

How perceived institutional forces impact ERP
(enterprise resource planning) implementers when
assimilating an ERP solution in a public sector
organisation.

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Abstract

This research aimed to explore how perceived institutional forces impact ERP implementers when assimilating an ERP solution in a public sector organisation in New Zealand.

A public sector organisational setting was chosen as the human resource structure of government agencies tends to be more complex, with wider levels of executives and groups tending to interpret business processes, rules and guidelines in varied ways. This more complex organisational human resource composition with added levels of administration is often underestimated by leaders in terms of getting buy in from affected staff that in turn, impedes an organisations agility. This method of operating inherently overflows into the organisational culture and in doing so, makes it more challenging to determine accepted values and perspectives to guide expected conduct and behaviours.

The study illustrates how the period after an ERP solution is technically implemented, but not yet assimilated throughout the organisation, is a time where ERP implementors particularly leadership, must come to the fore. It is at this stage that leaders receive direct feedback of whether the earlier investment in reviewing, preparing and revamping the organisational culture to assist manage the many changes that a new ERP solution brings, has been successful or not. The study identifies a myriad of often inter-linked themes centred on the institutional environment, leadership and managing change for why differing levels of staff actively support (or not) the adoption of the new ERP solution.

In contrast to quantitative and survey data, this qualitative study, using semi-structured interviews, provides a *direct line* to the key people in public sector organisations who were actively involved in implementing and/or assimilating ERP solutions. It gives an insight into the challenges faced by ERP implementors when leading organisational wide change, whilst introducing a new strategic IT solution across a variety of public sector organisations.

The findings have practical implications. The study shows that where an organisations culture is agile and facilitates change, where the ERP solution is seen as a strategic investment and leadership drives change, the assimilation processes of an ERP solution tend to be embedded more quickly and successfully. ERP implementors can leverage the key and sub themes that emerged from the findings as practical examples of where they might best focus their involvement and attention prior to and whilst undertaking ERP assimilation across public sector organisations.

Table of Contents

Contents

Abstract	ii
Table of Contents	iii
List of Tables.....	vi
Attestation of Authorship.....	vii
Dedication.....	viii
Acknowledgements.....	ix
Intellectual property rights.....	x
Ethics approval	xi
Chapter 1 - Introduction	1
1.1 Background.....	1
1.2 Research topic and approach	2
1.3 Organisation of the thesis.....	4
Chapter 2 - Literature Review	6
2.1 Introduction	6
2.2 Enterprise Resource Planning Solutions	6
2.3 Institutionalisation	9
2.4 ERP Implementors.....	14
2.5 Public Sector Organisations	20
2.6 Assimilation.....	23
2.7 Conclusion	26
Chapter 3 - Methodology	29
3.1 Introduction	29
3.2 Research interest, inspiration and research question	29
3.3 Research paradigm.....	30
3.3.1 Ontological position.....	30
3.3.2 Epistemological position.....	31
3.3.3 Philosophical position.....	32
3.4 Research design	33
3.5 Research method.....	34
3.5.1 Participant selection and profile.....	34
3.5.2 Research Method	39
3.5.3 Data Collection.....	39
Location and Time	41
3.5.4 Data Analysis	42
3.6 Ethical Requirements	43
Matters of ethics and reflection.	44
□ Purpose of the research	44
□ How they were I identified and why were they being invited to participate in this research..	44
□ How do I agree to participate in this research, by choosing to respond to this invitation	45

□ What was going to happen with the research	45
3.7 Reflection & Summary	46
Chapter 4 - Findings and Discussion	48
4.1 Introduction	48
4.1.1 Background.....	49
4.2 Key Theme One: Institutional Environment	51
4.2.1 Sub-theme One: Public sector environments are typically not dynamic environments	51
4.2.2 Sub-theme One: Summary.....	55
4.2.3 Sub-theme Two: Is the history of a public sector organisation a predictor of future events?	56
4.2.4 Sub-theme Two: Summary.....	60
4.2.5 Key-theme Institutional Environment: Summary	60
4.3 Key Theme Two: Leadership	61
4.3.1 Sub-theme Three: End to end vision	62
4.3.2 Sub-theme Three: Summary	63
4.3.3 Sub-theme Four: Senior leadership support and accountability.....	64
4.3.4 Sub-theme Four: Summary	66
4.3.5 Key-theme Leadership: Summary	67
4.4 Key Theme Three: Organisational Change	68
4.4.1 Sub-theme Five: Is managing change business-dependent?	68
4.4.2 Sub-theme Five: Summary.....	71
4.4.3 Sub-theme Six: Is the need for customisation a mindset?	71
4.4.4 Sub-theme Six: Summary	73
4.4.5 Sub-theme Seven: Data and process realignment	74
4.4.6 Sub-theme Seven: Summary	76
4.4.7 Sub-theme Eight: An organisational culture more amenable to sharing knowledge and change	76
4.4.8 Sub-theme Eight: Summary	78
4.4.9 Sub-theme Nine: ERP as a catalyst for on-going change	79
4.4.10 Sub-theme Nine: Summary	81
4.4.11 Key-theme three, Organisational change: Summary	81
4.5 Key Theme Four: People Change Considerations	82
4.5.1 Sub-theme Ten: Job protection	82
4.5.2 Summary: Sub-theme Ten	84
4.5.3 Sub-theme Eleven: What about end users?	84
4.5.4 Summary: Sub-theme Eleven.....	87
4.5.5 Sub-theme Twelve: Using people resources wisely.....	88
4.5.6 Summary: Sub-theme Twelve	89
4.5.7 Key-theme Four, People Change Considerations: Summary.....	90
Chapter 5 - Concluding commentary.....	92
5.1 The topic under research and the approach.....	92
5.2 Key themes.....	94
5.2.1 Institutional environment	94
5.2.2 Leadership	95
5.2.3 Change (organisation & people).....	96
5.3 Limitation of this research	99

5.3.1 Number of Interviewees	Error! Bookmark not defined.
5.4 Future research.....	99
5.4.1 Leadership Styles.....	100
5.4.2 An organisations Culture, relative to change	100
5.4.3 Multicultural Society	100
5.4.4 Private Organisations	101
5.5 Contribution and practical application of the research	101
5.6 Concluding Thoughts	102
References	104
Appendixes.....	139
Appendix A: Interview schedule	139
Appendix B: Documentation sheet	141
Appendix C: Template letter.....	142
Appendix D: Participant information sheet	144
Appendix E: Participant Consent form.....	147147
Appendix F: Ethics approval	148

List of Tables

Table 3.1: Outcome of approach to potential participants.....	36
Table 3.2: Interview organisations, contextual information.....	38
Table 3.3: Interview concepts.....	40
Table 4.1 Aggregate key & sub-themes.....	49
Table 4.2: Institutional motivated norms and behaviour.....	61
Table 5.1: Aggregate key and sub-themes.....	94

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.

Duncan Orr March 2022

Dedication

This thesis is dedicated to my two daughters. Even your father is still learning and undertaking tertiary education, just as you are embarking into the world post your high school education. I encourage you to further your education, to reach out and be everything you possibly can be. Anything worthwhile requires dedication, commitment and hard work.

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Intellectual property rights

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Ethics approval

This research was approved by the Auckland University of Technology Ethics Committee (AUTEC) on 10 June 2020.

AUTEC reference number: 20/52

Chapter 1 - Introduction

1.1 Background

This research seeks to provide insight into how perceived institutional forces impact ERP implementors when assimilating an ERP solution in a public sector organisation in New Zealand.

Enterprise Resource Planning (ERP) solutions are commercial software systems that enable the integration or amalgamation of transactional, management type data and business processes through an organisation (Markus & Tanis, 2000). The impetus for their adoption by organisations is to meet the existing and future challenges of an information era (Shah et al., 2011). Thus, increasing efficiency, reducing expenditure, improving customer service satisfaction and shareholder value, as the hallmarks of success, highlight the necessity to manage information and the interrelated business processes that support and make this information accessible (Ziemba & Oblak, 2013).

The application of information and automated process management in organisations now necessitates the support of information technology (IT) and appropriate systems (Taylor & Williams, 1991). ERP systems are integrated enterprise-wide systems in their scope and reach, automating core enterprise activities such as finance, supply chain management and human resources (Rasmy et al., 2005; Nah & Lau, 2001). Further, ERP systems facilitate the real time transfer of information among different parts of the organisation freely which subsequently helps end users, customers and management in making informed decisions. ERP capability is expected to reduce cost and process time cycle, therefore improving productivity as well as deriving customer service benefits (Shang & Seddon, 2002).

Various factors relevant to ERP implementation success or failure have been highlighted in past research (e.g. Soja, 2006; Dezdar & Ainin, 2011; Finney & Corbett, 2007). Most of this research has been carried out in developed countries and within private sector organisations (Moohebat et al., 2010). For example, research has looked at technology diffusion, such as that from Zhu et al., (2006) who looks at the extent the technology innovation has been adopted by a user base within an organisation. Here organisational (i.e. institutional, size, managerial obstacles) and environmental contexts (i.e. regulatory requirements, private businesses and some public sector) have been shown to act as subtle antecedents that either promote or encumber widespread assimilation of an ERP solution across an organisation (Zhu et al., 2006).

The assimilation of an ERP solution is every bit as much about 'change and transformation' as it is about an IT project (Napier et al., 2017). An ERP solution is only ever an enabler, supporting users, customers and people in the organisation to do things more effectively and efficiently in ways that attempt to provide a positive experience for customers both within and external to the organisation. So, at their heart, all ERP projects incorporate change management functions. Complications often arise when organisations place too much emphasis on the technology and not enough on change management aspects as part of their overall approach to the project (Jackson, 2016). Such decisions regarding organisational change management are the responsibility of a leadership team (Ziemba & Oblak, 2013). Leadership, or lack of when an organisation is going through significant change, such as when assimilating an ERP solution, quickly draws criticism and condemnation from stakeholders.

A more recent development has been the realisation by public sector entities (both at central and local government for example) that despite holding a monopoly position, they too are providing a service hence need to be more customer centric. Elements such as efficiency and the quality of the services that public sector organisations provide do matter. At the same time, public sector organisations are seen to have unique institutional forces such as their organisational culture and encounter more varied challenges due to their social obligations, complex legislative requirements and higher public expectancies (Kumar et al., 2002).

1.2 Research topic and approach

The aim of this study is to provide insight into how institutional forces may impact ERP implementors when assimilating an enterprise resource planning solution in a public sector organisation. The implementation of ERP systems is a complex technological exercise and organisational wide undertaking. It requires sound project management, knowledge of specific organisational processes and its environmental setting for example. While many private sector businesses have ERP systems experience (Sammon & Adam, 2010) there are major differences between private and public sector entities. It cannot therefore, be assumed that the same solutions, successfully adopted by private businesses will work in public sector organisations. Institutional disparities and the culture of public sector organisations are two impediments that can hinder the move to a new or replacement ERP system (Ziemba & Oblak, 2013). Further, public sector entities are perhaps not as agile to change when compared to private businesses, meaning the implementation of an ERP solution can be more

drawn out and challenging.

A case in point is the Auckland City Council, a public entity where their well-publicised ERP solution did not fully deliver on the intended outcomes (Jackson, 2016). The result was an IT project with a protracted timeline and consequently, a budgetary 'blow out'. This 'case' highlights how there are often more underlying multifaceted realities at play in public organisations and as such, the levels of risk. While similar 'blow outs' may happen in large private companies they may be better at 'silencing' such events. Conversely, when public institutions ERP solution projects go 'wrong', there is often more parties who are interested in the details and/or making a story out of what went amiss. This reflects the fact that public sector entities such as councils, are open to higher levels of scrutiny given their politicised nature and that taxpayer money, in contrast to private shareholder funds, have been deployed.

Importantly, while resulting budget blowouts are profoundly felt, as shown in the above example, they do not necessarily link to project failure. Notwithstanding that convoluting remediation phase(s) can be troubling for senior leadership, this pressure can be amplified by an amalgam of the following factors:

- the overall project could have been moving into a business-as-usual phase.
- an expectation of using lessons learned from previous projects to later projects.
- end-users have an expectation of the solution delivering publicised outcomes, and
- feel a responsibility to correct previous incorrectly part delivered deliverables.

(Krasner, 2000)

This study goes some way to fill a gap in what is known about how institutional forces impact ERP implementors, in particular the leadership of change when assimilating an ERP solution in a public sector organisation in Aotearoa New Zealand. To do so, the research uses a qualitative design incorporating semi-structured interviews with participants whose roles include for example, ERP project sponsors, ERP Project Managers, IT leaders and ERP consultants. Semi-structured interviews enable a systematic and comprehensive discussion while allowing for some flexibility on the experiences and reflections of seven 'experts' (Rowley, 2012; Gray, 2014; Eriksson & Kovalainen, 2016). Interviewees were either from, or had worked in public sector organisations that had or were at the time of the interview, implementing and/or assimilating ERP solutions. The rationale for employing a more descriptive interpretive research design was to hear interviewees voices to get a deeper insight and appreciation into the context of what they were sharing (Smythe, 2012).

1.3 Organisation of the thesis

This chapter started by giving context to the research; introducing how ERP solutions can reshape and benefit organisational processes. It then indicated some differences in the way in which private businesses vs public organisations operate. As a result, ERP implementation and assimilation are not always as clear and can be more complicated in public organisations. The not so long-ago recent ERP implementation at the Auckland City Council was given as an example. Leaders don't always appear to appreciate that the introduction and assimilation of ERP solutions is every bit as much about "change and transformation" as it is about an IT project.

Chapter 2 primarily presents a review of a selection of academic literature reflecting on the nature of ERP solutions. The rationale as to why organisations elect to implement ERP solutions and the "imposed" processes in these solutions, formulated by the ERP providers interpretation of what business processes best make sense to them. Institutional dimensions and leadership characteristics are discussed, particularly in the context of leading change. Insight is given into public sector operating nuances, with the review also examining what does assimilation really mean across an organisation.

The research methodology is discussed in Chapter 3. In sequence, the topics covered in this chapter are an overview of the issue and resulting research question; the research paradigm and approach; the research design; the research method including instruments, sampling, data collection, data analysis, and narrative approach; then finally, the issues of rigour, ethics, and reflexivity.

Chapter 4 first details and then discusses the key themes identified from amongst the participants' interviewed. These findings are focused at the macro organisational level. It is recognised that under each key theme there were what I phrase as sub-themes, associating with and interrelated under each key theme.

Chapter 5 is the concluding commentary for this research. There is a re-cap of the issue under investigation and the methodological approach. This is followed by a summary of the key themes identified throughout the research. The limitations of the study are acknowledged and areas for future research are outlined. A summary highlights the contribution and practical application of the research to governance practice. Finally, the chapter closes with some concluding thoughts on, if

organisations are to realise the full benefits from an ERP solution, then an appreciation of how perceived institutional forces may impact ERP implementers should be 'front of mind'.

Chapter 2 - Literature Review

2.1 Introduction

This chapter will present largely a review of a selection of academic literature covering particular aspects of ERP solutions. It is recognised that some topical areas are vast, i.e. leadership and organisational change. It is also recognised that leadership, organisational change and organisational culture have been topics of research for decades, but that this research is still of relevance today when contemplating introducing an ERP solution. Similarly, the literature review with regard to ERP solutions references research at a time when this technology was coming more widely on stream. In preparing this literature review I have focused primarily on literature that provides insight into unravelling different aspects of what leadership's relevance is concerning assimilation of an ERP solution, within a more politicized setting, across the public and government sector.

The first section of this literature review is organised with ERP solutions as the focus. The following section describes the institutionalisation theory framework and its fundamental elements. The following section provides a discussion on ERP implementors, leadership and managing change. At the same time, the following section emphasises that the contextual setting for my research is that of public sector organisations. Section 2.6 presents insight on assimilation and finally the closing section concludes with a summary of the literature, incorporating my formulated research constructs.

While this research is centred on New Zealand public sector organisations, much of this literature review on various topics comes from other countries and business settings. This reflects the lack of NZ specific research on many of the topics covered. In reality institutional forces on ERP implementors when assimilating an ERP solution are not limited to country or organisational sector type. However, a New Zealand audience was also selected in the context of taking advantage of access to people in New Zealand when interviewing about their experiences.

2.2 Enterprise Resource Planning Solutions

ERP stands for enterprise resource planning. According to Markus and Tanis (2000) ERP solutions are commercial software packages that enable the integration or bringing together of transactional, management orientated data and business processes through an organisation. While these solutions can be implemented in

modules (i.e. HR, finance), these modules activities / influence spans the scope of the entire organisation. These solutions are intended to confront and address the dilemmas associated with process fragmentation as they integrate and rationalise internal business processes by making available a suite of software modules that cover all (but perhaps, in particular, specialise in more “back of house”) business functions such as accounting and human resources and procurement for example Koch et al. (1999). The updating of information and transactions in these solutions occurs in real time and they are capable of operating across multiple business locations and sites (Stefanou, 2002).

Davenport (1998) identifies a number of motivations for businesses to implement ERP systems. These reasons may include for example a desire to up-date business processes and to reshape how they are delivered across the organisation. ERP solutions may also help resolve the challenges presented by a collection of supposedly disconnected applications that do not communicate either sufficiently or at all with each other. This also has the benefit, that should bespoke and detached information technology solutions be operated by “siloes” and “authoritarian” type business areas, then given ERP’s organisational wide focus such business areas can be accommodated (Kumar et al., 2002).

As the name suggests ERP solutions are business-wide in magnitude and range of influence. Markus and Tanis (2000) indicate that the degree of organisational disruption when implementing can be quite significant and substantial, as business areas grapple with the organisational transformation and transition to the new solution and the up-dated business-wide processes. ERP solutions create a process-centric view across generally functionally organised business areas (Kumar et al., 2002). The introduction of an ERP solution can communicate that the business has made a strategic decision to standardise, automate and transform business processes. Davenport (1998) notes that tension is probable in leading such business areas towards adopting not only the ERP solution but also standard organisational wide business processes (and not a continuation of their customised processes). An integrated business solution that transacts elementary business information used in principle by all business areas and for the principal benefit of an organisation should always remain the objective (Fernandez et al., 2017).

However, the phase after which an ERP solution is technically implemented and operational but not yet integrated across all business areas is often laden with barriers in which end users hinder adoption of the new solution. The end users of an ERP solution may not fully comprehend the advantages to be gained. Instead, according

to Markus and Tanis (2000) they may create and re-enact workarounds (i.e. a continuation of their processes or processes which “sit on the side”). Unless confronted, and at times this often requires leadership to get involved to make the required alignments, these workarounds according to Tyre and Orlikowski (1994) repeatedly continue for some time, even though from a business standpoint they move into what is often later acknowledged as being ineffective practice for the business. For example, Boudreau and Robey (2001) reveal how end users in a tertiary education provider continued to maintain the “shadow” processes and systems and how critical administrative staff found it problematic to unlearn their legacy systems after the implementation of a business-wide ERP solution. End users get familiar with what they know and change may create uncertainty. Furthermore, without end users being encouraged to adapt and adjust their behaviour to align with the new solution, the business may persist to unofficially rely on consultants or experts for solving such blockages and incur extended project costs in the process (Hirt & Swanson, 2001).

Indeed, if top executives are not all fully committed to assimilating the ERP systems within their respective business areas, particularly when collectively they have publicised their support to satisfy shareholder expectations, the implementation timeframe can be protracted and significantly drawn out (Chatterjee et al., 2002b). Similarly Liang et al. (2007) advises that leadership needs to engage with multiple interests, personalities and make prompt decisions. To not do so can mean the assimilation of the ERP solution will slow down or risks on occasions of even being stopped altogether. In the severest of circumstances, ERP solutions may be terminated in the post-implementation phase if not correctly assimilated and particularly if the significance of material issues (i.e. substantial cost over-runs) overwhelming (Davenport, 1998).

ERP assimilation will typically test businesses leadership in the ERP post-implementation phase (Liang et al., 2007). Senior leadership should expect to be challenged and encounter numerous instances where they will need to balance how the solution should work instead of how it is allowed to work under which the organisation naturally orientates itself to seek resolutions from its institutional surroundings. While resolutions that best fit the culture and underlying “power” models of the business environment may have the least disruption, such decisions are inevitably often shorter term in longevity (Liang et al., 2007).

Embedded Processes

ERP solutions have their own proprietary impressed process and rational integrated into the solution, formulated on the ERP providers interpretation of what business

processes makes sense to them. If you like, their own business prescribed processes. These business processes will have been progressed from customer feedback and research. However, more often than not, this does not mean that upon implementing the ERP solution into a business, these impressed processes will automatically transfer themselves into the practices of the adopting organisation (Ferreira & Otley, 2009; Cuganesan et al., 2012). Research has demonstrated that this is because the rationale inscribed in the ERP can conflict with the existing legacy institutional logic, structures, and practices of the adopting organisation (Parker et al., 2008).

Nevertheless, and when reflecting on the time, money and resources that are put into ERP implementations and then assimilations, most organisations generally do “muddle” their way ‘through’ with their ERP implementation and eventually contrive a “working information ‘system’ (Burns & Stalker, 1961). This often relies on considerable modifications with what is felt with at the time as necessary to make the solution more useable for the adopting business (Alsharari, 2016). This customisation suggests that the process rational impressed in the ERP solution has been adapted in some way to blend and integrate certain local beliefs and preferred procedures (Pratt, 2009). Thus, an ERP implementation is often typified as an encounter between the ERP impressed institutional prescribed logic of the provider and the legacy institutional forces and reason embedded in the existing adopting organisation.

Drawing on the literature on institutional theory (e.g. Powell & DiMaggio, 1991; Zucker, 1977,1987; Grosain, 2014) institutional forces get reflected in the way in which the ERP is configured and assimilated. It is to these institutional aspects that this literature review now turns.

2.3 Institutionalisation

Institutionalisation refers to the rule-like social fact quality of an organised pattern of action (Zucker, 1977) that leads to an “infusion of value beyond the technical requirements of the task on hand” (Selznick, 1957 p.271). Institutional theory has been widely used in the social science and management literature (Mizruchi & Fein, 1999) and has recently begun to be applied in information service research. For example, observed evidence of mimetic behaviour has been found in numerous contexts such as website adoption (e.g. Flanagin, 2000), electronic data interchange adoption (e.g. Teo et al., 2003b), information technology product choice (e.g. Tingling & Parent, 2002), and information technology budgeting decisions (e.g. Hu & Quan, 2006). Hu et al. (2006) believe that coercive and normative isomorphic mechanisms occur in organisational information security practices and policies.

Institutional Isomorphism and IT Assimilation

Institutional theory is particularly important when considering the influence of governmental, legislative, and professional bodies on organisational behaviour when assimilating an ERP solution. In contrast to transaction cost economics (Williamson 1975, 1981) and resource dependence theory (Pfeffer & Salancik, 1978), institutional theory suggests that underlying behavioural changes in organisations are driven less by external forces including competition and the aspiration for efficiency, which might otherwise be fundamental drivers in a private business, but rather more by the need for organisational legitimacy (Liang et al., 2007). That is the harmony an organisation seeks to establish between the social values they associate with or believe important in undertaking their activities and the norms of acceptable behaviour in the larger social organisation sector. This drive for legitimacy promotes the progressions of institutionalisation which over time makes organisations, especially public organisations, more comparable without guiding them to become more efficient and effective, giving rise to institutional isomorphism (DiMaggio & Powell, 1983). DiMaggio and Powell (1983) go on to identify three basic types of institutional isomorphism, coercive, mimetic, and normative, which reflect three analytically distinct processes of institutionalisation.

Coercive isomorphism results when organisations acquiesce to “the formal and informal external pressures exerted upon them by other organisations upon which they are dependent, and the cultural expectations in the society within which their organisation functions” (DiMaggio & Powell, 1983, p. 150).

Such pressures may be felt as guidelines, persuasions, or invitations to join a general consensus. DiMaggio and Powell (1983) mention examples where in some circumstances organisational change is a direct response to governmental mandates: for example manufacturers adopting new pollution control technologies to conform to environmental regulations; non-profits maintain accounts, and hire accountants in order to meet tax law requirements; and organisations employ affirmative-action officers to fend off allegations of discrimination (DiMaggio & Powell, 1983)

Coercive pressures invariably arise from procedures and policies stipulated by governmental requirements, from authorities in the same sector and professional networks and associations, or in the form of competitive necessity within an industry or market segment (Gular et al. ,2002; Mezas, 1990; Tolbert & Zucker, 1983).

Mimetic isomorphism results as organisations react to uncertainty by imitating the

actions of other organisations, whether correct or otherwise. When technologies are badly understood, for example, when the ERP assimilation milestones are ambiguous or non-existent, or when a changing environment creates uncertainty, organisations may replicate themselves on other organisations believed to be legitimate or competent in the services they provide (DiMaggio & Powell, 1983).

Uncertainty can also be a powerful force in that it may encourage simulating the desired actions partially at a time when some staff are not completely won over to new procedures. Therefore, providing them with latitude to perform their own things “on the side” in regard to their preferred interpretation of the new solution. When organisational technologies are badly comprehended (March & Olsen, 1976), when leadership doesn’t “anchor down” requirements including holding people to account for their behaviour, or when the environment manifests uncertainty, organisations may again replicate themselves on other organisations.

