

Agile Teams Roles and Responsibilities

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Declaration

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 nor material which to a substantial extent has been accepted for the qualification of any other degree or diploma of a University or other institution of higher learning, except where due acknowledgement is made in the acknowledgements.

A handwritten signature in black ink, appearing to be 'Amar Kashari', is centered on a light beige rectangular background.

Amar Kashari

Acknowledgement

First, praise is to ALLAH, the Almighty, the greatest of all, on whom ultimately we depend for sustenance and guidance. I also thank my late parents and my family.

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Abstract

Agile values and practices have gained a wide popularity in the modern software development industry. However, many aspects of Agile are not clearly defined or explained. One important aspect that is not clearly defined is the implementation of roles in Agile and how they are different from Waterfall. This can lead to creativity in implementing Agile, but it can also lead to confusion. Scrum, one of Agile's most popular methods, includes roles such as Scrum Master and Product Owner. In contrast, XP, which is another popular Agile method, suggests another set of roles.

This thesis uses Scrum Guide which is considered one of the authoritative Agile resources to identify the roles of Agile team members and their responsibilities. Next, employees with role names such as Scrum Master and Product Owner or different role names but with same responsibilities to those roles from five organisations that use Agile were interviewed using a set of predefined questions and a semi-structured approach. Thematic analysis techniques were then used to tease out the Agile roles and responsibilities deployed by these five organisations. The roles and responsibilities within the organisations were then compared with those in the Scrum Guide. This thesis focuses mainly on the roles of Scrum Master and Product Owner of Scrum teams. The reason for this focus on these two roles is that they are aware of overall Agile processes.

Thesis findings show a degree of misalignment in the Scrum Guide between the role of Scrum Master and Product Owner. This could be due to misunderstandings of the Scrum Guide, limited resources or the legacy of traditional management practices embedded within an organisation. Rather than the picture being complete, it also shows that the software industry is in a transitional stage moving towards new ways of working.

Thesis findings can be used to guide the future releases of Scrum Guide assisting the Guide authors to see how people use their methodology. In addition, it can be used by current or future Agile participants to help them understand how roles and responsibilities in Agile software development teams are distributed. This can be helpful for accelerating new teams moving to Agile or help current teams improve their way of work.

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1. Introduction

This introduction focuses on presenting the motivations for the research, the research problem, the research approach and design and the main contributions of this research. In addition, a roadmap for the rest of the thesis presented at the end of this chapter. Therefore, the components of this chapter are as the follows:

- Motivation and Research Problem,
- Research Approach and Design,
- Main Contributions, and
- Structure of the Thesis.

1.1 Motivation and Research Problem

Agile has gained wide popularity in contemporary software development leading to an increase in the success rate of software development projects (Denning, 2015).

However, from popular literature, the roles and responsibilities of members of Scrum teams, which is considered the most popular Agile method (VersionOne, 2016) , can be quite different to the roles described in generally accepted authoritative guides, such as the Scrum Guide (Schwaber & Sutherland, 2016). This can cause confusion among those adopting Agile (Yilmaz, O'Connor, & Clarke, 2015) .

This research is focused mainly on exploring the roles and their responsibilities in Agile software development teams. It will result in a clearer picture of current practice regarding roles in Agile teams and their responsibilities, and also assist practitioners with decision making, providing a structure for further research in this area. The overarching research questions for this thesis project are:

RQ1: What are the responsibilities of roles in an Agile software development team?

RQ2: How are the roles in practice different to the prescribed roles in the Scrum Guide?

RQ3: What are the challenges of each role, if any?

To answer these questions, this research conducts a comparison between roles and their responsibilities in contemporary software development teams with the roles described in the Scrum Guide which considered an authoritative definition of Scrum (Winter, 2015).

This research focuses mainly on the roles of Scrum Master and Product Owner of Scrum team. The reason of this focus on these two roles is that they are aware of overall Agile processes.

1.2 Research Approach and Design

This section introduces the research approach, design, data collection and analysis techniques.

1.2.1 The Case Study Approach

To gain an understanding of the complexity and nature of roles and responsibilities in Agile software development teams, it is vital to obtain the perceptions and expectations of Agile practitioners within the realistic setting of a software development company that uses Agile. The reason why this research was carried out in a commercial work setting is that in business usually there are financial reasons for the implementation of roles in Agile. Therefore, it is imperative that understanding the implementation of roles in Agile is practical and not theoretical. To gain a deeper understanding of roles in Agile software development teams a multiple case study analysis of five software organizations was conducted. Several local organizations claiming that they use Agile methods were contacted and five organizations agreed to participate in this research. From these five organisations we interviewed eight participants.

1.2.2 Data Collection

For the purpose of this research, the data collection method used is semi-structured interviews. As the aim of this case study is to obtain perceptions and expectations of roles in business projects, interviews were chosen as the data collection method instead of surveys or questionnaires because interviews allow to the researcher to gain a richer and greater depth of understanding of the phenomenon in a practical sense (Englander, 2012). Face-to-face interviews provided more than just simple answers to the interview questions but also provide information about other inflections of voice and body language, which generate richer data for qualitative analysis (Black, 2006). Semi-structured interview questions enabled the respondents to relate the questions to their own experience and provide details about the areas that they felt would answer the questions sufficiently. The interview was designed through a meeting with an expert in addition to several discussions between the researcher and his supervisors.

1.2.3 Data Analysis

The first step in analysis after conducting and summarising interviews, is to code thematically (Boyatzis, 1998). In this step I coded the interviews, focusing on

responsibilities and categorise these codes into themes related to roles. This step was taken to help to obtain an understanding of interviewees' expectations around Agile roles.

1.3 Main Contributions

The findings of this thesis will contribute to the body of empirically based knowledge about Agile and Scrum in particular. This will help to widen the understanding of roles and responsibilities within Agile software development teams. Agile practitioners will gain from a broader awareness and understanding of the similarities and differences of implementing roles and responsibilities in various development organisations. This knowledge should encourage more discussion and an effort to understand the implementation of Agile. This will help deepen an understanding of the current and future trends and practices in Agile. This is useful to researchers interested in exploring this area and practitioners involved with decision-making and the adoption of Scrum. A deeper understanding of roles and responsibilities can also assist the design of future versions of the Scrum Guide or other kinds of Agile.

1.4 The Structure of the Thesis

After the introduction, Chapter Two presents the research context for this thesis based on current literature in the area of Agile software development. Chapter Three, focuses on research design and methodology to present the research philosophy and approach in addition to the design of data collection and methods of analysis. In Chapter Four, the findings and discussion will present the main contributions of the thesis. In Chapter Five, the conclusion presents a summary of the main results, provides explicit answers to the research questions.

2 Literature Review

The literature review will focus mainly on exploring what is known about roles in Agile software development teams. This will result in a clearer picture of what is known currently as a good practice regarding roles in Agile teams and Scrum in particular and their responsibilities. The overarching research questions are:

RQ1: What are the responsibilities of roles in an Agile software development team?

RQ2: How do the roles in practice differ to the prescribed roles in the Scrum Guide?

RQ3: What are the challenges of each role, if any?

To identify what is empirically and theoretically known about these questions the components of this chapter are as follows:

Background,

The Definition of Roles in Software Development,

The Importance and Benefits of Roles in Software Development,

An introduction to Agile,

Roles in Software Development Teams.

2.1 Background

Software development is a socio-technical complex activity that relies on a group of individuals who play different roles working together. Human factors are vital in the software development process. Sommerville and Rodden (1996) claimed that people have a decisive impact on the production of software. Similarly Boehm and Turner (2003) stated that people factors are the most critical success factors in software development. Moreover DeMarco and Lister (2013) and Constantine (2001) indicated that the people factor in software development can be even more important than the technical factors.

All software development methodologies such as Waterfall and Agile identify the roles of individual professionals. When describing a software development method, the roles that are assigned to members of a software team is one of the key elements (Dubinsky & Hazzan, 2004). This research aims to study current roles and responsibilities within

Agile teams. Therefore, the Literature Review will introduce both Waterfall and Agile methodologies in this background section. The next section, 2.2, will focus on the definition of role.

