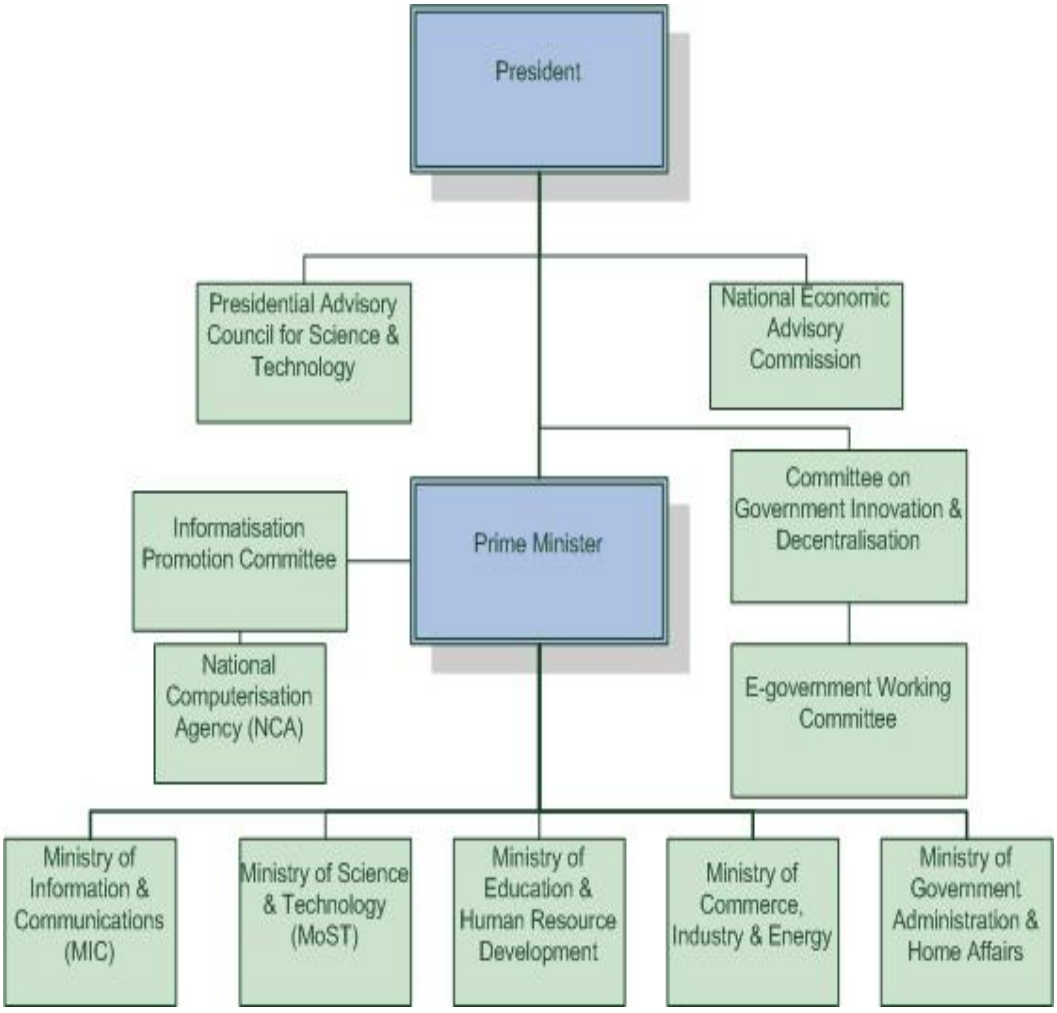


Figure 5.5: Concept map

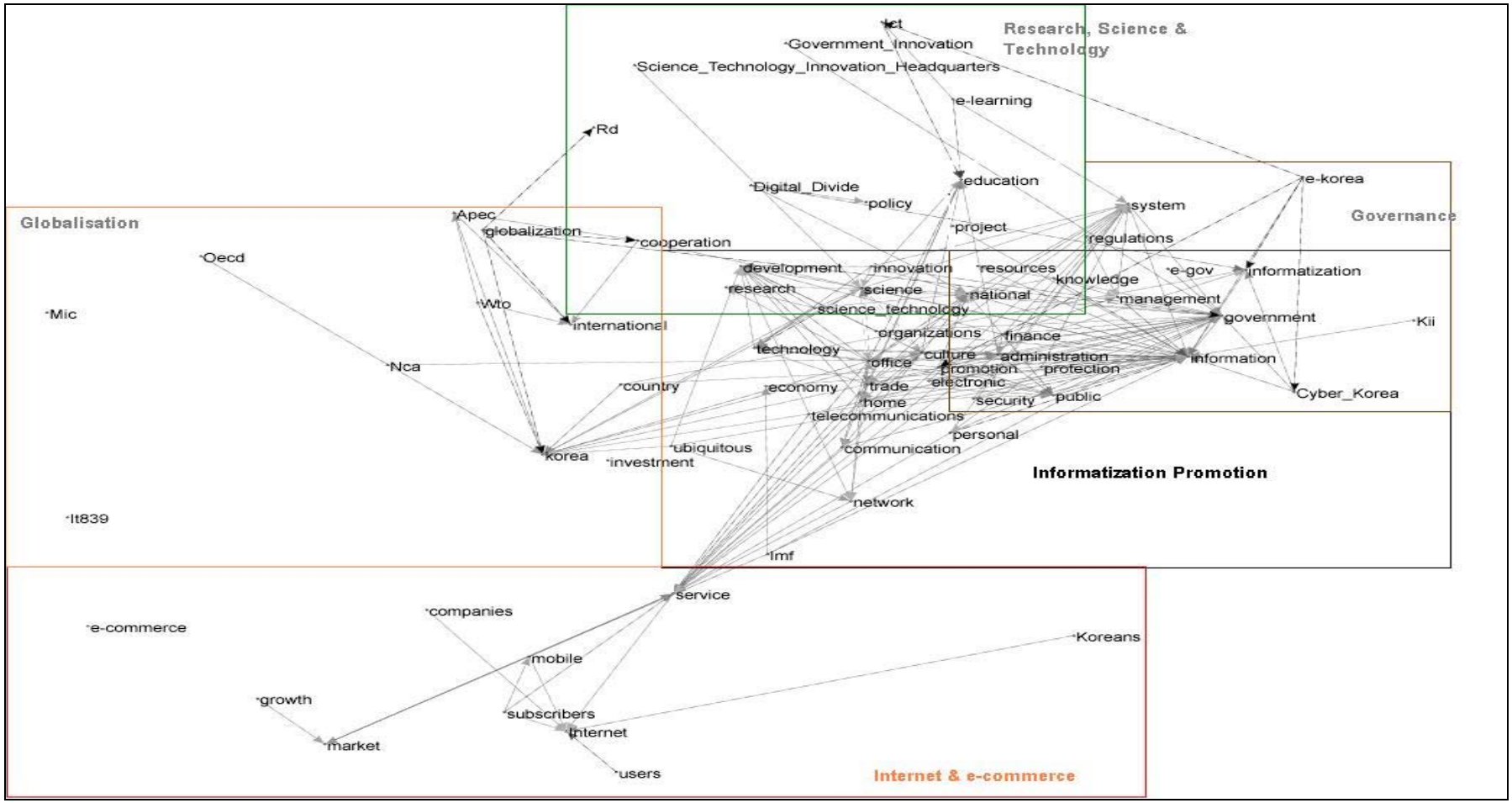
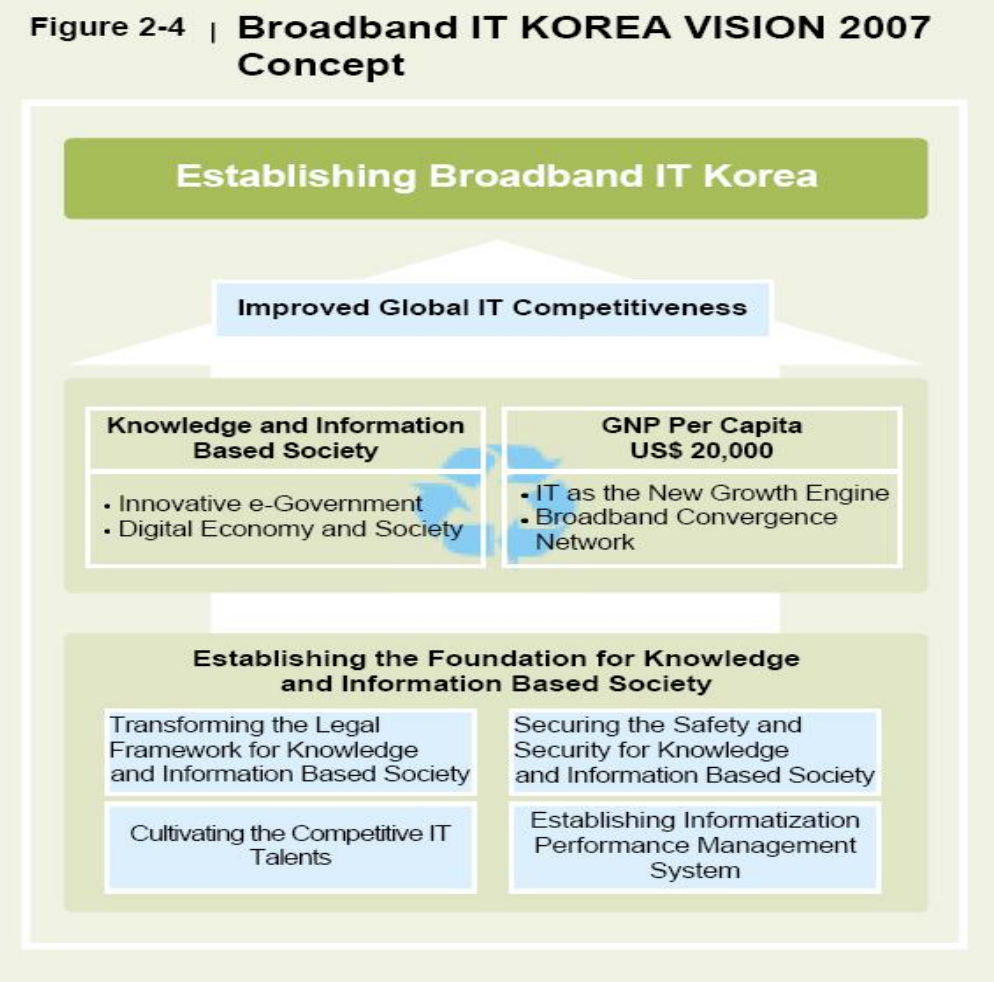
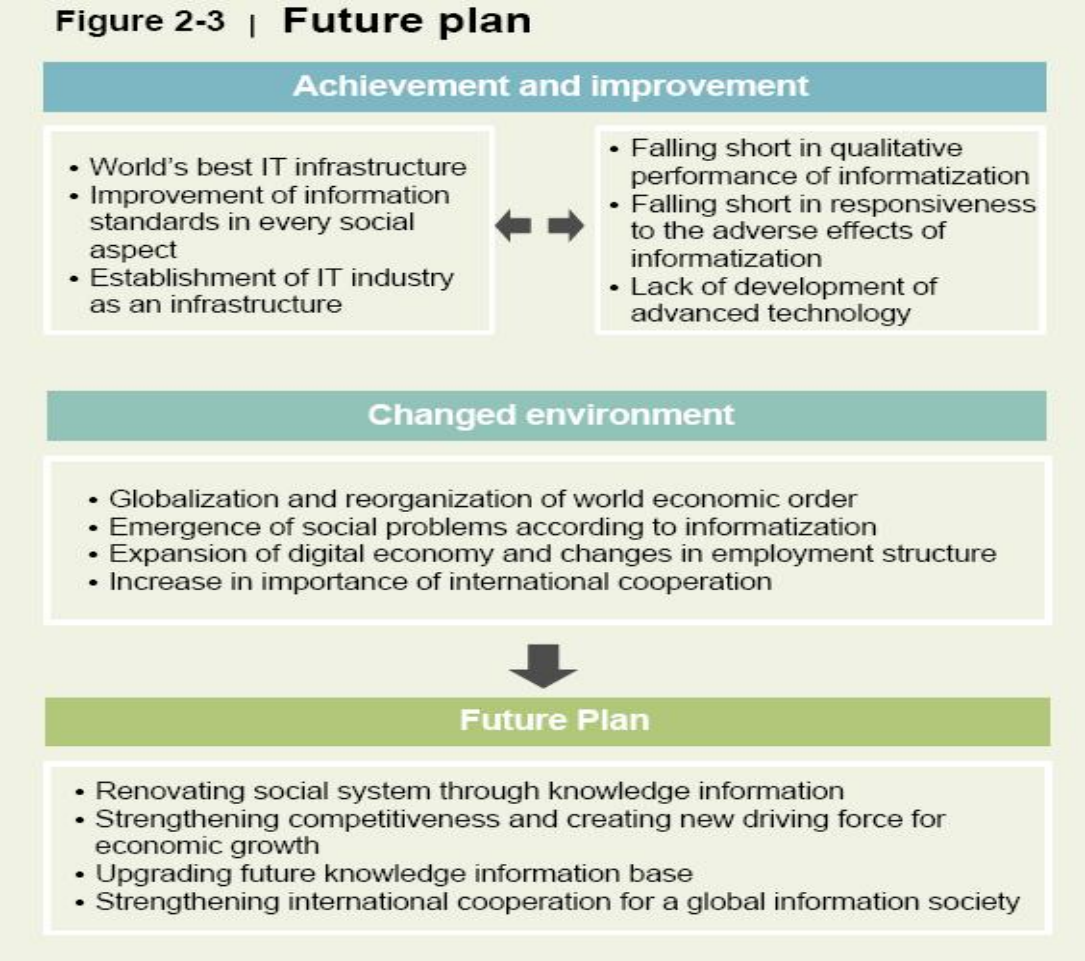


Figure 5.6: Broadband IT Korea vision 2007.