Therefore, impersonation is often associated with the bandwagon effect, that is people going off and doing their own thing regardless and/ or ignoring the desired way to perform the task (Staw & Epstein, 2000). Mimetic isomorphism can impact on the decision-making abilities of leadership and is observed in non-comparable processes (Haveman, 1993; Staw & Epstein, 2000).

Normative isomorphism occurs typically by so called professionals of a group who are often in the hierarchy of a business, who define the conditions and procedures of their work to control the production and orientation of processes of other member professionals, so as to establish a cognitive base and legitimisation for their occupational autonomy” (DiMaggio & Powell, 1983, p.152). Their intended efforts are to legitimise their preferred norms, rules, and logics, then embed them within the organisation.

By occupying similar positions across varied organisations, these individuals display a similar dispositions and views that are orientated to override the traditions and control mechanisms, such as policies and procedures, to facilitate the adoption of professional values and otherwise shape distinctive organisational behaviours.

How can institutional forces influence ERP assimilation?

Institutionalisation may be driven by an individual, collective group or respected authorities views of the means in which the business or sector should operate. Zucker (1987) mentions that two parallel views of institutionalisation can exist. Firstly, the organisation as the institution and then secondly, the working environment of the

institution. With respect to the first view the occurrence of institutionalisation generates predictability of events by permitting the continuation of distinctive cultural patterns and behaviour unique to that institution(s) attitudes, viewpoints, cultural norms, values and social structures that transcend individuals to contrive a form of understanding by employees (Gosian, 2004). Perhaps nowhere is this more antagonising than within public sector organisations, where it's not uncommon to find staff who may equate their value to the organisation as being tied in meaningful ways to their understanding of the history of 'how things have always been done' (Napier et al., 2017, p. 134).

Institutionalisation could be seen to provide gains to an organisation due to diminished information being required because expectations and behaviour are stable (Weick, 1976). Institutional forces may be adopted as practises and policies that can drive organisations to gain a competitive edge and advance their legitimacy in certain markets (Gopal et al., 2005). Yet other institutional forces in organisations may also result from the presence of sanctioned professional authorities and groups of similarly qualified people (DiMaggio & Powell, 1983). These forces are not necessarily enforced by any one authority or individual but are founded on the common emergence of strong norms and accepted beliefs as viewed within by the specific industry segment. Institutional pressure may be imposed by laws, public views at the time, opinions of important constituents and recognised authorities (Gopal et al., 2005).

Curran et al. (1996) note that once discrete organisations in the same business industry sector are forced to resemble other organisation's in the same industry by the state, competitive prospects and/or professional bodies for example, influential forces emerge that guide them to evolve and become more synchronised in how they operate their business operations relative to each other.

A differing view on institutional theory is presented by Zucker (1987). This view acknowledges that organisations must contend for political influence and institutional authority to warrant continuation of operating in the way in which they currently do whether good or indifferent. Kling and Scacchi (1982) comment that information systems such as ERP solutions, are exposed to institutional forces such as political interests, structural restrictions, and human interpretation of their subjective view of how situations might be slanted to best fit for them. Dominant interests are anticipated to be reflected in the configuration and functioning of the technology through favoured processes, based on how the information system project team consider institutional forces and the prevailing circumstances in the organisation at the time (Latour, 1992).

In addition to this Kling and Iacono (1989) point out that institutional characteristics in respect to a computer-based information system may effectively support routine activities, but may also suppress innovation and productivity because of the administrative burden, the people and effort involved in effecting organisational change.

Gosain (2004) cautions against ERP solutions becoming objects and carriers of institution forces imposed on organisations by what he refers to as “actors”. Actors are those who have a particular interest, then leverage resources and engage people to create new institutional norms or to incrementally transform present ones. Fligstein (1987); Brint and Karabel (1991), advise that gaining insight into institutional shifts is important so as to understand how past forces, leadership styles and cultural transformations held power and control compared to where they now are. Similarly, Lewin (1951) believed that one must consider the power of the underlying forces to determine behaviour. As these patterns of power and authority will more than likely impact the way in which these actors bring an organisation around to optimise the benefits of the ERP solution post-implementation (Thornton, 2004). A central premise of institutional theory is that actors and their interests are themselves institutionally constructed (Powell & DiMaggio, 1991). Similarly, Xue et al. (2004); Kwahk and Ahn (2009) advise that the use of ERP systems is shaped, designed, constructed, and modified by the interests, values, and assumptions of a wide variety of organisational stakeholders.

Any kind of organisational change initiative is going to have obstacles and the individual journeys of people will proceed at different rates. The intended and the actual working environment and the way in which they people make sense of this may become an irrefutable and non-readily movable aspect of their world at work that drives their sense making (Gosain, 2004). Is it possible that this might be attributable to people's desire to maintain degrees of comfort in familiar processes and protection for their job roles? Does recognition that institutional elements and forces can constrain change signal leadership to be wary of such before implementing/assimilating their ERP solution?

Several scholars argue that leadership support and championing the ERP cause is seen as the most important factor of ERP project success (e.g. Bingi et al., 1999; Aladwani, 2001; Bradford & Florin, 2003; Umble et al., 2003; Somers & Nelson, 2004; Ngai et al., 2008). Caution and discernment need to be exercised by leadership so that a long view of how the organisation should operate overall is preserved and not

overridden by vying unhelpful institutional interests present at the time. Leadership support and commitment is not just limited to through the project implementation phase; but rather once implemented leadership should encourage system adoption and commitment of use (i.e. role modelling) (Pishdad & Haider, 2013). It is now to the importance of leadership that this literature review now turns. Positioning the organisation to maximise the benefits of adopting the ERP solution through different phases of ERP evolution and assimilation is critical.

2.4 ERP Implementors

It is recognised that ERP implementors could apply to a range of people and roles. This research study focuses primarily on the role of leadership when assimilating an ERP solution. It is this focus that provides the basis for the next section of the literature review.

Leadership

Assimilating an enterprise-wide solution requires an enterprise or business-wide approach to incorporate practises across the organisation. It would be reasonable to expect that in an effective business, employees, board members, shareholders and other stakeholders expect their business leaders offer direction, provide long-term strategic initiatives and “drive” to make things happen (Canals, 2014). Glamuzina (2015) defines leadership as a “social interactive process between the leader and their disciples, in which leaders through actions providing business direction, motivation and engage people, then, influence through people the progression and achievement of organisational objectives” (p. 89). Similarly, Alabduljader (2012) asserts that leadership acts as a process of influencing other’s behaviour and directing them to achieve goals. Integral to an ERP solution assimilation is leadership that is action-driven, introducing change and transformation based on values, ideals and vision (Day & Antoniakakis, 2012).

A broad base of literature provides theoretical support for the role of senior leadership in driving IT usage within organisations (Reich & Benbasat, 1990). Prior studies also demonstrate that formal monitoring of progress (e.g. Garrity, 1963) and incentives (e.g. Bhattacharjee, 1996) result in increased usage of IT. Where visible leadership and assertive directives are not used to prepare an organisation for the ERP post-implementation phase, then it is possible that outcomes may vary on a continuum from end users and other stakeholders facing a crisis of confidence in their leaders ability to take command of situations, to affected employees frustratingly muddling their way through in the hope of eventually creating a working information solution

(Burns & Stalker, 1961).

The words of leader and leadership are often used interchangeably but should be differentiated. Clegg et al. (2008) define leaders relative to what they do: leading people as prominent figures, inspiring people as persuaders and facilitators of ideas and initiatives. The focus here is upon the person's personal attributes in the position as a person who leads. Whereas leadership is more about the process of directing, aligning, motivating, engaging and inspiring staff towards fulfilling stated organisational goals (Clegg et al., 2008, p.662). Perhaps similar to that of a coach or mentor, leadership places greater emphasis upon processes of tangible actions, the 'how' to move the collective towards goals. Leadership may be carried out by a group (i.e. senior managers/ executives) or by a person (i.e. CEO) (Hughes, 2010).

The influential work of Kotter (1996, p.26) reinforced the importance of good leadership for a successful organisational transformation. Kotter (1996) saw 70 to 90 per cent of success can be attributed to leadership and an estimated 10 to 30 per cent to management. He cautioned that by concentrating upon managing change risked overlooking the significance of leading change, in other words, the process. In 1996 Kotter addressed his concerns by using eight seemingly prescriptive steps outlined in his book *Leading Change*:

- a) Creating an appreciation of the need for urgency;
- b) Establishing a guiding alliance;
- c) Cultivating a vision and strategy;
- d) Conveying the change vision;
- e) Sanctioning wide-reaching action;
- f) Producing short term wins;
- g) Firming up gains and generating more change; &
- h) Securing new approaches by anchoring them back into the culture.

Kotter contended that leading change was framed by a multistep process that could neither be completed and effective without good quality leadership. Further, an associate of his, Caldwell (2003) argued that executives / senior leaders were best positioned to make permanent envisioned organisational change, when they sponsor the strategic change. Change leadership was about crafting a vision of incremental change initiatives, whereas change management was more concerned with transferring the vision into actions and processes. These two aspects are different and yet complimentary (Hughes, 2010). This agrees with past research which affirms that senior leadership needs to recognise their role in accepting the responsibility for

the implementation of the technical solution and the impact their leadership has on organisational changes required to fully assimilate the ERP solution (Leonard-Barton, 1988).

On the premise that organisational change leaders are executives and/or senior leaders, it would be reasonable to expect that the CEO primarily but also those with senior leadership responsibilities be charged with undertaking business wide change associated with assimilating an ERP solution. Liang et al. (2007) support this view in that organisational leadership executives are the primary business function that should be entrusted with changing organisations norms and re-establishing policies and processes based on their perceptions of the necessary processes and practices to best position an organisation for ERP assimilation. Similarly, Purvis et al. (2001) concur that the norms, values, and culture engendered by the top management need to permeate to the individual level in the form of procedures, rules, regulations, and routines guide individual behaviour.

A human resource viewpoint insinuates that individuals are relatively free to patronage technologies in varied ways. They can use the newly implemented ERP solution minimally, support it individually or collaboratively, and create ways of using the solution which produce innovative and unexpected outcomes. Liang et al. (2007) mention that their support may not always match the desired behaviour or benefits sought by the organisation. Tijs and Driessen (1986) claim that this situation can be intensified because of the perceived need to implement significant customisation both intentionally and unintentionally so that the ERP solution will “fit” the business area needs and / or the prevailing culture and environment of the organisation. Doll and Vonderembse (1987) advise that it’s especially critical for senior leadership to forge partnerships among functional business area executives prior to implementing large scale ERP solutions. Leadership not only needs to sell the vision on the use of the solution going forward to all employees and business areas, but also be the impetus to drive compliance and alignment to using the solution across the entire organisation.

Senior leadership’s role is however, not complete in setting vision for an ERP solution and when the ERP solution is implemented (Liang et al., 2007). The obstacles that are encountered along the way in assimilating the solution and changing behavior is not for management and others to figure out and overcome either. In the context of a small working group this might be considered satisfactory, but in the context of business wide change across a large organisation it’s senior leaders who need to get actively involved in aligning the different business sectors. Kotter’s (1996) eighth step which was “anchoring new approaches in the culture”. This is paramount for effective

and lasting assimilation benefits and should be viewed as senior leadership responsibility, not managements (Hughes, 2010).

Leading / Managing Change

Effective leaders within the implementation process must be able to blend strong visionary skills with effective management into one integrated whole (Morden, 1997). Organisational leadership and change go hand in hand, and one is nothing without the other (Burns & Hughes, 2018, p. 142). As senior leaders have boundary traversing roles they have been observed to significantly affect IT project success by recognising when to bring in external knowledge and integrate internal know how of business operations Mitchell (2006). In the institutional environment, while senior leadership may occasionally be influenced by external consultants they generally tend to be influenced by 'others' choices (or preferences) in that organisation and then further to this by what others in that institution/industry of IT products or services use (i.e., the environment as the institution). Where able to they would therefore tend to, or at least have an interest in benchmarking the business benefits from their ERP usage against those derived by other organisations in the same/ similar sector (Liang et al., 2007).

Hughes (2010) describes change management as a process of leadership and direction to bring about organisational transformation, especially about the human resource aspects and overcoming resistance to change. Practices of educating, encouraging, aligning and empowering are all strategies of effective change leadership (Stewart, 2000). ERP implementations are essentially a foundation for organisational change and as such change requires effectual change leadership practices (Stewart, 2000). ERP assimilations is where effectual change leadership practices will no doubt be tested. Where previously enshrined organisational practices are aligned and self-interests sacrificed for the benefit of the organisation (Bass, 1985). This requires leadership to have an appetite for organisational process redesign to position the organisation for real business operational performance improvement (Stewart, 2000, p.42). Nevertheless, how well senior leadership rise to this occasion and fulfil this opportunity may present us with an institutional "lens" through which organisational leadership and the resulting behaviour of staff in assimilating the ERP solution can be relatively comprehended (Liang et al., 2007).

Does history play a role in managing change?

On one hand, it could be argued that history may have little to do with the forward-looking application of managing change. On the other hand, and in particular recognising the degree of change that ERP assimilation requires there could foreseeably be much practical merit in reflecting upon history as part of envisioning

the future looking theatre of managing change. Cummings (2002) reveals that understanding organisational histories and traditions are critical. One question to be asked is, are the same organisational leaders still present? These are all critical components of assimilating ERP solutions across an organisation and suggest that it is preferable and more productive to work with the past than against. While reviewing how organisational change has evolved in particular ways could be argued as prudent, Kotter (1996) reasons, that people who cling to the past are less happy than those who embrace change and move positively forward in the future.

While this might be arguably true, too many leaders slide into the trap of thinking that their change leadership has no past, or at least that nothing can be learned about change leadership today by studying history (Witzel, 2003, p.13). Any account of change leadership must respect the past realities and perceptions, by attempting to address the past, to thus allow people to move on and therefore position the business for forward thinking momentum.

The one best way conundrum

The study of leading in general and change leadership in particular disclosures the many dependent variables that influence and impact the process of change leadership (Hughes, 2010). For example, politically-charged leaders who place their self-interest as the primary objective, with more of a “my way or the highway” type attitude will look very different from the change leadership that emanates from leaders who place the long-term interests of the business first. Change leadership in a public organisation will look very different from managing change in a small non-for-profit organisation. This line of reasoning questions how organisational change is affected and the one best approach to change leadership. The “opacities” that typify change leadership (Walton & Russell, 2004, p.143) in more complex organisations can be quite different when contrasting the tension between “change leadership that places employee’s well-being of up most importance and change leadership which places more emphasise on the business needs only”.

Is organisational change a “thing” or a “process”?

Change management portrays organisational change as something more resembling a destination, something with clear boundaries (Hughes, 2010). Ha and Ahn (2014) also mention that basic underlying premise of most studies is that the initial implementation of the ERP solution largely determines its success. However, Moon (2007) and Grabski et al. (2011) argue that most of these studies focus on the implementation activities and tend to ignore the role of the post-implementation stage that can either improve or impair the performance of ERP regardless of how

successful the initial implementation was. The ERP assimilation phase is likely to take years, to position the business with incremental improvements to their business operations.

Overcoming resistance to change.

Kotter (1995, p.60) warns leaders and managers against the risk of “playing it too safe” and noted that “when the urgency rate and or requirement for compliance is not propelled with sufficient forward motion, ERP assimilation risks being impaired. As one might envisage however evidence is varied regarding the optimal pace for integrating change. Where typical aspects to consider might include the industry, culture and stakeholder group(s) expectations for example. Some specialists promote the need to adopt change progressively or incrementally on a lesser scale to generate momentum and demonstrate the benefits of change (Armenakis et al., 1999; Cohen & Eimicke, 1994; Greiner, 1967; Kotter, 1995; Rainey & Rainey, 1986).

Others such as Tushman and Romanelli (1985) have argued that a swift pace of change positions the organisation better to overcome inertia and resistance. Recognising that such change should not be superficial as this often does not generate adequate force to bring about necessary organisational transformation (Meyers et al., 1996; Mohrman & Lawler, 1983; Nadler & Nadler, 1998; Tichy, 1983).

Golembiewski (1985) stresses the ineffectiveness of changing attitudes and behaviours toward collaboration and overall business process efficiency if the organisational structure remains strictly hierarchical and siloed. Robertson and Seneviratne's (1995) study suggest that team orientation may be more challenging to achieve in public than in the private sector due to agents in the public sector exercising less responsibility for businesses areas to work as an integrated business entirety than their private sector counterparts. This statement leads the next section examining public organisational settings, where some distinctions are brought to the fore.

End Users.

For successful innovation transformation Day and Jung (2000) have stated that each employee that intends to use the ERP solution and therefore end user, must comprehend and identify with the personal benefits of the new ERP solution. Leadership should be prepared in credible ways to questions from end users, such as “What's in it for me?”. To inspire authentic belief and in doing so provide assurance to end users, changing to the ERP solution must withstand robust scrutiny from the most cynical end user right from the start (Day & Jung, 2000).

However, it is reported that end users are generally sceptical about the introduction of the 'complex' ERP solution, which is why it is often rejected or under-utilised (Amoako-Gyampah 2004). Researchers have identified user acceptance related factors as critical risk factors for the ERP implementation projects (Bueno & Salmeron, 2008; Luo & Strong, 2004; Migdadi, 2009).

It is important to note that decisions associated with the ERP solution implementation are owned by senior leadership (Glomer et al., 1999) and that most of the end users are involved merely at the later phases of the project such as training phase (Wang & Chen, 2006). Interestingly, Albadri and Adballah (2009) say that most often leadership view ERP projects failures due to technical aspects. In reality they note, 50% of ERP failures can be attributed to people related concerns such as resistance to change, insufficient appropriate training, awareness of the value of the ERP solution, and / or lack of understanding the organisational culture. The organisational culture is probably the most difficult barrier in the implementation of a new ERP solution, since it involves a complex relationship between end user's personal values, preferences, skills, the organisations accepted behaviour and the business processes of the ERP solution (Albadri & Adballah, 2009).

In the context of institutional forces impacting ERP implementers when assimilating an ERP solution in a public sector organisation, some sub questions worth exploring might include: are the organisational cultures in public sector organisations different, do institutional forces in these public sector organisations influence how an organisational culture is shaped?

2.5 Public Sector Organisations

Assimilating ERP solutions in public sector organisation can prove to be challenging. Recognising that public sector organisations often have a unique business culture and encounter more varied challenges due to their social obligations, complex legislative requirements and higher public expectancies (Kumar et al., 2002). Further to this, holding senior leaders to account in public entities can become more "blurred" as they do not always appear to be held to the same leading standards of performance and accountability as private businesses (Borins, 2002).

Wagner and Antonucci (2004) advise that the organisational structure of governmental agencies is inclined to be more complex, with a higher probability of more departments and directorates, comprising of more middle management and often each with a tendency to create their approach to observing business processes

and rules. This alleged more complex management system intensifies the possibility of fragmented power systems and political agendas which exaggerates the challenge in obtaining management commitment (Watson et. al., 2003; Chang et al., 2001).

Organisational complexity in public organisations also affects the ability to bring people together. Too many viewpoints and people adapting to a propensity of doing their own thing can prevail. More complexity generally makes it more difficult to formulate a common organisational process and identify an organisational process owner (Blick et al., 2000). Once identified, educating the process owners and agreeing on a business-wide viewpoint tends to be prolonged (Blick et al., 2000). People who study organisational behaviour have noted that public sector organisations are usually large officialdoms structured to achieve their core tasks with stability and consistency, and therefore resist change or disruption of these tasks (Wilson, 1989, p. 218-26).

It is recognised that organisations change and that efforts have been made to reform and apply fundamental management concepts from the private sectors into the public sectors (Rosacker & Rosacker, 2010). While the findings of the private sector have been slow to be recognised by the public sector organisations, over more recent years public sector organisations are starting to catch up (Thomas & Jajodia, 2004). In support of this Wagner and Antonucci (2009) state that in the public sector governments across many countries have over more recent years intensified their efforts to modernise their business processes by using various technologies.

The initial use of ERP was to improve the operating functions of manufacturing companies (Rosacker & Rosacker, 2010). Due to the significant benefits gained from the application of these IT solutions, both the private and public sectors have transitioned to implementing such solutions within their organisations. ERP systems are the centre of technology enablers within public organisations (Wagner & Antonucci, 2009). ERP solutions are also considered an answer to the growing requirements for government authorities to store and access necessary information required within the public sector (Spano et al., 2009; Céu Alves & Matos, 2013). Some public-sector organisations have adopted a generalised private-sector ERP implementation approach, then customised and personalised it to the public-sector environment (Wagner & Antonucci, 2009).

Davenport (1989) notes how ERP systems have aided public organisations in helping to reshape public organisations. ERP systems promise to solve and alleviate the challenges posed by fragmented business areas, together with disconnected and

uncoordinated IT applications, as they present an enterprise-wide solution. The rapid advancement of technology and applications has provided opportunities for firms to streamline their operations and transform their business.

The transfer of processes from the private to public sector organisations should not occur instinctively (Uwizeyemungu & Raymond, 2005). In the public sector it is more widely accepted that change is not as actively embraced (Borins, 2002). When considering ERP implementations between the public and private sectors there are more than a few areas indicated in the literature that seem to differentiate between the two sectors. First and of notable dissimilarity is that the culture has been suggested as an area of a major difference between public and private organisations (Wagner & Antonucci, 2004).

Organisational Culture

Schein (2010) describes organisational culture as a set of values, viewpoints and expectations that are communal among members of an organisation, that influence the conduct of organisational staff, as members rely on these viewpoints and values to guide their choices and behaviours.

An organisation's existing culture is likely to have prominent effects on the planning, implementation and assimilation of ERP solutions (Stewart, 2000, p.42). It affects how the operationalised solution meets the originally intended desired project outcome. Organisational culture can affect users' learning and assimilation behaviour in the post ERP implementation environment and thus impact the assimilation of the ERP solution across the organisation (Shao et al., 2013). According to Schein, culture is the most difficult organisational attributes to change, outlasting organisational products, services, founders and leadership and all other physical attributes of the organisation. A strong organisational culture has normally been seen as a conservative force. A strong culture implies improved performance whereas a weak culture can only be described as non-conducive to performance (Mallak et al., 2003).

Hence, it is recommended that pre-implementation of the intended ERP solution a program of work is undertaken to reflect and in instances refocus the organisational culture (Bai & Cheng, 2010). This should be seen as a good investment to help prepare, promote changes to users' attitude and behaviour for the benefit of the organisation long term (Bai & Cheng, 2010). In the context of an ERP solution, Liu et al. (2011) propose that organisations create and nurture a learning culture from both past and present events that might have a material effect on ERP assimilation. Ke and Wei (2008) surmise that ERP success is positively associated with the sharing of

power, participative behaviour and collective decision making, together with a transformative leadership vision. ERP assimilation requires both coordination and adaption of the revised ERP inscribed processes but also often alignment of now past/previous organisational processes that have now been updated. As organisational users come to terms with the updated and/or “corrected” organisational ERP processes, two possible situations may occur say Bai and Cheng (2010), that is: (1) the original organisational culture supports the characteristics of the newly implemented ERP, facilitating good assimilation within a reasonable time; (2) there is a conflict between the original organisational culture and the adoption of ERP, which unless the organisation culture adapts the resulting assimilation will likely end up being prolonged over a sustained period (Dong et al., 2009).

Findings supported by Cooper (1994), likewise suggest that when the ERP system conflicts with an organisations culture, the implementation will be resisted in one of two ways. Either the system will be rejected, or it will be modified so processes maintain alignment with the existing culture. Wei and Ke (2008, p.45) say that an intentional modification of processes that consider costs and resources may enviably have to be considered. However, unintentional bypassing or “work arounds” deviating from intended processes where aspects of the overall anticipated ERP benefits start to unravel away is undesirable.

When an organisations culture is not aligned across all business areas, people have different perceptions and understandings of the desired organisational changes, which in turn affects employees accepting change (Lau & Woodman, 1995). Bliss (1999) concurs with this point of view and go on to mention further that the “preferred” organisational culture and the “actual” organisational culture are all too often very much different. It is vital to understand how these dissimilarities may affect ERP implementation processes. It is recognised that organisational culture in innovation acceptance is known to be key factor for the success of ERP projects as ERP projects involve organisational wide changes (Wei & Ke, 2008, p.45) . Stewart (2000) believes that elements that regularly cause challenges are related to user empowerment and user accountability. An ERP solution where the organisational culture is aligned provides employees with a shared framework to position the organisation for changes. However, from the evidence presented above from selected academic literature, when there is a conflict between the original organisational culture and the adoption of ERP it's probable that assimilation if it occurs will end up being prolonged and over a sustained period of time.

2.6 Assimilation

In this research the definition of assimilation that I have adopted is the extent to which the use of technology is diffused across the organisational projects or work processes and becomes routinised in the activities of those projects and processes (Tornatzky & Klein, 1982; Cooper & Zmud, 1990; Fichman & Kemerer, 1997). Pishdad and Haider (2013) concur and refer to ERP assimilation as the diffusion of ERP usage across organisational business processes and the routinisation of activities within these processes. Similarly, Zhu et al. (2006) suggest that assimilation encompasses initiation, adoption, and routinisation as the core elements of IT assimilation process.