2.1.1 The Waterfall Model

The Waterfall Model is a sequential development method. The roots of the Waterfall Model can be traced back to the manufacturing and construction industries (traditional management) where all aspects of the project are easily predefined in the beginning. Benington (1987) argued that due to the unavailability to any formal software development method, a traditional management approach was adopted for the software industry.

The origins of traditional management can be traced back to the influences of Western philosophers, Karl Marx and Adam Smith who have influenced traditional management practices (Weymes, 2004). Marx's materialist theory of the human being focuses on human formation through social activity (Scruton, 2001). Smith, on the other hand, based his theory of economics on self-interest (Scruton, 2001). This shifted the focus of Western philosophy from human and social relationships to personal gains. It also led to the development of a theory of impersonal management (bureaucracy) which focuses on hierarchy, command and control (Weymes, 2004). In 1911, F.W. Taylor developed the scientific approach to management, which focused on maximizing the revenue of shareholders. It was also one of the early attempts to apply science to management. Regardless of the outcomes of this approach, the scientific approach to management was absorbed into the living tissue of American life (Mitcham, 2005).

2.1.2 Challenges to the Waterfall model

Although, the Waterfall model had historically been successful with traditional projects, for years the software industry suffered because of the inappropriate practices inherited from traditional management. In 1975, Fred Brooks published his book *The Mythical Man-Month: Essays on Software Engineering*, highlighting some problems facing the management of software engineering. Brooks answered a simple question in his book: why is programming hard to manage? Brooks discussed some problems with scheduling failures, documentation, project estimation, communication etc. (Brooks, 1975).

In 1994, research by the Standish Group reported chaos in the software industry. The Report declared that only in the United States of America was \$250 billion spend on the IT application development of 175,000 projects. Of these projects 31.1% were cancelled

before they were ever completed. Further results indicated that 52.7% of projects would cost 189% more than their original estimates. On the success side, the average was only 16.2% for software projects that were completed on time and on budget, this percentage went down to 9% in big companies.

In addition to the popular Standish Group Report, there are more studies and reports that highlighted the crisis of the software industry, some presented as following:

Tata Consultancy Services (TCS) (Neemuchwala, 2007)

- 62% of organizations experienced IT projects that failed to meet their schedules.
- 49% suffered from budget overruns.
- 47% had higher-than-expected maintenance costs.
- 41% failed to deliver the expected business value and ROI.
- 33% failed to perform against expectations.

European Service Strategy Unit (ESSU) (Whitfield, 2007)

- 57% of contracts experienced cost overruns.
- 33% of contracts suffered major delays.
- 30% of contracts were terminated.
- 12.5% of Strategic Service Delivery Partnerships failed.

National Institute of Standards and Technology (Tassey, 2002)

- Software defects cost nearly \$60 Billion annually.
- 80% of development costs involved identifying and correcting defects.

Oxford University regarding IT project success (Sauer & Cuthbertson, 2003)

- Successful: 16%
- Challenged: 74%
- Abandoned: 10%

2.1.3 Agile

Agile arose as a response to some challenges facing the Waterfall Model in the software industry. Its first introduction was in February 2001 by a group of software developers who met at the Snowbird resort in Utah in United States and published the Manifesto for Agile Software Development (Beck, Beedle, Bennekum, et al., 2001). At this meeting, they declared four Agile values known as the Agile manifesto. These values were (Alliance, 2001):

*“Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan”*

They said that there was value in the items on the right but that they valued the items on the left more. The Agile Manifesto was based on twelve principles:

1. *“Customer satisfaction by early and continuous delivery of valuable software*
2. *Welcome changing requirements, even in late development*
3. *Working software is delivered frequently (weeks rather than months)*
4. *Close, daily cooperation between business people and developers*
5. *Projects are built around motivated individuals, who should be trusted*
6. *Face-to-face conversation is the best form of communication (co-location)*
7. *Working software is the principal measure of progress*
8. *Sustainable development, able to maintain a constant pace*
9. *Continuous attention to technical excellence and good design*
10. *Simplicity—the art of maximizing the amount of work not done—is essential*
11. *Best architectures, requirements, and designs emerge from self-organizing teams*
12. *Regularly, the team reflects on how to become more effective, and adjusts accordingly” (Alliance, 2001)*

The root of some of the Agile manifesto’s 12 principles can be traced to 1986 when Hirotaka Takeuchi and Ikujiro Nonaka introduced in their article “The New New Product Development Game” a new approach to commercial product-development which they claimed would increase speed and flexibility (Nonaka, 1986). In this article, the writers introduced the word Scrum (Schwaber & Sutherland, 2016) that later become the most popular of Agile methodologies. In 1997, Ken Schwaber published a paper describing Scrum methodology (Schwaber,1997). In 2002, some Agile Manifesto writers founded Scrum Alliance, a non-profit organisation which promoted the Agile Manifesto's values and principles, the Certified Scrum Master programme and its derivatives. In 2009, Schwaber left the Scrum Alliance and founded Scrum.org. Jeff Sutherland and Ken Schwaber wrote the Scrum Guide, which describes the essential elements of Scrum.

In addition to Scrum, there are many other Agile methodologies such as XP, Kanban and others. Furthermore, there are many Agile certification and training programs such as icagile.com and scrum-institute.org. However, the focus of this research will be on the Scrum Guide (scrumguide.org) as it is the authoritative definition of Scrum (Winter, 2015).

2.1.4 Agile Popularity

Since its beginning in 2001, Agile has gained wide success and acceptance. The 10th annual State of Agile report (VersionOne, 2016) indicated that Agile is no longer solely the domain of start-ups and small development team. Among 3,880 participants from around the world, 95% said their organisation practiced Agile. Around 31% of the total participants said they worked for an organization with more than 1,000 people. The participants were from various industries such as Software 26%, Financial Services 14%, Professional Services 11%, Healthcare 6% and others.

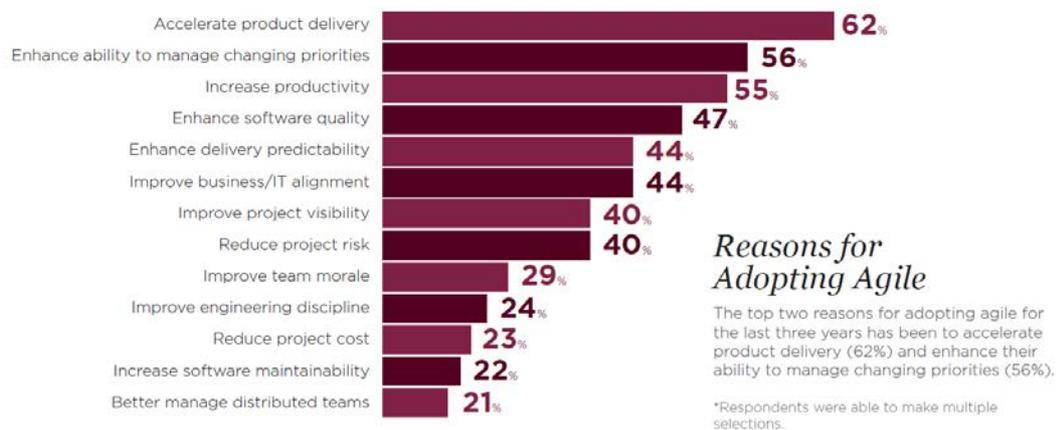


Figure 1. Reasons for adopting Agile (VersionOne, 2016)

Figure 1 illustrates reasons for adopting Agile. The top reasons include: accelerate product delivery 62%, enhance the ability to manage changing priorities 56%, increase productivity 55%, and enhance software quality 47%.