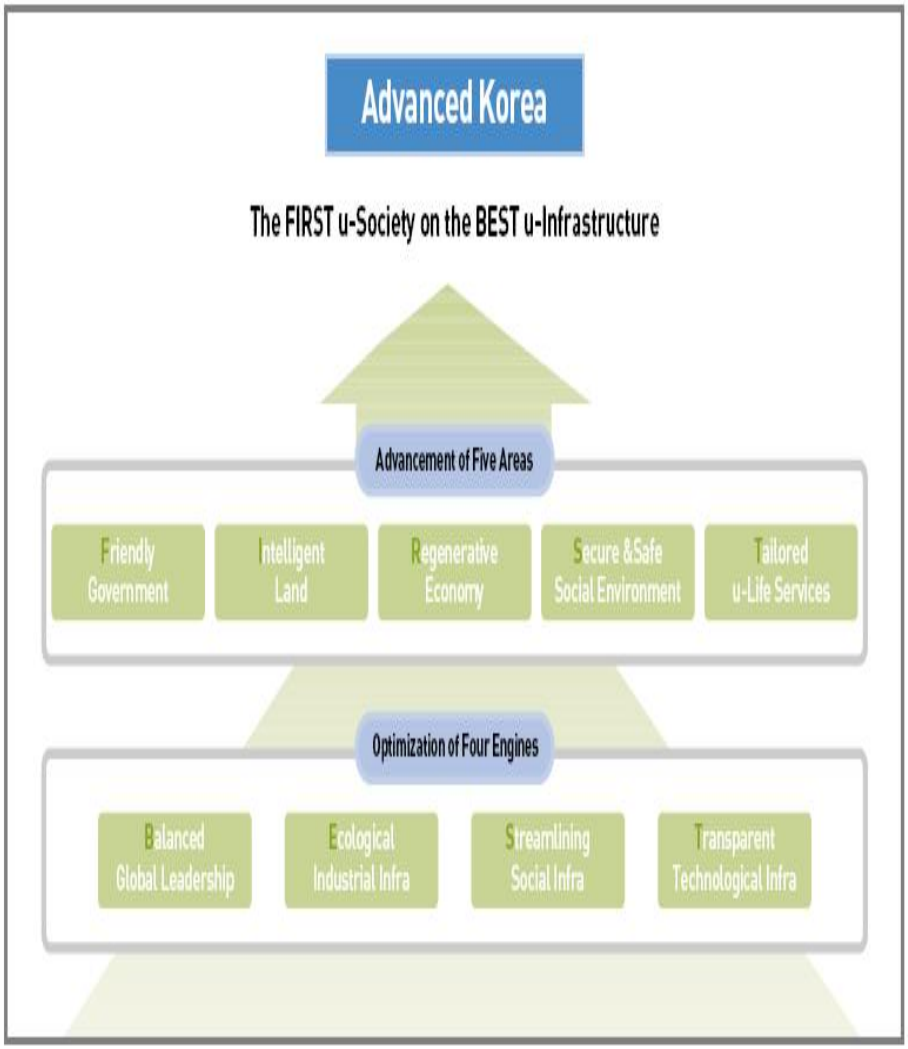
Source: Reproduced from NCA Informatization White Paper: Broadband IT Korea (NCA, 2004, p. 11)

Figure 5.7: IT Korea 2007 vision



Source: Reproduced from NCA Informatization White Paper: Broadband IT Korea (NCA, 2004, p. 10)

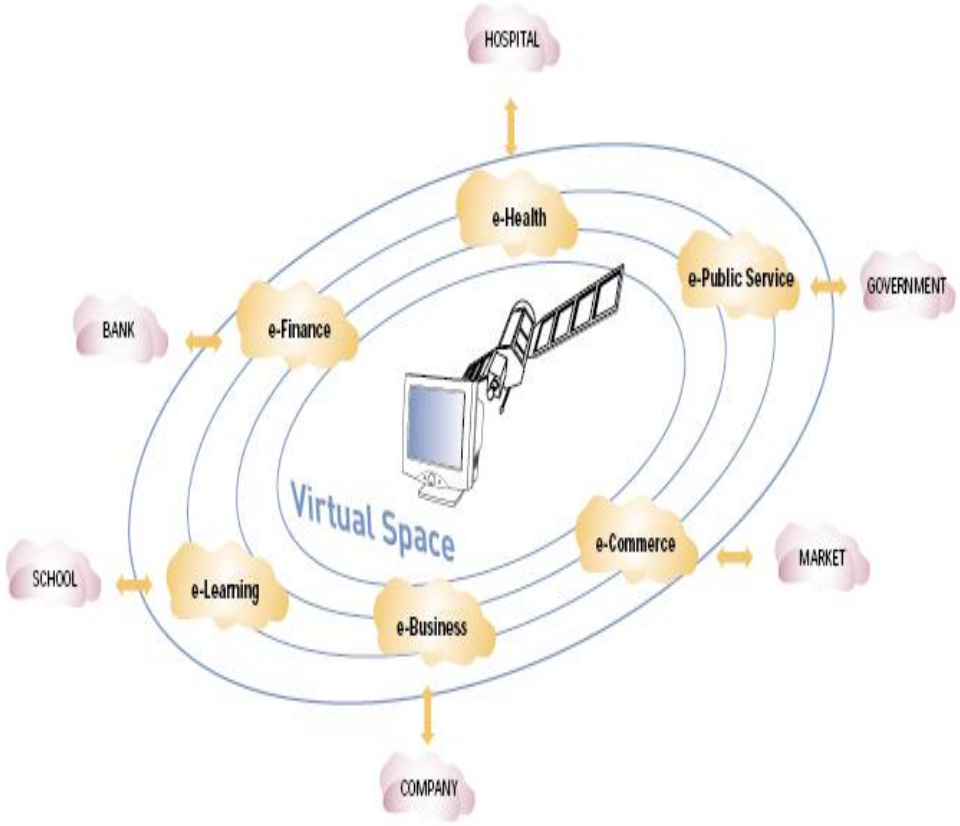
Figure 5.8: u-Korea vision and goals.



Source: NCA Informatization White Paper 2006 (NCA, 2006, p. 14).

Figure 5.9: u-society

[FIGURE 1-1] *Ubiquitous Society*



Source: MIC - White Paper 2004: Dynamic Digital Korea - IT839 leading to u-Korea (MIC, 2004, p. 8)