ERP implementation typically replaces legacy information systems in an organisation. For the new ERP solution assimilation to occur there is a requirement for the existing legacy systems to be “deinstitutionalised” (Pishdad & Haider, 2013). Deinstitutionalisation is a reversal, erosion of existing procedures attached to the previous legacy system and is a necessary consideration as it reinforces leadership’s commitment that the business is moving to a new ERP solution (Seal, 2003; Siti-Nabiha & Scapens, 2005). This is synonymous with the first step of Lewin’s approach to managing change of which the first step is to ‘unfreeze’ existing conditions (Lewin, 1951).

Markus and Tanis (2000) advise that after the ERP implementation stage the focus is soon directed to the “shakedown” and “continuous improvement” stages of the ERP life cycle model where the intention is directed to assimilate the technical features of the ERP solution into the business practices, to normalise these practices so that the expected benefits of ERP have an actual chance of being realised. This is synonymous with the third step of Lewin’s approach to managing change of which the third step is to ‘refreeze’ new conditions/processes (Lewin, 1951).

Up until implementation, a project manager often supervises the progression of the ERP solution. After this, the project manager role is typically disestablished. The project manager will have largely focused on the technical requirements, whereas ERP assimilation cannot be treated as separate occurrence, it is intertwined within the social/cultural contexts of the organisation and is dependent on the perceptions of the ERP stakeholders (Kwahk & Ahn, 2009). After implementing the ERP solution organisations risk falling into what Fichman and Kemerer (1999) term as an “assimilation gap”, which is the lag between widespread use of ERP system and the adoption decision. This chasm may occur because of inadequate leadership motivation to drive ERP adoption and/or the organisation’s and its staff’s knowledge to leverage the ERP solution (Pishdad & Haider, 2013). Law (2004) advises that the effects of social factors, organisational setting, and culture also play an important role

in the processes involved in the introduction of technology in an organisation.

The accepted concept of implementation success is commonly founded upon the direct results/benefits of the project being delivered. These include such as completion within budget, finishing on time, and the solution is up and operational (Ram et al., 2013). However, when assimilating ERP solutions into organisations a considerably wider reaching and more comprehensive gauge of an ERP projects success needs to be considered. The ERP solution implementation when looking back retrospectively, is but one of the earlier milestones, whereas an appropriate explanation of ERP solution success should go much wider, further and deeper in regard to the solution being embraced by the business (Armstrong & Sambamurthy, 1999; Purvis et al., 2001; Zmud & Apple 1992).

Gallivan (2001) divided the concept of assimilation into two sub-constructs: breadth and depth. Breadth refers to the number of users and percentage of business processes that are using the technology. Depth explains how extensively the users use the technology and its vertical impact on the business activities. Ram et al. (2013) note how an overall organisational adoption construct configured around the assimilation of the ERP solution back into the business is conceivably more appropriate. Assimilation measures that plausibly encompass enhancements in the operational, financial, and experienced customer services elements might want to be considered for example. Ram et al. (2013) argue that ERP project success might conceivably be based on multiple measurement dimensions: a current 'implementation success' construct (1), a 3 to 5-year overall organisational assimilation construct (2) and then a best business practice/ learning organisation contrast (3), with the former transpiring first and often having a definite impact on the subsequent success of future phases.

Accomplishing implementation and the assimilation of an ERP solution organisational wide are two distinct and dependent aspects and therefore, their success ought to be considered as connected but still very much separate phases (Ram et al., 2013). Cooper and Zmud (1990) define initiation, adoption, adaptation, acceptance, routinisation and infusion as the six phases of their suggested IT implementation model.

Prior to implementing the ERP solution the organisation needs to determine how the ERP solution is going to be shaped within the social, cultural and technical context of the organisation (Pishdad & Haider, 2013). ERP assimilation is not to be considered as an isolated process; during this assimilation stage the effects of uncontrolled

problems in previous stages risk appearing again (Kouki et al., 2006; Ifinedo et al., 2010). What happened well before the implementation now has a bearing on how the well the ERP solution will be received by adoptive users and impacts how they will cooperate with the assimilation phase(s). Guo et al. (2014) found that organisational culture and the development and maintenance of stable organisational rules, structures, and processes have a significant bearing. How were users incorporated to the decision-making processes, were “power” disparities objectionably ignored or treated fairly for example, were organisational rules up-held fairly? An ERP solution may be technically implemented yet not socially and culturally supported and depends on the past and present perceptions of the ERP stakeholders (Pishdad & Haider, 2013).

The success and failure of ERP assimilation process is translated and assessed by the intentions and aspirations of those stakeholder groups across the organisation who socially construct it (Chang et al., 2008; Kwahk & Ahn, 2009). These end user stakeholders now informally have the “power” to make the assimilation period more progressive or painfully protracted and drawn out over longer periods. Various social, cultural, technical, and organisational factors are vital for influencing and shaping the assimilation of ERP solution within the organisation. These factors fabricate the ease of which the ERP solution is “institutionalised” within the organisation (Umble et al., 2003; Xue et al., 2004) . In this way, the interfaces between the technical, cultural, social, and organisational aspects promote alignment of the ERP solution, which characterise the simplicity or difficulty by which the end users adopt the solution within the organisational environment (Pishdad & Haider, 2013) .

It's the presence of these Institutional forces that will assist the ERP system to be legally sanctioned, morally governed, and culturally supported by the organisational stakeholders and either hinder or assist promotion of the ERP solution assimilation (Baptista, 2009; Ugrin, 2009; Maheshwari et al., 2010). Where leadership has not had this hindsight and carefully managed, the ERP solution assimilation risks losing momentum and impetus and risks only partially assimilating throughout the organisation.

2.7 Conclusion

From the literature review and in the context of my research topic, several institutional dimensions were identified and perceived as more profoundly impacting on the leadership of change in assimilating an ERP solution. I perceive that there is a lack of understanding of how these institutional forces impact leadership, or whether leadership are even conscious of their moderating effect when assimilating an ERP

solution.

Is the effectiveness of leadership altered by the three institutional aspects of isomorphism, coercive, mimetic and normative, as mentioned by DiMaggio and Powell (1983)? It is likely that the actions of leadership will be guided in varying degrees by formal requirements (e.g. rules, laws, professional bodies and informal constraints (e.g. norms of behaviour, conventions, codes of conduct) (Manning et al., 2000). Organisational institutional forces may be driven by an individual, collective group or respected authorities views of the means in which the business or sector should operate. Manning et al. (2000) comment that organisations are shaped by the actions of the people who lead and conduct the functions within them. With informal rules being what leadership collectively understand as appropriate behaviour or 'how we do things around here' (Manning et al., 2000).

Do organisational institutional forces that guide the behaviours and norms of operation in public sector organisations, overflow into how senior leaders in these organisations under take their roles? For example, in an organisation that is guided by regulatory controls, has increased public accountability and is averse to risk, does this mindset transfer over into a leader's ability to make decisions that move away from the status quo and / or decisions that take superfluous amounts of effort and time in contemplating? Which considering the changes that an organisation goes through in implementing an ERP solution and the amount of decisions that lead to these changes, an ability to make decisive decisions based on what's best for the organisation in the future would be of value.

Hughes (2010) suggests that the traditional approach is to see senior leadership as the change agents within their organisations. The strength of such a method approach is that change can be planned with clear strategic vision, the un-helpful institutional forces restrained (or eliminated) and then cascaded down throughout the hierarchical levels of an organisation. However, does this tend to happen intentionally, organically or not at all in aiding organisational change linked with implementing and/or assimilating an ERP solution?

Much of the literature on leadership and change emphasise the importance of organisational culture. Schein (2010) described organisational culture as a set of values, viewpoints and expectations that are communal among members of an organisation. Is it possibly that institutional forces impact organisational culture by influencing the conduct of organisational staff and blurring their motives and opinions for their actions and choices? Certain 'unhelpful' institutional forces may shape

distinctive organisational behaviours and views which effect an organisations culture and its ability to transform.

For successful innovation transformation end users are important when anticipating successful innovation transformation (Day & Jung, 2000). However, how are institutional forces that impair end user prerogatives from effectively using the ERP solution managed? Is the ease of using the ERP solution affected by institutional forces?

By leadership neglecting to effectively manage certain institutional forces, which transpire through to institutional motivated norms and behaviour, is it likely to bring about superficial utilisation of the ERP solution? Can institutional norms and behaviour risk exacerbate organisational change and consequently hindering organisations from fully achieving their ERP objectives? With a view to giving further insight on institutional forces shaping the direction of the overall ERP assimilation outcomes and considering that there may be some institutional motivated norms and behaviour that overflow into either hindering or facilitating good leadership practices when assimilating an ERP solution, the contribution of these institutional forces is researched in further detail through interview questions which were derived around three different aspects of interest, which are:

- Institutional forces contribution to organisational culture;
- Institutional forces impact on ERP implementors;
- Institutional forces contribution centred on the leadership of change conundrum.

Given the large body of knowledge on the ERP solution implementation and assimilation projects, I digress that there is a void in the contemporary literature in how perceived institutional forces may impact ERP implementors when assimilating an ERP solution in a public sector organisation.

Chapter 3 - Methodology

3.1 Introduction

This chapter details the research methodology, providing insights into its appropriateness for addressing the research question. Methodology refers to “the theoretical, political and philosophical backgrounds to social research and their implications for research practice and for the use of particular research methods” (Robson, 2011, p. 528). Put simply, Denzin and Lincoln (2000), and Creswell (2009) describe the methodology as a strategy of enquiry that guides a set of procedures.

The chapter is organized as follows: first, a brief overview of the research interest, inspiration and subsequent research question is given. Second, the research paradigm and approach are outlined followed by the research design and method. Third, the involvement of a possible intermediary is discussed then finally, matters of rigor, ethics and reflection on the process.

3.2 Research interest, inspiration and research question

Public sector organisations are not dissimilar from many other private sector organisations in their motivations to invest in Enterprise Resource Planning (ERP) solutions to up-date and reshape the delivery of business processes across their organisation. Their goal is to make business processes more beneficial, effective and efficient. In doing so staff, shareholders and other affected stakeholders need to comprehend the objectives behind implementing the solution, assure themselves that there is a plan in place to oversee the implementation and, aspire to see senior leaders provide timely and effective leadership in assimilating the ERP solution. The probability that most senior leaders have not participated in an ERP implementation and/or comprehend the organisations changes associated with such, does not come to the forefront of consideration. This combined with other quandaries such as how practised and agile the organisation is in facilitating change and other organisational predicaments (i.e. organisational politics) can give rise to complex implications.

My interest in undertaking this research project was provoked by observing the ERP implementation at AUT University. While separate from my work role, what I observed initiated my interest to understand more around the complexities faced by leadership in implementing and/or assimilating such information technology solutions across public sector organisations. Further, my prior work experiences suggest that public sector organisations were not as agile or as ‘fast paced’ as private sector entities. Public organisations have a tendency for more fragmented business areas, include wider consultation groups which compounds decision making and to not always hold

people to the same levels of accountability. This can mean that ERP assimilation across a public sector organisation can occur rather slowly over years. One consequence of this slow pace is that it can make it difficult for leaders to move past any mistakes quickly and previous ill judgements can work against them. This in turn delays the assimilation momentum with waning leadership commitment to realize the more robust ERP benefits. Thus, the purpose of this research project is guided by the following research question:

How perceived institutional forces impact ERP implementors when assimilating an enterprise resource planning solution in a public sector organisation

3.3 Research paradigm

A paradigm consists of the following components: ontology, epistemology, methodology, and methods (Scotland, 2012). Each component is explained in the context of the researcher's worldview. Guba and Lincoln (1994) define a paradigm as a world view or a belief system that guides a researcher in their work.

Scotland (2012) notes how every paradigm is based upon its own ontological and epistemological assumptions, and since all assumptions are conjecture, the philosophical underpinnings of each paradigm may never be empirically proven or disproven. Therefore, different paradigms inherently have varied assumptions of actuality and knowledge which emphasise the particular approach the researcher has taken. This in turn may be reflected in the researcher's methodology and methods that they chose to employ when carrying out their research.

3.3.1 Ontological position

The term *ontology* is rooted in the Greek words for 'being' and 'study' (WalesDTP, 2015). Crotty (1998, p.10) defines ontology as the study of being. Smith (2012) further defines ontology as a branch of philosophy, it is the science of what is, of the kinds and structures of objects, properties, events, processes, and relations in every area of reality. Ontology seeks to provide a definitive and exhaustive classification of entities in all spheres of being. Ontology is an approach of belief that reveals an understanding by a person about what comprises actual reality, in other words *what is* (Scotland, 2012).

In contemplating how, I might address my research I felt it essential that I chose to take a realist standpoint. That is, reality is independent of the way a researcher distinguishes knowledge and the creation of agendas and perspectives. Sale et al.

(2002) comment that different researchers embrace different realities, just as do the individuals being studied, the readers of this study and other interested individuals. I maintain that reality happens independent of people's awareness, hence I began this research with the aim of revealing the objective truth. Through the research process, I have learnt the significance of settings and context and the value of subjective personal experiences.

This initial belief in objectivity was driven by a broad base of literature that provides theoretical support for the important role of senior leadership in driving IT usage within organisations (Reich & Benbasat, 1990). Ke and Wei (2008) declare that in the extant ERP literature, leadership is consistently identified as the most important factor affecting ERP implementation. It is also suggested that previous organisation change experience and if more readily practised, serves to transition an organisation post its ERP implementation more rapidly. Eby et al. (2000) advise that readiness for change plays a crucial role in mitigating resistance to change and thus in reducing the failure rate of organisational changes around ERP assimilation.

In contrast to this body of literature, some of which is cited above, this research journey has made me conscious of subjective realities where individuals recite their personal experiences of assimilating an ERP solution somewhat differently. For example, when researchers compile a study based on the experiences of other individuals using a qualitative methodology, Moustakas (1994) using qualitative research reports how individual encounters may be the same but are yet experienced differently by virtue of an individual's lived experiences in the world. Thus, my realist viewpoint has been challenged as the people I interviewed shared their personal recollections, shaped by what they have experienced and felt during the assimilation of an ERP solution within their organisational settings. The ontological space I now occupy traverses between realism (objective nature of knowledge) and relativism (subjective nature of knowledge), hence links to my epistemological position.

3.3.2 Epistemological position

The term epistemology comes from the Greek words 'episteme' and 'logos' (Steup & Neta, 2005). Epistemology is concerned with the nature and forms of knowledge (Cohen et al., 2007, p. 7). Epistemological suppositions are associated with how knowledge can be produced, obtained and conveyed, in other words *what it means to know* (Sandoval, 2012). Guba and Lincoln, (1994, p. 108) explain that epistemology asks the question, what is the nature of the relationship between the would-be knower and what can be known?

Killam (2013) delineates two types of relations that researchers have with their research at each end of a spectrum: an objectivist epistemology, where truth can be discovered and calculated; and a subjectivist epistemology, where the researcher networks with people to find out their truth shaped by meanings and encounters. While this research is the subject of an academic thesis, the driver behind undertaking this research is to gain further insight on how institutional forces can impact on leading change. I come from a finance background and feel more comfortable with numbers. Numbers fit nicely into boxes (or cells in a spreadsheet) and are guided only by logic or truth. This background has shaped my outlook and supports why I chose to initially take a realist position when undertaking this research. Business audiences tend to place an emphasis on empirical information. Positivism, a term coined by Comte (1975), refers to an assumption that the only legitimate knowledge can be found from experience. Management and organization researchers (e.g. Johnson & Duberley, 2000, p. 38) suggest that positivism, is the mainstream philosophical position adopted by those studying management. This relies on empirical information that is gathered from observation and/or experience, then systematically verified through natural sciences (Johnson & Duberley, 2000).

However, listening to the observations and reflective thoughts of the interviewee's I now appreciate how what they shared has been shaped by their world view and subjective experiences. Substantialism is an epistemological position that attempts to settle an objective truth from research. The findings may on the surface, appear reasonably distinct but subtle realities emerge. These may in part, be guided by contextual factors such as the institutional norms in a particular organisation which influences why interviewees may have interpreted things differently. The findings might also be influenced by insights from underlying antecedent conditions that are present in public sector organisations which impact on the way in which an organisation operates.

3.3.3 Philosophical position

The philosophical assumptions or ontologies and epistemologies, are beliefs made by researchers when undertaking a qualitative study that define a philosophical position. Researchers employ philosophical conceptions in slightly differing ways. Nonetheless it is commonly acknowledged that there four main paradigms that surround social science and business research. Guba and Lincoln (1994) identify these as being positivism, post-positivism, critical theory, and constructivism.

The philosophical framework that I have used for this thesis is directed by a post-

positivist, critical theory or realism. Critical realism compliments positivists in that it acknowledges there is an evident world impartial of human consciousness (Denzin, 2004). Thus, as a social constructivist approach this connects with my view that good or poor leadership for example, is independent of organisational staff knowledge, experience and perspectives on leadership. Critical realism goes further in that it attempts to simultaneously propose that knowledge about the world (or in this instance public sector organisations) is socially created by events and discourses. We may only be able to understand and so change the social world if we identify the structures (or in this research the institutional forces) at work that generate those events and discourses. Bhaskar (1989, p.2) states that these structures are not spontaneously apparent in the observable pattern of events, they can only be identified through practical and theoretical work of the social sciences (or in this research examining public organisational settings). Johnson and Duberley (2000) suggest that critical realism allows you to use multi-methodological approaches, which in turn, enhance more detailed and accurate analyses when looking for causalities in an organisations progress and development.

In many ways the truth lies somewhere between where a person believes a realist truth exists but simultaneously, acknowledges that retrieving all the accompanying facts may well be unattainable (Rosser, 2020). Even if it were conceivable, such facts would arguably be more respected if explained through the 'eyes' of ERP users. This is especially so, given that ERP users will form their own view of the leader's ability and the impact or prominence of institutional forces within their organisation. As critical realist, Bhaskar (2010) states "We will only be able to understand – and so change – the social world if we identify the structures at work that generate those events" (p.2). The philosophical path of this thesis therefore aligns to a critical realist research paradigm.

3.4 Research design

Given the philosophical standpoint outlined above, the research design had to factor in the appreciation of both undeniable facts and also individual perceptions in order to consider the complexities that sit behind the research question:

How perceived institutional forces impact ERP implementors when assimilating an enterprise resource planning solution in a public sector organisation

Reflecting on my background, in the initial planning stage of this research project, I was drawn to a quantitative methodology. This aligned with my perception that reality is largely based on factual knowledge and that this is measurable. This belief in "one

absolute” reality of human behaviour was challenged by the supervisory team. They pointed to the subjective nature of experiences and views I was seeking to unravel and the need to shift beyond surface perception. I was persuaded that a qualitative research methodology would uncover a range of perceptions, enable enriched feedback and interpretations hence convey important insights into my research topic. This shift in methodology would force me to listen and gain a more substantive appreciation of opinions and sentiments expressed by interviewees, and improve understanding of the contexts and complexities they faced. Specifically, this research utilised a descriptive interpretive research design. According to Smythe (2012) the purpose of a descriptive, interpretive design is to hear the voices of interviewees, identify the key themes and link the findings with the wider literature to either support or show differences and contradictions. Pragmatically, a descriptive, interpretive research design is a feasible option for a master’s thesis (Smythe, 2012) given the timeframe and paid work commitments of the researcher.

3.5 Research method

This section outlines the research method including sampling, the research instruments, time and location, the involvement of an intermediary party AUT Ethics committee, approaching participants, data collection, data analysis the narrative development.

3.5.1 Participant selection and profile

The criteria for selection of the research participants were that they were individuals who had or currently held a relatively senior position, serving in or consulting with public sector organisations in New Zealand. It was necessary that these public sector entities were either in or had been through a recent ERP implementation and were therefore now assimilating their ERP solution across the organisation. The process outlined below illustrates purposeful sampling (Silverman, 2010) where the researcher uses their own discernment to select targeted interviewees who:

- a) had first-hand experience in implementing and/or assimilating these ERP solutions in their organisations; and
- b) were best positioned to provide insight from the duties their roles encompassed and ‘inner workings’ of the organisation they observed at the time. People who had or currently held relatively senior positions whose roles included the following, for example:

- ERP assimilation project management role
- ERP assimilation project sponsorship/leadership role
- Information Technology business transformation role
- Senior financial management role
- ERP consultancy role; and/or
- ERP Account Management role

Sourcing possible interviewees proved to be problematic. One strategy to solicit possible interviewees was through the support of an intermediary private sector company that provides ERP solutions to both private and public sector organisations in NZ. This company were willing to send information about the project to their contacts in NZ public sector organisations with whom they had provided ERP solutions. While this offer of support was welcomed we did envision that such an approach could be problematic when seeking ethics approval. A second strategy was to identify and approach public sector organisations that had implemented ERP solutions from various providers. Given the size of some public sector entities it was difficult to know who the best person was to approach.

The feasibility of a qualitative research project is dictated by the ability to access and recruit suitable participants (Riese, 2019). Timing matters. Unfortunately, while undertaking the two strategies to recruit prospective interviewees noted above, coincided with the arrival of the COVID19 pandemic to NZ. The ongoing disruptions from the first and second lockdowns experienced over 2020 (nationally, March – May) and specifically, the Auckland region, (August – September 2020) made this task, quite daunting. Further a subsequent restructure at the intermediary organization saw the withdrawal of their support making the recruitment task much more challenging.

The initial research audience included the e-mail addresses of 50 people in all who held senior roles in either IT, finance, governance or consultancy services (relative to ERP). These people were sent an overview of me, my research and requested that they express an interest of participating in my research (Appendix C, Template letter). Not surprisingly, amidst the stress of the COVID-19 pandemic/lockdowns there was not a deluge of offers to participate in this research project. Over the preceding weeks I did receive some feedback. Typically, most indicated they were too busy and wished me luck or something similar in effect. Time, persistence and a maximum of three

follow up e-mails were important factors in “capturing” the attention of prospective interviewees. Patience was required, together with some gentle words of encouragement from my supervisors to maintain focus. At the same time, other options for how I might complete this master’s thesis had to be considered.

It took time but I was able to secure 5 participants who agreed to take part in my research. In support of this number, two further interviewees were approached directly, and both agreed to participate, taking the overall number to 7 participants. Given the seniority of the interviewee participants, who would have all had busy work schedules, coupled with my ability/ luck to attract suitable participants, 7 was seen as a realistic number and sufficient to provide discerning insight into the research topic. In this instance, New Zealand was in the ‘unknowns’ of a COVID-19 pandemic. The number of interviews was limited because of these ‘unknowns’ with priority given to completing the thesis within the time allowed.

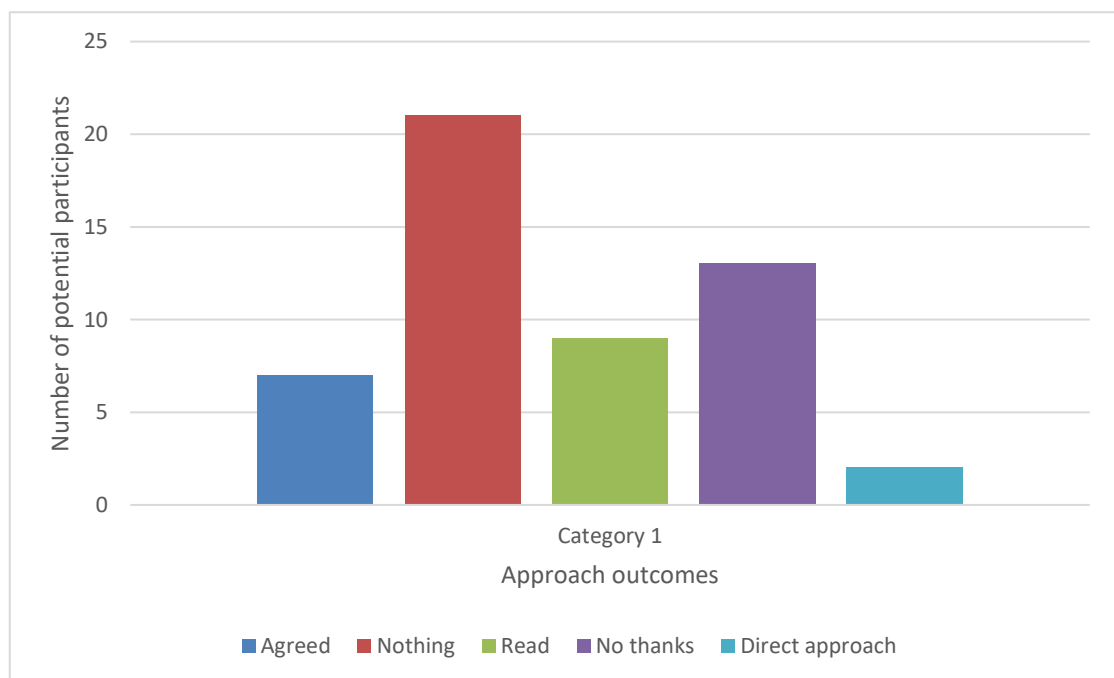


Table 3.1, Outcome of approach to potential participants

Undertaking interviews with people from more senior level roles and varied (but relevant) job functions, the information gathered from the interviews was cross representative of key people across an organisation who would typically be directly involved in facilitating an IT organisational change/transformation project. I say change/ transformation because empirical evidence suggests that this underpins a successful ERP solution implementation and/or assimilation.