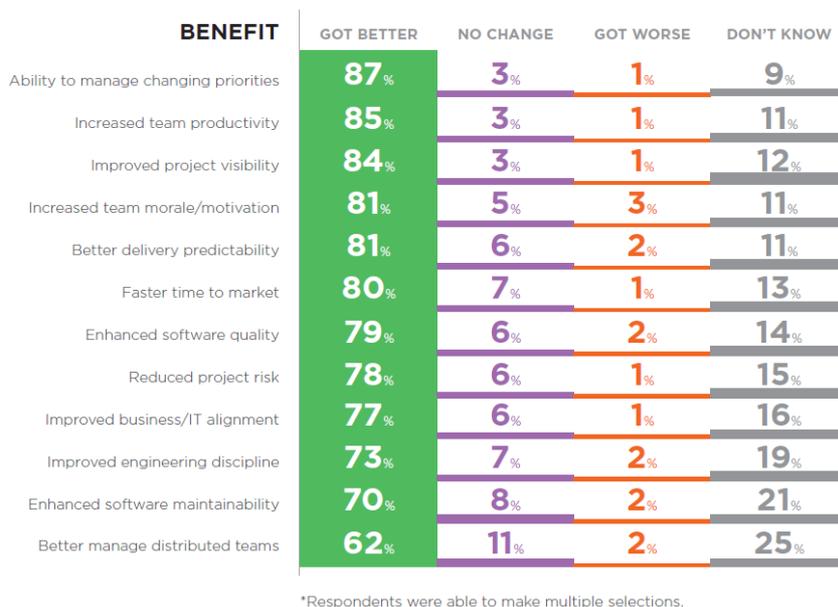


Figure 2. Actual improvement from using Agile (VersionOne, 2016)

Figure 2 shows that the top improvements once adopting Agile are: the ability to manage changing priorities, increased team productivity and improve project visibility. These top benefits from adopting Agile have remained steady for the past five years. In addition to the Version One report, many other reports presented evidence of the growing adoption of Agile. Tan and Teo (2007) stated that the rise and fast adoption of the Agile Manifesto and its principles has grown significantly. Similarly, Jamieson, Vinsen, and Callender (2006) argue that it is not an option not to use Agile. Furthermore, Agile has been adopted outside of its comfort zone of small, co-located teams (Poole & Huisman, 2001), (Drobka, Noftz, & Raghu, 2004), it has also been adopted outside of IT (Baker & Thomas, 2007) and it is used with other disciplines such as manufacturing (Yusuf, Sarhadi, & Gunasekaran, 1999). In addition, a report by The Economist magazine indicated that an overwhelming majority of executives (88%) cite that organisational agility is key to global success. Similarly a study by MIT reported that Agile firms grew revenue 37% faster and generated 30% higher profits than non-Agile firms (Highsmith, 2013). In 23 July 2015 Agile was named by Forbes as 'The World's Most Popular Innovation Engine' (Denning, 2015).

2.2 The Definition of Roles in Software Development

Roles are the descriptions of assignments or duties and competence for individuals who are required to complete a defined set of activities and tasks for software development (Sommerville, 2010). Usually a role is part of the development or process methodology that is used such as Waterfall or Agile. A role reflects the responsibilities of the people involved in the process of software development. Examples of roles are project manager, programmer, configuration manager, etc.

However, the perceptions of a role in software development have changed over the years. Traditionally, a role in Waterfall methodology is strict and specialised. Raymond (1999) stated in his essay, *The Cathedral and the Bazaar*, that due to the nature of traditional development roles where people work in small isolated teams, roles in traditional development are similar to roles in building and construction. However, this could be a disadvantage because several parts of software are only visible to a limited number of people.

The traditional view emerged from physical production where all project aspects were predefined at the beginning of the project. But this is not suitable for a knowledge-

oriented economy (Uhl-Bien, Marion, & McKelvey, 2007). In the software industry, normally aspects of projects are not clearly predefined in the beginning. In addition, the end user requirements could change with time. In another scenario, the market reaction and demand to software features change over time. Hanna (1995) and Bradac, Perry, and Votta (1993) argued that this new change in the environment required a new way that traditional methods were unable to deal with .

In addition, in today's knowledge production era where the creation of knowledge is a competitive advantage, organisations need an environment where individual creativity and innovation can flourish (Weymes, 2004). This environment cannot exist through the traditional method based on command and control and designed to maximize shareholders' profits.

In contrast to the traditional view, Agile advocated an approach where individuals and interactions are valued over processes and tools (Alliance, 2001). Agile teams are meant to be self-organising and have intense collaboration within the team and across the organisation (Cockburn & Highsmith, 2001). Team members in Agile teams are meant to share responsibility and commitment for what they do. Although, the Scrum team consist of a Product Owner, Scrum Master and the development team, the Scrum Guide recognises no other title than developer for development team members, regardless of what they do or their level of expertise. More details about Scrum team roles will be introduced in Section 2.4.2.

2.3 Importance and Benefits of Roles in Software Development

This section presents the importance and benefits of roles in software development, however, it is important to clarify that the evidence presented in this section is from the Waterfall Model and traditional management perspective of roles. Although the Agile stance towards roles is different from the Waterfall Model, this evidence is still valuable.

Roles are a key element of software development methods. They define expectations and limitations of the performance of individuals who play a role in software development teams. There is evidence that team members in an environment where roles are well-defined are more effective (Cooper & Sutter, 2011).

From a management perspective, the ability to customise a software method not only depends on the method used but on roles that are included in this software development method. Thus, to be able to use and customise a software development method, understanding role is vital (Yilmaz, O'Connor, & Clarke, 2012) . In addition, roles help

us to control the flow of activities and information that help to manage work in a software development company. Finally, roles can be considered as to be a quality assurance activity that improves the quality of the product (Pressman, 2005).

From a human resources perspective, roles can be used to empower and stimulate individuals (Yilmaz et al., 2012). Roles descriptions can be used by individuals who play this role in software development teams to learn how to do their job better and understand other people's roles in the team, which will help them to communicate effectively.

2.4 Roles in Software Development Teams

As mentioned earlier, the perceptions of roles in software development have changed over the years. Here, the researcher presents a brief description of roles in traditional Waterfall software development in addition to Agile (Scrum). Scrum will be the main focus among Agile methodologies because it is the most used version (VersionOne, 2016). In addition to its popularity, scrum is considered the main approach to manage Agile teams (Abrahamsson, Salo, Ronkainen, & Warsta, 2002), (Cohen, Lindvall, & Costa, 2004).

2.4.1 Traditional (Waterfall) Software Development Teams

In traditional software development team members works together with very low overlap and high specialization within the waterfall life-cycle paradigm (Raymond, 1999). Traditional roles in waterfall methodologies are shown in Table 1. These roles may differ from one organisation to another based on its size or other factors. However, this gives an overview of common roles in traditional software development.

Table 5 Roles in traditional Software Development (Yilmaz et al., 2012)

Role name	Description
Project Manager	Responsible for resource allocation and budgeting
Developer	Responsible for writing the software code
Interface Designer	Responsible for designing the user interface
Database specialist	Responsible for designing the database
Business Analyst	Responsible for collecting requirements
Tester	Responsible for manually testing the software
Architect	Responsible for designing the software architecture

2.4.2 Agile Scrum Software Development Teams

The Scrum team consist of a Scrum master, a Product Owner, and the development team. The Scrum team are meant to be self-organised; they choose how to achieve their work without been directed by others. The scrum team is meant to be cross functional and they have the capability to achieve their work without the need of others who are not part of the team. This section presents a summary of the Scrum Guide (Schwaber & Sutherland, 2016) as it will be used as a basis of comparison for the Findings and Discussion chapter.

2.4.2.1 Scrum Master

The Scrum Master is responsible for making sure the Scrum is understood and followed by team members. The Scrum Master also helps people outside the Scrum team understand if their interaction with the team is helpful or not. He is a servant-leader to the scrum team, serving them in a several ways including:

Services to the Product Owner

- Assistance to manage product backlog effectively by finding techniques;
- Help the Scrum team to realise the importance of concise and clear product backlog items;
- Understanding the empirical environment to assist product planning;
- Assure that the Product Owner is aware of how to arrange and maximize the value of product backlog items; and,
- As facilitates Scrum events as requested or needed.

Services to the Development Team

- Coaches them in self-organising and cross-functionality;
- Helps them to create high-value products;
- Removes any obstacles to their progress;
- Facilitates Scrum events as requested or needed; and,
- Coaches them into Scrum where the method is not yet fully adopted and understood.

Service to the Organisation

- Coaching and leading the organisation in its adoption of Scrum;
- Planning Scrum implementations ahead within the organisation;

- Helping stakeholders and employees in the organisation understand and apply Scrum and empirical product development;
- Making any change that help to increase the productivity of the Scrum Team; and,
- Cooperates with other Scrum Masters to increase the effectiveness of Scrum in the organisation.