New Zealand

Figure 6.1: Concept map

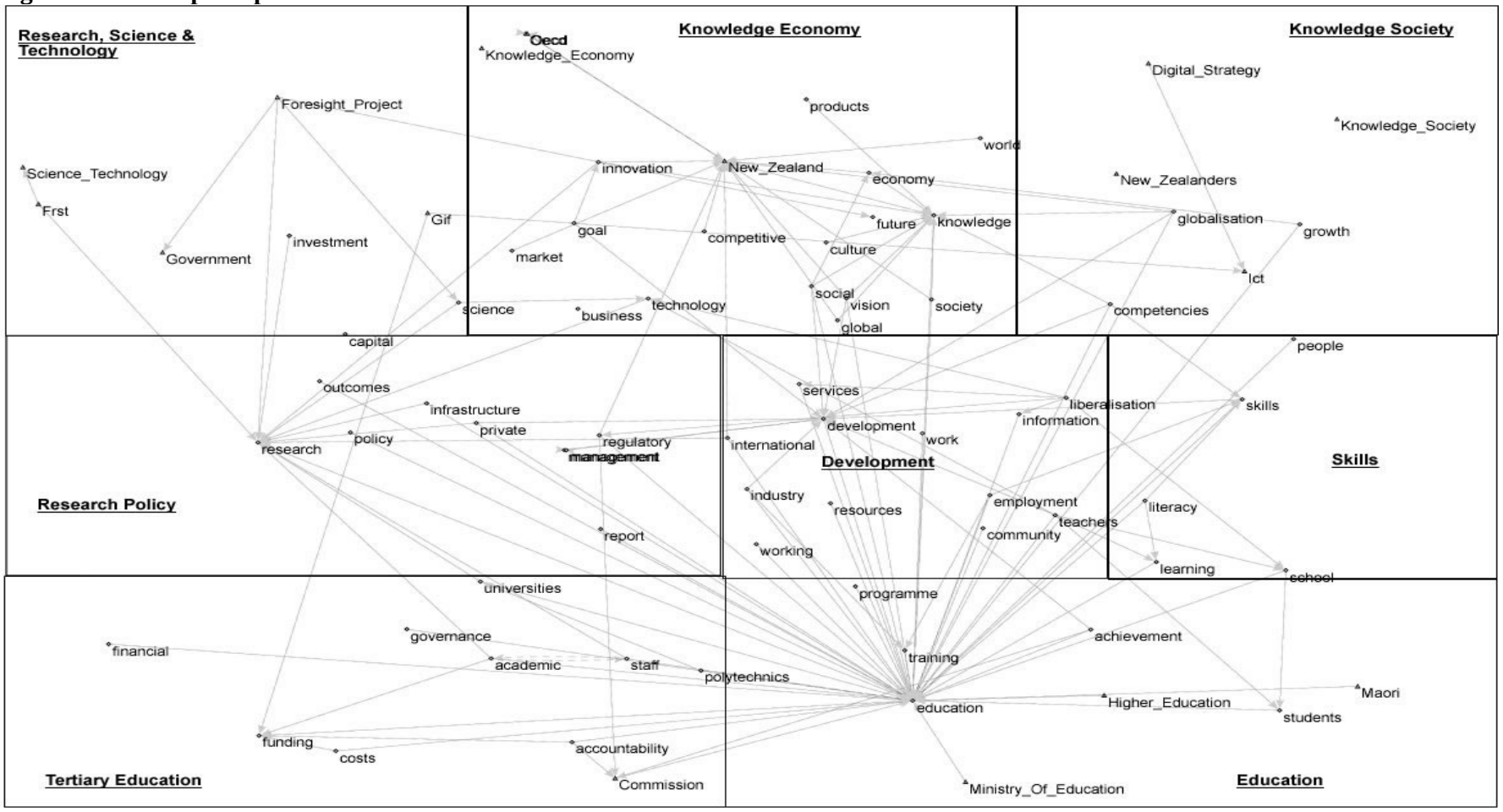


Figure 6.2: New Zealand knowledge policy structure

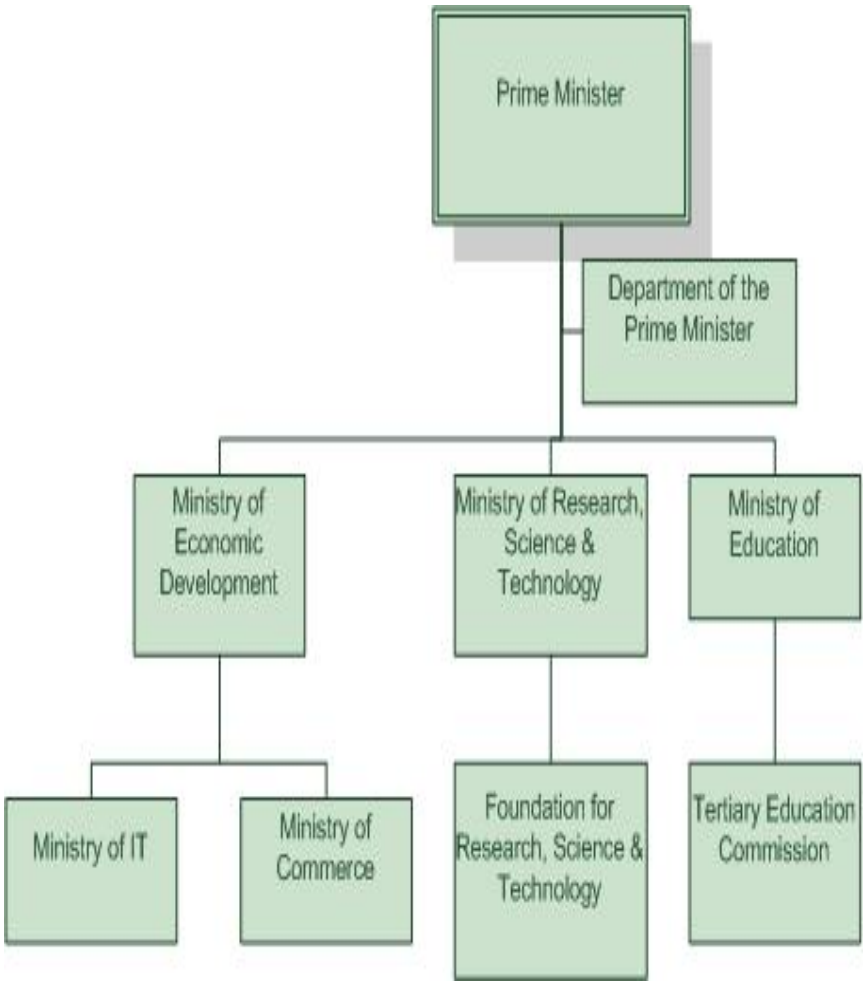
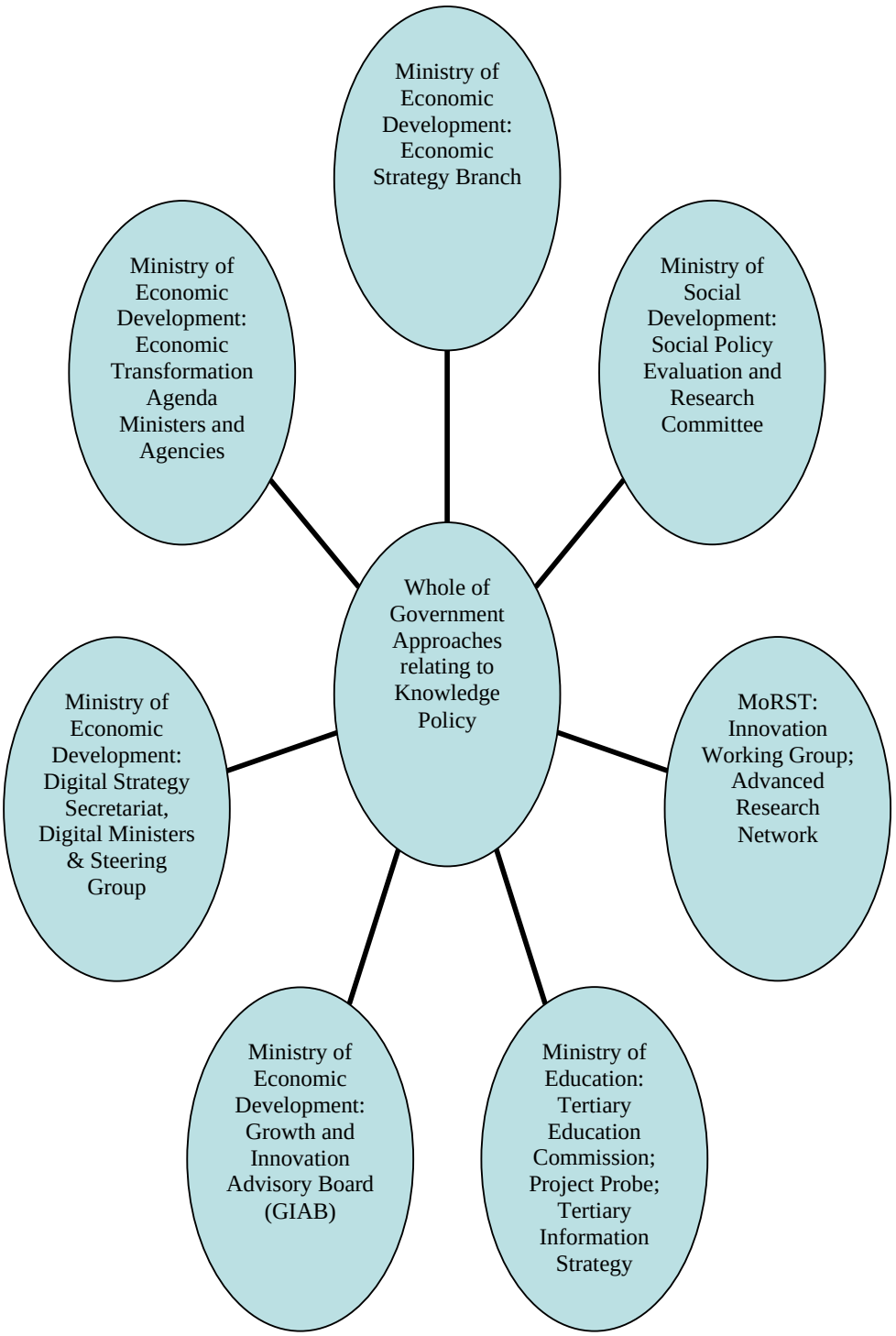


Figure 6.3: Cross-sectoral collaborative structure of policy governance



Singapore

Figure 7.1: Hierarchy of policy organisations

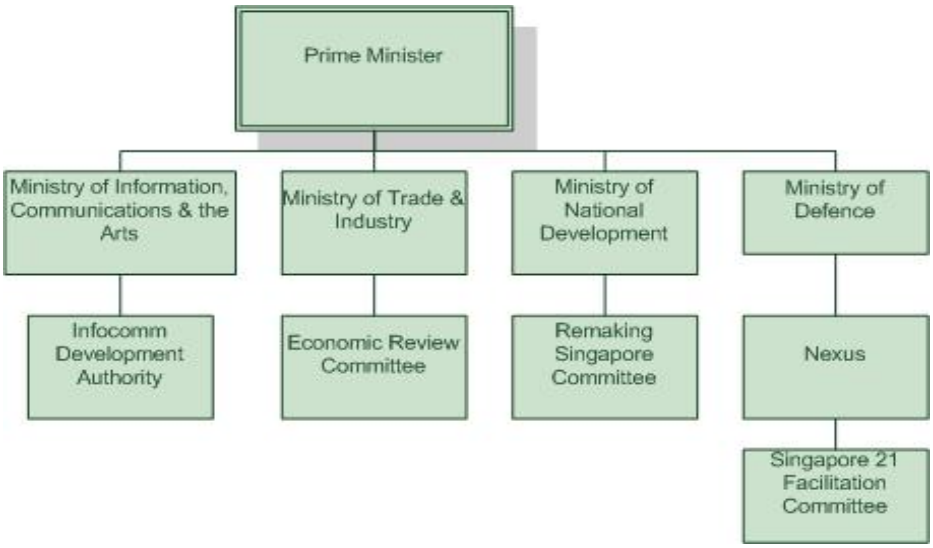


Figure 7.2: Car decal prints for Singapore 21

Source: Singapore 21 website (http://www.singapore21.org.sg/images/car_decal.gif).

Figure 7.3: Concept map

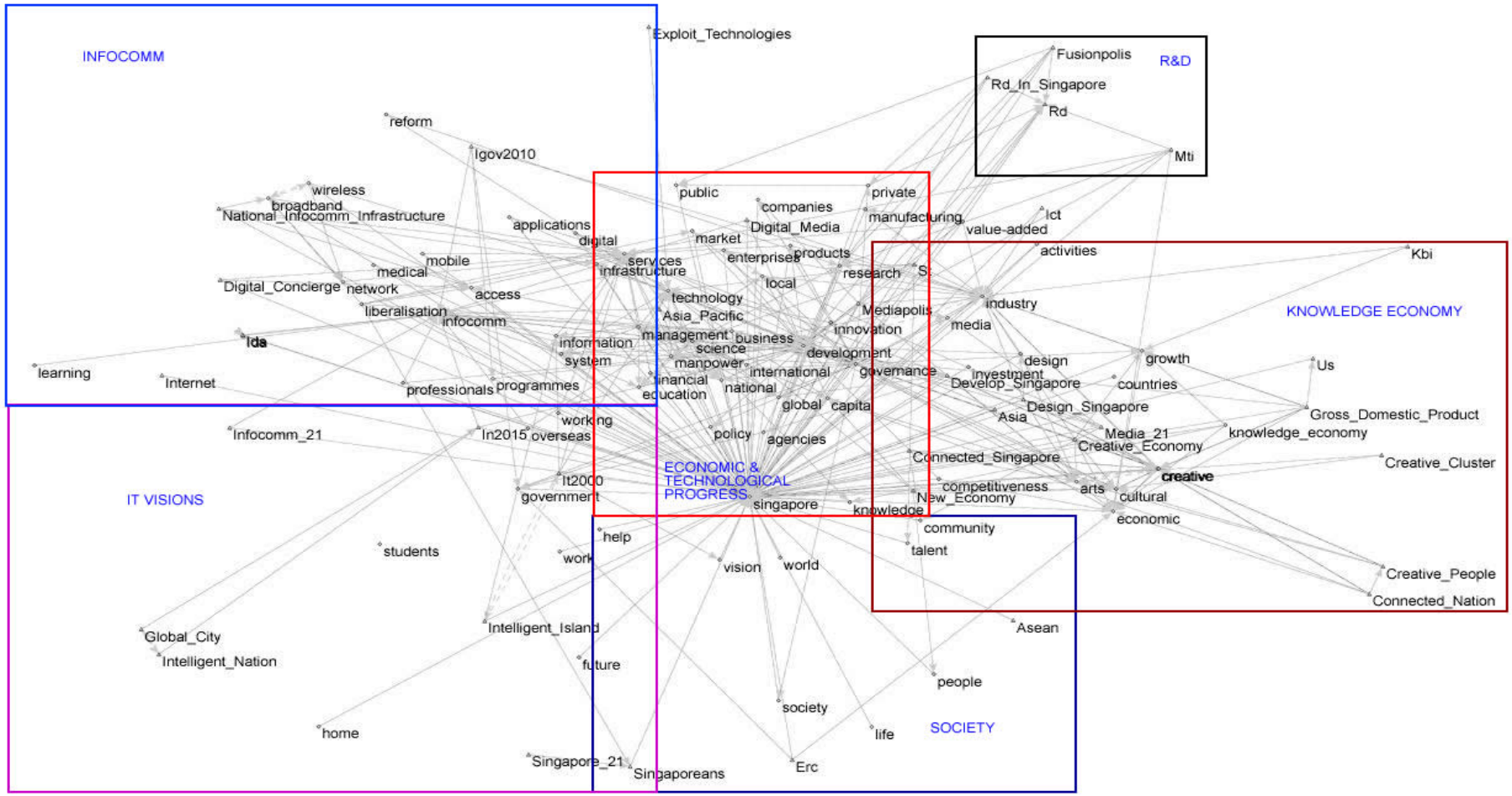
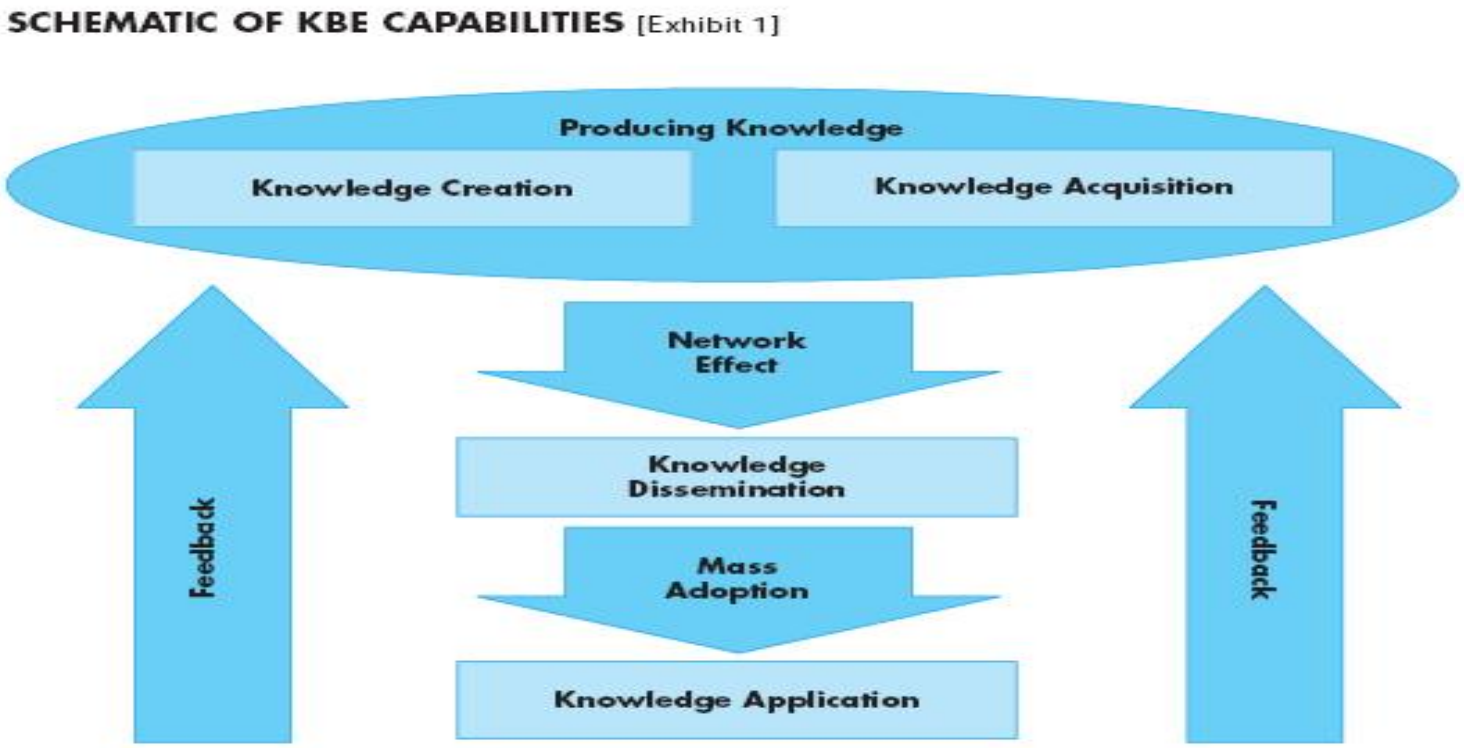