One interviewee's role was as the Executive owner of the ERP work stream, sitting both on the governance and executive board that managed in their organisations wider business transformation. Another interviewee was the sponsor the ERP transformation project while another was a key executive who managed delivery of the contract milestones and relationship with their ERP solution provider. Two interviewees were from ERP consultancy businesses, one in advisory role and one in a senior account management role. It is important to note that both these interviewees were speaking in their private capacities and not representing their business. The final two interviewees had more information technology (IT) centric roles, with teams around them responsible for the delivery of IT services to their organisations that in the context of this research either were or had recently implemented ERP solutions. Their roles also included, setting the strategic direction for technology investments within their organisations, and persuading internal customers (e.g., executive teams and other business groups) that the technology approach and investments were appropriate for their public sector organisations.

Participant group profile

The 7 people who confirmed their acceptance to take part in the research did so on the understanding of confidentiality. To maintain the confidentiality of interviewees in this research, only interviewee organisational sector, interviewee job role, together with organisational employee numbers is shared. This information was entered into a documentation sheet (see Appendix B) containing key data and research notes for each participant (Flick, 2009). Around a third of the participants were based in Auckland, while the rest were based in other main centres or the regions of New Zealand.

The table below is provided in the anticipation that it will give some context in relation to the interviewees. The interviewees were from local government entities, a national governmental agency, an ERP supplier, an ERP consultant who worked for an IT company and a publicly listed company but with a majority government stake holding. The table also indicates the size, in terms of number of employees of the organisation/s interviewees were or had been associated with. As Rogers (1983) points out, organisational size correlates to the resources required to implement and / or assimilate expensive IT innovations and their ability to withstand adoption failures. The larger an organisation, the more resilient it is to tolerate temporary adoption methods such as continuing with shadow systems and the gradual termination of legacy systems. This contrasts to smaller businesses where survival is primarily more of a concern and therefore any ERP implementation 'hang ups' [obstacles] risk having immediate repercussions on the organisation's ability to service customers and

suppliers (Liang et al., 2007). Another reason for communicating the organisational employee numbers is that the organisational size varies considerably and also organisational size is one important contextual factor when considering the complexity of an organisation, that may have shaped interviewees reflective comments.

Participant Name	Participant role	Organisational Employee Numbers	Organisation
Interviewee One	ERP Account Management role	1,000 – 1,200	ERP supplier
Interviewee Two	Information Technology business transformation role	7,000 – 8,000	Publicly listed company (with a majority government stake holding)
Interviewee Three	ERP Assimilation project management role	300 - 350	Local government entity
Interviewee Four	Information Technology business transformation role	200 - 250	Local government entity
Interviewee Five	ERP Assimilation project sponsorship/ leadership role	5,000	National government entity
Interviewee Six	ERP assimilation project sponsorship/ leadership role	300 - 350	Local government entity
Interviewee Seven	ERP consultancy role	6,500	ERP Consultant

Table 3.2, Interviewee's organisations, contextual information

3.5.2 Research Method

This subsection outlines the research methods employed in this research including semi-structured questions, recording devices and a documentation sheet.

Semi-structured interviews

As noted earlier I was persuaded that semi-structured interview would be the best method to gain a more comprehensive insight to address the research question. According to Rowley (2012) interviews have 'the potential to generate a range of insights and understandings that might be useful' (p. 262). Semi-structured, one-on-one interviews align well with a descriptive interpretive research design (Rowley, 2012). Moreover, interviews present the opportunity to 'probe a bit deeper' into interviewees responses and give them the chance to express more 'candid' type responses.

Rowley (2012) suggests that interviews should be based on up to 12 questions, delivered for the most part in a set order but "with some flexibility in the questions asked, the extent of probing, and question order" (p. 262). Interview questions were formulated from the literature review and the resulting suppositions. These suppositions were reworked into interview questions to better reflect the information sought to explore the research question. Some open-ended questions were included to aid exploration of broader issues and to allow interviewees (leaders/ managers) to reflect on the ERP post implementation stage. Twelve questions formed the interview schedule (see Appendix A).

3.5.3 Data Collection

The interviewees were invited to contact me if they are willing to be interviewed about their experiences of the ERP post-implementation stages. Mutually agreeable times were organised to meet via scheduled Outlook invitations. I made use of structured interview questions to lead the conversations to reveal particular understandings gained from interviewees previous experiences centred on my research topic. The interviews incorporated the interviewee format as provided in Appendix A. As a person unfamiliar with actually 'doing' a semi-structured interview, the question schedule assisted me to keep the interview flowing while at the same time, ensuring that the key issues were largely covered and importantly, stay within the allotted scheduled time. There were opportunities for conversations to digress particularly when interviewees held strong opinions about aspects of an ERP implementation or responding to prompts in relation to queries from me.

Interview Process

Interviews commenced with an introduction, a brief overview of the purpose of the interview, comments to establish rapport and a reminder to participants that they would be recorded and assurances of confidentiality. An Interview schedule with interview concepts is summarised in Table 3.3.

Open section (understanding of role(s))

The interview was then directed to questions to establish their previous role vs their ongoing role regarding the assimilation of an ERP solution. These questions sought to provide the contextual elements of their involvement hence assist me in understanding some of the interviewee's explanations.

Open section (macro-level focus)

The main body of the interview questions focused on concepts such as:

- Readiness of organisation/contribution of institutional forces;
- Institutional forces impact on ERP implementors;
- Change leadership conundrums.

Concluding section

Finally, the interview concluded with questions asking about what changes they noticed to the organisation's culture since the ERP solution has been implemented. This line of questioning opened up a broader conversation beyond the actual ERP implementation. The indirect learnings and findings the interviewees experienced from being part of an ERP implementation and/or assimilation were quite profound.

Section	Number of questions	Interview concepts
Administrative	2	Administrative and setting the scene
Structured (Broad topic & macro)	3	Centred around institutional forces contribution to culture.
	3 - 4	Centred around institutional forces impact on ERP implementors in complex environments.

	3	Centred around the leadership of change conundrum
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Table 3.3, Interview concepts

Recording devices

The interviews were conducted over Microsoft Teams (Teams), which was a necessity given the interviews commenced at the time when NZ and then the Auckland region was 'locked down' by COVID 19 restrictions (around mid/end of 2020). The disruption this event caused and the roles interviewees held, saw the interviews spread over a 5-month period.

All interviews were recorded and consent for such was requested and ascertained before the interviews started. I also verbally acknowledged immediately after introductions had taken place that recording was commencing. Each recording was auto transcribed by the Teams software, then reviewed and corrected by me as Teams does not always perform its auto transcribe function with absolute accuracy. I also wrote brief notes on points of interest where I felt this would help with understanding the information interviewees had conveyed. The ensuing transcripts formed the primary data for analysis.

Location and Time

This subsection underlines the significance of time and location regarding the recruitment and information collection phases.

After interest had been signalled via e-mail by a potential participant, interviews were then arranged via phone and e-mails. Generally, interviews were timetabled about two weeks in advance, which gave plenty of time for both parties to get prepared. A quiet space was recommended that was free from interruption. With most interviews conducted while participants were either at work or working from home, invitations were sent via Outlook with Teams meeting connections. Given that for much of this time the nation was experiencing COVID-19 restrictions being able to conduct the interviews from the safety of ones working environment without the need to travel, was paramount. Interviewees tended to be located either at their home office (3 interviews) or business office (4 Interviews). Teams provides the ideal solution as it enables the interviews to be recorded both in audio and video. The time allowed for each interview was forty -five minutes, with the average being around 30 minutes.

So, in summary, despite the many unforeseen challenges and the struggle to recruit interviewees, the seven people who finally volunteered did hold senior roles and varied job functions, and importantly for the purpose of this research, held a wealth of knowledge expertise and experience in the public sector ERP environment in New Zealand.

3.5.4 Data Analysis

Data analysis proceeded through the five key stages outlined below.

Stage one – Microsoft Teams auto transcribe function

Microsoft Teams has an auto transcribe function, which takes the recorded audio and transcribes such into a word document. From my experience while it does not miss any sentences it does get a few of the words wrong and therefore misconstrues the conversation. However, after each sentence or there about, it delineates the recorded time, which later proved particularly helpful. This function gives the ability to go back and replay, and pause the interview at certain points in time, where the sentences did not make sense because of the word interpretation assigned by Teams or slang [jargon] words used. I was able to insert the correct word from the interview and piece all the sentences together. This was at times an onerous task but it allowed me to become very familiar with the interview content and reconnect with what was being shared.

The next four stages took me into a *thematic analysis* of the data. Gavin (2013) says that thematic analysis is a process of formulating clear structures and explicit meanings, that the participant or reader embodies in a text.

Stage Two – Transcription and early impressions

Braun and Clarke (2006) outline four stages of thematic analysis. Stages one and two interlink. These involve familiarising oneself with the data during transcription and reading through the transcripts, focusing in on early impressions. In replaying the recorded interviews in Teams to ensure the auto transcript was correct allowed me to reacquaint myself with the interviews. During the interview I also jotted down some supplementary notes on each interviewee's documentation sheet. Then immediately post each interview I took a few minutes to quietly reflect on the interview and ensure any formed impressions were not lost, but rather written down for possible future reference.

Stage Three – Initial coding

The next phase of thematic analysis comprises of creating codes; that is, working systematically through the whole data set to identify interesting features and collating interrelated data within the data set (Braun & Clarke, 2006).

Thematic analysis is suitable for both inductive and deductive research (Boyatzis, 1998; Patton, 2002). As I read through each transcript observing emerging themes, I inserted comments on the side to note the developing themes and then on occasions re-reading to form some sort of appreciation of how often emerging themes were forming across the interviews. Coding was founded on whatever common themes ensued, sometimes recalling research opinions cited from the literature review. Through this activity each transcript was consecutively reviewed, commencing with the first interview question through to the final question of each interview. On occasions I also referred to the documentation sheets to check nothing had been missed.

Stage Four – Detailed coding

Stage four involved revisiting the transcripts and undertake a more thorough coding activity using the emerging themes/initial codes produced from stage three. This process allowed me to note how frequent opinions were revealed that overlapped with comments from other interviewees. It also gave more the opportunity to examine instances where there was a disparity of views between the interviewees. From the stage four data analysis process step aggregate key themes emerged.

Stage Five –Theme work

Following the process outlined by Braun and Clarke (2006) I collated related codes (or sub themes). Working more closely with these sub-themes, I identified commonalities and linked them back to the wider aggregate key themes by taking a macro view of the sub-theme data. Where sub themes overlapped, pragmatic choices were made to place these under the broader aggregate theme where I thought they best fit.

3.6 Ethical Requirements

To complete the research requirements of a master's thesis necessitates the approval of the Auckland University of Technology Ethics Committee (AUTEC) to conduct a

research project. Discussions on any of the ethical considerations were integral when planning the project. The formal application process began in February 2020 with final approval not being received until June 2020 (see Appendix F). The key concern from AUTECH revolved around the positioning of the researcher and his role at AUT and what was seen as a 'potential conflict of interest' with the intermediary organisation. It took a considerable amount of time to convince AUTECH there was no 'conflict of interest'. This delay did however, mean valuable time was lost. COVID19 changed the context and added unanticipated layers of complexity. One example, noted earlier, was a restructure within the intermediary organisation which negated their help in the recruitment of potential interviewees.

Matters of ethics and reflection.

Te Tiriti o Waitangi (Treaty of Waitangi) underpins research ethics at AUT. This section outlines how this thesis engaged with the core principals of partnership, participation and protection.

Partnership with participants

In the participant information and consent sheets, information on the research project and a check list was provided to ensure that interviewees understood the research and the terms by which they were participating in the research. Interviewees had an opportunity to ask questions which were answered and were cognisant in advance that the interviews would be recorded. Prior to undertaking the interviews, we naturally introduced ourselves and briefly exchanged "pleasantries" with a view to establishing a level of rapport before getting into the interviews. I explained that if they wished they could review their transcript and/or receive a summary of the research findings. All interviewees were eager to share their views and experiences. I concluded each interview by thanking them very much for their time and wished them well in continuing on with their future ERP endeavours.

Participant Information

To help provide further insight into my research I provided a "Participant Information Sheet" to my prospective research audience. This participant information sheet outlined in detail the reason for the research and provided assurances that the recorded interviewees were to be used only for my research and nothing else. It also provided my supervisors contact details to reassure participants who they might contact with any questions or concerns. You will see that my "Participant information Sheet" incorporated other aspects such as:

- Purpose of the research
- How they were identified and why were they being invited to participate in this

research

- How do I agree to participate in this research, by choosing to respond to this invitation
- That their participation in this research was voluntary (it was their choice)
- What are the benefits, primarily to help myself pursue a completion of a thesis as part of a Master's degree but also to benefit providers of ERP solutions re aiding implementation and/or assimilation of their ERP solution
- How would their privacy be protected
- What was going to happen with the research

See Appendix D for a copy of the actual "Participant Information Sheet" used to better inform my proposed research audience.

Participant Consent

Participants were asked to provide their written consent to indicate that they agreed to take part in this research and understood that their interviewee would be recorded for example. As the researcher, I undertook considered steps to ensure the interviewees in my research were guarded from deceptiveness, or duress to participate. Gray (2014) defines informed consent as "The obtaining of voluntary participation in a research project based on a full understanding of the likely benefits and risks" (p. 684). You will see that my Participant Consent Sheet incorporated other aspects such as:

- That they have had an opportunity to ask questions and to have them answered.
- That they understood that the research will not identify participants individually or their organisation in the thesis and in any subsequent reports, articles, presentations etc.
- That they wished to receive a summary of the research findings or not.
Going on further to ensure full disclosure of options available to my research audience, covering such aspects as:
- Their rights in regard to them taking part in this research as completely voluntary (their choice) and that they could withdraw from the research at any time without being disadvantaged in any way.
- That in withdrawing from the research they would be offered the choice between having any data that is identifiable as belonging to them removed or allowing it to continue to be used. Acknowledging that once the findings had been presented that removal of their data may not have been possible.

Being mindful of not wanting to inconvenience or over burden the interviewees.

Factors of consideration included:

- conducting the interviews via Teams, no travel required, and they get to pick a quiet location to enable private conversation;
- Not going over the allotted 45 minutes for the interview;
- Scheduling the interviewee in advance by some two weeks.

See Appendix E for a copy of the actual “participant consent form” used prior to carrying out the interview.

3.7 Reflection & Summary

In undertaking qualitative research, it is important for the researcher to reflect on their own background and assumptions, and how they might impact on the way they undertake, analyse, interpret and represent their research (Rowley, 2012; Roulston, 2013).

From what I had observed I had assumed that leadership was crucial when implementing and/or assimilating an ERP solution. The interviews appeared to reaffirm this view. There appeared to be some organisations where the leadership took hold of the opportunity presented. For example, strategic choices were made to reposition processes and responsibilities, resulting in more substantial efficiencies and productivity gains being realised in shorter periods of time and more markedly. In other organisations, it appeared organisational leadership got side-tracked on the events brought about because of the change implications through for example:

- The organisational change not being well managed;
- Senior leaders not being fully engaged or interested in the organisational change required;
- Too much time being invested on satisfying individuals or responding to business area needs, at the loss of oversight on organisational improvements; &
- Battling [combatting] either institutional forces and/or organisational culture headwinds [obstacles].

While remaining deep seated in my realist standpoint that acknowledges reality as material, I could also grasp how the people that I interviewed may have formed their perceptions of relativism. Employing a descriptive interpretive stage as part of the research design, this research endeavoured to hear the voices of those participants who were interviewed and then through conducting a thematic analysis of the

transcripts, to draw out themes and explain them in taking a 'light' interpretive role (Smythe, 2012).

What I did not hear was the view of 'others' involved in the ERP assimilation process who may interpret reality differently hence have contradictory standpoints. As noted earlier, the philosophical position of this thesis aligns to that of a critical realist research paradigm. Bhaskar (2010) says that critical realism aims to contribute to knowledge by identifying some of the structures that lead to the issues. This critical realist premise affirms that if public sector organisations take steps to mitigate and/or combat some of the challenges of their organisations settings, they can positively promote the changes associated with assimilating an ERP solution.

This research therefore takes a practical approach to with a view to presenting findings that I think will resonate with leaders in particular recognising the exhaustive change leadership elements that need to be addressed when implementing and/or assimilating an ERP solution. The findings recognise individual perspectives of seven professionals through both key and sub themes, with the ensuing discussion characteristically underpinned by proven facts from literature.

Chapter 4 - Findings and Discussion

4.1 Introduction

This research explores the question: How perceived institutional forces impact ERP implementors when assimilating an enterprise resource planning solution in a public sector organisation. Seven knowledgeable women and men responded to a series of questions about their experiences and observations of the different stages of implementing and/or assimilating ERP solutions in public sector organisations. In what follows, I review points of interest about public sector organisations and provide an overview of where the interviewees came from and the organisations they worked at. The research findings of the thematic analysis are then presented and discussed. The key aggregate themes to emerge from the interviewee data from the detailed coding, stage four step, alongside the sub-themes that then transpired a further level beneath from the theme work, stage five step were:

Aggregate key-themes	Sub-themes
1) Institutional Environment	Are Public sector environments dynamic environments? (pp 51-56, sub-theme one)
	Is the history of a public sector organisation a predictor of future events (pp 56-60, sub-theme two)
2) Leadership	End to end vision (pp 60-63, sub-theme three)
	Senior leadership support and accountability (pp 64-67, sub-theme four)
3) Change (organisational dimension)	Is managing change business-dependent (pp 68-71, sub-theme five)
	Is the need for customisation a mindset (pp 71-73, sub-theme six)
	Data and process realignment (pp 74-76, sub-theme seven)
	An organisational culture more amendable to change (pp 76-78, sub-theme eight)
	Is ERP a catalyst for on-going change? (pp 79-81, sub-theme nine)
4) Change (people dimension)	Job protection (pp 82-84, sub-theme ten)
	What about end users (pp 84-88, sub-theme eleven)

	Using people resources wisely (pp 88-91, sub-theme twelve)
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Table 4.1, Aggregate key & sub-themes

This chapter presents the key themes as sections. Then under each key theme, sub-headings denote the sub-themes that emerged from events witnessed and/or observations of the interviewees in their respective organisational settings. It is these sub-themes that reference selected quotes, findings and discussion drawing on selected literature. While this separation of sub-themes is viewed as necessary for the ease of reporting the findings, it must be acknowledged that the themes are interrelated and interdependent. Discussion is centred at a meso-organisational level as those interviewed came from different contexts (i.e. employment roles). The conduit connecting the interviewees is their vast experience and knowledge of working on ERP solutions within public sector organisations. Pseudonyms (i.e. Interviewee One, Two....) are used for each interviewee given the ‘smallness’ of the New Zealand market. In the case of the account manager/consultant, the public sector organisations they worked for and/or are referring to are not named.

4.1.1 Background

For decades, New Zealand public sector organisations were the embodiment of steadfastness, attributed in part to the need for good governance and accountability in using public funds. According to Tsaravas and Themistocleous (2011) traditionally government organisations in general, are considered to be complicated organisations, comprising convoluted procedures, volumes of transactions, which congregate in considerable amounts of information requiring to be kept. This information is seen, at times to be inaccessible due to bureaucratic obstacles, which also hampers the delivery of effective services.

The onset of post-1980’s neo-liberal inspired, public-sector managerialism (e.g. Sinclair, 1989), initially enabled In New Zealand by the 1988 State Sector Act, has been extremely influential in public sector reform (Chapple, 2019; Cullen, 2021). Integral to this reform is the belief that public sector bureaucracies should be transformed to replicate the supposedly superior, quantifiable measures of performance and accountability attributed to private sector corporates (see Sinclair, 1989). Principles of effectiveness and excellence relevant to this research include elements such as:

- a) Customers want more self-service-type functionality available, with information being present at one’s “fingertips” and preferably not wanting to wait for extended periods for information or responses to queries.

b) Ongoing demographic shifts, with not only more of an aging population but also a younger more technology-savvy customer community group.

(Brown & Osborne, 2005)

A further impact of the State Sector Act (1988) relevant to this study was a shift in the employment terms and conditions of the senior leaders of state organizations. Acquiring the title Chief Executive, a new term and concept for this sector, was adopted to duplicate the private sector model (Cullen, 2021). A once permanent employment relationship gave way to fixed-term individual contracts and with professionalisation, CEO appointments have increasingly focused on their capability as “efficient change managers” (Chapple, 2019, p.50). Using examples, Chapple (2019) shows how this model of ‘short-termism’ has seen individuals appointed to lead government agencies with little sectoral and/or institution-specific expertise. He then argues that their one area of expertise, change management, has seen a rise in the number of government department restructures. Thus, while the fixed-term employment relationship of senior leaders contrasts with the more ‘permanent’ status of many of their staff, long-term tenure can no longer be taken for granted (Chapple, 2019).

The focus of this research project is one example of the strategies used to enable heightened customer-centric expectations, expediency and efficiency in public sector entities through transforming ‘back of house’ operations. Technological innovation saw ERP offerings arrive in NZ in a similar time frame to public sector managerialism. ERP solutions are commercial software packages that facilitate the integration of operational /transactional data between all functions within the organisation consistently and visibly. This consistent and visible manner satisfies public entities governance requirements (Controller & Auditor General, 2021). Automation of business processes aids improved speed of delivery of outcomes to both internal and external customers, which helps manage customer service expectations. As noted above, there has been increased pressure on public sector entities and their senior leaders to be ‘change leaders’, with numerous restructures prompted by digital innovation to facilitate the delivery of customer service experiences in an efficient and timely manner (Chapple, 2019).

It is in this context that interviewees shared their ERP experiences. The broad spectrum of interviewee roles (see Chapter 3) enabled me to gain valuable insights into the purpose of the research. It is also important to note that the organisations the interviewees referred to collectively were at various stages of ERP implementation and/or assimilation. These stages include: 1) recognising the need to replace an ERP

solution, 2) moving into implementation and then 3) through various assimilation phases as organisations seek to continue to improve business process, and finally, 4) realising improved efficacy and value from their ERP solution.

4.2 Key Theme One: Institutional Environment

The first key theme to be discussed is the institutional environment, where two sub-themes will be discussed. The first sub-theme explores interviewees' thoughts on the extent (or not) to which the public sector organisations they work for/ have been involved with were organisations that were responsive, nimble in their decision making and if these organisations were prepared for the magnitude of changes associated with an ERP implementation and/or assimilation.

The second sub-theme that emerged from the interviewees was whether the history of a public sector organisation should predict future events. Where insight is provided from interviewees on whether they think public sector organisations can move on from the past easily and whether these organisations learn particularly well from history.

4.2.1 Sub-theme One: Are Public sector environments dynamic environments?

Introduction

People who study organisational behaviour have noted that public sector organisations are usually large officialdoms structured to achieve their core tasks with stability and consistency and therefore resist change or disruption of these tasks (Wilson, 1989, pp 218-26). It is also worthwhile to note that public sector institutions often operate in environments that may straddle both humanly devised formal operational constraints (i.e. rules, laws and policy's) and matters around relationships of trust between parties or informal constraints (i.e. codes of conduct, norms of behaviour, attitudes), that guide public organisational activities (Manning & Mukherjee, 2000). While there might be commonalities in preparing a business for change by introducing an ERP solution, the change effort and application varies across different organisations and settings.

A common sub-theme to emerge suggested that the interviewees did not think that public sector environments were typically dynamic environments so demanded more effort and tenacity to change and transform. Interviewee Three mentioned during the interview that:

Change was not something they as a government entity do regularly or entirely well.

In respect to the complexity of change across a public sector organisation, Interviewee One indicated that:

In a commercial environment you just wouldn't be challenging and spending so much time on discussing preferences and likes/ dislikes of people from around the organisation in preparing the business for change, things like that. ERP projects that are still going around and around three to four years after implementing. These businesses might have very controlled ways of operating at business area levels, [be] largely very politically managed and very measured in how they go about conducting business. [Here] leaders were perhaps more centred on not causing any 'waves' and dismissing differences.

Wagner and Antonucci (2004) advise that not only do government organisations tend not to operate in competitive environments, but their organisational structure is more complex. As typically, government organisations tend to have a larger organisational size, are entities that consist of several departments and divisions, each having its manager and often their ways of doing things or norms, rules and processes. Further, while in the private sector, smaller teams are preferred, in the public sector, the project team arrangement tends to be more inclusive of many departments and divisions, which prolongs any decision-making process. Due to these and other factors, their readiness for change is typically not as progressive as private entities. Readiness can be correlated to Lewin's (1951) simple and easily understood concept of unfreezing. This first stage of planned change reflects organisation members' beliefs, attitudes and intentions regarding the extent to which changes are needed and the organisations capacity to make those changes successfully.