Table 2 summarises the Scrum Master responsibilities with a brief description of each responsibility. This categorisation and description is based on the researcher’s efforts to summarise the responsibilities of the Scrum Guide regarding the Scrum Master role.

Table 6 Responsibilities of Scrum Master

Teaching scrum	Helps stakeholders and team members to understand scrum
Scrum guardian	Makes sure Scrum practices are followed
Servant-leader	Servant-leader for the scrum team
Outside team communication	Helps with communication outside the scrum team
Coaching the scrum team	Coaching the development team into self-organisation and cross-functionality
Facilitating	Facilitating scrum events
Manage product backlog	Helps the Product Owner manage product backlog
Planning product backlog	Helps the Product Owner to plan products in an empirical environment.
Maximise value	Makes sure Product Owner understand how to maximise value by arranging product backlog items in the right way
Coach Product Owner	Helps the Product Owner practice and understand agility
Create high value products	Help the development team create high-value products
Remove obstacles	Remove any obstacles for development teams
Enabling scrum in the organisation	Leading the organisation to scrum adoption and practices
Cooperation with	Cooperation with other Scrum Masters to increase the

other scrum masters	effectiveness of Scrum in the organisation
---------------------	--

2.4.2.2 Product Owner

The Product Owner is the sole person responsible for managing the product backlog and maximizing the value of the product and the work of the development team. This is done in different ways across organisations, Scrum teams, and individuals.

Product backlog responsibilities includes:

- Expressing product backlog items clearly;
- Ordering product backlog items to help achieve goals and missions;
- Optimising the development team’s value of the work;
- Assuring that the product backlog is clear, visible and transparent to all;
- Showing what product backlog items the Scrum team will work on next; and,
- Ensuring items in the product backlog are understood by the development team to the level needed.

The Product Owner is accountable for the above work; however, they may do it themselves or have the development team do it. The scrum guide emphasises that the Product Owner is one person, not a committee. He may represent the desires of a committee in the Product backlog; however, if they want to change the product backlog item’s priority they must address the Product Owner.

To help the Product Owner succeed, the whole organisation must respect their decisions on the content and ordering of the product backlog. No one else is allowed to tell the development team to work on what from the product backlog and the development team is not allowed respond to anyone other than the Product Owner on this matter

Table 3 summarises the Product Owner responsibilities with a brief description of each responsibility. This categorisation and description is based on the researcher’s efforts to summarise the responsibilities identified in the Scrum Guide regarding the Product Owner’s role.

Table 7 Responsibilities of the Product Owner

Explaining backlog items	Expressing product backlog items clearly
Prioritizing backlog Items	Ordering product backlog items to help achieve goals and missions

Developing work practices	Optimizing the development team value of the work
Assigning backlog items	Show what product backlog items the Scrum team will work on next

2.4.2.3 The Development Team

The Scrum Guide defines the development team as a group of between three and nine professionals who do the work needed to deliver an increment release of the product at the end of each sprint. The development team members are the only people to create the increment. The development team is empowered by the organisation to organise and manage their own work. The development team has these attributes:

- Self-organising, no one tells them how to turn a product backlog item into a product increment;
- Cross-functional, they have all the skills the team need to create a product increment;
- No title for the team members other than developer;
- No sub-teams in the development team; and,
- Accountability is shared between the development team, although individuals may have area of specialised skills or focus.

As it is clear that the only responsibility of the development team is to deliver a software increment.

2.5 Roles of Agile Teams in the Literature Review

Although roles are important in software engineering, very little research has addressed the roles of Agile software development teams in practice. Following I present practitioners' literature review related to roles in Agile teams. Yilmaz et al. (2015) conducted a survey of 266 software practitioners around roles in Agile and traditional software teams and identified that the roles described in the literature vary for Agile and traditional methods. Although Yilmaz's study included more than one Agile method it only focused on the role title and did not explore the responsibilities of each role. Similarly, Dearden, Rizvi, and Gupta (2010) implemented Agile based on both their experience in using it and Agile descriptions. They used Agile for the design and deployment of a system in rural India. They found differences between the described roles in Agile and their practices. They found the crucial role played by the "Project

Manager” responsible for coordinating between different roles in Agile teams was missing in their implementation.

The previous two studies show a limited attention in research to roles and their responsibilities and a gap between the theory and practice of Agile implementation. This gap has motivated the design of this thesis research question to identify current roles and responsibilities in Agile scrum teams.

2.6 Research Focus

Figure 3 shows a synthesis of the ideas that come from the Literature Review. This framework forms the basis of data collection and analysis for this research. The main area of research focus “Agile team roles and responsibilities” is shown first at the top of the Figure 3 then after the arrow to the next square below “Identify current roles” and then “Compare it to prescribed roles” and finally “Challenges”. This framework will be used to structure the interview questions.

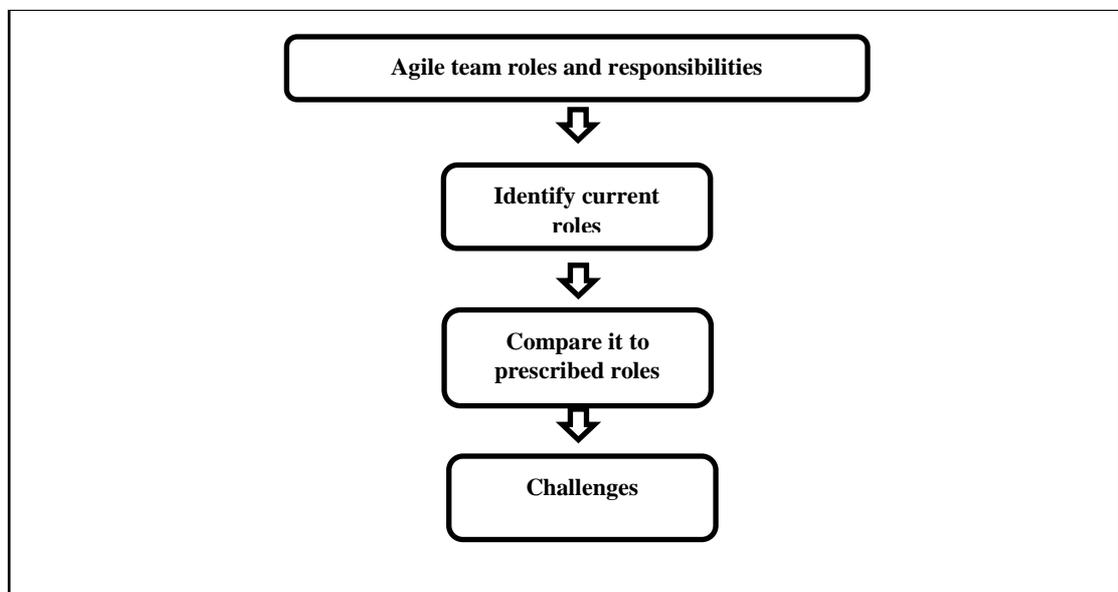


Figure 3. Framework of research focus

The literature review leads me to investigate the following research questions:

RQ1: What are the responsibilities of roles in an Agile software development team?

RQ2: How do the roles in practice differ from the prescribed roles in the Scrum Guide?

RQ3: What are the challenges of each role, if any?

The findings from this thesis are expected to not only help current Agile practitioners to improve their implementation of Agile, but will also help businesses new to Agile or who want to implement Agile, understand team roles in Agile software development,

and have an idea of what is going on in Agile teams and who is responsible for what. The findings will also help different team members within Agile teams to understand each other's expectations, leading to better coordination and project success.

3 Research Design & Methodology

The motivation of this thesis is to explore the current work practices for Agile (Scrum) software development teams and compare it to what is defined as a good practice by Scrum Guide. The research design and methodology were chosen to suit the nature of the exploratory research questions. Therefore, the components of this chapter are the selection and design of:

- Research Approach,
- Research Method,
- Data Collection and Analysis,
- Implementation, and
- Research Design Validity.