Figure 7.4: The capabilities required in a knowledge economy



Source: Mapping Singapore's Knowledge-based Economy (MTI Singapore, 2002, p. 57)

Figure 7.5: Innovation, internationalisation and integration

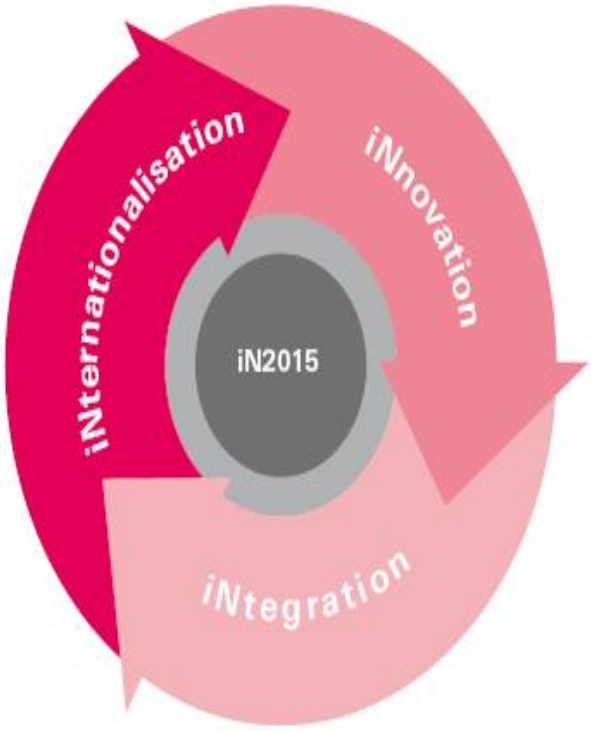
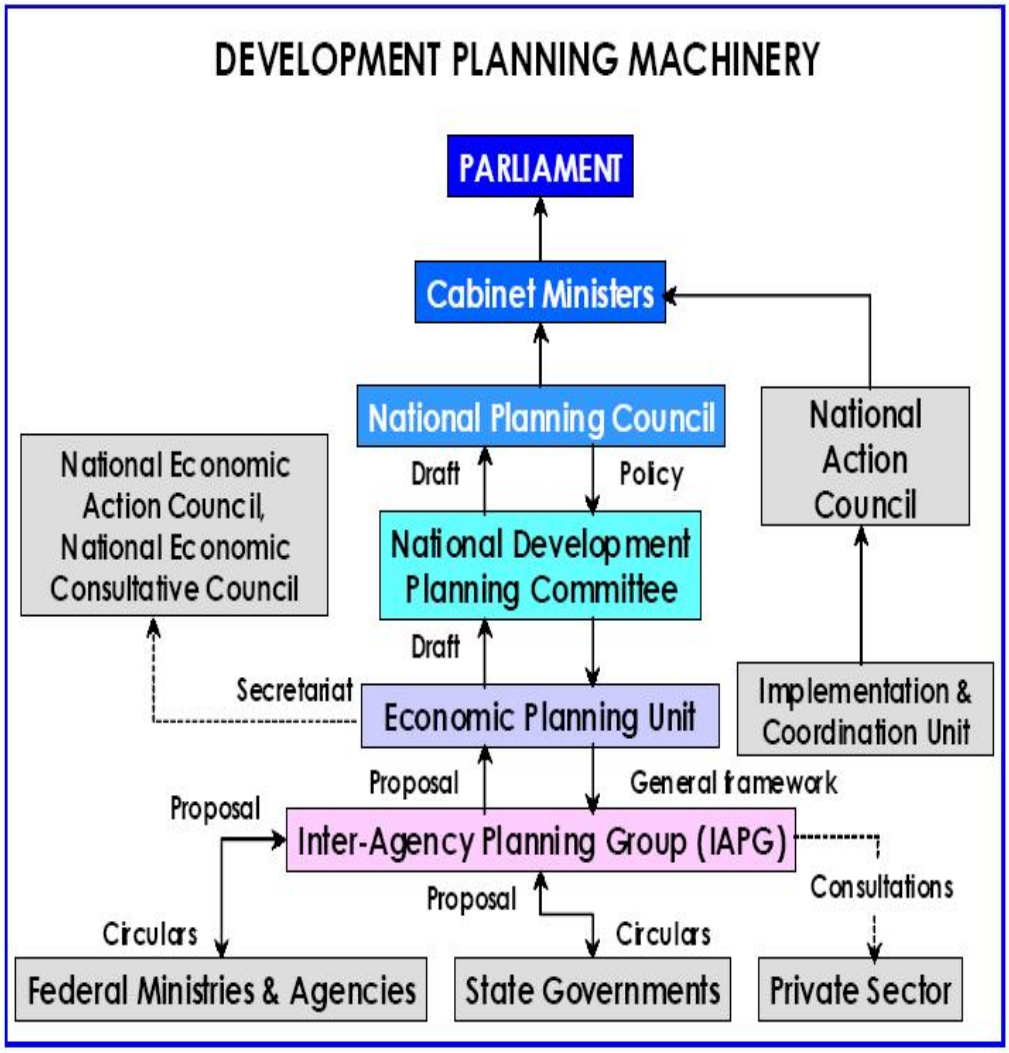


Figure 1-1: Key themes of iN2015

Source: Innovation, Integration and Internationalisation: Imagine Your World (IDA Singapore, 2006, p. 13)

Malaysia

Figure 8.1: Malaysia's development planning machinery



Source: Development Planning in Malaysia (Economic Planning Unit, 2004, p. 8).

Figure 8.2: Knowledge policy structure.