Interviewee One emphasized that the established ways of doing things in some public sector organisations made the 'unfreezing' of current practises extremely difficult:

This business had certain entrenched ways of operating, maybe a legacy technology which dated back 20 plus years. Therefore, as an organisation they took a lot longer and required a lot more effort to change.

The adage, 'the more practiced you become at something the better you become at it' is verified by Interviewee One. The implications of overlooking the importance of readiness and/or being practiced in organisational change can be significant. For example, it could be that an appropriate intervention may not produce the intended organisational changes because organisational personnel are simply not ready or practiced in change (Pasmore & Fagans, 1992).

Interviewees who had the experience of ERP implementation within a central government and local government environment spoke of how there appeared to be a disconnect between the senior leadership team supporting the strategy and their role in delivering on the operating detail. To illustrate, Interviewee Four remarked that:

In government and local government as a broad generalization, executive teams need to get involved with managing political stakeholder expectations. As all too often the project team felt like it was a full-time job managing the political aspirations of individuals and outcomes.

In contrast to private organisations where the reason for implementing modern ERP solutions may be in part be to gain a competitive edge, public sector agencies do not always have this degree of tension (Uwizeyemungu & Raymond, 2005). Wagner and Antonucci (2009) comment on how in the public-sector, large-scale ERP implementations tend to have amplified organisational challenges. This is then combined with a larger user audience across multiple ERP modules. Furthermore, as the drive for change is not the same as that in private businesses, it can be difficult and protracted for the adopting public sector organisation to assimilate more commercial orientated processes (Blick et al. 2000; Gullledge & Sommer, 2003; Thomas & Jajodia, 2004).

Interviewee Seven surmised that:

The leadership they had witnessed didn't always appear to appreciate the relationship between the business's reason for change, political factors and how these complexities related back to business wide change.

Political considerations frequently manifest in self-interest from key contributors inside the organisation (Wood & Caldas, 2001). For example, circumstances may result in a proposed ERP process not providing the desired resolution to a business area. Wood and Caldas (2001) infer that the leaders may then choose to use their power and influence to imprint their personal preference on how a process should work. If not carefully managed, the ensuing tensions have the potential to defer and disrupt ERP implementation aspirations, leading to expenditure overruns and a lack of envisioned benefits.

In support of the above view Interviewee Six shared their perceptions of the political divide between senior leaders in her organisation.

Yeah yeah yeah, it's like there's a mixed bag with some of my colleagues and the senior leadership team around here. I don't think we were united on it by any stretch.

A small number of interviewees noted that where staff sense this disunity, it could be divisive on the need for assimilation of processes or, indeed, if needed at all. These interviewees disclosed that if this were the case, it would inevitably draw out the new solution adoption and assimilation phases. Notwithstanding, such Interviewee's signalled that it would be reasonable to expect some political forces at play with projects of the magnitude seen in recent times in the public sector in NZ (i.e. reduction in the number of district health boards in NZ). Interviewee One saw the remedy being: *A very senior, politically astute sponsor, who actively leads. A high-level sponsor who is engaged is critical for the success of the project.*

While no specific interview question sought to delve into the political forces that may influence the ERP processes, interviewees mentioned that political agendas and/or preferences were behind some of the decisions being made. All Interviewee's thought that individual political agenda should be "*stomped*" out early in the process but that leadership did not always have the appetite for addressing this issue.

These comments raised two interrelated questions: Are political preferences managed differently in local government environments than private sector businesses? If so, is there something special/ different about local government environments? Interviewee Three, who came from a local government organisation, mentioned that:

They [local government] worked in a very interesting and very risk averse environment.

In elaborating on the "*interesting*" government environment, Interviewee Three used the following example:

In one project I went to we had gone through two project managers who had both previously had IT backgrounds and work experience with more commercial/ private entities. Both resigned. The first Project Manager could not really sustain the local government environment. He could not deal with the bureaucracy and the constant what he felt were push backs.

Interviewee Three elaborated further by mentioning:

Not knocking him [the project manager] he however had a purist view. The second Project Manager that they appointed suffered a similar fate as he couldn't handle the fog [muddle] of local government".

In the resulting conversation Interviewee Three explained how he interpreted the comment "purist view", which he saw as operating along what would be typical private

sector business expectations/commercially driven decisions. He then went on to say that, in local government you often need to adapt by softening your approach and being flexible in accommodating requirements from many interested personalities.

As highlighted earlier, this organisational complexity and fragmented operating business areas can affect identifying appropriate process owners resulting in a lack of consistent processes (Wagner & Antonucci, 2009). Many ERP solutions aim to introduce process-centric views across businesses. Kumar et al. (2002) note that the time and effort expended to consult and seek views from the many invested departments and divisions which are largely functionally organised, tends to extend and magnify the complexity of change across a public organisation.

Interviewee Three then noted that after the resignation of the two project managers (referred to above):

They shoulder tapped an internal applicant who was part of their IT team and said look we want you to run the project. She took on the Project Manager role and provided some good project stability. But this person has worked in local government for a long time, so she gets [understands] the environment and what the challenges are.

4.2.2 Sub-theme One: Summary

The first sub-theme to emerge under the key theme of 'Institutional Environment' delved into interviewees views on why ppublic sector environments are typically not dynamic environments.

I believe interviewees thought it was more difficult in navigating and instigating change in the public sector environments, relative to others, for the reasons put forward. In support of such research shows how, centralized and/or decentralized decision making in a diverse management hierarchy, such as some public organisations, often complicates the clarity of the decisions made within such organisations (e.g. Fenwick & Bailey, 1999; Meyer & Hammerschmid, 2010). This can protract the amount of time taken for decisions to be made. Further to this, it is recognised that public entities will have higher levels of regulatory control and, therefore, increased formal constraints, making them more averse to change. The interviewees also noted that what should not be underestimated is the informal constraints that may also be present in public sector organisations. Interviewees indicated that such entities tended to have certain entrenched ways of operating and norms of behaviour that do not make these organisations conducive to change. When undertaking an ERP implementation and/or assimilation, the interviewees noted that these constraints may hinder change if not

carefully managed. Due to these aspects, for example, which might be construed as institutional forces, it implies that interviewees thought that public sector environments were not typically environments where change took place easily.

4.2.3 Sub-theme Two: Is the history of a public sector organisation a predictor of future events?

Introduction

A predictive analysis prior to venturing into implementing an ERP solution can provide insight on possible future outcomes based on how the organisation currently and historically, operates. As Tucker (1768) notes 'To be forewarned is to be forearmed'.

This sub-theme resonated with all interviewees. For example, one interviewee went further claiming that:

People do not forget just about organisational history, but they also remember about public sector service history. Or the history of people implementing new IT solutions and doing it badly and exceeding their initial budgets significantly. Using public funds tends to amplify the public scrutiny and media visibility.

Interviewee Five reiterated why public sector failures tend to capture people's attention as prior to starting their payroll module "roll out", where the people involved kept saying

"remember Novapay, wasn't that a disaster".

Novapay became synonymous with NZ public sector IT implementation failure. The preferred vendors, Synergy/Talent2, delivered in 2012 a new public-school payroll system beset with major implementation problems leading to significant cost overruns. This failure caused the Government serious reputational damage igniting a Ministerial Inquiry. The inquiry authors found a complex interplay of issues that could have been averted if the lessons from a prior, significant public sector IT failure a decade earlier (INCIS Project) and subsequent Commission of Inquiry, had not been ignored (Eppel, 2019).

Another interviewee indicated that they thought that there has been a litany of failed ERP projects in the public sector. For example:

Where an organisations history has been quite immature in terms of their IT, holding leaders to account or their digital transformation strategy (which maybe not even centralized), does not have a common financial system or has done things quite ad hoc, things have not always gone so well.

However, in terms of learning from history, it sought of depends. Some organisations might not have had any history, any bad projects or a lot of sizable investment in IT. Whereas on the other side you might have got more mature type places that have tried ERP twice, maybe even a third time round. Each time they've learned more about those change management things. They have improved their learning in relation to vendor selection, about contracts, change leadership, oh and of course project management as well.

Reflecting on and learning from past significant IT failures (e.g. INCIS and Novapay) has been used to justify government initiated ministerial inquiries (Cranefield et al., 2018). The idea of reflecting on what could be learnt appears as counter-intuitive to those in senior decision-making roles. All interviewees were amazed how many organisations appeared to under prioritise reflecting upon the past IT history to guide future implementations. Interviewees attributed this to an eagerness to get projects up and underway. Interviewee Five sums up the consequences:

If you're in the public sector and implementing / assimilating these large IT business wide solutions, there's potentially a long way to fall when things don't work out.

There was common ground with all interviewees around this occurrence, with supporting comments such as that from Interviewee Six who stated that:

Lessons learned from previous projects is probably a thing that we don't do as well as we could do. You can only learn from your history because it gives you a view of what's going to happen in the future.

One interviewee commented that prior to an ERP solution implementation and/or assimilation:

Is not the time to take a 'rose tinted' [positive] view of such and/or 'skip over' [glance over]. Taking time to be reflective, being aware of the institutional dynamics is to be fore warned.

While Interviewee Two commented that once the projects are done in their organisation: *It was like they were in a hurry to progress on with other things, the attitude was let's not worry or hold people to account as this can be uncomfortable.*

Interviewee Seven saw an integral part of learning from history is tailoring a change management plan depending on the maturity of where the organisation has been and is at, for example:

Are you changing a behaviour that's been set in stone for a long time? And are you

really changing a lot of people's beliefs in how they do things versus a relatively new start up business. With persistence you suddenly start to see how your investment in the self-reflection exercise up front pays back in the project over time.

Swan et al. (2010) comment that there are often complications related to the learning within projects and the handover of knowledge from projects to the broader organisation. Edmondson (2002) believes that an organisation can claim it has learned when its actions have been amended or are now different due to reflection on new information or understanding gained from previous experiences. This understanding acknowledges that learning includes evidence of approaching things differently, which ties action and reflection together. An example of this was portrayed by Interviewee Five who disclosed that they spent a lot of time listening to people who had experience in implementing ERP solutions in New Zealand:

I asked constantly, you know if you're going to do this, what would you have done differently? What works, what does not work? Just really listening to what other people have done. People should not be afraid to borrow/ steal other people's ideas and stuff. If it works, it works", use it for your organisations benefit. Forget about this sought of a 'tall poppy' view of things and save yourself and your organisation a whole a lot of grieve.

This insight infers that this organisation was probably more practised in learning from history and as a consequence, more open to benefit from what others in public sector organisations had done since, thus avoiding the need to "reinvent the wheel", for example.

However, in contrast, most interviewees commented that overall, the learning from past mistakes or successes were not applied, at least when it came to their practices around organisational change.

When queried Interviewee Three shared that:

You can communicate, communicate and communicate but people only listen to what they want. Where change hasn't been constant and/or regular across an organisation historically, and even with the best intentions, change can be viewed as disruptive. In an organisation which is inherently conservative and risk averse, change can be viewed as unproductive. You need to always being conscious of the audience that you're delivering to, and 'tune' in to the organisational contextual influences and be flexible in your approach.

Interviewee Seven disclosed that:

You're going to have pushbacks [setbacks], you need to adapt by softening your style and be persistent. I think the biggest thing is the mind-set, to come back to why are we doing this? The 'why' is really, really important. Without losing sight on the 'how, else you risk losing people's attention. They then regress and generate noise around the way in which you're going about undertaking the change.

This insight aligned with those of other interviewees where in the words of one:
Time and time again I had to reflect on what should be viewed as acceptable organisational behaviour in implementing/ assimilation this whole ERP solution?

All interviewees widely accepted that if you put in one system and hope to roll it out through all the different business areas, it is a big undertaking in any organisational setting, let alone a public sector environment. In many ways, the ability of public officials is greatly determined by the institutional environment that they find themselves in. Manning and Mukherjee (2000) advise that it is the institutional environment in general but also the application of "rules", application of regulations and predictability of things to occur (or not) that greatly determines the time taken and outcomes reached.

Much of the popularised organisational change literature talks of the need for rallying support and generating a tension for change, a 'burning bridge' type moment. Kotter (1995) mentions that there is a risk in playing it too cautiously; when the urgency is not pumped up enough, the transformation process risks unravelling. Interviewees could see how there was a need to create a 'tension' or impetus for change at a business level, with most acknowledging this tension *"was not always so obvious and unwavering at a user level"*.

Conversely, two interviewees spoke of these 'burning bridge' moments/events being present in their organisations. Interviewee Five alluded to one of their previous ERP solution projects being a bit "clunky" [awkward in form and/or appearance]. This aided the project team to create tension for change and tell a story as they travelled to various branches around the country. They were able to say, *"this is what our ERP program is about, this is what we'd like to be able to do and what do you think"*? According to Interviewee Five, the result was:
When they said to their people, you know we're going to be replacing the current ERP system, they cheered.

In this scenario, history and timely communication proved useful in moving to a new ERP solution. In another example of a 'burning bridge' type moment, Interviewee Two spoke of:

As times past new organisation business model(s) were developed to where we eventually reached a point that our old legacy systems no longer necessarily fitted the new business operating model.

In this example, the tension for change was created between the 'old' and the need for a 'new' ERP solution, as the people from within the organisation realised that to support further aspirations and performance measures the organisation would need to move to a new ERP solution.

4.2.4 Sub-theme Two: Summary

So, do stakeholders and other invested audiences quickly move on from or forget history? If not, how prevalent are project debriefs, including observations and interpretation of what went right and wrong with the recent project(s)? Are people/ organisations held to account from such learnings and changes acted upon in future projects? From the above interviewee's impressions and experiences, it appears that there is marked room for improvement.

The words from Interviewee Seven perhaps sum up the thoughts from those interviewed, whereby:

History does not guarantee success, while you have to make sure you consider all elements you might argue that it provides a good indication of future behaviour and outcomes. Those elements and norms that are potentially unique to that organisation versus the previous projects that either you or the consulting company, the vendor or project team members within the organisation have worked upon.

4.2.5 Key-theme Institutional Environment: Summary

The overarching perception of interviewees was that public sector organisations perhaps have and were influenced more by institutional forces in these environments. These institutional forces exacerbate certain norms and behaviour traits, with public sector organisational environments exhibiting increased occurrences of for example:

Increased decision making time and effort
Convoluting in managing stakeholder's expectations, political and otherwise
Entrenched and controlled ways of operating
Propensity to 'gloss' over history

A perceived need to accommodate certain preferences and ways of 'doing things' based on maturity of the organisation
Were risk adverse and conscious of increased public interest
Not agile

Table 4.2, Institutional motivated norms and behaviour

Certain occurrences or institutional aspects from the above are referred to by Wilson (1989, pp.218-26) who notes that public sector organisations are usually large officialdoms structured to achieve their core tasks with stability and consistency, and therefore resist change or disruption of these tasks. Overall, all interviewees concurred that the institutional environment within which public sector entities operate has its particular 'peculiarities' in terms of institutional forces that can prove challenging for the leadership of these organisations when implementing and/or assimilating an ERP solution.

Together with the history of a public sector organisations in ways being a predictor of future events, for example, previous mistakes or successes not always being applied in to practices around organisational change, its conceivable that these factors do impact leaderships ability to drive the changes associated with an ERP roll-out. It moving on to the next key-theme it's possible that senior leaders are themselves influenced and shaped by the institutional outlook, mindset or otherwise of these public organisations.

4.3 Key Theme Two: Leadership

In the extant ERP literature, leadership is consistently identified as the most important factor affecting ERP implementation (e.g. Al-Mudimigh et al., 2002; Bingi et al., 1999; Parr & Shanks, 2000; Umble et al., 2003). This key theme specifically explores the interviewees thoughts on the role of senior leaders; what is it that they need to do? Two sub-themes are discussed, where the first sub-theme to emerge under leadership, but sub-theme three overall from the interviewees, was the need for leadership to provide the organisation with an end to end vision. Inter-related to this is the fourth sub-theme, which is the significance of leadership support and accountability. As noted earlier, making senior leaders accountable for the actions of their staff was at the "heart" of the changes implemented under the State Sector Act (1988) (Cullen, 2021, p.114).

4.3.1 Sub-theme Three: End to end vision

Introduction

A business vision is a common expression for the general overall reason of the organisation, which typically incorporates the values and expectations of the major stakeholders (Johnson & Scholes, 1999). Markus and Tanis (2000) note that it's important for organisations to have a distinct understanding of how an ERP can be used as a strategic solution to support their business vision. The widely publicized motives for an ERP adoption include acquiring a strategic advantage and enhancing customer service, which to different degrees are an expression of organisational objectives (Davenport, 1998, 2000).

Several interviewees spoke of the rationale for organisations moving to a new ERP solution either for the first time or as a replacement. The rationale originates from a business vision, utilising a strategy centred on technology, where an ERP solution is adopted to achieve organisational broad objectives and benefits. For example, Interviewee One spoke of what, in their experience, helps position an ERP project to be successful:

When someone influential comes in with a business case that articulates an enterprise-wide vision of ERP, where a road map is laid out to transform, implement and assimilate an ERP solution end to end across the business.

Interviewee One's comment is supported by Ifinedo (2008), who argues that when an organisation can appropriately articulate the link between an ERP implementation /and assimilation with a vision for the business, affirmative outcomes and the overall success of the ERP solution are higher. Conversely, the opposite is true when the ERP solution is attained without any sensible preconceived rationale.

Interviewee Five spoke of the importance of senior leaders having a really clear vision about:

What you're trying to achieve, how you communicate it, while at the same time being very, very transparent and consistent in how you apply this vision being vital.

Interviewees were under no illusion that to envision a single software solution across an organisation that serves the needs of people in human resources as well as those in finance alongside integrating other organisational processes and customer needs is quite challenging

Interviewee Four spoke of using the ERP implementation as a tool for leaders to actually talk more about a strategic IT road map, the end-to-end vision.

An ERP solution provides an opportunity for what might have previously been quite disparate conversations around leveraging your ERP solution for organisational wide benefits. Conversations around digital investment, promotion of the ERP digital platform and strategic alignment of future IT investment within the ERP solution opens up numerous possibilities.

In considering such Interviewee Two suggested performing what he termed a 'fit gap' assessment:

Fit gap assessment, and if it's an 80% fit or better then you would go with the ERP module rather than the best of breed for example.

By this Interviewee Two was referring the decision around which solution to adopt. If an ERP module broadly provides the functionality and expectations of the organisation's IT solution, they should go with the ERP module. This pathway contrasts with seeking a specialised solution [best of breed] from another provider and then, in the future, having to deal with integration concerns between two different systems. The essence of what Interviewee Two's comments encompassed was supported by other interviewees. Most talked about how when adopting an ERP solution; you need to look at the holistic benefit of having a solution that can manage integrated processes in one solution across an entire organisation.

Interviewee Six reflects on this:

A business needs to preferably get away from having islands of data [databases that don't connect to each other] so you can reduce your integration costs. Then with one solution allowing your organisation to establish a single source of truth that you then add to by connecting additional ERP modules over time.

4.3.2 Sub-theme Three: Summary

Koch et al. (1999) advise a key benefit of an ERP solution is the ability to consolidate a range of different and often bespoke systems that do not integrate and/or speak to each other into a single digital solution. This potentially allows various departments to share information easily and communicate with each other as the ERP solutions can replace multiple software databases with a single and centralized database. These interconnected and comprehensive systems can be influential, integrating operational and customer-centric management information across an entire organisation (Deschamps, 2012). All interviewees were aware of the value that an ERP solution brings to an organisation, but I don't think that all interviewees actually thought that

their leaders actioned the vision well or necessarily saw the ERP strategic solution in that it could also assist change unhelpful institutional behaviour, which leads me on to the next section

4.3.3 Sub-theme Four: Senior leadership support and accountability

Introduction

Senior leadership support is a key success factor for any organisation-wide initiative (Murray & Coffin, 2001). As ERP systems imply fundamental organisational senior leadership accountability is vital for change (Prasad et al., 1999). It needs to be recognised that implementing an ERP solution is not just acquiring another software package. ERP solutions, when implemented correctly, have the ability to transform the way an organisation operates. Senior leaders must be involved from the beginning of implementing an ERP solution and remain engaged by being present, driving change and making alignments all the way through (Murray & Coffin, 2001). ERP implementations will test the resolve and accountability of senior leaders. Koch et al. (1999) suggest that accountability measures should be considered and linked to senior leader's performance plans.

Interviewee Two's viewpoint was that:

The GM's [General Manager] of each business area should have accountability for delivery of the project in their respective businesses areas and reporting back up to the executive sponsor/project manager re progress. It is not the Project Managers role to coerce users in different business areas to move towards attaining different milestones and project 'gates'. This puts the responsibility back on to the business area, the GM of each business area and allows the Project Manager to keep oversight on monitoring the 'larger' organisational picture.

Similarly, this is supported by Beheshti (2006) who claims that senior leaders ought to be involved in the development of an implementation plan, be the driving force behind every phase of the implementation, and resolve any problem encountered to secure the desired outcome. Laughlin (1999) calls for the senior leadership team to communicate business direction, allocate resources sufficiently, and deal with organisational resistance.

Interviewee Four, supported the view expressed above about having accountability in each business areas, mentioning that:

There are so many moving parts, you're 'sunk' if don't have strong accountability in each business area and a sound governance framework.

Interviewee One affirmed a point of importance relative to the difference between a Project Manager and senior leadership, commenting that:

The project manager type of people are like the 'doers', and they're make sure that those milestones and gates are there. But if the senior leader isn't involved in each business area, then this will have a very important impact on the quality, outcome and success of the project. It's part of the executive project sponsor(s) role to hold senior leaders in each business area to account for getting things done in their respective business areas.

Prasad et al. (1999) confirm this view, the responsibility for organisational changes associated with ERP implementation cannot simply be handed over to either the IT department or the Project Manager.

All interviewees, except perhaps one, expressed concern for how senior leaders seemed to struggle in their communication and/or the execution of the organisational change plan. Comments by Interviewee Four suggest that:

There is an 'art' is in bringing people along for the journey. This can be challenging as essentially what we're trying to do is emphasize business wide prerogatives. But that doesn't necessarily always translate well into individual functional activities for business areas. Where 'what's in it for me' the individual tends to always be front of mind.

Interviewee One's viewpoint was that:

Ideally senior leaders are required who are politically astute and who actively lead change. Their involvement and presence I'd suggest needs to be weekly rather than quarterly and/or at periodic intervals.

A sentiment expressed by all interviewees is that leadership cannot be by way of observing from an 'ivory tower'. Stakeholders require that senior leadership are visible. Interviewee One illuminates this point:

Leadership is respected when it's witnessed by walking about, taking an interest and aligning people with organisational aspirations in mind.

The leadership in the organisation that Interviewee Five worked for seemed more conversed with leadership actually implementing and demonstrating what good leadership looks like, as Interviewee Five further commented that:

It was about their leaders and/or managers role modelling the certain behaviour that we wanted our staff to see and these leaders and managers then “cascading” [passing] this out to other staff.

On the point of leadership’s pivotal role in influencing expected behaviour, Interviewee Five spoke of how their:

Chief executive undertook sending out a monthly kind of newsletter/e-mail of up-dates to users in parallel to other communication that’s going on. Comprising of a short video where possible, a video blog newsletter or similar. Their image/brand ‘out there’ appearing on the screen’s saying don’t forget, you know this has just happened or that.

The high visibility role modelling of senior leaders and seeing colleagues/ users as customers was in all interviewee’s opinion’s, a very worthwhile consideration. But with the exception of Interview Five’s organisation, not always widely exhibited widely or consistently by all senior leaders.

Senior leadership needs to explicitly identify the ERP project as a top priority and preferably publicly (Shanks et al., 2000; Wee, 2000). This commitment from senior leadership sends a message to all organisational employees to come on board and provide their commitment to the project. If senior leadership are committed to their own involvement and willingness to allocate valuable resources to the implementation effort, this also aids to employees’ view of wanting to do their utmost to help and be part of the change (Holland et al., 1999; Shanks et al., 2000).

Interviewee Seven made an important distinction when they noted that:

Senior executive business leaders may only have tenure span of say around three to five years. In several instances I saw a continual ‘swinging of doors’ of key leadership positions and/or people walking in and out of the business which definitely effected the momentum of the ERP project.

4.3.4 Sub-theme Four: Summary

All interviewees concurred on the necessity of senior leader support and, accountability for the project. However, queries were often raised by interviewees as to the extent in practical terms of how well leadership were doing with showing this support and actually being held accountable. Interviewee Seven’s reference to a continual ‘swinging of doors’ of key leadership positions reaffirms the critique by Chapple (2019) on the shift in the employment relationship of public sector senior

leaders. Fixed-term contracts and the professionalisation of their role as 'efficient change managers' suggests that little thought has been given to the time an ERP implementation and assimilation can take (Chapple, 2019, p.50). This raises the question of who is accountable for project delivery when senior leaders leave part way through a project? Furthermore, does more thought need to be given to stability in leadership when assimilating complex ERP solutions?