3.1 Research Approach

Orlikowski and Baroudi (1991) claim that there are three paradigms for scientific research: positivist, interpretivist and critical. This thesis project adopts an interpretivist approach, while bearing in mind that it is not possible to absolutely fit a research problem to one particular paradigm.

The positivist paradigm posits subjective personal values and external truths, which the researcher can separate. In contrast, the critical paradigm holds that people construct their realities. Therefore, a person must maintain a critical view of their values while undertaking research. Situated between the two previous paradigms, interpretivism sees “reality-for-us as an intersubjective construction of the shared human cognitive apparatus” (Walsham, 1995). A thesis project that studies people interacting with each other and the environment fits appropriately with a paradigm that focuses on the interpretations and meanings applied by people (Walsham, 1995). Interpretivists do not start with a hypothesis or define variables and manipulate; instead, they use existing theory to develop a research question and then examine the research question through data collection and analysis.

3.1 Research Method

Case studies and ethnography are commonly used as research methods for interpretive work. Ethnographic studies assume a participant-observer looking at the observed, anew. As a method, there are limitations. First, the participant-observer could affect the data. Second, the participant-observer should be the ultimate interpreter. Finally, observation can be lengthy. For example, Sharp and Robinson (2006) reported that they had to spend a week on site while conducting their research. For these reasons and the limited time scope for this thesis, the case study is a more logical candidate for researching this context.

The aim of this research project is to contribute an in-depth knowledge of roles in Agile software development teams. Given this objective, I have adopted a multi-method research design: a case study approach with qualitative data collection strategies. Researcher Robert K. Yin defines the case study research method as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used” (Yin, 1984, p. 23). That said, the case study does not develop knowledge as formal as sampling or statistics. Rather, it develops a deep investigation of a small sample. Runeson and Höst (2009) argued that this deep scrutiny is one advantage of case study research.

There are two types of case study; single and multiple-case (Yin, 2003). Case studies can be a mix of quantitative and qualitative evidence. Single case studies are often used to confirm, challenge or extend well-formulated theory. These types of studies help to refocus and review investigations in an entire field. Multiple case studies are used to obtain similar or contrasting results from similar cases. They include the repetition of procedures to build a rich theoretical framework that defines the conditions that do and do not affect the appearance of a phenomenon. For the purpose of this thesis, a multiple case study approach has been chosen as it allows the comparison of cases to investigate the roles of Agile software development teams. The framework of Agile obtained from the literature review can be applied to examine and compare expectations surrounding Agile software development team practices and the notion of roles, as they are practiced in Agile software development organisations. Table 4, adopted from Yin (2003), summarises the purpose underlying multiple case study designs and relates them to the reasons of this thesis and the use of a multiple case study approach.

Table 8. An outline of multiple case studies with research questions. Yin (2003).

Case Study Type	Purpose	This Research
Multiple Case Study	Predict similar (literal replication) or contrasting (theoretical replication) results	Comparison of roles: In Agile teams Inter-organisational
	Prevalence or frequency of a particular phenomenon	Frequency of factors elicited by each organization as contributors and barriers to a successful Agile team
	Enabling comparison of conditions	Comparison of roles in case organisations
	Every case should serve a specific purpose within its overall scope of enquiry	Agile in software projects

3.2 Literature Review of Research on Agile Roles

The first stage of the research project is the literature review that involved reading Agile values, principles and different methods. This helped the researcher understand the current practices of Agile software development, identify areas of interest and gaps in the knowledge about Agile. These areas of interest focus on the roles and responsibilities of Agile software development teams. Yilmaz et al. (2015), and Dearden, Rizvi, and Gupta (2010) found through their research that the roles described by Agile were different from how the roles played out in practice. These findings motivated the researcher to study this area of roles and responsibilities in Agile teams. The focuses in this thesis mainly on the roles of Scrum Master and Product Owner. The reason of this is that these roles are aware of overall Agile processes.

The researcher chose the Scrum guide due to its popularity and tested it against the responses obtained from the interviews to gain some insights about how the roles actually implemented in practice.

3.3 Data Collection and Analysis

In this thesis, the data collection method is qualitative. The social science interpretivist tradition features qualitative research methods. There are many reasons why a qualitative approach is suitable for a study of software Agile development teams. For example, Butler, Hope, and Gittins (2001) argued that research into Extreme Programming “relies strongly on the results of impressions and feelings of members

within the environment” (p. 140). In addition, the boundaries in Agile are not easily quantifiable (Beck, Beedle, Van Bennekum, et al., 2001).

Qualitative researchers focus more on essences than numbers, studying them to obtain a clear understanding of the case. Seaman (2008) has suggested that qualitative methods permit us “to delve into the complexity the problem rather than abstract it away” (p. 558). By studying qualitative data, this thesis seeks a deep understanding of the roles in Agile software development teams.

3.3.1 Data to be Collected

The specific qualitative data to be collected in this study relates to understanding the roles and their responsibilities in Agile software development teams. The perceptions and expectations of roles and responsibilities are obtained from the experience of practitioners who are involved in Agile teams. The interview questions were based on many meetings and discussions between the researcher and his supervisors in addition to consultation with an expert Agile coach who has 12 years of experience in implementing Agile. In these meetings, we discussed the contrasts and similarities between what was found in the literature review and the interviews with Agile participants who presented overviews of common Agile practices in the modern software industry.

3.3.2 Data collection techniques

This thesis used semi-structured interview methods to study the experiences of practitioners in Agile software development teams. Walsham (1995) observed that interviews allow the researcher to assess how the interviewees understand their own experiences at the same time as allowing the interviewer to remain a separate observer.

There are three primary types of interview, structured, semi-structured and unstructured. The structured interview focuses on qualitative, face-to-face data gathering (Seaman, 2008). With the structured interview, the researcher either does not want or does not admit the value of any information that is not related to his list of questions. On the other hand, it is difficult to create harmonious qualitative data from unstructured interviews.

To avoid the problems of the previous two methods, the semi-structured interview is a good choice for interpretive case study research. Usually, semi-structured interviews have a specific set of questions around the research question and allow the researcher to

lead the interview. Semi-structured interviews also have open-ended questions that also allow the interviewee to express their interpretations.

The pre-planned interview questions, and their relationships to the research questions are shown in next section. Other guided questions were used to clarify answers or extend the discussion to cover aspects of a specific area related to Agile roles and responsibilities. This is discussed in more detail in the next section.

3.3.3 Data Analysis

Thematic analysis in the form of template analysis (Boyatzis, 1998) will be used to analyse interview data for this thesis project. Thematic analysis emphasises studying, examining and recognising patterns or themes within data. All cases will be analysed in depth before discussing results.

3.3.4 Unit and Scope of Analysis

As this thesis project involved the expectations and perceptions of team members whose job can be categorized under roles of either Scrum master, Agile coach or Product Owner. Thus, the unit of analysis is presumed to be the “role”. In addition, the Scrum team is the scope of the analysis.

Comparing the data obtained from the interviews and literature review will shed light on some of the alignments or misalignments between theory and the actual practices.

3.4 Implementation

As a study of the roles and responsibilities in Agile software development teams, this thesis investigates a contemporary phenomenon. The boundaries of this phenomenon are not defined clearly, as Agile is a relatively new and growing method for software development.

3.4.1 Development and Implementation of Research Process

Because of his experience as a software developer, the researcher was motivated to study the roles and responsibilities in Agile software development. He began by investigating the research literature to find out what is empirically known about these roles. As shown in Figure 4, research questions were developed after determining a research motivation and examining relevant literature. From that, data collection methods were examined and decided upon.