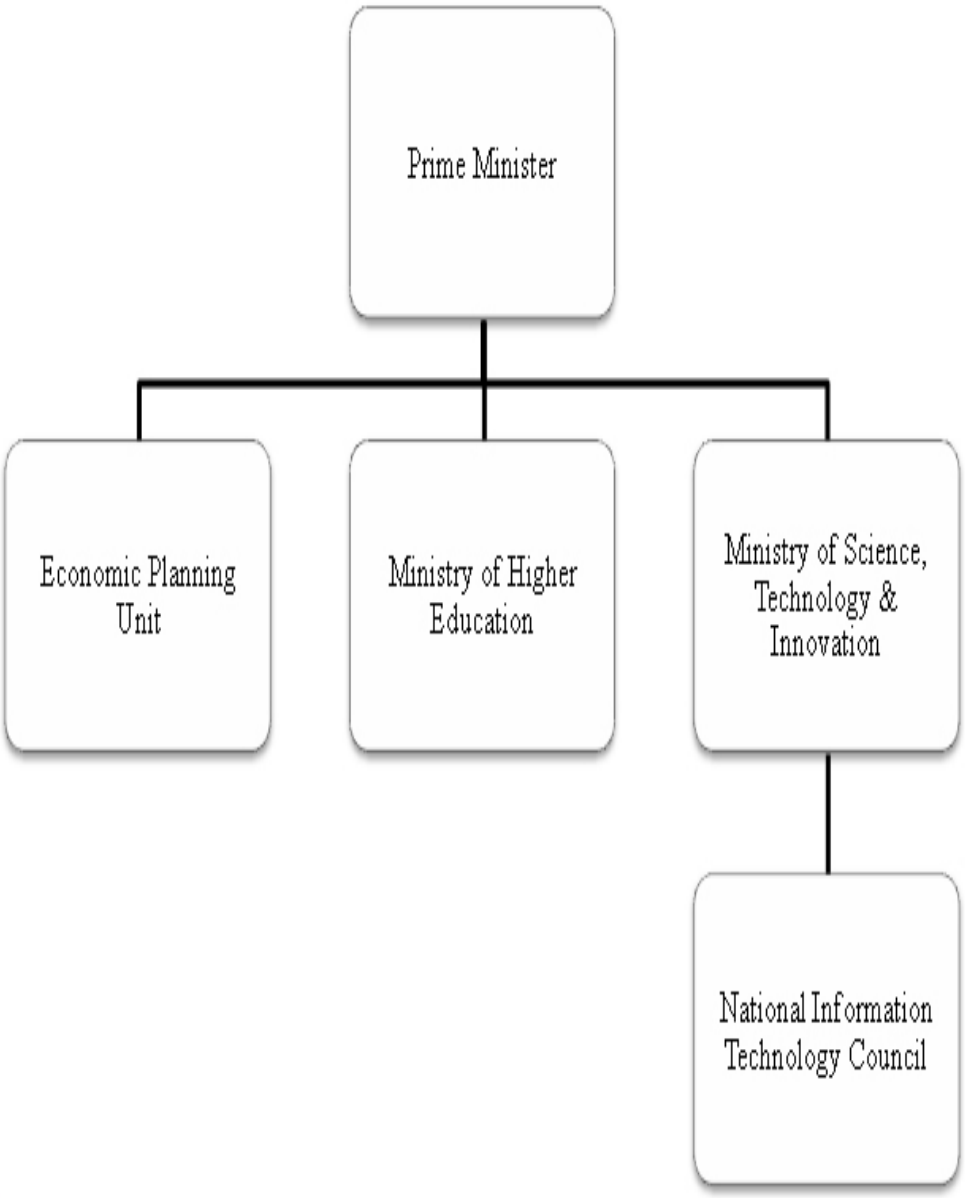


Figure 8.3: Concept map

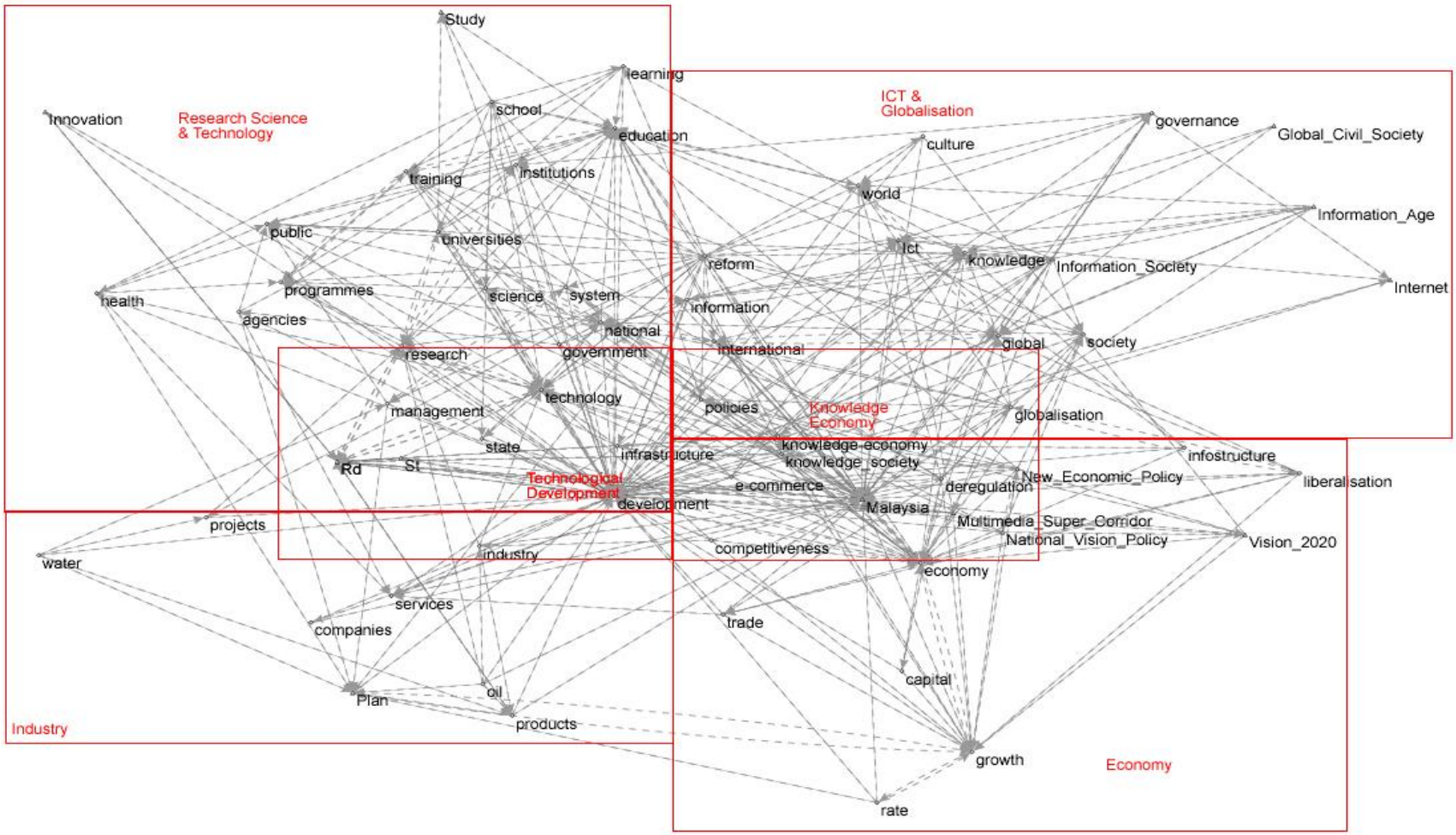
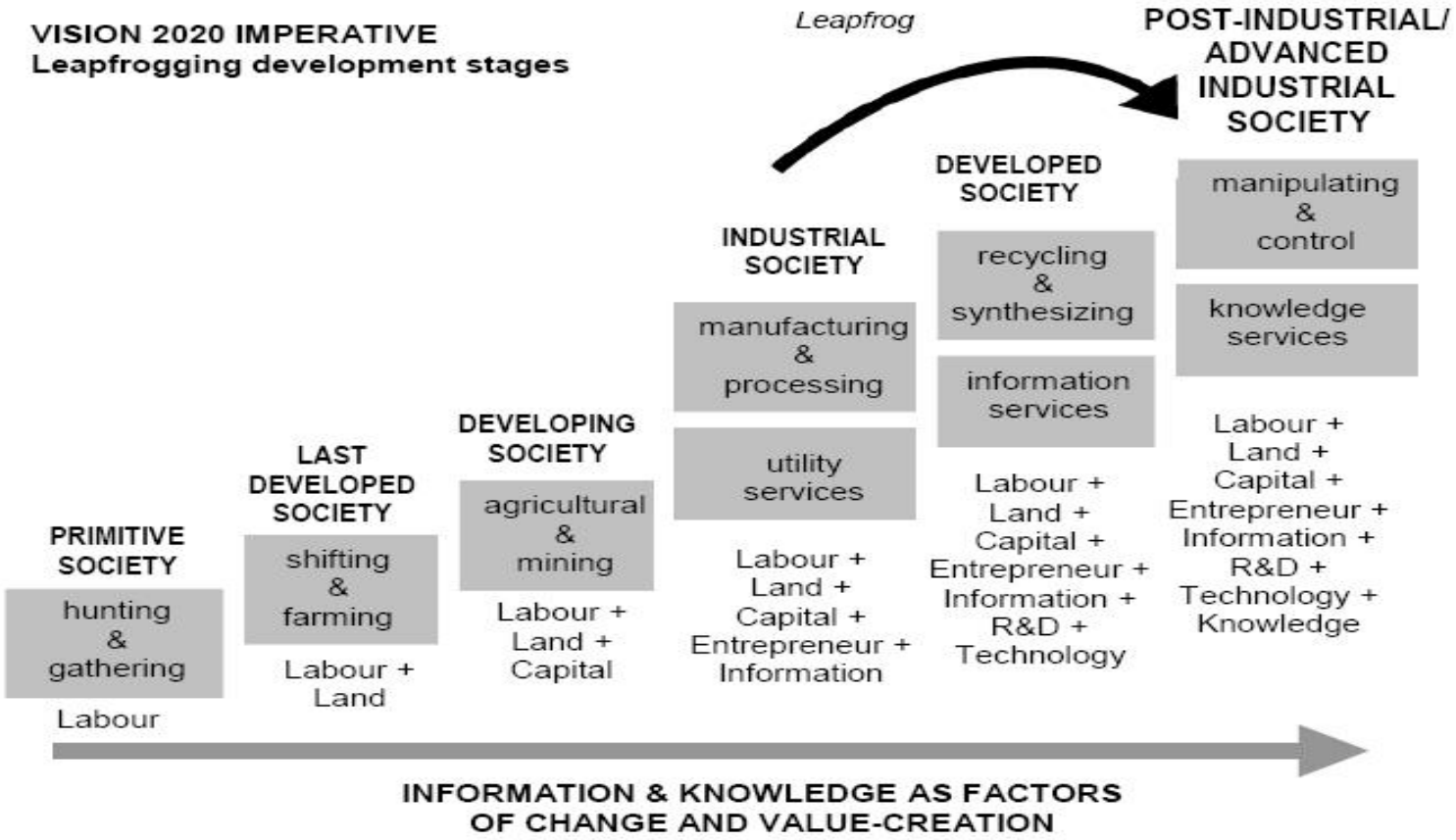
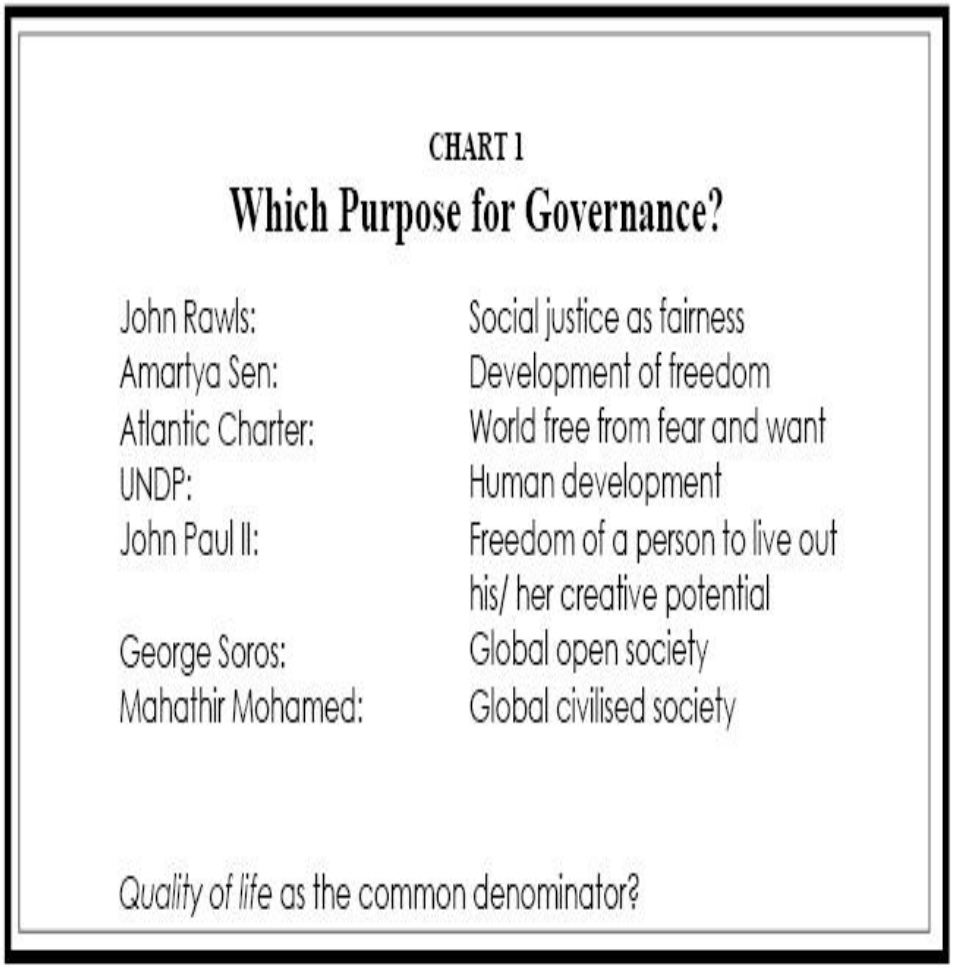


Figure 8.4: Vision 2020 - leapfrogging development stages



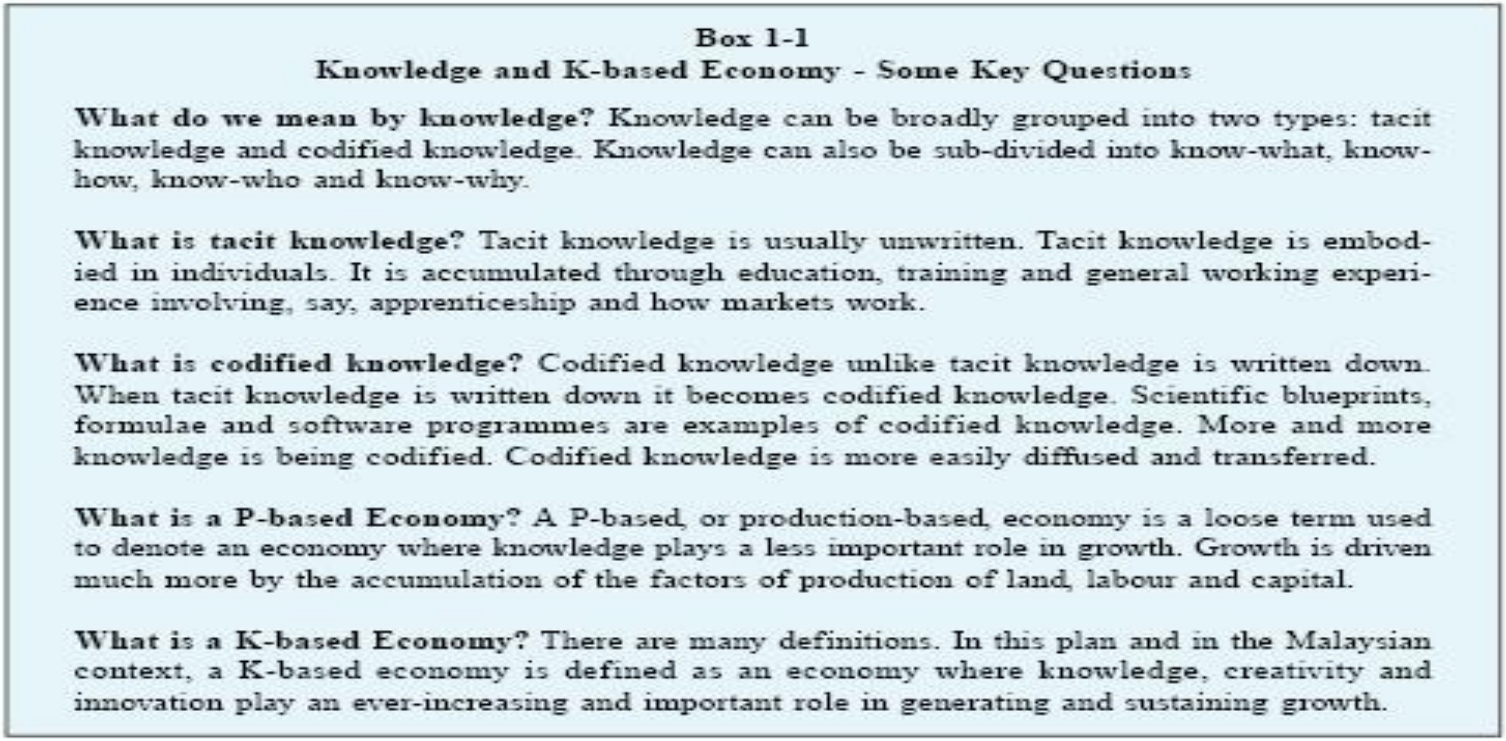
Source: Access, Empowerment and Governance in the Information Age (National Information Technology Council, 2000, p. xii)

Figure 8.5: Purposes of governance.



Source: NITC (2000), Access, Empowerment and Governance in the Information Age, p. 19.

Figure 8.6: Definitions of knowledge and knowledge economy



Box 1-1
Knowledge and K-based Economy - Some Key Questions

What do we mean by knowledge? Knowledge can be broadly grouped into two types: tacit knowledge and codified knowledge. Knowledge can also be sub-divided into know-what, know-how, know-who and know-why.

What is tacit knowledge? Tacit knowledge is usually unwritten. Tacit knowledge is embodied in individuals. It is accumulated through education, training and general working experience involving, say, apprenticeship and how markets work.