4.3.5 Key-theme Leadership: Summary

From the two sub-themes identified under the key theme of Leadership, the interviewees highlighted the importance of leadership selling the ERP proposition as a strategic vision and investment for the organisation. With senior leadership support noted by the interviewees, and supported by literature, as a key success factor in the myriad of undertakings necessary when implementing and/or assimilating an ERP solution. While it appears that senior leaders understood at a theoretical level the need for support of staff, they did appear to struggle at times to transfer this into practical actions. Staff did not always feel that they were being led. The interviewees observations of senior leadership therefore sometimes fell short of their expectations in aspects of visible engagement and accountability when introducing the new ERP solution across their respective organisations.

While Ke and Wei (2008) note the value of leadership prominence in affecting ERP implementation by nurturing a desired organizational culture. From the above insights, with perhaps the one exception, the leader's exhibited actions to support and be held accountable required improvement and similarly any value in preparing an organisation by deliberately repositioning the organisational culture was not well understood.

Closely related to the two key themes of institutional environment and leadership discussed above is change. Indeed, the key theme of change is best described as the umbrella under which key themes of organisational and people rest. ERP implementation and/or assimilation always involves change, as part of the project framework, process and the outcomes. In adopting ERP solutions successfully, Aladwani (2001) identifies two core change dimensions, organisational and people.

Thus, these key themes explore the interviewee's thoughts on the changes associated with introducing ERP solutions and contending with the magnitude of adjustments and alignments associated with ERP assimilation across an organisation.

4.4 Key Theme Three: Organisational Change

The third key theme to be discussed is the organisational change. Organisational strategies for promoting ERP implementation success include change strategy development and deployment, change management techniques, organisational structure and resources, managerial style and ideology, communication and coordination, and IS function characteristics (e.g. Al-Mashari & Zairi, 2000; Gable & Stewart, 1999; Sarker & Sarker, 2000).

The first sub-theme under organisational change, but sub-theme five overall, is whether managing change is business dependent or sought of the same but different public organisations. Interviewees provide their insight on how managing change was achieved. The sixth sub-theme was whether customisation of an ERP solution is necessary prior to introducing into an organisation, or whether more of an 'off the shelf' approach can be taken when rolling out a new ERP solution. Interviewees share their thoughts on the benefits of data and process realignment as the seventh sub-theme. While the eighth sub-theme to emerge was interviewees sharing their thoughts on how the organisational culture, after implementing/or part way through implementing the ERP solution was starting to show evidence of being more amendable to change. The importance of a sound organisational culture should not be underestimated when introducing a new ERP solution. Finally, sub-theme nine reveals how interviewees saw the arrival of a new ERP solution as a catalyst for on-going change across the organisation.

4.4.1 Sub-theme Five: Is managing change business-dependent?

Introduction

The initial step in managing change effectively presented by IT is to recognise and assess past experiences and attitudes of end-users and influential groups within the organisation (Aladwani, 1998). Does the organisational environment lend itself to managing change assuming the same process each time, or do nuances need to be considered based on aspects such as culture, legacy factors and institutional forces within the organisation, for example?

All interviewees verified an understanding that organisational change means first coming to terms with the fact that there is a void between how the business operates now and the desired state(s) going forward (Hughes, 2010). As interviewees reflected on the preparation required to implement an ERP solution, a dichotomy emerged that resembled two extremes. On the one hand, in some organisations, it appeared that

people had very little understanding of the challenges or the business change that an ERP would bring. Interviewee One shared one example of this scenario:

In this particular organisation several different ERP modules were grouped together. All failed because not enough attention was paid to getting the end-users, buy in. However, in learning the “hard way” and subsequently being much better resourced, investing more in their approach prior to rolling out the ERP technology for the second time around and the resulting outcome was much more beneficial for themselves.

On the other hand, at the other end of the spectrum, some interviewees spoke of organisations that had previously invested more heavily in resources and experienced wider and more frequent internal change. These interviewees noted how this wider and more frequent change had compelled these organisational entities to become more practiced and knowledgeable in facilitating change. As a result, their change management practices typically exemplified more robust practice and improved leadership. An example of one aspect that Interviewee One found useful was:

All through the business you have trainers who “train the trainer” to then facilitate the cascading of knowledge throughout the business. These trainers might wear a pink shirt to acknowledge their role and aid promotion of the new solution.

Interviewees all indicated how a change management program could span across several stages from 1) early user engagement to 2) promoting the technology, a process that can continue for months or perhaps years. The interviewees talked of the importance of preparing the organisation for change to help guide expectations and facilitate expected behaviour. Interviewee Two referred to this process using the analogy of a ‘traffic light’ system:

That to me is the fundamental difference that I see between the ones that aren't or are ready. You get like the “red”, “amber” or “green” (traffic lights) scenario.

Interviewee Two went on to comment that:

Organisations that invest and position themselves in the “green” much earlier on, are more successful earlier on and get value from the ERP investment in a timelier manner after implementation. These organisations are really prepared, it's noticeable that their leadership has thought about the whole change management process of bringing people together and aligning behaviour.

Amoako-Gyampha's (2007) research on ERP implementations shows that when senior leadership pushes for organisational change, it is expected to construct a positive perception. Employees can see that senior leadership were engaged and committed to the changes. This creates an inevitability that change is in order and

'we are all in this together'. They found that employees felt positive and were more willing to engage with the ERP solution.

Elaborating on the "traffic light" analogy, Interviewee Two remarked that:

The organisations that do not invest as much often position themselves in an "amber" type situation. Where leadership has implemented perhaps a "half" change management process, and as a result is not proactive on aligning behaviour. After implementation, the business is on its way but still has noticeable work to the receive value from the ERP investment. In regard to those organisations that are in the "red", these business leaders see ERP as primarily updating the technology only. Where investment is not accompanied by appropriate organisational change after implementation the organisation flounders [struggles].

In general interviewees, except for perhaps Interviewee Five, all talked about how the real benefits from the ERP solution take time to be derived. They commented that this can be due to staff not initially being convinced on the need for change for example and in such instances, it could take some time (years), for assimilation to occur. As Interviewee Six notes:

The things you need to focus on I guess in terms of organisational readiness is understanding the impact of change, and conversely not changing.

Zaltman et al. (1973) observed innovation adoption within organisations and found that the adoption process often occurs in two stages -- a firm-level decision to adopt the innovation (primary adoption), followed by actual implementation, which includes individual adoption by end users (secondary adoption). A principal observation communicated by all interviewees was how now as they reflected on their involvement in their ERP implementations, they could more clearly see how that implementation and adoption by end users was related to how much time, and budget the organisation had to invest.

One interviewee spoke of a cross over point regarding the resources required to prepare a business for change vs getting things done. All interviewees said that it's not a "one size fits all" kind of programme. For example, Interviewee Four spoke of their being:

A balance between moving forward and getting things done vs the time and cost prepping the business to levels of assurance that it is ready for change. What is the cross-over point time and dollar wise, well given that people are involved in the equation this should be perhaps seen as a business dependent art rather than a science, where the same approach works time and time again.

One example identified in the literature is the Prosci Change Management methodology. This model is seen as an adaptable and repeatable approach to enable the people side of change and deliver organisational results Project Management Institute (2000). Change practitioners utilize the Prosci Methodology to create change management plans and approaches in conjunction with their audiences, increasing the probability of adoption towards newly introduced solutions and initiatives. Interviewee Three spoke of the use of this methodology:

We purposely trained their people in “Prosci”, a change management solution. They went across to Australia and trained in this change management approach. They took the view that this approach has tried and tested change management roots. However, it takes a lot of energy in a public [sector] organisation to generate change. Prosci is quite a theoretical approach which and when you operate in a government business environment it can have mixed outcomes.

To illustrate perspective an interviewee disclosed that:

Levels of leadership who reported through to the CEO don’t quite see change as a discipline within itself.

Which is at odds with (Burns & Hughes, 2018, p.142) statement in that ‘organisational leadership and change go hand in hand, and that one is nothing without the other’.

4.4.2 Sub-theme Five: Summary

All occurrences of managing organisational change cast their dilemmas and trials. Dunphy and Stace (1993) mention that in managing change, there is no one approach suitable for all circumstances and objectives. A change framework may be applied, but ultimately the scope and depth of change need to be customized for each project, audience and conditions involved. From the interviewee’s insights above, it appears that organisational readiness and/or the resources and effort to effect change was not always sufficiently comprehended by the leadership of these organisations. Therefore, the value of organisational change was not always executed satisfactorily in these public sector environments for many reasons.

4.4.3 Sub-theme Six: Is the need for customisation a mindset?

Introduction

ERP solutions provide a standardized and united integration of generally most of the information needed by businesses for their standard business functions (Davenport,

1998). ERP solutions may be procured as capital expenditure or leased and operated online (cloud-based), referred to software as a service [SaaS], from ERP suppliers.

However, all too often, to appease the customer base, minimise resistance, and promote acceptance of the new ERP solution, embedded processes in the ERP system are customised to 'better fit' the prevailing institutional norms and values of the organisation. One consequence is that many organisations embark on a complex re-engineering project of reviewing business processes prior to implementing their ERP solution (Light, 2005).

Interviewees spoke of the transition from the legacy system to an ERP solution as both a significant upheaval and an opportunity for organisations to reform their business processes and operations. Comments were made of instances where senior leadership in some organisations wanted to adopt more standardised processes viewed as more efficient and effective at an organisational level. One illustration was the organisation where Interviewee Five worked:

They seized this opportunity making the decision to consume the software as a service with little to no levels of customisation.

She referred to a 'mantra' that was often repeated in preparation for implementing their ERP solution:

'Process takers and not process makers'. We made a decision very early on in proceedings that if we are unique and special in the back of office processes, then it was for all the wrong reasons.

In using this term 'process takers, not process makers' Interviewee Five was referring to the decision that when their organisation started reviewing their 'back of house' business processes, the behind the scenes processes that customers do not see or use directly, they took a wider collective view of endeavouring to adopt the same business processes that were inscribed within the ERP solution.

An ERP solution typically operates on customers IT infrastructure, but on occasions, it may also be hosted in the cloud [data centres] managed by the ERP providers. Venkatachalam et al. (2012) highlight the potential benefits of operating on a Software as a Service (SaaS) model, including reduced implementation costs, ease of access to global innovations and scalability.

Interviewee Five explains:

This approach had strategic merit in that our leadership got our people on board,

including the end users, very early on with the fact that they going to consume software as a service, that they were not going to change the business processes inscribed within the ERP solution.

Their change leadership work started much earlier on. In buying into the prerequisite that whatever ERP solution they ended up with that the processes were largely (if not completely) not going to be customised. Their existing and/or proposed business processes would have to adapt to embrace and reflect the more widely and commonly used process models inscribed in the ERP solution. Choosing to up-date what they currently did and implement software-enabled processes rather than trying to make the software do what they've always done. Which meant as you might imagine, personal and political agendas had to be put aside.

Conversely, in a SaaS ERP model without any level of process customisation organisations risk not always getting the same sense of ownership as they neither own the infrastructure, nor inscribed business processes (Seethamraju, 2014). Seethamraju (2014) acknowledges that fostering a culture of change and education early on in the project can effectively position the organisation for faster and improved adoption of the new ERP solution. Harris (2000) supports this view of SaaS solutions being easier to implement. Many organisations do not fully understand the impact on cost, maintenance, and other downstream effects on other parts of the system that customisations devolve when changing the inscribed ERP business processes. By integrating the inscribed business processes of the selected ERP solution as part of their overall change management program Interviewee Five commented that:

I'm inclined to believe that it no doubt underpinned and accelerated our transformation to the new solution. As previously we used to change our software because it was easier to change our software than it was to change our people.

4.4.4 Sub-theme Six: Summary

Customisation of processes within an ERP solution is neither necessarily a 'good' or 'bad' thing, it is undertaken and what's important is to appreciate why (Light, 2005). Higher levels of customisation suggest that the process rational impressed in the ERP solution has been adapted in some way to fit in with and integrate with certain local beliefs, preferred behavior, together with organisational institutional preferences (Pratt, 2009). As customisation of ERP processes can abate user resistance so that processes better 'fit' in, and therefore the ERP solution is more easily adopted by end users. Although organisations that are perhaps more progressive and better at accommodating change, such as in the case of Interviewee Five's organisation, decided to stay with the imbedded ERP solution processes.

4.4.5 Sub-theme Seven: Data and process realignment

Introduction

A positive that interviewees identified of embracing one database across the organisation was witnessed through data and process realignment.

With one interviewee noting that:

In realigning processes, they had seen a simplification of their back of house environment. They had 'bolted' so many things on to the old system, with so many workarounds to get the systems to speak to each other or pull data from different places and then consolidate. They were now starting to unbolt and get rid of these on the side systems and consolidated into one, their new ERP solution.

This simplification characteristic was reinforced by another interviewee who commented that: *The ERP allowed them to sort out their IT architecture and 'back of house' [behind the scenes, generally administrative in nature] processes. Previously they had to manually trawl through filing cabinets and emails, this operation is now automated with the press of a button and within a few minutes it's done.*

Olson, Chae and Sheu (2005) endorse the efficiency gains ERP systems offer. They see tremendous opportunities to consistently provide information to organisations standardized, centralized, and cost-efficient.

All interviewees remarked that with the automation and data linkage that ERP integration delivers, the improved service delivery is remarkable. This aspect is supported by Interviewee Four who commented that:

The benefit of automation and linking business processes in the ERP solution has been huge.

While Interviewee Six testified that:

This is the sort of stuff that moves the gauge in terms of engagement with our people in the community who engage with us. If we can deliver really good service, then we can engage with our communities so much better.

This interviewee from a local council spoke of the speed of which information could be provided. *With their former system and the process around this it took up to three days for LIM (Land Information Management) report to be issued to clients. But now with this new ERP solution we're able to issue LIM reports much faster. By having all*

of your information sources linked intentionally together through the same ERP solution it allows to deliver faster customer service.

Botta-Genoulaz and Millet (2005) support the above statements and say that companies that implement an ERP system experience improved performance from an information perspective, as its more easily accessible and this facilitates improved service across the organisation.

Interviewee Five gave a further example:

The revised year end process in the ERP solution reduced the overall process by taking out particular unnecessary steps, but still making sure that all the steps happened in the right order. It had the ability to extract data through into a narrative reporting tool. The corporate finance manager reckoned it significantly reduced the amount of time off the overall year end close process, with incremental time/process savings planned for the next year. This was around a 40% time saving. If you actually implement the ERP solution with the built-in processes in just the way the software developers intended, it removes so many impediments and obstacles.

Nevertheless, interviewees mentioned that success is often relevant to which area of the organisation one references and what perspective is taken when considering the changes evoked by ERP. To illustrate Interviewee Four mentioned that:

There had been some negativity and pushback around some areas of the business regarding the additional work that's required by having linked up processes. For example, if you look at procurement, where in the 'old days' you could go down and pick up something. You wouldn't necessarily need to instigate a purchase order prior to picking up the equipment. Not only do you now need to raise a purchase order, but it needs to be receipted in the system. An ERP system has required a different approach in this respect, maturing procurement practises now require the 'administration of raising a purchase order first. This expenditure must be approved through the appropriate delegation and the product/ services receipted in the system to "close" the purchase order.

Taking an organisational view, interviewees appreciated that implementing a new ERP solution allows the organisation to reconsider previous governance aspects (or lack of). It attempts to re-balance *the processing workload* on the initiating party (back in the business unit) as opposed to *more centralised business functions having to second guess and follow things up* (i.e. Accounts Payable running around and the back end trying to get approval(s) to pay).

Interviewee Seven commented that:

A maturing procurement practice now places the administration of raising a purchase order back on the business first but for the overall benefit of the organisation.

4.4.6 Sub-theme Seven: Summary

Fub et al. (2007) state that ERP solutions support organisational endeavours to adjust their operations, as they possess compliance functionalities that can assist organisations in achieving their regulatory duties. In enforcing such compliance to use the processes in the ERP solution it also better ensures that data is captured and actioned correctly. This alignment of data and processes from the above examples given by interviewees provide evidence of how ERP solutions can promote adoption of standardised business processes and support governance aspects across an organisation. In this context they may actually assist combat unhelpful particular institutional forces. Further to this all interviews were impressed that there was now one organisational database and the speed within which information could be presented and utilised to improve both internal and external customer service expectations.

4.4.7 Sub-theme Eight: An organisational culture more amenable to sharing knowledge and change

Introduction

The organisational culture may also be perceived as a knowledge resource as it provides the context around which organisational members create, acquire, share, and manage knowledge (Holscapple & Joshi, 2001, 2003; Kayworth & Leidner, 2003). In many organisations, a significant cultural change may be required to transform employees' attitudes and behaviour to feel secure and less hesitant in sharing their knowledge (Alavi & Leidner, 2001). Some organisations are nimbler and change-oriented, always wanting to improve their operations. Change and sharing knowledge is often more widely accepted in these organisations because organisational members are comfortable with change and view it as affirmative Brown & Eisenhardt (1997). While other more complex organisations, regulatory influenced and perhaps more prevalent in the public sector tend to be characterized by a preference of "not rocking the boat" and are very stability orientated.

More than one interviewee revealed that an ERP implementation was an opportunity to focus and/or improve on the organisations culture. Interviewee Five stated that: *the organisations she had worked at were becoming more open and nimbler in accommodating change. For example, when they started their ERP journey people*

weren't really into the change. People were quite confrontational and protective of their own 'patches' [areas under their control]. I witnessed a fair bit of falling out around the place over how things might work in the future.

However, Interviewee Three went on to mention that:

As we have gone further and further into the assimilation phase(s) people generally now see it for what it is, which is the business changing and evolving the way in which it performs its business. It's difficult to argue with higher levels of customer service and removing unnecessary process steps, as well as political biases from the way in which an organisation operates. There's been a big change in people's attitudes, so it's very much about working together now. How do we make this happen and how soon can we get it done?

Most of the interviewees generally supported this view, commenting that the organisational culture in the organisations they interacted with was more open to sharing ideas, resources, and collaboration with cross-departmental projects. In considering these aspects, it had made the business more open to future change and interested in what benefits change could bring.

Barker and Frolick (2003) emphasise that ERP solutions break down impediments between business areas and allow for the movement of critical information between business functions. This movement of critical business data allows organisations to experience tangible and intangible benefits such as improved reporting and streamlined activities. With its integrated framework, ERP solutions demand organisations to change. Gosain et al. (2005) write that ERP systems, over time break down resistance to change, with 'silo effects' progressively reducing as there is a greater emphasis on cross-functional teams working together. One interviewee did note the difficulty of attributing an organisational culture shift to just their ERP solution alone. In this instance, implementing an ERP solution was one part of an intentional wider cultural change programme. ERP solutions are catalysts for change, but without intentional organisational change programmes around them, implementations and integration into the business will not be successful.

Post-implementation of introducing their ERP solution, Interviewee Four went on to articulate that:

We're now better positioned to have collaborative discussions around technology investment, aligning business technology decisions and business processes. Which is kind of a key point in choosing to invest in an ERP solution in the first place. These

conversations are bringing people together with a view of finding cooperative outcomes using the ERP solution.

Interviewee Six spoke of improved digital awareness around the business with IT maturity starting to grow:

ERP solutions are great for breaking down organisational barriers and designing processes that put in building blocks for organisational value. In a public entity this cannot be underestimated, it's a massive benefit. More sharing of information and less building of silos. Breaking down those barriers through technology and in doing so intangibly improving the organisational culture

Interviewee Three remarked:

There has been a real shift in the organisation since now operating in a digital ERP environment. People are starting to see the potential benefits and a "flip around" [turn around] is starting to emerge right now. How do we make this always happen and how soon can we get it done? There's been a big change in people's attitudes, so it's very much about working together now.

Interviewee One explained:

Where an organisation's history has been quite immature in terms of their IT or their digital transformation strategy, maybe not even centralized or a common financial system or has done things quite ad hoc or there was still see a huge amount of information in spreadsheets. The benefits that they are now experiencing from their ERP solution in terms of that workflow efficiency, effectiveness, organisational culture and in this COVID world, even being able to do things remotely has been phenomenal

4.4.8 Sub-theme Eight: Summary

Examining an organisation's culture affords insight into whether an organisation is more practised in change and/ or the magnitude of institutional forces that exist. As elements of an organisation's culture, such as un-helpful institutional forces, may act as obstacles to knowledge sharing to support the ERP solution, which contradicts the integrated, cross-functional nature of an ERP environment (Baskerville et al., 2000).

Comments from the above interviewees suggest that in adopting an ERP solution it changed the way in which internal departments worked, which was now more about collaboration and working together. This had assisted repositioning their organisation's culture, so that knowledge sharing is now more prevalent going forward and the organisation is more nimble in accommodating future change (Mary et al., 2006).

Furthermore, the requirements for knowledge sharing do not stop once the ERP solution is adopted (Lee & Lee, 2000; Massey et al., 2002). Recognising that it was a process that employees were going through, interviewees perceptions were also that employees were less afraid of what change meant and more open to it.

4.4.9 Sub-theme Nine: Is ERP as a catalyst for on-going change?

Introduction

When an ERP solution has been technically implemented and has 'gone live', it is a distinct point in time. In the aftermath, perhaps only those who have been part of an ERP project can appreciate how momentum needs to be maintained to facilitate continued improvement and assimilation of the ERP solution. All interviewees were united in this view, that the changes brought about by ERP should be a catalyst for ongoing change.

A selection of comments from interviewees traverse two questions: Does an ERP assimilation have clear definitive boundaries or should it serve more as a catalyst for ongoing process improvements across the organisation?

Interviewee One:

Oh absolutely, a journey. I mean in terms of a destination where a project is now complete from a client's perspective does not occur when one looks back retrospectively.

Interviewee Four:

Yeah, it's very much the latter. ERP assimilation serves as a catalyst for ongoing business improvements. It should be recognised that ongoing business improvements can have such a wide definition.

Interviewee Six:

For us very much a catalyst

Interviewee Three:

Absolute catalyst for on-going process improvements.

Interviewee Five:

I would consider that it's a catalyst for continuous improvement.

Ross and Vitale (2001) also use the term “ERP journey” and argue that this journey has different phases. Markus and Tanis (2000) name what they perceive as being four phases, such as: ‘project chartering’, ‘the project’, ‘shakedown’ and ‘onward and upward.’ The “onward and upward phase” is described as the interval in which the business realizes incremental benefits and efficiencies from the ERP solution. It often takes several years to implement the ERP system fully, to refine the alignment of the organisation so that it more fully leverages the opportunities offered by the ERP system (Beard & Sumner, 2004).

Most interviewees supported this statement, commenting that ERP solutions can take time to assimilate and therefore ongoing work is required fully. Interviewee Seven mentioned that:

Immediately after implementing most organisations are only using a relatively narrow part of the entire ERP solution. The challenge in using any business tool is getting that return on investment. The same can be said for ERP solutions because people get different levels of expertise depending on how frequently they use different ERP modules, processes and aspects. These assimilations are completely driven by how frequently someone uses the tool and how easy it is to use. And that's why you'll see these assimilations still in motion two to three years after implementation. Some activities you only do once a year (i.e. year-end financials), while other processes you do every day/ week (i.e. requisitions)

Interviewee One expressed that:

Afterwards the business has come around and taken ownership of the solution this is where it starts because you then start looking at a business on realising benefits, looking for efficiency and effectiveness. People see different possibilities and it creates a compulsion for people in the business to want to automate and improve their business processes further

Interviewee Two spoke of:

ERP solutions have new up-dates and releases which will cause customers to look at things in different ways and therefore resulting changes are probable.

This comment was reiterated by Interviewee Four who stated:

Essentially you know that the idea of ‘evergreen software’, is that it’s always being updated, always changing. Which essentially means you have to comprehend that business processes will need to involve the use of the software and from time to time may evolve as the software functionality changes

This view is affirmed by Markus and Tanis (2000) who saw their stage model (described above) as reiterative. This means that organisations often return to earlier stages in these processes when undertaking major upgrades and/or particular material process refinements.

Interviewee Seven drew on the analogy of total quality management:

In the context of ERP processes continuing improving, it's very much similar to the Japanese manufacturing discipline of total quality management. You start with this, but then in the following months you'll attempt to go to the next level and the next level, and the next level. You're challenging and moving processes forward for greater effectiveness and efficiencies. That is what very good organisations will seek to try and do, continuing to improve their business operations and maximise the return from their ERP investment.

4.4.10 Sub-theme Nine: Summary

Many companies treat their ERP implementations as any other software project (Koch et al., 1999). Once the implementation is complete, the project is seen as over. This is a common oversight, as implied by the interviews who mentioned that the ERP projects are a catalyst for on-going change. The comments from all interviewees signalled that in utilising the ERP solutions, organisations see different ways of refining processes, changing the “look and feel” of things to enable phased improvements over time. This focus when maintained by leadership effectively helps assist in ensuring that former aspects of un-helpful institutional behaviour are mitigated in the organisations quest of wanting to move forward.

4.4.11 Key-theme three, Organisational change: Summary

Projects are defined as, “temporary endeavours undertaken to create a unique product or service” (Project Management Body of Knowledge, 2000, p. 204). Projects have a beginning and an end; an ERP implementation is a good example. Programmes are typically more comprehensive usually comprising of a collection of related projects. Programmes are ongoing, so are more akin to an ERP assimilation across an organisation.