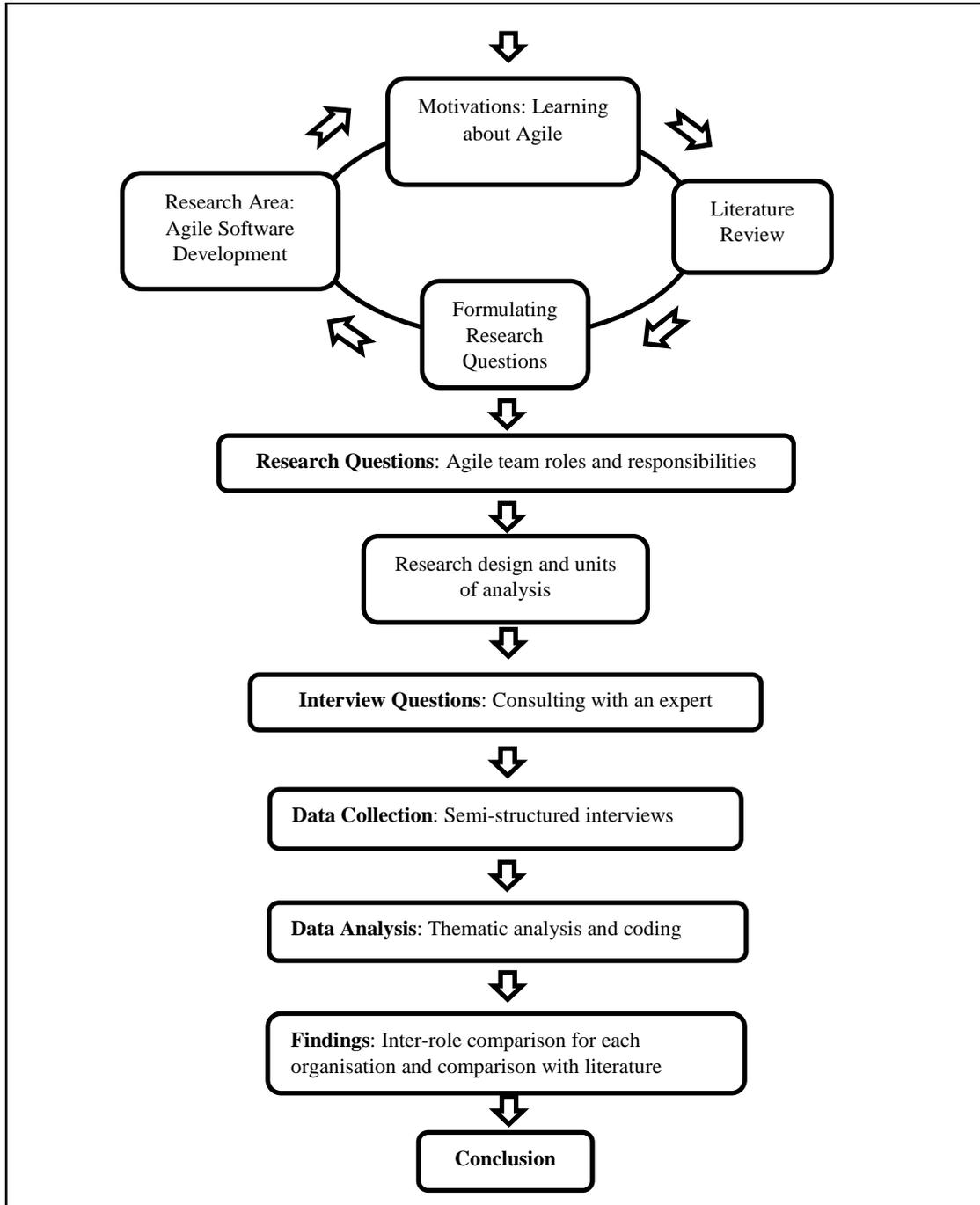


Figure 4. Research Process

3.4.2 Ethical Considerations

For this research, ethics approval was obtained from the Auckland University of Technology Ethics Committee on 22 June 2016 (AUTEC Reference number 16/227) (see Appendix A). All participants were provided with a participant information form (see Appendix D) and invited to contact the researcher with any questions before

beginning the research. In addition, consent forms (see Appendix C) were signed by each participant, permitting the use of the information obtained during the interviews for this research. The participants were assured that they could withdraw from the research at any time before the completion of data collection, without adverse consequences.

3.4.3 Participant Selection

Two main criteria were identified for case selection. These criteria were: First, as this thesis is about roles in Agile software development the organisations selected should be practitioners of Agile software development and follow Agile principles. Second, the interviewee should be either a Scrum master, Agile coach or Product Owner, or someone with the same responsibilities as these roles, with knowledge of how the Agile team works together. In addition, the participant should be located in New Zealand and preferably in Auckland, which is the current location of the researcher. Then if more participants were needed, we applied these criteria

- Their availability within in the time frame.
- Those with the most experience.

As shown in Table 5, the participants had different roles in Agile software development teams. Most had significant experience and were involved with their company's implementation of Agile. Their answers to the interview questions demonstrated this considerable experience.

The researcher conducted two main case studies for this research. Three participants were interviewed from the first case study organisation and two participants were interviewed from the second organisation. In addition, three supporting evidence interviews were conducted with team members from other organisations to support the two main case studies.

The privacy and comfort of the participant was important for the interview. All interviews were undertaken at the Company premises with a few exceptions. The interview with participant number three was carried out via Skype due to their location in Wellington, New Zealand. Interviews with participants three and eight occurred in a local café.

Table 9. Research Participants

ID	Organization	Project Types	Role Name	Experience in Software development	Experience Agile
1	A	In-House	Agile coach	None	12 Years
2	A	In-House	Agile Team Facilitator	None	3-4 years
3	A	In-House	Agile team facilitator	None	10 months
4	B	In-House	Delivery Coach	28 Years	16 Years
5	B	In-House	Senior Product Owner	19 years	5 years
6	C	In-House	Product analyst	21 Years	18 months
7	D	In-House	Head of Product	17 Years	16 Years
8	E	In-House and external	Delivery manager	19 years	8 Years

3.4.4 Connections Between Interview Questions and Research Questions

To justify gathering the data, the interview questions needed to reflect the research aims and questions. Table 6 shows the relation between interview and research questions. These research questions were generated through many discussions between the researcher and his supervisor, in addition to consulting an expert in Agile methodologies. The questions were also designed to allow the participants to freely discuss their thoughts and experiences from which the benefits and challenge could be extracted during analysis.

Research Questions

1. What are the responsibilities of roles in an Agile software development team?
2. How are the roles in practice different to the prescribed roles in the Scrum Guide?
3. What are the challenges for each role, if any?

Interview Questions

1. What is your experience in Agile software development?
 - a. How many years have you been working in SD?
 - b. How many years using Agile SD?

2. What is your named role (according to your employment contract) in the development team?
3. What are the responsibilities of your role?
 - a. Describe your activities in a typical day
4. What do you see are the main challenges with your role?
5. What are the other named roles in the core team you work with on a daily basis?
 - a. Briefly, what do you see their responsibilities being?
6. What are the named roles and relevant responsibilities of others in the organisation that interact with the team to develop software?
7. What do you think the main challenges are with any of these roles?
8. What leadership, mentoring and/or coaching roles are there?
 - a. What are their responsibilities?
 - b. How would you describe their leadership style?
 If not already covered ...
9. What role(s) hold the responsibility for project management?
 - a. What aspects of PM are they responsible for?
10. What role(s) manages the Agile SD team and what are their responsibilities?
 - a. What management responsibilities do they have?
11. What role(s) is/are responsible for risk management?
 - a. What aspects of risk management are they responsible for?
12. What roles are responsible for quality assurance?
 - a. What aspects of QA are they responsible for?
13. What roles are responsible for facilitating Agile meetings?

Table 10. Connection between interview and research questions.

Research question	Related interview question(s)
1. and 2.	1.,2., 3., 5., 6., 8., 9., 10., 11., 12., 13.
3.	4., 7.

3.4.5 Data Recording

Interviews was recorded using a digital recorder. The researcher asked the participants for their agreement to the voice recording. Interviews ranged from thirty minutes to one hour. Eight interviews were conducted.

3.4.6 Implementation of Data Analysis

Once the researcher completed all of the interviews, he summarised them (see appendix G). In addition to the actual interview and during the summaries, the researcher had taken three sets of notes for all interviews. He read each of the summary at least three times. These repeated interpretations of enabled the researcher to develop a deep understanding of Agile roles as they were related through the data. This understanding was used to create a detailed description the case study.

The researcher used NVivo qualitative analysis software to load interview data. The data was then coded to different schemes:

- Scrum Master
- Product Owner

Each theme included the responsibilities of each role (see appendix F). These schemes discussed with the primary supervisor.