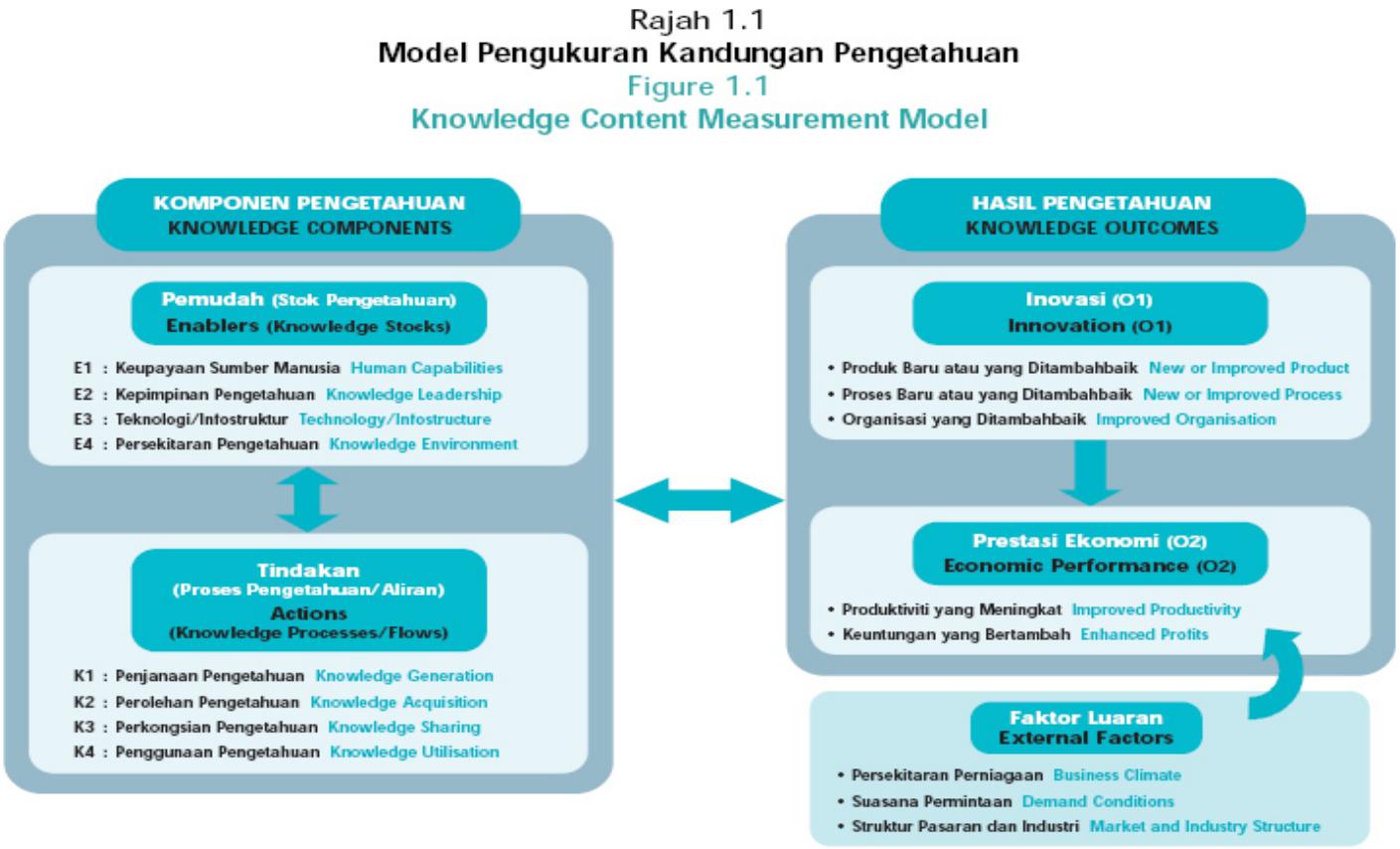
What is codified knowledge? Codified knowledge unlike tacit knowledge is written down. When tacit knowledge is written down it becomes codified knowledge. Scientific blueprints, formulae and software programmes are examples of codified knowledge. More and more knowledge is being codified. Codified knowledge is more easily diffused and transferred.

What is a P-based Economy? A P-based, or production-based, economy is a loose term used to denote an economy where knowledge plays a less important role in growth. Growth is driven much more by the accumulation of the factors of production of land, labour and capital.

What is a K-based Economy? There are many definitions. In this plan and in the Malaysian context, a K-based economy is defined as an economy where knowledge, creativity and innovation play an ever-increasing and important role in generating and sustaining growth.

Source: Knowledge-Based Economy Master Plan ISIS (2002, p. 2).

Figure 8.7: Knowledge content measurement model



Source: Knowledge Content in Key Economic Sectors in Malaysia 2004 (Economic Planning Unit, 2005, p. 10).

Figure 8.8: Innovation as a light bulb.

Source: EPU, (2004), Knowledge Content in Key Economic Sectors in Malaysia 2004, p. xvii.

Figure 8.9: Innovation

Source: EPU, (2004), Knowledge Content in Key Economic Sectors in Malaysia 2004, p. 52