The five sub-themes identified under the key theme of organisational change, give insight into the magnitude of mostly incremental and positive change that is initiated from introducing a new ERP solution in an organisation. It came across that managing change is largely business dependent and strongly influenced previous changes that the organisation has been through and the senior leaders previous experience in

leading organisational change.

Ke and Wei (2008) communicate that when senior leaders intentionally foster a desired organisational culture to support change it enhances the chance of the ERP solution being even further successful. In support of this interviewees noticed in organisations that invested more heavily in change and/or are more practised in change, that these organisations reaped the benefits from their ERP solution more rapidly. It was considered by interviewees that once the ERP solution was more fully integrated and adopted by an organisation, that the organisation was left in an improved operational state. With some of the improvements specifically in relation to data and process realignment, an organisational culture more amenable to change.

The feedback from interviewees denotes that ERP solutions can act as legacies for on-going change and delivering higher levels of customer service going forward. This momentum can assist an organisation curtail unfavourable institutional forces and minimise the effects of such. As people start to see their ERP solution for what is, a strategic investment in the organisation's future.

4.5 Key Theme Four: People Change Considerations

The fourth and final key theme and the second change dimension that I introduce is that of changes in regard to people, specifically end users. Examples of end user strategies include staff attitudes, involvement and training (e.g. Amoako-Gyampah, 1999; Gable & Stewart, 1999; Russo et al., 1999; Computerworld, 1998).

The first sub-theme, which it is recognised is sub-theme ten overall, contends with end users views on that of protecting their job and primarily their reservations in regard to keeping such intact. The second sub-theme includes how effectively or otherwise these organisations tried to integrate end users views and requirements into the ERP project and overall outcomes. Whereas in the third and final sub-theme interviewees give some insight into the importance of using key end user resources wisely, particularly when contemplating the on-going nature of future improvements and ERP up-dates.

4.5.1 Sub-theme Ten: Job protection

Introduction

Chapple (2019) highlights the scope of restructures (internal and external) NZ public sector entities have faced in the last decade. "Restructuring kills valuable networks,

eliminates core institutional knowledge and demoralises staff” (Chapple, 2019, p. 53). The changes about introducing a new ERP solution also extend over into prompting changes in people’s roles, especially those at an administrator, coordinator type level. Given this, some interviewees saw one of the biggest change challenges that they faced was around issues connected with job protection. Interviewee Six illuminates this fear:

They had been with their previous system for going on some 30 years and with this legacy system had some processes are very manual, around 0.2 to 0.4 of a staff’s position description for example. There resource consent process, for example, was a nine-step manual process. They could now perform this nine-step manual process, all of it, in this new system. So where does that leave the individuals who used to facilitate these previous nine manual processes, how does it affect them?

With Interviewee Six then going on to say that:

Some individuals from different business areas felt like, “Oh my God, you’re going to automate most of my job” or “what’s in this for me”.

Interviewee Four also commented on the potential for job losses:

With their new ERP solution, a lot of those manual type processes were disappearing.

The language used to justify an ERP system implementation, such as efficiency, more customer-centric, and expediency signals the likelihood of severely altering the tasks and the way people view their work. A fundamental argument that Morris and Venkatesh (2010) make is that job perceptions and the implementation of an ERP system will interact to influence employees’ job satisfaction. Yet, the effect on job changes, probably felt more at the administrator role level (bottom to mid-level in a hierarchy), appears to rarely be an explicit consideration in the implementation of ERP solutions. Murphy et al. (2012) advise that ERP automation of processes and process integration may conceivably result in decreased role identity for administrator type users. As ERP solutions emphasise centralising data and processes, these solutions typically prioritise functional departments, groups, or individuals (Davenport, 2000). Moreover, the user’s behaviours and their resulting ‘buy in’ are crucial in utilising ERP systems. Job content and position description alongside transparency on the possible impact affect behaviour (Judge et al., 2001; Wright et al., 2005). Unless implementing organisations pay specific attention to managing material changes in users position descriptions, it can profoundly affect morale and resistance to the new ERP solution (Appuswamy, 2000).

In a similar manner to other interviewees, Interviewee Three spoke of the need to be very careful in the wording around changes to position duties. One example given was to say that:

The ERP solution was removing more meaningless work from the organisation, so that such duties could be replaced with more meaningful work.

4.5.2 Summary: Sub-theme Ten

Interviewees acknowledged that end users, particularly those at an administrator or coordinator type level, expressed concerns about their job changing. This aspect is supported by (Laughlin, 1999; Ross, 1999; Robey et al., 2002; Staehr et al., 2002) who claim that assimilation of an ERP solution into an organisation often radically alters the operational processes of the organisation by rearranging the flow of communication and information.

Interviewees appreciated that responding to all concerns from end-users regarding how people's roles may or may not be affected while undertaking organisational wide change was not easy. Particularly when the prime focus was on improving the operations at an organisational wide overall. However, inadequate involvement of end users can result in them having wavering perspectives about the need for the ERP solution, and therefore in such instances leadership risk end users being more sceptical about the ERP solution, which may be initially rejected or underutilised (Amoako-Gyampah, 2004).

What was also acknowledged is that how end-users interpret and distinguish between 'meaningless' and 'meaningful' work. As meaningful work is often subjective in the eyes of the individual.

4.5.3 Sub-theme Eleven: What about end users?

Introduction

A further inter-related theme to emerge from all interviewees revolved around the end-users of the ERP solution. One example is the gap between how the inscribed processes are built into the ERP solution by the developer and subsequent refinement of the intended functionality versus how end-users thought or would have liked the processes to work in their particular work setting. Where not carefully managed, this may lead to what Otley (2008) refer to as a clash between the existing legacy institutional logic, structures, and practices of the adopting organisation and the changes expected by the end-users but not delivered within the new ERP processes. Interviewee Seven commented on this divergence:

There was a complete lack [absence] of everyone putting themselves in the position of the end user, what do they need to do their job?

Further, Interviewee Seven expanded on this process usefulness/efficiency perception issue:

It might be an end user needs to procure a contract for at least for five years or make some travel bookings. Whatever, people [e.g. developers] need to put themselves in the 'shoes' of the end user rather than the software configuration. The focus needs to be on the end user experience and providing a suitable tool for them to undertake their job, since end-user satisfaction should be considered as one useful predictor of ERP success.

Davis (1989) considers that end-users who perceive an information solution as adding value are more likely to be satisfied and resist customization of processes than one who does not. Some authors point to a dichotomy between implementing integrated, standardized ERP technology and the traditional, fiefdom-like structure of some businesses areas that are very much controlled (Allen & Kern, 2001; Cornford, 2000; Pollock, 1999), with Universities being given as an example. Expectations and anticipation heighten in the adopting organisation leading up to the implementation. Afterwards, once end-users begin applying the inscribed processes in the ERP solution, actual practice confirms if there is or are no variances between the inscribed processes in the ERP solution and the institutional/end-user process logic of how they thought these processes should work (Ferreira & Otley, 2009).

Interviewee Four indicated that:

They had intentionally included end users from the business and endeavoured to take them along on the journey. Because that is how it should be viewed, as a journey rather than a destination.

Interviewee Four went on to say:

They actually put the ERP suppliers' people in front of a few key business stakeholders including end users. These key business stakeholders get to see the way the software works; they actually are end users and therefore by putting the building blocks of these things together, they get to configure it so grow in their ownership of the decision that gets made and eventually the resulting solution.

Interviewee Two emphasized:

While this might be viewed as an information technology project, it's not the information technology directorate doing it for or to you. Within reason [i.e., subject to

budgets for example] key business stakeholders, first-hand involvement by the operating areas in the selection of the ERP vendor and designing and confirming the business processes is good for instilling improved buy-in and trust from end users, and therefore providing longer term benefits.

Interviewee Two noted that the organisation they were involved with was only partway through their implementation/ assimilation, so the point of longer-term benefits was still being worked on. Another interviewee spoke of how the change management for some end users was challenging, with Interviewee Three commenting that:

It is pretty intense stuff, because it involved actually finding out what the individual needs of end users were and paying special attention to the communication they receive. Adequate and targeted communication channels were viewed as being very important.

When interviewees were asked to share their thoughts on end users, they all indicated that managing the expectations of end users was important. Interviewees referred to undertaking “*heavy engagement*” with the end users and despite the training, there were still a few people that got stuck on the user interface, the means by which the user and ERP solution interact. Interviewee Two explains this point further:

It's not like what might be installed at home, it doesn't look like a Netflix sought of thing. These interfaces were not personally what I want or envisaged.

Iso (1998) advises that usability problems (issues) can hinder the degree to which an ERP solution can be used by its users. There is an expectation that the user interfaces in the new ERP solution will be easier to use, intuitive and aid the end-users to carry out their tasks.

Interviewee Two stated that:

managing end user expectations was hugely important and the need to work through such aspects as part of the overall change management process was vital.

Amoako-Gyampah (2003) note how technology acceptance and software usage is governed in two ways: first, by a behavioral desire to use the software, and second, where the intention to operate the software is in part influenced by a person's attitude toward the software and its perceived usefulness.

While acknowledging the importance of end users, some interviewees indicated how end users sometimes requested some rather strenuous demands. Interviewee Four is one example:

It is impossible to keep their entire organisational end user audience happy all the time with decisions that were made.

The ensuing conversation raised the question if it was actually necessary to keep 100% of the end user audience happy all the time or is there a kind of a threshold there? The percentage might differ dependent on the organisation but it was recognised by interviewees that you will not achieve 100 % all the time. Interviewee Four thought something like 40% was more realistic in terms of keeping the internal audience happy.

Laukkanen et al. (2007) mention that ERP system adoption is typically accompanied by considerable time, money, and effort investments. The decision to acquire an ERP solution can have considerable implications for the adopting larger organisations where implementations may last several years, such as when a system is heavily customized to make it better suit the needs of the adopting organisation (Davenport, 1998).

Reflecting on the length of time implementations can take, Interviewee Six stated:
Hopefully you get to a stage where usage becomes common and routine, and therefore you've reached the required adoption. Staff will come and go; new staff come on board and adopt the business solution as there is nothing for the new staff to compare it against. Proportionality we have found that adoption within the younger workforce generation was a lot easier and swifter. They are more tech savvy.

Interviewee Six went on to articulate that:

Perhaps a more tech savvy individual is a key driver when implementing / adopting ERP solutions particularly if you can approve transactions on mobile devices. It's almost as though this mobility and the ability of working anywhere resonates with a younger generation. They have a higher familiarity with technology, learn such more quickly and tend to 'play' or learn in the same way, yeah. While an older worker perhaps expects to limit their work to a desktop and only during office hours.

4.5.4 Summary: Sub-theme Eleven

All the interviewees concurred in principle, commenting that some people get 'it' (both the need for the organisation to implement a new ERP solution and acceptance of the new ERP solution) within days, while others take considerably much more time. Changing people generally requires an intentional and prolonged effort. ERP system adoption could therefore be seen as a sequence of progressive phases to boost user confidence and matching transitions in the solutions perceived usefulness and value

as felt by end users, that is an evolutionary solution enhancement process (Panagiotidis & Edwards, 2001; Tan & Pan, 2003).

Interviewee Five sums up the feelings of interviewees in regard to end users/ people: *There needs to be an adequate focus on bringing people along on the journey. Technology is actually the easy piece of change management/ leadership. Changing people to support and feel comfortable using the ERP solution and in turn actually transforming the business operations is the hard part.*

4.5.5 Sub-theme Twelve: Using people resources wisely

Introduction

Alongside the necessity to bring people/end users along on the journey, interviewees indicated the importance of wisely using external and internal 'people' resources. An ERP project can seldom be accomplished by organisational personnel alone and requires external consulting support (Swartz & Orgill, 2001; Wang & Chen, 2006). While interviews indicated that it was inevitable that some consultants/ contractors would be necessary the trick was how much and what legacy/ sharing of knowledge they might leave. One example used by Interviewee One was the use of a lot of fixed term contractors and consultants to do the change leadership:

Then once the implementation is complete in the IT sense, that is the technical sense, they 'fly off'.

Several interviewees expressed that in 'flying off', the organisation loses a lot of skills and experience that fixed term contractors pick up on the ERP journey, that then disappears when the contract period ends. Interview One went on to say that:

If they had backed filled the functional permanent roles and educated their own staff to facilitate the change/ learn more about the ERP solution then it perhaps would have better positioned the organisation for the future assimilation phase(s).

Interviewee Seven's business philosophy in regard to teaching was to:

Teach a man to fish for a lifetime, rather than bringing him fish each day. This way the organisation is more self-sufficient, capable and knowledgeable in regard to the ERP solution.

Interviewee Seven continued raising the question of vested interests:

Whereas many other ERP organisations want to continue to make money from the organisation by way of consulting fees, which go on and on. If you take a destination focus that can be a problem. Because after the implementation these people leave

and then how do you reinvigorate your project for the assimilation phases? How do you then take the ERP solution forward to realising further and further benefits? It's not that you can't but rather you're now on the 'back foot' because this expertise has left the business. An ERP is not finished when it's technically implemented, the assimilation phase(s) are a journey that also require an enhanced skill set and focus.

While Interviewee One commented that:

ERP solutions with their ERP consultants are not low-ticket items. You need to invest in your permanent people as much as you can rather than being reliant on [expensive] consultants and contractors.

Interviewee Three elaborated on the juxtaposition organisations face:

With this stuff you can't take people away from the business. You have to have an element of business-as-usual stuff going on as well. So, for instance we've tried to work our program around some blackout times with our finance team because over certain months they start doing the annual report. So, we've got two months of needing to remove them from the project. You know this hasn't been a straightforward and it's been a bit of a balancing act.

Conversely, for another interviewee, the business had made a deliberate choice to put their staff into the project and to 'back fill' [support] them with contractors and fixed term staff to do the 'day-to-day' tasks instead of bringing in fixed term staff and contractors to run the project. They swapped it around the other way and communicated that this had been a very wise choice. By taking this strategy, Interviewee Five observed that:

As our people were undertaking the change leadership and management, the commitment and pride that our people have in the solution itself is huge because they've the ones who have created it.

4.5.6 Summary: Sub-theme Twelve

The feedback from interviewees suggested that similar approaches were utilised in providing resources for ERP implementations. Some used their own staff quite extensively while others did not so much. However, all acknowledged the importance of training key end users so that their people could build up a knowledge base of the ERP solution. Research shows that consulting / contractor fees are a substantial part of ERP project costs and that together with the remuneration of internal resources may add up to over 70% of all overall ERP costs (Hartono, Santhanam & Holsapple, 2007; Swartz & Orgill, 2001). So, going into an ERP implementation with a mindset of

when consultants/contractors are required vs when they are not, can save an organisation a lot of money. Further to this, the appreciation and direction that ERP customers give their consultants to share knowledge is imperative. As consultants/contractors are required to help with process guidance and share their experience and transfer knowledge, and both aspects should be written into contracts (Volkoff & Sawyer, 2001). By transferring knowledge, organisations can upskill themselves and derive improved value from their ERP package without the need to continue to rely on expensive consultants.

4.5.7 Key-theme Four, People Change Considerations: Summary

This key-theme detailed and discussed interviewees views on the changes relative to what they had witnessed with reference to people/ end user change considerations. I feel it was important to incorporate end user's perspectives, as it gives us a further view to understand how or if leadership sufficiently considered this important group of people, and recognising that end user satisfaction has been found as a critical success factor when implementing an ERP solution Ijaz et al. (2014).

All interviewees agreed that technology is more easily changed than people. They also acknowledged that addressing people concerns with regard to job protection, when improving the organisational operations overall, required careful handling to not get them off-side. The interviewee's explanations of whether end user's expectations were met and was it necessary to keep them happy all the time was varied. Although the importance of keeping end users onside as best as one could and endeavouring to bring them along for the 'journey' was noted as an objective.

Probably few people are ready for the magnitude of changes associated with introducing a new ERP solution, which can extend over into changing end user's roles. I digress that previous organisational behaviour and current organisational culture would play a key part in how favourably people embrace the ERP solution. Interviewees also noted the importance of using people resources wisely and transferring ERP knowledge to permanent key users so that the organisation then has inhouse knowledge of how to harness improved use of their ERP solution.

In considering the wide-reaching change complexities that initiating an ERP solution brings to both the organisation and the people with the organisation, the responsibilities that senior leadership face in navigating an organisation through such should not be taken light heartedly. Else shortly after technically implementing the ERP solution elements risk unravelling and the assimilation phase(s) taking years. Historical and current perceptions (and reality) of leaderships ability to get things

done, the prevailing organisational culture and aspects such as how amenable the organisation is to change make a considerable difference. Its these features that I discuss further in Chapter Five, entitled Concluding Commentary.

Chapter 5 - Concluding commentary

This chapter will present the closing commentary from this research into 'how perceived institutional forces impact ERP implementors when assimilating an enterprise resource planning solution in a public sector organisation'. The first section recapitulates the topic under investigation and the methodological approach, while the next section summarises and draws together the key themes identified throughout the research. The third section acknowledges the limitations of this research. While the fourth section underlines the contribution and practical application of the research. Finally, the chapter wraps up with some concluding thoughts.

5.1 The topic under research and the approach

ERP implementation and/or assimilation success relies upon good leadership (Sarker & Lee, 2003). Further to this leadership is depicted as a contributing factor of organisational culture (Schein, 1985); and the harmonisation between organisational culture and an organisations information system is vital for ERP implementation success (Cooper, 1994; Martinsons & Chong, 1999). It has been stated that ERP implementation and/or assimilation compels an upheaval on the adopting organisation whilst at the same time an opportunity to encourage a culture that is conducive to making the most of this occasion. In considering how senior leadership navigate this opportunity and position the organisational culture extends our understandings of probable ERP implementation and/or assimilation outcomes (Ke & Wei, 2008).

Moorcroft (2005) describes leadership as a relationship through which a group of people or an individual with power, engage and sway the behaviour of others. It also implies that there is a requirement for these others to follow (Mauri, 2017). Consequently, a holistic view of leadership is incomplete without also taking into consideration the followers (Hollander, 1980).

The period after ERP implementation, is a time where leadership get first-hand experience of whether their earlier investment in appropriately making ready, and nurturing the organisational culture, will yield the anticipated results and staff willingness to actively support the new ERP solution or not. Notwithstanding that in an organisational setting, earlier viewpoints from staff and shareholders in regard to whether there was mutual trust, loyalty, respect and a willingness to actively support

them (Wang et al., 2005), may characterise in reality how staff and shareholders prolong or embody support for the ERP solution.

A number of organisations are unsuccessful in what Fichman and Kemerer (1999) term as an “assimilation gap”, which is the lag associated between the widespread use of ERP solution and the adoption decision. This lag may occur for a variety of reasons such as insufficient knowledge of the organisation and its staff and shareholders to realise timely and refined benefits from the ERP solution, ERP end users not actively or enthusiastically supporting the ERP solution with institutional forces encumbering leadership’s ability to bring about the desired actions to leverage the ERP solution for example. Pishdad and Haider (2013) go on to note that all too often the implemented ERP solution is not brought into line with the organisational culture and environment, hence fails to match end user’s expectations. If leadership does not quickly come to terms with this, then a void may result in leadership wrestling with how to leverage the ERP solution across the organisation.

Literature suggests that the match between the information system and organisational culture is essential for organisations to fulfil potential benefits assured by advocates of the solution (Romm et al., 1991). When the ERP solution collides with an organisation's culture, it's probable that resistance behaviour will ensue. The solution will be rejected, sabotaged, or even customised to match the prevailing culture and/or take prolonged periods of time to correctly assimilate across the organisation (Cooper, 1994; Martinsons & Chong, 1999). In contrast there is evidence that suggests that culture can be consciously realigned and manipulated by leadership (e.g., Schein, 1985; Senge, 1990; Vera & Crossain, 2004; Waldman et al., 2001) with a view to repositioning the culture so that it enhances the chances of ERP assimilation success. However, it should be noted that the reverse is also true, in that the culture and/or institutional forces present at an organisation may also impact upon leadership’s ability to appropriately assimilate the ERP solution across the organisation within what might have previously been considered reasonable expectations. Further to this is the likelihood of such a phenomenon occurring enhanced or impaired if the organisation is in the public sector?

It was considered that a qualitative methodology would provide more in depth understanding to meet the objectives of this research, in order to be a catalyst for thought and change (Rorty, 1991; Gray, 2014). Seven semi- structured interviews from professionals who were either still employed or who had previously worked in public organisational settings were undertaken. Employing a descriptive interpretive

research design, this research strived to hear the voices of those interviewees and afterwards, through thematic analysis of the interview transcripts, derive key themes and shed light on them by taking a 'light' interpretive view (Smythe, 2012).

5.2 Key themes

The questions that guided this research were broad. Hence the interview questions were expansive reflecting a desire to elicit the interviewee's candid and insightful commentary. This section summarises the key themes, together with the sub-themes that emerged from the interviews, which were:

Aggregate key-themes	Sub-themes
Institutional Environment	Are public sector environments dynamic environments?
	Is the history of a public sector organisation a predictor of future events
Leadership	End to end vision
	Senior leadership support and accountability
Change (organisational dimension)	Is managing change business-dependent
	Is the need for customisation a mindset
	Data and process realignment
	An organisational culture more amenable to change
	Is ERP a catalyst for on-going change?
Change (people dimension)	Job protection
	What about end users
	Using people resources wisely

Table, 5.1 Aggregate key & sub-themes

5.2.1 Institutional environment

Introducing a new ERP solution across an organisation does not occur without challengers and perhaps this is particularly more so in public sector organisations. Most interviewees stated or implied during the interview that public sector organisational environments do not typically exemplify dynamic environments, they required more effort and tenacity to change and transform. While this could be attributable to a myriad of factors, some examples given were:

- public sector organisations are typically more risk adverse than their private counterparts;
- a transact and regulatory assurance approach results in lack of cross-departmental collaboration; &

- entrenched ways of operating which does not foster an agile culture and/or mind set across the organisation that supports responsiveness to change.

As public sector organisations also have less (i.e. University) to no competition (i.e. IRD) and leaders who are no doubt conscious of being open to public scrutiny, their leadership tends to be more transactional and cautious.

Interviewee Five made an important distinction when she revealed people can 'blur' organisational history with the history of public sector organisations. Novapay was cited as the case in point. While public sector organisations may have a line back to government, its improbable to imply that the failings or challenges of one organisation might provide a blueprint of what not to do for all public sector organisations. But rather perhaps public organisations might reframe such as that of an opportunity to reflect on the possibility of increased public scrutiny, use of public funds and the requirement to get the time, quality and costs right, prior to undertaking an ERP project.

While this is not a bad thing it can lead to excessive emphasis in inclusively of all views and opinions, a prolonged decision-making process and a desire to not compromise or upset the status quo, through risk of drawing attention or criticism. Such an approach may risk being overly protracted at the expense of getting on with the activity at hand. Institutional environments are the way they are in no small part due to the senior leaders/leadership style. Which leads me on to the next concluding key theme, which gives prominence to the role of leadership.

5.2.2 Leadership

A key role of leadership with regard to the introduction of a new ERP solution is to sell the vision of the ERP acquisition and see it as a strategic organisational investment. It is senior leaderships role to elect buy in and sell this vision to the different business groups that they represent/are responsible for. It is not someone else's role or job. For this reason and shown in this study, it is important that end users/staff see their senior leader committed to the ERP solution, role modelling the expected behaviour and inspiring others to replicate this interest.

The sentiment from interviewees was that an ERP implementation was not something to be taken light heartedly. The ERP solution that the organisation ends up choosing will last for years if not decade(s). When senior leadership make an intentional decision to partner with a particular ERP solution provider it is vital that this is an agreed choice and that organisational benefits are made known and prioritised from using the solution. This helps unify the organisations senior leaders,

with a side benefit of being witnessed by employees and end users. The interviewees also raised an opinion that leadership should be 'stable' while implementing an ERP solution and have organisational knowledge, not changing frequently or have no appreciation of the organisational culture.

Transformational leaders that are charismatic may be seen as ideal 'agents of change'. They have an appreciation of the opportunities that a new solution can bring and can work in partnership with followers in the changing times prior to moving towards a new ERP solution. Notably, is the notion of partnership between leaders and the end-users of the ERP solution that the hierarchies embedded within public sector organisations appear to negate.

In contrast to a more conservative or status quo type leadership style, the knack [talent] of managing a business the way it always has been managed, even when situation such as an ERP solution implementation and/or assimilation calls for notable change, is probably not the ideal leadership approach. Status quo leaders risk spending too much time being concerned about their own image and 'maintaining power', with an over concern with what might be lost when carrying out organisational change, at the expense of what might be gained.

How amendable is the organisational culture that senior leaders are the custodians of? Another important distinction on the point of the ERP solution being a strategic organisational investment is that it's not just about implementing and/or assimilating the ERP solution. Both aspects were viewed by interviewees as being of significant importance. The introduction of ERP solutions when performed correctly should incorporate leadership challenging the existing ways in which things operate, especially those tainted by adverse institutional, social and political preferences. Introducing ERP solutions should be seen as a catalyst for change, where senior leaders should see it as their responsibility to not only technically move the organisation to a new ERP solution but also in parallel, refocus and enhance the organisational culture. Which leads me on to the next concluding key theme, which was change across the two dimensions of the organisation and people.