The researcher only focused on these two Scrum team roles as it gave him an overview of how the Agile team worked together. If the interviewee had a different job title but the same responsibilities, the researcher included his responsibilities within the relevant code scheme. For example, if the interviewee was an Agile Coach or team facilitator the researcher included his responsibilities in the Scrum Master code scheme. This decision was made because of the limited number of participants.

3.5 Limitations / Threats to Validity

The following are some threats to validity. These threats can be group into: interview weaknesses and researcher bias.

Possible interview weaknesses:

- **Participant Range:** The researcher did not include the perspectives of some members of the Agile team such as the member of the development team. The researcher's goal was to meet people who were aware of overall Agile processes. However, this made the research biased towards some roles in Agile teams (Scrum Master and Product Owner).
- **Self-Selection:** Some participants may have wanted to be involved in this research because they have a positive view of the topic. Thus, other participants with different perspectives were not involved in the research. Although this was not a threat to the research validity, it is good to keep this potential problem in mind.
- **Comfort Factor:** The interview environment may feel uncomfortable to some participants (Myers & Newman, 2007). To overcome this possibility, the interviewees were invited to choose where to have the interview.
- **Trust:** The interviewees may not trust the interviewer. This can result in the inaccuracy of interview information (Myers & Newman, 2007). The researcher tried to be friendly and maintain a professional relationship with participants.

- Reflexivity: The participants may answer questions with what they think the researcher wants to hear (Yin, 2003). To overcome the issue, the researcher tried to be natural and ask opened ended questions.
- Reliability: In semi-structured interviews the answers can vary even when repeating the same open-ended questions to the same participants. Thus, it would be difficult to get reliable answers. If the researcher was able to interview different member of the Agile team within the same Company, the issue could be overcome. However, this was only possible with two organisations. Also using job descriptions as a different source of information was not reliable as interviewees said that the work they do is not reflected in their job description.
- Invalidity due to poor recall/inaudible recordings (Yin, 2003): Moments of unclear recording are unavoidable. Repeated listening to the recording will clarify these moments. It is also important to have another digital recording available for back-up.

Possible researcher bias:

- The researcher's background as an ex-developer: This could potentially skew the direction of the interview or analysis to the technical side of Agile, which should be avoided as the research objective is to focus on the role of Agile team participants (Scrum Master and Product Owner). The researcher must be aware of this to prevent interpretation of the data through his previous experiences.
- The researcher finds Agile ideas attractive: This is similar to the issue identified with self-selected participants who may participate just because they are interested in Agile. This researcher may tend towards emphasising the positive aspects of Agile. He or she must be aware of this possibility and evaluate the evidence in a detached manner.

4 Findings and Discussions

The goal of this chapter is to present the findings and discussions for the following research questions:

RQ1: What are the responsibilities of roles in an Agile software development team?

RQ2: How the roles in practice different to the prescribed roles in Scrum Guide?

RQ3: What are the challenges of each role, if any?

To be able to answer the research questions, research was conducted with five leading organisations based in Auckland and Wellington, New Zealand. These organisations are briefly described and compared in the next section 4.1 and are referred to as Organisation A, B, C, D and E to maintain anonymity. All organisations consider themselves to be practitioners of Agile software development but have different ways of implementing Agile. Based on the information from interviews with members from these organisations, the findings and discussions are described below

4.1 Context and Comparison of Interviewed Organisations

All five organisations were based in Auckland and Wellington, New Zealand. They were all developing software for their company product (in-house) with exception of one company that develops software for in-house and external partners or customers. All the companies were following Agile practices. The researcher was able to meet three and two members in companies A and B. The researcher was able to meet only one member of the development team for organisations C, D and E. The researcher considered using the job descriptions for roles in these organisations as secondary resources. However, the interviewees stated that their work was not necessarily represented in the formal job descriptions of their contracts.

Context of Organisation A

In organisation A (Auckland branch), there were two teams and each team consisted of a Product Owner, the development team (developers and QA) and the Agile team facilitator who works across both teams. The Product Owner is responsible for understanding the big picture of the product and owning it and then passing it to the teams and helping them understand the items. The project manager looks to the big picture and deals with senior stakeholders, roadmaps and budgets. One team has an

architect and a product knowledge specialist who is also the Scrum master. Each member in the team has a direct manager who is a senior developer or tester in another team. The team members don't work directly with their managers but they are evaluated by their managers. Some roles in marketing, design, security, architecture, DBA or operations can work with more than one team as needed. In the Wellington branch, there are more than 20 teams but their ways of working are similar.

Context of Organisation B

In organisation B there are a number of teams that consist of developers and testers and a Scrum Master or a facilitator who works across teams. There are team leads (delivery leads) in each team who are the line managers for all team members (they are not necessarily technical). There is a senior Product Owner who works across teams with two juniors (sometimes called technical BAs). The senior Product Owner is responsible for delivering a whole iteration and the junior Product Owners are responsible for delivering a specific capability within that iteration. The two junior Product Owners do not report to the senior Product Owners, but he is like a coach to them. The senior Product Owner also works externally with client representatives and the product manager or director. In addition, a field coordination office coordinates the product releases that go to clients.

Context of Organisation C

Organisation C has two Scrum Masters between two and three teams. They are not in this role full time as one of the Scrum Masters is a QA lead and the other is also a technical digital payment lead. The role of the Scrum Master is to make sure the team is on track. In this organisation, the product analyst/business analyst takes the role of Product Owner and he is responsible for project management and external communication. A product analyst can work across teams or is dedicated to one team. Their development team is self-managing and does not have a leader.

Context of Organisation D

In organization D, there is no Scrum Master or Agile Coach. They justify that by saying that Scrum is for corporates and does not apply to them. They say that in their organization everyone knows how Agile works as it is part of their nature. However, each team has a team lead (with different backgrounds) who is effectively a project manager and also performs the role of Product Owner. They also have a product analyst

who is like the business analyst. They own the low-level details, but in many ways they also act as Product Owners. In this organisation, there is no iteration or estimation because delivery here is constant. They follow a simple philosophy of write what you want to do and do it! There is no definition of 'done' but they do write down their goals for the project and what success looks like. They have a daily stand-up meeting but sometimes it occurs weekly instead.

Context of Organisation E

In this organisation, people are hired according to traditional roles: business analysts, testers and project managers. Although this goes against the Scrum, they still do that as these jobs require a high degree of specialization. They have a Scrum Master (iteration manager) who enables others to be a part of the Agile teams. They have Product Owners who usually work with more than one team. They have a delivery manager who would generally be accountable for the actual delivery of project element. They try not to have barriers between roles. They used to work in a way that if you are tester, then a more experienced tester will be your line manager, but they are moving from that to what is called the 'domain model'. This is where the delivery manager manages the people who work in his domain and has developers, testers and BAs who report to him.

4.2 Comparison of Role Responsibilities across Organisations

The Scrum software development team consist of two main roles: Scrum Master and Product Owner. In addition, there is the development team, which is responsible for the delivery of the working software. As discussed before, this thesis focuses on the role of the Scrum Master and Product Owner, as they are new roles for Agile and can see the overview of processes in Agile teams. Following each role is presented in a separated section and within each section I present the answers to the three research questions RQ1, RQ2 and RQ3.

Scrum Master

The responsibilities of the Scrum Master role across organisations and how the roles in practice different to the prescribed roles in Scrum Guide presented in Table 7 which is the answer to RQ1, RQ2. It shows that the Scrum Master is not responsible for product backlog (manage, planning or maximizing value). In all organisations, the Product Owner is responsible for all activities related to product backlog. In one instance, the Scrum Master was the Product Owner but only where extra help was needed. Table 7

also shows that the scrum master, unless he is also the Agile Coach (working in scrum of scrum), is not responsible for communication outside the team. In all case study organisations, there were no responsibilities mentioned by the interviewee that were not listed in the Scrum Guide.