India

Figure 9.1: Structure of knowledge policy organisations

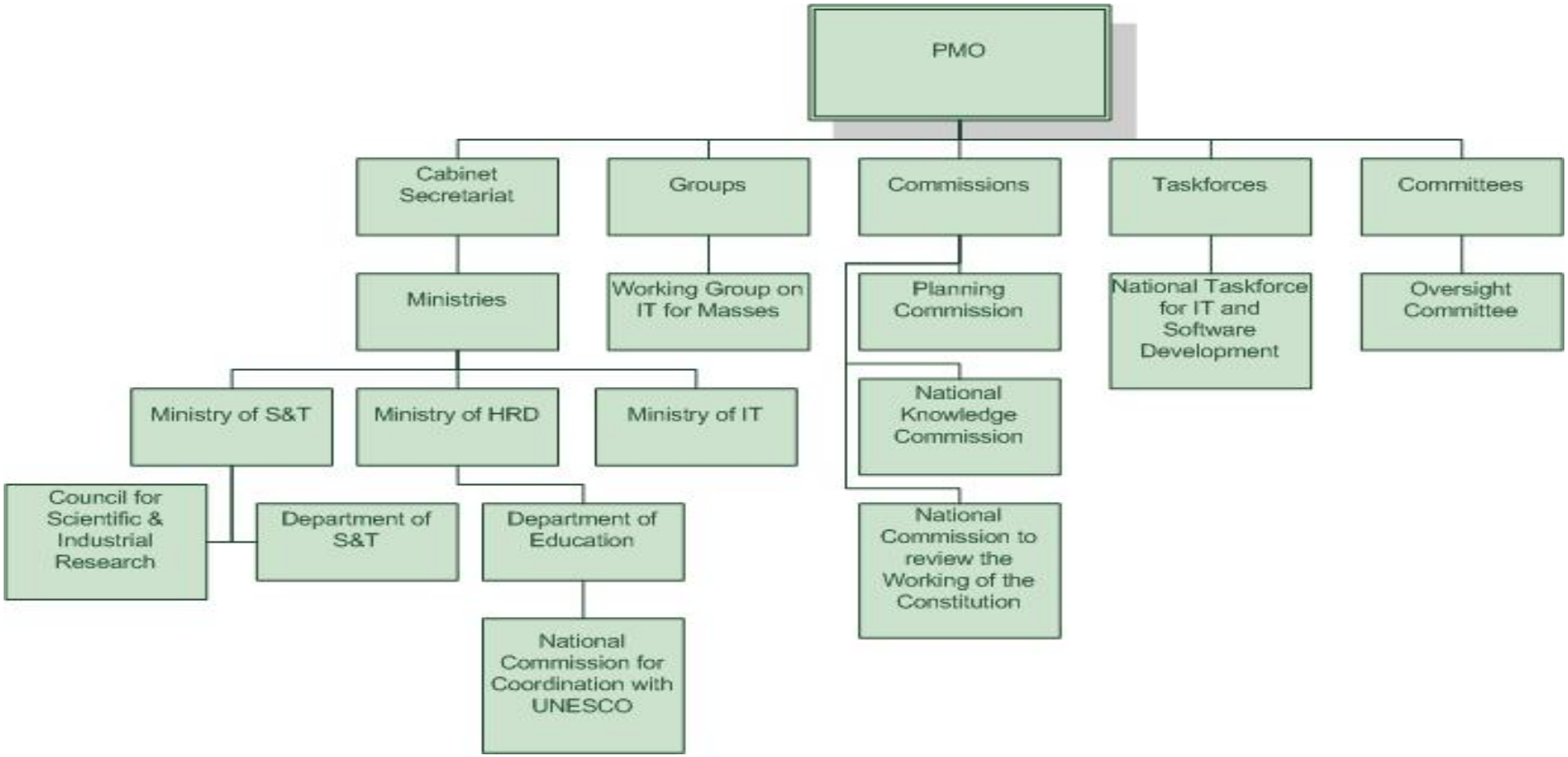


Figure 9.2: Concept map

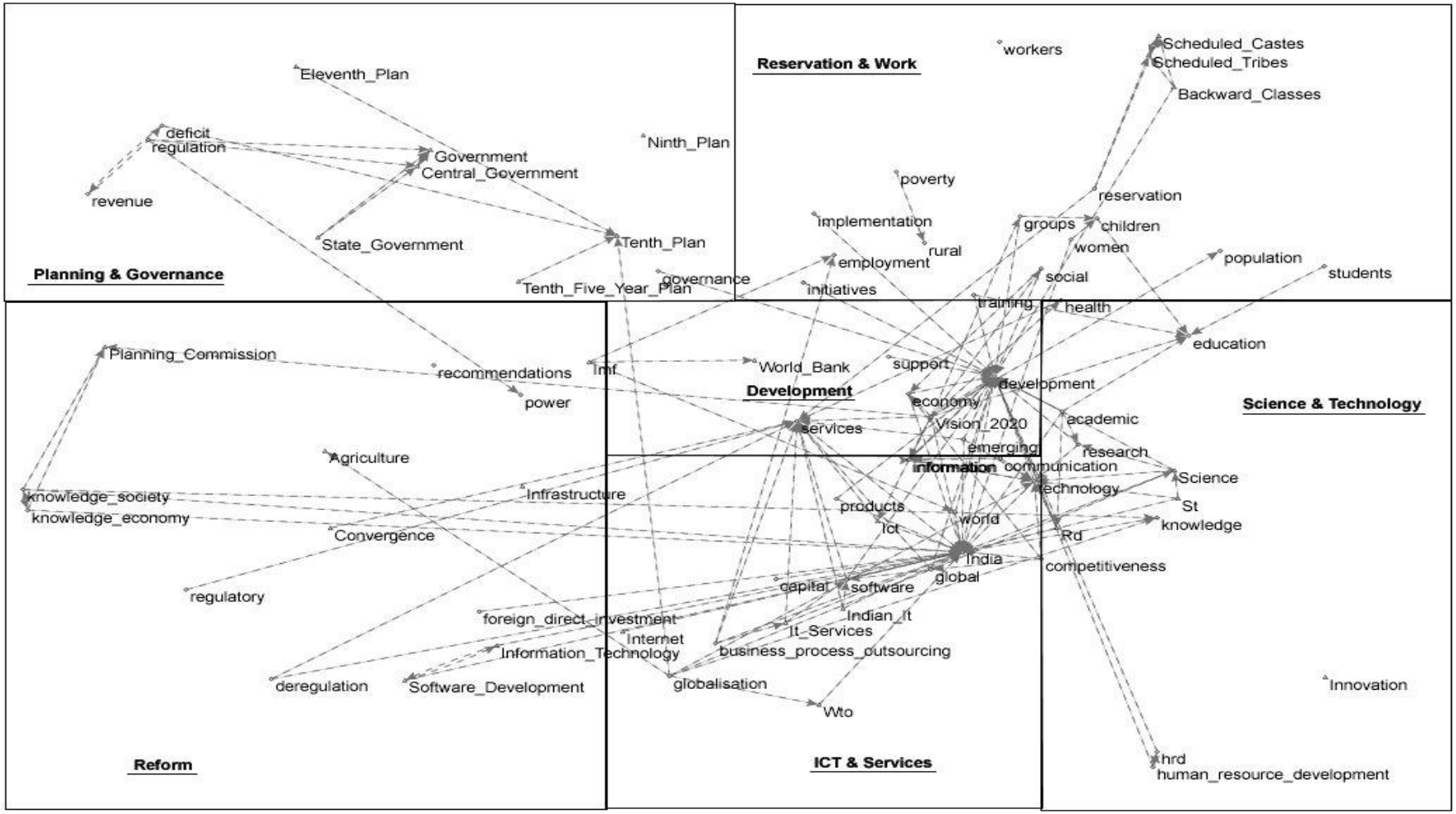
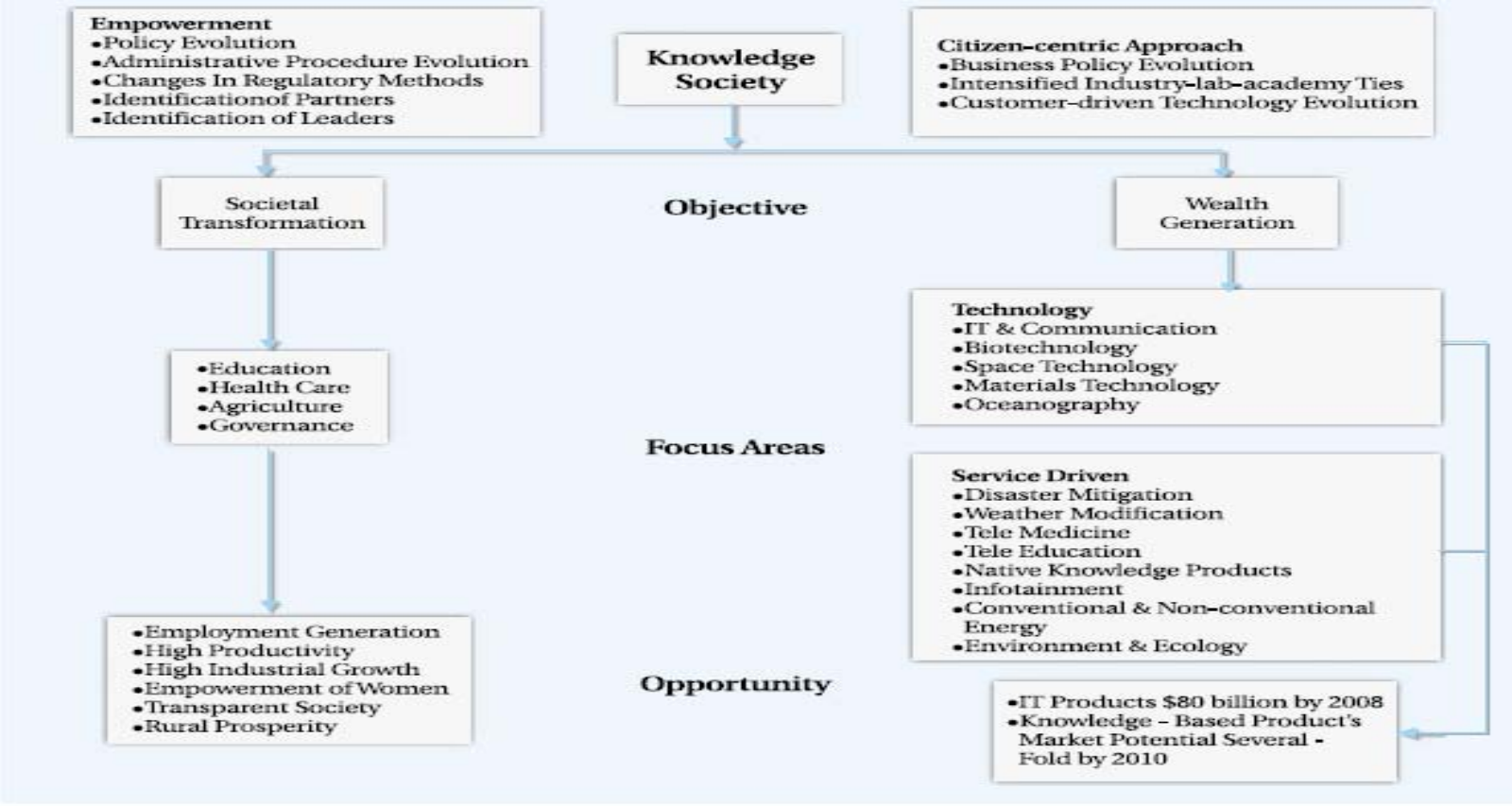
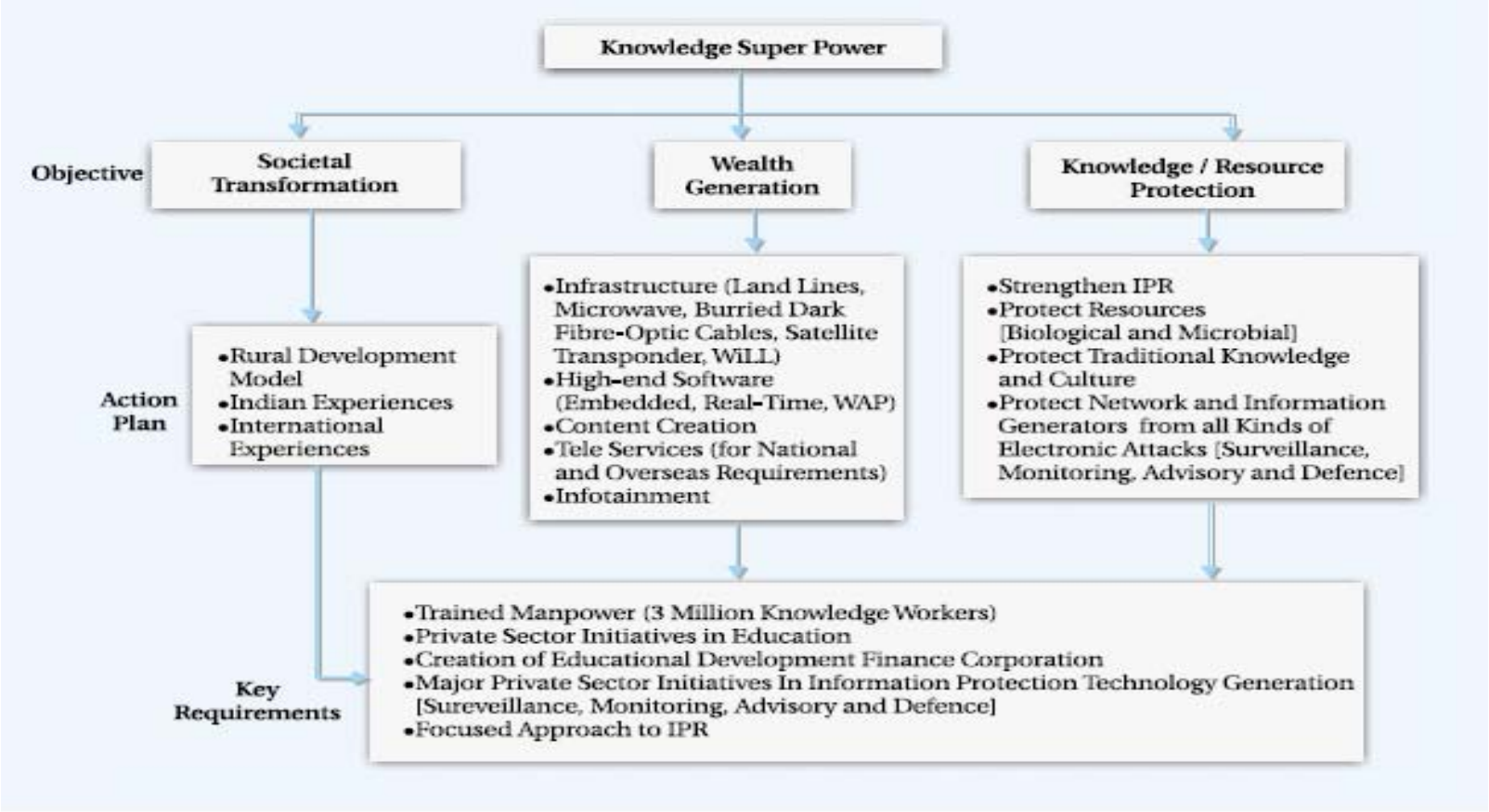


Figure 9.3: India as a knowledge society.



Source: (Planning Commission, 2001, p. 2).

Figure 9.4: India as a knowledge superpower.



Source: (Planning Commission, 2001, p. 3).

Figure 9.6: Characteristics of knowledge economy

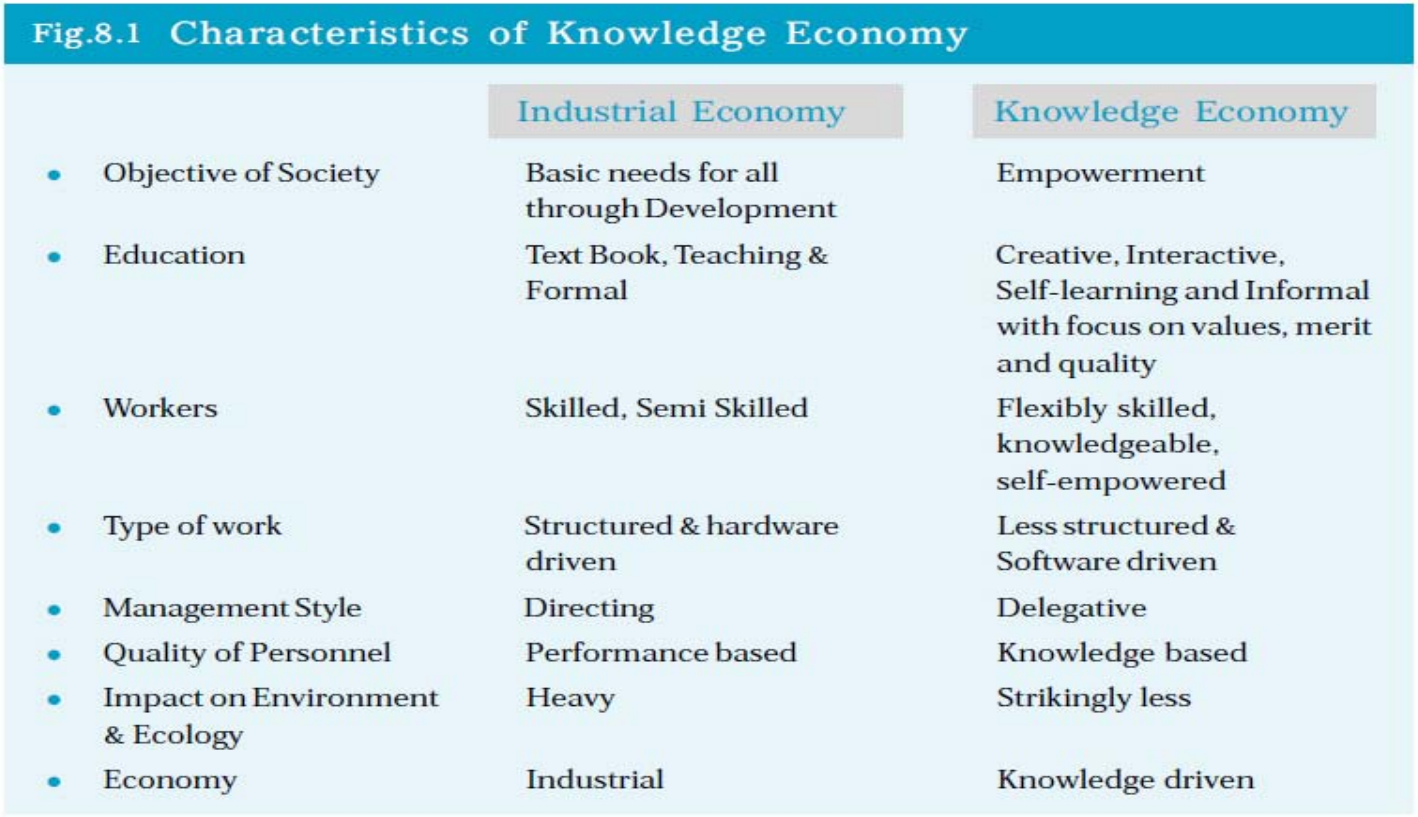
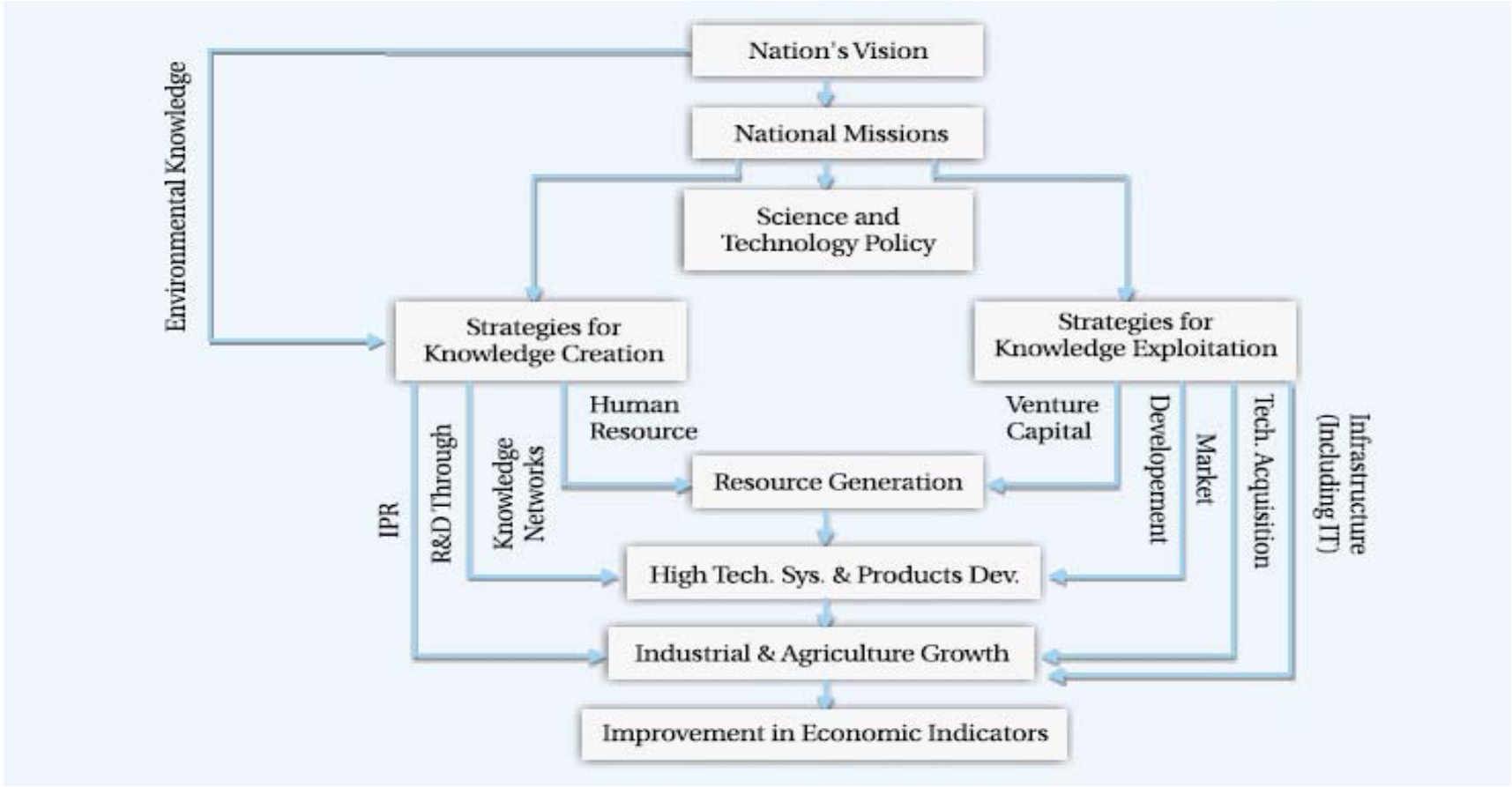