5.2.3 Change (organisation & people)

Recognising that public sector organisations tend to be hugely risk adverse, regulatory guided, more consultative and complex in the way in which they go about making decisions. Their change management project stream that commences in parallel with their technology management project stream, is when the senior leadership need to reach agreement on setting realistic milestone dates,

encompassing the terms under how such will be reviewed, amended if necessary and in what situations. It is not so easy to go back and re-litigate the terms of such once the project is underway, particularly when the end users, staff and other shareholders are watching and seeking direction.

To assist senior leaders with this change in their respective business area, each key business area may have change agents or selected staff who act as advocates for the change. The aim is to provide a connection between the ERP project team and their business areas. This in turn can give further impetus to promote change and importantly, communicate expectations both 'up and down' and up-dates on progress.

Managing change is often business dependent on where the organisation was previously positioned before deciding to move to a new ERP solution. How many systems does the organisation currently have, what is the bespoke-ness of their systems that they seek to integrate into an ERP solution and what is the probability of staff roles being varied (or lost) moving forward? These questions can provide additional predicaments for senior leaders who need to keep end users on board while at the same time desiring to manage end user's expectations about how their future roles might be varied going forward, when at times these senior leaders do not often fully appreciate the magnitude of change themselves.

Conversely, change is required for an organisation to adapt and evolve, both at an operational and a strategic level. For the above reasons and more the organisational setting does denote the level of readiness of an organisation's probability to manage change well, while at the same time the likelihood of future challenges. Prudent senior leadership will gauge such and use this insight prior to contemplating assimilating an ERP solution across a public sector organisation, particularly in light of the institutional motivated norms and behaviour mentioned, such as those in table, 4.2

Many interviewees reflected upon an interrelationship between time, quality, and costs. What was difficult to access was the relativity of these project tensions in each organisation. For example, if an organisation is conversed and practiced in change, the baseline from which an organisation is starting prior to implementing and/or assimilating an ERP solution is not the same. Therefore, there is a correlation between the time and costs to implement and/or assimilate an ERP solution, due to the organisation and its staff being more "agile", amenable and receptive to change from past experiences. This is of particular relevance recognising the wide

organisational change that accompanies an ERP roll out.

Using key end-users from within the organisation to “back-fill” project roles and then “back-fill” current roles, so that permanent end users/staff get a deeper technical appreciation and knowledge of the ERP solution was overall considered the wiser option. This way the expertise is kept in-house as much as possible and minimising the degree of support required from expensive consultants.

I am left thinking that it does not matter which ERP solution an organisation is moving to there will always be a gap between how the inscribed processes built into the ERP solution operate relative to how end-users thought or would have liked the processes to work in their particular work setting. The role of senior leadership in moving to an ERP solution is to set the scene regarding what end users can expect, manage expectations, do not “over promise” and “under deliver”, and provide rationale for the changes. Hopefully, end users will have more “aha” moments (be inspired) when using the ERP technology and less “doh” (here we go again) moments.

Only perhaps those that have been part of an ERP assimilation across a business previously can appreciate how the business is now in an improved position for “continuous improvement”. The scale of such relevant to aspects such as leadership, time, resources and effort spent on change management activities. All interviewees were united in their view in that ERP assimilation acts as a catalyst for on-going future organisational change.

However, where an organisations history has been quite immature in terms of their IT or their digital transformation strategy, has more of a decentralised framework, to many bespoke systems or has done things quite ad hoc with insufficient strategic direction from senior leadership, you will see these assimilations still in motion three to five years or more after implementation. Similarly for those organisations whose organisational culture is not so practised in change, where assimilation benefits in some ways may occur more “organically” over a number of years.

Conversely for organisations whose organisational culture facilitates change more easily and where senior leadership drive strategic change, the benefits that organisations experience from their ERP solution in terms of workflow efficiency and effectiveness can be remarkable. Immediately after implementing most organisations will only be using a relatively narrow part of the entire ERP solution. The challenge then turns towards getting returns from the organisation's investment.

To conclude, an “agile organisation” that has systems, processes, collaborative and visionary leadership, including a ‘tuned’ organisational culture in place already, will rapidly adapt and adjust to change. A balance needs to be struck between regulatory controls, operating in silos, more meetings, and moving towards being more results orientated, working together for the organisation's benefit and getting things done. Senior leadership is responsible for fabricating this culture and mind-set of collaboration where operational areas are interested in what benefits ERP changes could bring for themselves and their entire organisation. The challenge is that this is not an organisational structure change. But instead the introduction of a new ERP solution has been seen as a holistic change that senior leaders act as the catalysts for and engineer this way of thinking, acting and embedding these beliefs in the organisational culture. If such occurs prior to implementing their ERP solution, they will reap a competitive advantage by having an ERP solution that delivers benefits more profoundly and in shorter periods. To become an agile organisation, one needs to excel in digital technology deployment and in leadership that is visionary, receptive to decision-making, prioritises process optimisation for the organisation, and fosters a nimble culture.

5.3 Limitation of this research

It is acknowledged that the prime limitation of this research is that there were seven interviewees. While this might be sufficient in the context of completing a master's thesis it is not viewed as being representative of findings that could be construed as being from or on behalf of public organisations in general. However, while there may have been only seven interviews the interviewees held key roles in implementing and/or assimilating their ERP solutions. Therefore, their experience and contribution to my research are viewed as highly valued and most appropriate.

5.4 Future research

In undertaking this research and incorporating the feedback from interviewees, it became evident how some organisations were in different states of preparedness and how significant a difference different leadership styles might make to implementing and/or assimilating an ERP solution in a public organisation. It is recognised that by having further insight and/or perhaps even some sort of gauge across the following subjects might present further targeted insight and/or improve interpretation to the value of how such subjects contribute to minimizing the impact of institutional forces and/or assimilating ERP solutions in public sector organisations. The topics that might be included in future research are:

5.4.1 Leadership Styles

Literature repeatedly alluded to the value of how important good leadership is when deploying an ERP solution. Indeed, in the extant ERP literature, leadership is consistently identified as the most important factor affecting ERP implementation (e.g. Mudimigh et al., 2002; Bingi & Sharma, 1999; Parr & Shanks, 2000; Umble et al., 2003). While extensive comments were made by interviewees on the influence of culture / institutional forces on leadership, the research did not focus on how different leadership styles might best promote the assimilation of an ERP solution. Transactional leaders are inclined to manage operations within the existing culture, not “rock any boats” and support the majority or status quo. In contrast, authoritarian leaders tend to direct both subtly and more overtly to adopting the/their preferred way of operating. So-called transformational leaders might prioritise aligning organisational culture in line with a vision of the future and tend to seek out more innovative and improved ways of operating. I think that such knowledge could provide an interesting back drop for senior leaders to understand prior to introducing a new ERP solution in their organisation

5.4.2 An organisations Culture, relative to change

Secondly, no “index” is provided of an organisation's current culture or ability to change. It should be recognised that organisations from within the public sector will be at different states of evolution in term of progression and ability with respect to being an agile organisation. One organisation in particular based on the strength of the interview appeared to have transformational and visionary leadership who not only wanted to up-date their ERP solution but also make a paradigm shift to the way in which they provided customer service internally and externally. A customer centric view of incorporating improvements for the benefit of both internal customers within the organisation and to front of house customers. This contrasts with other public organisations who from the interviews I formed a picture of their organisations being less agile or practised in changed, and therefore the senior leadership more guided by entrenched institutional practises.

Many interviews reflected upon an interrelationship between time, quality, and costs. Further research might be conducted to give insight into how prepared an organisation is (i.e. an organisational agile ‘index’, or how mature an organisational culture is to change for example).

5.4.3 Multicultural Society

Thirdly, the ' values, beliefs, diversity profiles and age of end users. New Zealand is a diverse multicultural society and comprises people with different viewpoints, practices, and contributions. Considerations were not considered regarding how senior leadership conduct might differ when repositioning organisational culture across different cultures or diversity groups. Multiculturalism seeks to include opinions and contributions from many different members of society while maintaining respect for their differences. Studying such differences may offer more guidelines on the most effective mechanisms and methods for effecting a specific culture in the build up to managing ERP implementations and/or assimilations.

5.4.4 Private Organisations

Fourthly, no comparison has been made to the impact of forces, institutional or otherwise, on leadership in private organisations when assimilating an ERP solution. I do not think for a moment that there will not be any nuances or disparities in private organisations that may hinder ERP assimilation. The leadership in these private businesses will also assume reference and context from the business culture's prevailing values and beliefs. These private businesses will also have established ways of doing things and leadership styles for example that will both hinder and promote ERP solution assimilation across an enterprise.

5.5 Contribution and practical application of the research

A key contribution of this research is that, unlike quantitative and survey data, a direct connection to relevant 'key people' of public organisations was made. These people were instrumental in their respective organisations in changing over to a new ERP solution and gave them an occasion to voice, in their own words an image of varying institutional forces that impacted leadership when assimilating the ERP solutions. The qualitative methodology employed improved the comprehension and further enhanced the understanding of the complexities involved.

In light of the methodology used a further contribution of this research are insights into the organisational environments / cultures that exist in public organisations. Interviewees in general, perhaps with the exception of one, portrayed these as "infused" with institutional forces. These institutional norms are then transferred in the organisational culture and are soon seen as 'the way things are done around here'. From a theoretical perspective, the findings of this study infer that a bi-directional relationship exists between senior leaders and the organisational culture. Support for this premise was first revealed by Schein (2010), who inferred that a bi-directional relationship between leadership and organisational culture may exist. It

remains to be seen and it will no doubt differ across each organisation and what feels right for each senior leader. While a small sample, this research has shown some of the tensions that exist in this bi-directional relationship. On the one hand, it shows senior leaders who succumb to an organisation's culture and institutional forces, so that they remain the dominating factors influencing leadership accountability and ability to drive timely and effective outcomes. Conversely, references were made to those senior leaders who collaborate with an organisation's culture and institutional forces, whilst still wanting to leave the organisation in a better position than when they arrived.

Finally, this research project contributes to the limited number of studies set primarily in the public sector IT management domain in Aotearoa New Zealand. In saying this, from a practical standpoint, its' findings may be applicable to other domains such as IT project or technology management. It is clear that if senior leadership thoroughly understood cultural and institutional influences, if senior leaders are prepared to abate and subside the impact of institutional forces prior to or while introducing a new ERP solution, then the organisational culture can be re-shaped so that it is more agile and in doing so, foster the success of ERP solutions.

5.6 Concluding Thoughts

I quite like the insight and analogy made by one of the interviewees who said that: *their organisation currently had a team of around 5,000 musicians or end users who had tools available via their ERP solution to carry out their daily operations. There were a variety of musicians of varying capability, some of them are playing their instruments satisfactory, while some of them at the moment are making absolute "awful noises", squeaky violins and raucous recorders. While we acknowledge that it takes time we're pressing forward to get our end users practised in playing with the organisations ERP tools and then get them in tune playing together. So that the end users will then know how to play in tune together and what its sounds like to resemble something of a symphony.*

My concluding thoughts as the researcher are that if an organisation has made a deliberate investment in a new ERP solution, there is little point in putting this new technology in unless they are realising its full benefits. It starts off being all about the technology but there soon comes an appreciation that it's primary about organisational change. Where a previously adapted culture, a pre-tuned agile organisation that is intentionally directed and supported by senior leadership,

mobilisers end users to enable them to embody change, so that the organisation more quickly evolves to resemble something of a symphony when engaging with the ERP solution.

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Appendixes

Appendix A: Interview schedule

Note that aligned with the semi-structured nature of the interviews, this interview schedule is *indicative* of the order of questioning and the questions themselves.

Research question: How do institutional forces impact on the leadership of change in public organisations in the assimilation stage of Enterprise Resource Planning

Preamble: *Hello, my name is Duncan Orr. I am an employee and a mature student undertaking a Master of Business Degree at Auckland University of Technology (AUT). I invite you to participate in the research for my thesis by sharing your experience, knowledge and expertise on assimilating an ERP solution in a public sector organisation in New Zealand on a confidential basis.*

The purpose of this research is to gain further insight on how institutional forces can impact on leading change in the assimilating stage of Enterprise Resource Planning in public sector organisations. The assimilation stage after which an ERP solution is operational but not yet integrated across the business can be laden with challenges and barriers which then impact on the choices leaders in the process make. Due to the challenges research suggests that leaders in this process can struggle to provide a clear roadmap, so they tend to muddle around trialling different ways on how to drive the adoption of the still reasonably new ERP solution.

This research considers how institutional forces, for example, siloed business areas not sharing information, the culture of the business environment and/or compliance to adopt practices, hinders a leader's ability to influence the assimilation (i.e. post implementation, period upon which the technology is diffused across the organisation and considered nominalised into practises) of ERP solutions in public entities. If leaders in these organisations identified, understood and proactively managed identified institutional forces, they might then be better positioned to support stakeholder / user expectations and realise the assimilation benefits in a much timelier manner.

Once you have read this information sheet, please click on the link to access directly the survey. Please notice that the completion of the online survey will be taken as consent to participate in the survey.

About the ERP solution, the type of change it required and their role

	Interview Questions:	Prompts
a)	Can you tell me what your role was in implementing the ERP solution?	Prompt: did this role change over time?
b)	In terms of the ongoing assimilation process what was your role	Similar to the above
c)	Can you tell me something of the organisations readiness for the changes associated with ERP assimilation.	Were their briefing meetings? Staff involved in designing the ERP solution - training

d)	How do you feel the changes required within the organisation uptake of the ERP solution went overall?	What went well – not so well
e)	Do you think there is one best way of managing organisational change in the context of ERP assimilation and why?	What does this depend on?
f)	To what degree did leadership appear to have a plan in place to manage the organisational change required with assimilation the ERP solution.	
g)	How did leadership communicate the expected assimilation milestones and monitor progress towards achieving the milestones?	Face-to-face meetings Project management document Reporting mechanism Did not closely monitor
h)	How did leadership keep the organisation/users engaged and motivated towards achieving the ERP assimilation milestones (or if no formal milestones, then progressing the ERP assimilation)?	Hold people to account and aligning business areas that diverge off.
i)	What part did history play a role in impacting ERP organisational change - to what degree did the way in which previous organisational projects assist or hinder ERP assimilation?	Is history a good indicator of the future?
j)	From your experience do you think ERP assimilation actually can have clear definitive boundaries or does it serve as a catalyst for ongoing process improvements across the organisation? (maybe two questions)	A journey or a destination?
k)	What have been/ are the benefits from introducing the ERP solution and to what degree were they realised?	
l)	What changes have you noticed to the organisation's culture since the ERP solution has been implemented?	Has such rolled over and impacted cultural benefits (i.e. collaboration and sharing of ideas/ resources)

Appendix B: Documentation sheet

Name	
Company name(s)	
Experience: Job Role(s) Sector(s)	
Email address	
Est organisational employee number	
Phone number	
Initial communication date	
Consent form return date	
Interview date & time	
Interview location	
Recorded interview file #	
Recording transcribed?	
Transcription checked?	
Field notes: Immediate impressions	
Transcript: Early impressions & key quotes	

Appendix C: Template letter

Good Afternoon

Introduction

The introduction of enterprise resource planning (ERP) solutions requires significant investment where the success of such necessitates that benefits be realised. Today's businesses need to have clear expectations when it comes assimilating IT solutions, this is no different in public organisations. Yet as part of the challenge of assimilating ERP solutions how many businesses first seek to understand the impact of institutional forces on their organisation and the complications these may have for leadership? Understanding how these institutional forces risk impact the assimilation of the ERP solution and in particular their effect on leadership, are vital to cultivating a good environment for change to facilitate adoption of a new ERP solution.

Research

This research examines how institutional forces can affect leadership in public organisations in the context of enterprise resource planning (ERP) post-implementation. The stage after which an ERP solution is operational but not yet integrated across the business can be laden with barriers and choices in which leadership can muddle around with how to drive adoption of the still reasonably new ERP solution. This study considers how institutional forces such as certain business areas not sharing information and compliance to adopt practices, hinders leadership's ability to influence incorporation of ERP solutions in public entities. If leadership in these organisations understood and managed these institutional forces, then they might be better positioned to manage stakeholder and user expectations.

Documents

One of the attached documents sets out information for participants of this research of which I encourage all to read. While the other document is a consent form for those wanting to be participate in the interview.

Survey

While the research to a two-step process the following link is provided to connect you to the survey (research step one): https://aut.au1.qualtrics.com/jfe/form/SV_dhCYJ5DTawQQWKV Could you please complete the survey by the 1st August 2020. By choosing to respond to survey it is viewed as voluntary consent. You can withdraw at any point up until you submit your responses, after which it will not be possible to identify and therefore withdraw your data.

Continued...

Interview

If you are willing to be interviewed about your experiences in regard to this research then could you please review the attached consent form, sign and forward back to the researcher by the 1st August 2020. Your consent is required prior to a mutually

agreeable time being arranged to discuss your experiences and insights (research step two)

Kind Regards
Duncan

Appendix D: Participant information sheet



Participant Information Sheet

Date Information Sheet Produced:
20/7/2020

Project Title
How do institutional forces impact on the leadership of change in public organisations in the assimilation stage of Enterprise Resource Planning (ERP)?

Introduction
My name is Duncan Orr. I am an employee and a mature student undertaking a Master of Business Degree at Auckland University of Technology (AUT). I invite you to participate in the research for my thesis by sharing your experience, knowledge and expertise on implementing an ERP solution in a public sector organisation in New Zealand on a confidential basis.

What is the purpose of this research?
The purpose of this research is to gain further insight on how institutional forces can impact on leading change in the assimilating stage of Enterprise Resource Planning in public sector organisations. The assimilation stage after which an ERP solution is operational but not yet integrated across the business can be laden with challenges and barriers. These then impact on the choices leaders in the process make. Due to the challenges research suggests that leaders in this process can struggle to provide a clear roadmap, instead they tend to muddle around trialling different ways on how to drive the adoption of the still reasonably new ERP solution.
This research considers how institutional forces, for example, siloed business areas not sharing information, the culture of the business environment and/or compliance to adopt practices, hinders a leader's ability to influence the assimilation (i.e. post implementation, period upon which the technology is diffused across the organisation and considered normalised into practises) of ERP solutions in public sector entities. If leaders in these organisations identified, understood and proactively (rather than reactively) managed such institutional forces, they might then be better positioned to support stakeholder / user expectations and realise the assimilation benefits in a much timelier manner.

How was I identified and why am I being invited to participate in this research?
You were identified as a key manager in a public organisation that has or is in the process of assimilating an ERP solution. You are invited as a potential participant in this research because as a key manager involved in the assimilation of an ERP solution your personal insight, knowledge and experiences will be of significant value.

How do I agree to participate in this research?
By choosing to respond to the invitation which includes a link to the survey. If you are also willing to be interviewed or would prefer to be interviewed only about your experiences in regard to leading/managing assimilation ERP solution could you please review/sign off on the consent form and forward back to the researcher. The interviews will ask different questions as a way to add more depth to understanding the institutional forces you have encountered. I will contact you to arrange a time and venue convenient (or you may prefer to use Microsoft Teams or Zoom or telephone) for the interview OR contact me by phone on 09 921 9864 to arrange a mutually agreeable day and time.
Your participation in this research is voluntary (it is your choice). Completion of the survey is viewed as voluntary consent. The interview however requires you to sign off on the consent form. Whether or not you choose to

Continued...

participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

The intent of the survey is to collect data from a purposive sample to gauge the impact of identified institutional forces at an overall level if any, on leading change in the post-implementation (assimilating) stage of ERP in a range of public sector organisations. The expectation is that you answer the questions based on your personal experiences and general expertise – you are not answering these questions on behalf of your employing/contracting organisation.

If you agree to an interview, a mutually agreeable mode (e.g face-to-face; Zoom, Microsoft teams; telephone) and location will be agreed alongside a suitable time and day. It is expected the interviews will take a maximum of forty five minutes of your time. The interviews will be digitally recorded which will then be transcribed either by myself or a professional transcriber who will be subject to a confidentiality agreement. You will have the opportunity to review the transcript of your interview. The interviews will be semi-structured and ask different questions which will not be based on the responses of the survey you completed.

I will review the survey data and the transcripts of all interviewees and conduct an analysis of the key themes that emerge from each data set. Finally, I will interpret the data and link it to existing related research before completing my thesis.

What are the benefits?

Apart from the benefits to myself including the opportunity to pursue a personally interesting and useful topic while attaining a Master's Degree, I aim for this research to benefit providers of ERP solutions to public sector organisations (e.g TechnologyOne) and research participants.

The research will benefit participants who will receive a summary of the research findings which may provide them with useful material to discuss with their colleagues, reflect upon their practice, and perhaps consider changes in approach when preparing an organisation for ERP assimilation to position their business for improved ERP adoption.

How will my privacy be protected?

I will make considerable efforts to protect your privacy although please note it cannot be absolutely guaranteed.

The survey is anonymous and in the interviews, I will keep confidential the identity of the participant and their organisation.

The student will acknowledge the participants either as a group, or through the use of individual pseudonyms. Any data that may identify your employing organisation will not be used in the thesis and in any subsequent reports, articles, presentations etc.

As noted earlier the interviews will ask different questions which will not be based on the responses of the survey you completed. Each data set will be treated as a separate unit of analysis.

Other measures I will undertake include:

- Using coded file names and storing the coding details separately from your data
- Storing your Consent Form separately from your data
- Password-protecting files
- Insisting upon Confidentiality Agreements for any third-party transcription services
- Storing your data in locked facilities provided by the AUT Faculty of Business, Economics & Law until it's destruction after a mandatory six-year period

Continued...

Will I receive feedback on the results of this research?

Participants will receive a summary report on the findings if they request.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor(s), Irene Ryan, irene.ryan@aut.ac.nz or call her on her work phone number which is , (+649) 921 9999 ext 7852

OR

Marcus Ho, Marcus.ho@aut.ac.nz or call him on his work phone number which is, (+649) 921 9999 ext 5448

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, ethics@aut.ac.nz , (+649) 921 9999 ext 6038.

What's next?

If you are willing to help Duncan in his research, it would be appreciated in the first instance if you could complete the survey via the Qualtrics link provided in the invitation email you received. If you are willing to be interviewed please indicate this at the end of the survey. If you have any queries or questions around this research please email Duncan Orr (duncan.orr@aut.ac.nz) call me on 09 921 9864 if you require further information.


Approved by the Auckland University of Technology Ethics Committee on 9th June 2020. AUTEK Reference number 20/52.

Thank you

Kind Regards

Duncan Orr

Appendix E: Participant Consent form



Consent Form

For participant responding to interview invitation.

Project title: How do institutional forces impact on the leadership of change in public organisations in the assimilation stage of Enterprise Resource Planning?

Project Supervisor: Irene Ryan
Student: Duncan Orr

- ☐ I have read and understood the information provided about this research project in the Information Sheet.
- ☐ I have had an opportunity to ask questions and to have them answered.
- ☐ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ☐ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ☐ I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ☐ I agree to take part in this research.
- ☐ I understand that the research will not identify participants individually or their organisation in the thesis and in any subsequent reports, articles, presentations etc.
- ☐ I wish to receive a summary of the research findings (please tick one): Yes ☐ No ☐

Participant 's signature:

Participant 's name:

Participant 's Contact Details for interview
.....
.....
.....
.....

Date:

Approved by the Auckland University of Technology Ethics Committee on 9th June 2020. AUTEK Reference number 20/52

Note: The Participant should retain a copy of this form.

Appendix F: Ethics approval



Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

10 June 2020

Irene Ryan
Faculty of Business Economics and Law

Dear Irene

Re Ethics Application: 20/52 How do institutional forces impact on the leadership of change in the assimilating stage of Enterprise Resource Planning in public organisations

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 9 June 2023.

Non-Standard Conditions of Approval

1. Removal of the following sentences:
 - a. From the Information Sheet 'it is however acknowledged that by providing your contact details in the survey expressing your willingness to be interviewed, that the student (only) will be able to identify who provided that particular survey response.'
 - b. And from the Consent Form 'I acknowledge that by providing my contact details at the end of the survey indicating my willingness to be interviewed, it will be possible to link the survey response to a person. This information will only be known by the student. The survey response will be kept separate and will in no way inform what is asked in the interview. As stated above you and your businesses confidentially is assured.'
2. In the 'how will my privacy be protected' section of the Information Sheet include the following information - that the survey is anonymous and that in the interviews you will keep confidential the identity of the participant and their organisation.
3. In the anonymous survey, please include the following information alongside the consent statement: 'You can withdraw at any point up until you submit your responses, after which it will not be possible to identify and therefore withdraw your data.'

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be reviewed by AUTEC before commencing your study but please send through updated documents for our file.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the [Auckland University of Technology Code of Conduct for Research](#) and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through <http://www.aut.ac.nz/research/researchethics>

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: Duncan Orr; Marcus Ho