Fig.8.1 Characteristics of Knowledge Economy

	Industrial Economy	Knowledge Economy
• Objective of Society	Basic needs for all through Development	Empowerment
• Education	Text Book, Teaching & Formal	Creative, Interactive, Self-learning and Informal with focus on values, merit and quality
• Workers	Skilled, Semi Skilled	Flexibly skilled, knowledgeable, self-empowered
• Type of work	Structured & hardware driven	Less structured & Software driven
• Management Style	Directing	Delegative
• Quality of Personnel	Performance based	Knowledge based
• Impact on Environment & Ecology	Heavy	Strikingly less
• Economy	Industrial	Knowledge driven

Source: (Planning Commission, 2001, p. 58).

Figure 9.7: Nationwide knowledge management framework



Source: Reproduced from (Planning Commission, 2001, p. 64).

Fiji Islands

Figure 10.1: Fiji's knowledge policy structure.

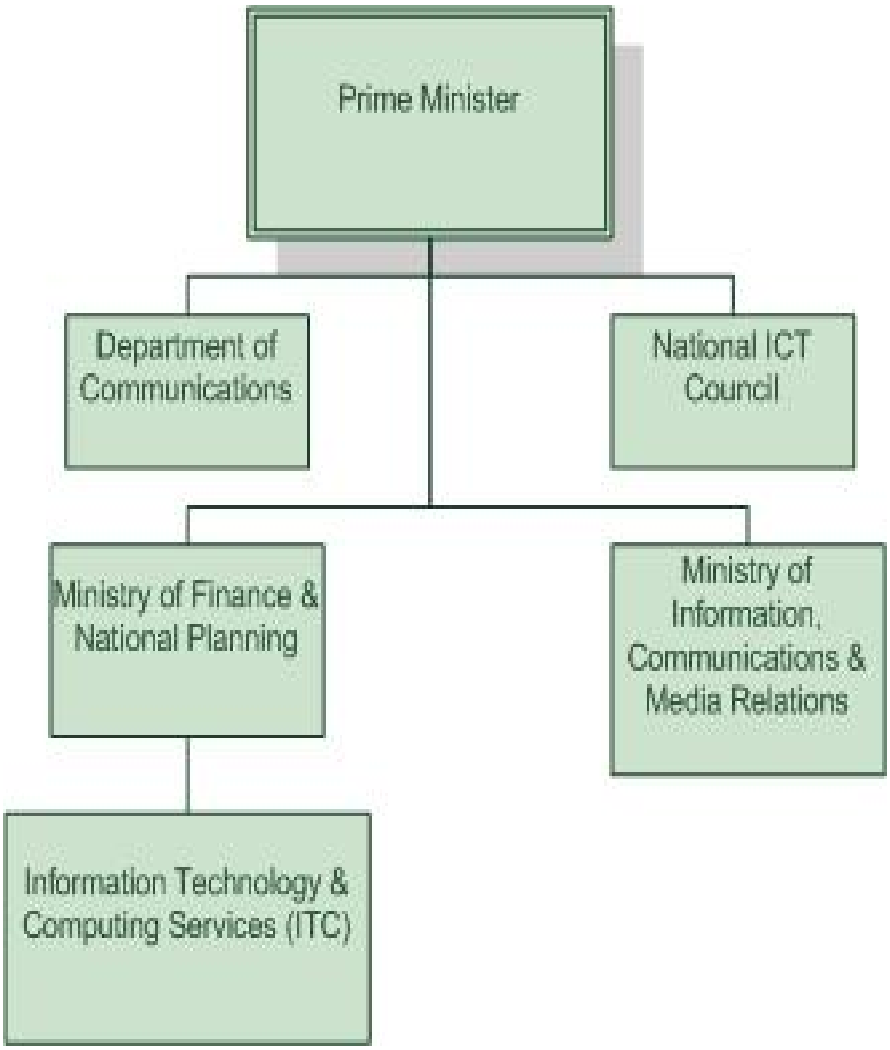


Figure 10.2: Concept map

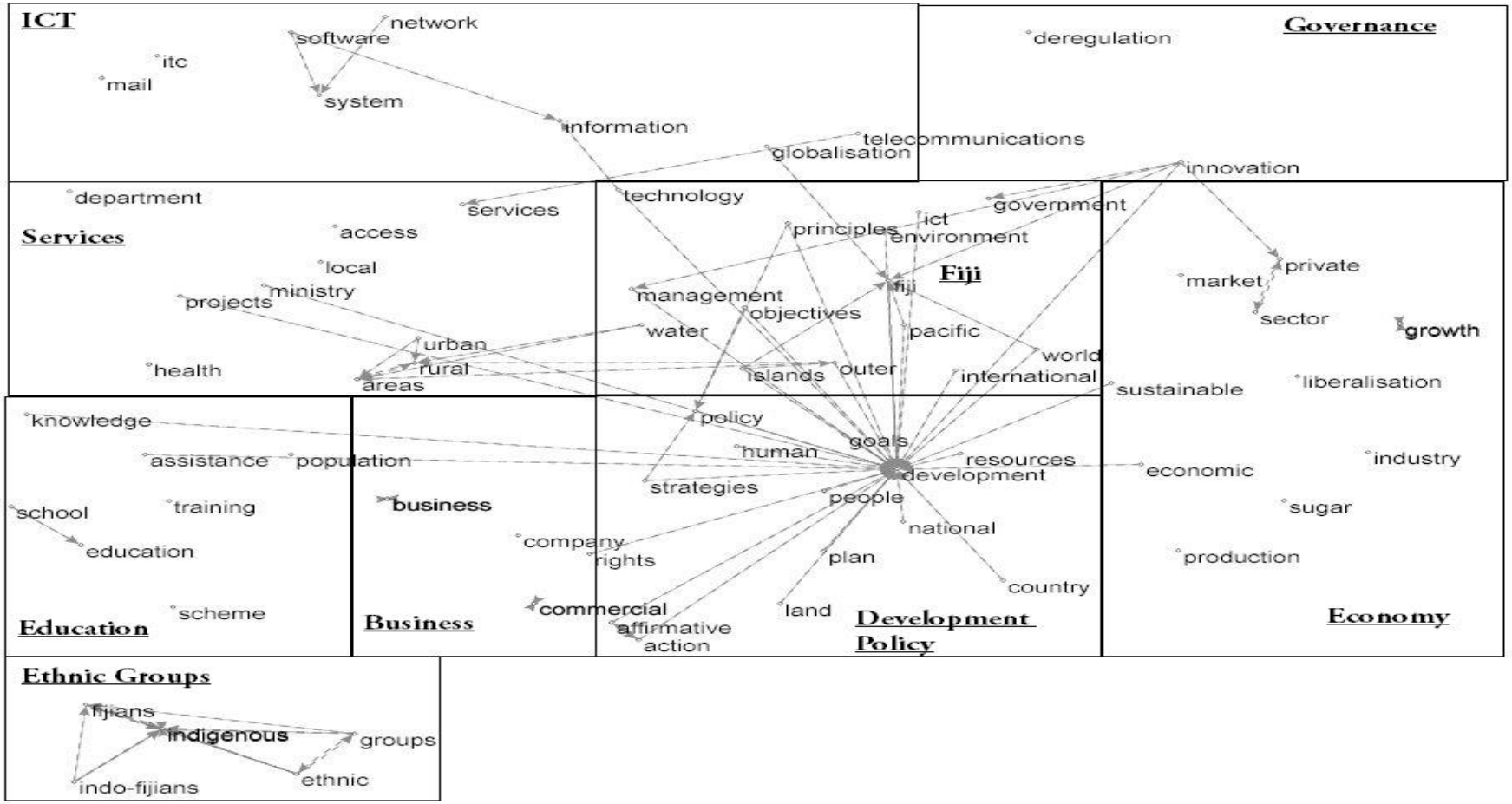
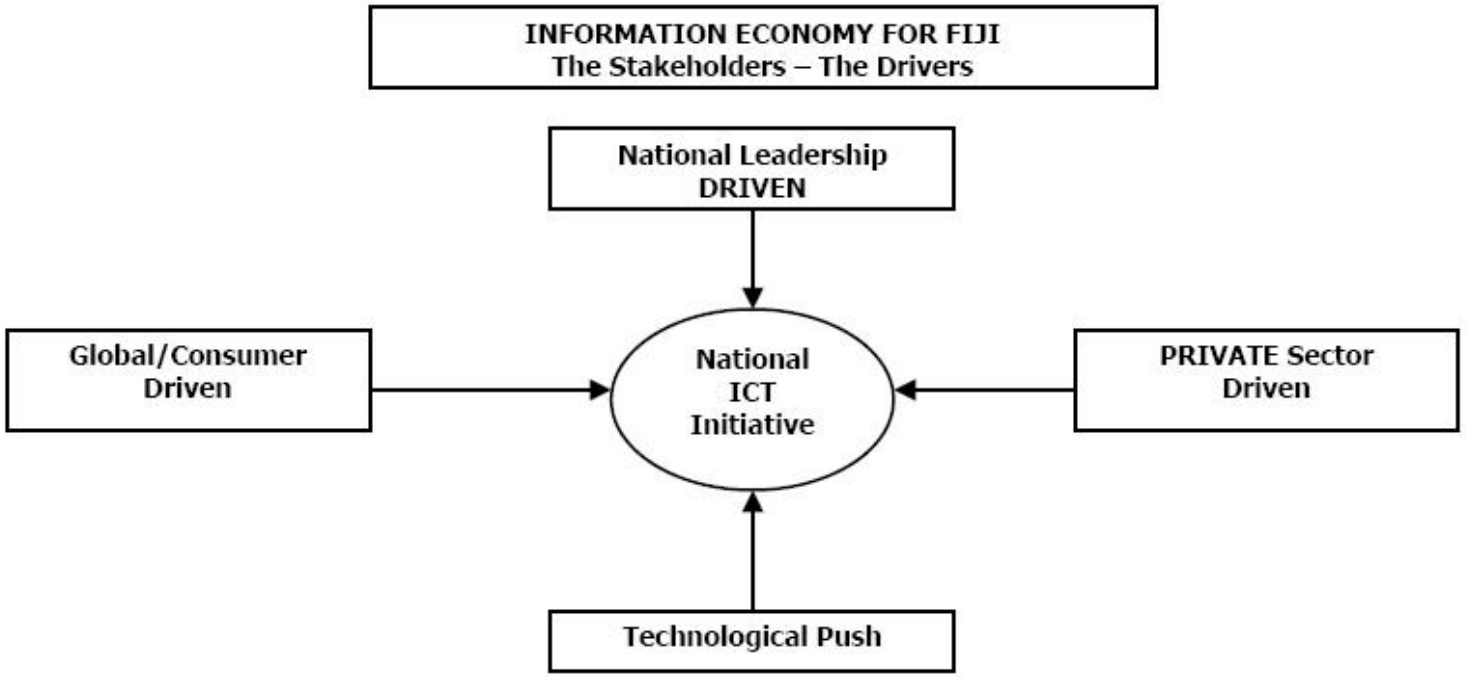


Figure 10.3: Stakeholders in Fiji's information economy



Source: Reproduced from ICT Development Policy – e-Fiji (Department of Communications (Fiji), 2004, p. 13).

Figure 10.4: The desirable outcomes of the e-Fiji vision.

Source: Reproduced from ICT Development Policy – e-Fiji (Department of Communications (Fiji), 2004, p. 17).