Table 7. The frequency of Scrum Guide’s Scrum Master responsibilities mentioned in all Interviews

Scrum Guide Responsibilities	Description	Frequency mentioned in interviews
Teaching scrum	Help stakeholders and team members understand scrum.	2
Scrum guardian	Make sure scrum practices are followed.	1
Servant-leader	Servant-leader for the scrum team.	2
Outside team communication	Help with communication outside the scrum team.	0
Coaching the scrum team	Coaching the development team into self-organisation and cross-functionality.	3
Facilitating	Facilitating scrum events.	4
Manage product backlog	Help Product Owner manage product backlog.	0
Planning product backlog	Helps the Product Owner to plan products in an empirical environment.	0
Maximize value	Make sure the Product Owner understands how to maximize value by arranging product backlog item in the right way.	0
Coach Product Owner	Help the Product Owner practice and understand agility.	1
Create high value products	Help the development team create high-value products.	2
Remove obstacles	Remove any obstacles to the development teams.	2

Enabling scrum in organisation	Lead the organisation to scrum adoption and practices	2
Cooperation with other Scrum masters	Cooperation with other Scrum Masters to increase the effectiveness of Scrum in the organisation.	1

The responsibilities of the Scrum Master were assigned to different named job roles across the organizations. These roles included: delivery manager, Agile coach, Agile team facilitator, iteration manager and delivery coach. In two cases (A and B) Agile Coach was the person who enable the whole organization to be Agile whereas Scrum Master helps individual teams to be Agile. In organisation E, delivery manager was a similar job title to Agile coach.

Although the main responsibilities of the of Scrum Master are similar across organisations, this role was occupied by full-time and part-time Scrum masters (organization A) and by other people who had different roles as well as Scrum Master (organisation C). In organisation D, there was no Scrum Master and when I asked why, they said:

“I think this is because not only scrum is for corporate and does not apply for us but also everyone here knows how Agile work it is their second nature.”

In Organization A, the Scrum Master said that this role was to help the team become Agile and once the team is Agile they can go somewhere else to assist other teams because they no longer needed the Scrum Master in their team.

“If you start with Scrum out of the Scrum guide and then evolve that effectively. I can see absolutely a case, I do not know how many teams will reach this point, where the role of Scrum Master move to something else or disappear. Because the role of Scrum Master is to help the team understand Scrum and facilitate them. But then if we exist in a context of an organization that understand all of that then we do not need scrum master. However, if we do not get there, because of the changing dynamic of the team (people, initiative or

context), then somebody or a group of people should act like a guide or a reference.”

In addition, in organization A, one of the Scrum Master stated that the responsibilities of this role can be done by other members of the development team if the Scrum Master is not available. Most the participants we interviewed who are working in this role had no development experience and sometimes had non-technical backgrounds. For example, in organisation A, the Scrum Master was working as educational manager before she moved to work as Scrum master.

The challenges of the Scrum Master role include (the answer to RQ3):

- Dealing with difficult personalities.
- Assisting the team to understand the value of Agile practices.
- Boosting commitment and shared responsibilities between team members.
- Changing the mind-set of the whole company to be Agile not just do Agile.

When asking two Scrum masters from organisation A about the gaps of this role one said that there should be no gaps in Agile because they shared responsibilities so they do whatever they need to accomplish their goals even if this is not their job. Another Scrum Master said that one of the challenges is that the boundaries of the role are not clear. The first answer aligns with the Agile mind-set of the whole team sharing responsibility for what they do. The second answer aligns less with this mind-set but could be due to the limited understanding of the Agile way of working.

Product Owner

The responsibilities of the Product Owner role across organisations and how the roles in practice are different from the prescribed roles in Scrum Guide presented in Table 8 which is the answer to RQ1, RQ2.

Table 8. The frequency of scrum guide’s Product Owner responsibilities mentioned in all Interviews

Scrum Guide responsibilities	Description	Frequency mentioned in interviews
Explaining backlog items	Expressing product backlog items clearly.	3

Prioritising backlog items	Ordering product backlog items to help achieve goals and the mission.	3
Developing work practices	Optimising the development team value of the work.	1
Assigning backlog items	Show what product backlog items the Scrum team will work on next.	1

Table 9 shows one responsibility for Product Owner found in different organizations but the Scrum Guide did not mention it. The Product Owner in many organisations was responsible for communication outside the team as he was the main point of contact for everyone involved with the product being developed such as senior managers in addition to the development team.

Table 9. New responsibilities of Product Owner emerged from the Interviews

Responsibilities from interviews	Frequency mentioned in interviews
Communication outside team	4

The responsibilities of the Product Owner were assigned to different named job roles across the organizations. These roles included: business analyst, product manager and product analyst. However, the product manager was at a higher level and had many others working for him. In one case (organisation D) the responsibilities of this role were undertaken by a team lead who was also the project manager.

“Our structure is that we have a team lead and this team lead is effectively a project manager and I guess in some way they will perform the role of Product Owner.”

In another case, (organisation B), the responsibilities of this were managed by a team of Product Owners (a senior Product Owner and two junior Product Owners). When the senior Product Owner asked about their responsibilities answered:

“I have responsible for delivering a whole iteration but they are responsible for delivering a specific capability in that iteration”

In one case, (organization A), the Product Owner also had another role:

“In the two teams I work with we have: Product Owner (One is official BA, the other is QA who is acting like BA) and development team”

In another case, (organisation C), I found Product Owners who worked across two teams.

“Product analysis we have generally one per team but I am across two teams. “

Finally, the answer to RQ3 the common challenge of this role was time management due to large number of contacts. When asking Product Owners about the gaps of this role they said that the boundaries were not clear.

4.4 The Implications of Findings

The roles of Agile teams have been the focus for this thesis with the aim of obtaining an understanding of the roles and responsibilities in Agile teams. Roles and responsibilities of Product Owner and Scrum Master have been obtained from the Scrum Guide and compared to roles and responsibilities provided by Agile practitioners to gain a clearer picture of good practice regarding roles in Agile teams, which will assist practitioners with decision making and providing a structure for further research in this area.

The finding of this thesis shows a wide variety of ways to implement roles and their responsibilities in contemporary Agile teams. However, this could be due to different factors: limited resources (capital or experts), history of using traditional management, and misunderstanding about Agile and the Scrum Guide. In addition, Agile advocates shared responsibilities between all Agile team members, which is a different mentality from traditional command and control where all team members have a specific set of responsibilities. This shift from traditional to Agile is in progress and could take more time to complete enabling us to see the new picture.

This make it hard to list a specific set of responsibilities for each member in Agile team since the responsibilities are shared between team members. However, the findings of this thesis show that the roles of Scrum Master focus more on the side of the development team. The Scrum Master is responsible for dealing on daily basis with the

development team and help them as described by the Scrum Guide. However, the Scrum Master was not responsible for dealing with other people outside the development team unless he was an Agile Coach. The Scrum Master was not responsible to deal with the product backlog or help the Product Owner in managing it.

The finding of this thesis shows that the roles of Product Owner focuses more on the side of product backlog. The Product Owner is the person who is responsible for all activities related to product backlog. In contrast to Scrum Guide, the Product Owner is responsible for communication outside the team.

The overall findings of this research confirm the previous studies that found a gap between theory and practice and contribute to the body of knowledge about roles and in addition responsibilities in Agile teams. This thesis could be useful to businesses planners implementing Agile. It provides a clear visibility of how roles and their responsibilities are implemented by current Agile practitioners. The Finding of this thesis can be also used by the Scrum Guide authors to understand how their methodology has been implemented and used in the real world. This may help guide future releases of the Scrum Guide.

5 Conclusion

The main aim for this thesis was to understand the roles and responsibilities of Agile teams. To achieve this, this thesis used the Scrum Guide as a base and compared the role of Product Owner and Scrum Master and their responsibilities outlined in this Guide with five leading organisations based in New Zealand. This thesis has met its objective of obtaining information about how key industry players the researcher interviewed implement roles and responsibilities in Agile software development teams.

This comparison of various roles in case study organisations with the Scrum Guide found that the implementation of roles within the development teams aligned with the Scrum Guide in some areas and were misaligned in other areas. This could be due to misunderstandings of the Scrum Guide, limited resources or the legacy of traditional management practices embedded within an organisation. This also shows that software industry is moving towards new ways of working.

The main distinction is that the Product Owner is an independent character not always working with the Scrum Master and he is completely responsible for all activity related to the product backlog and also the outside communication. In contrast, the Scrum Master was mainly responsible for dealing with the development team members.

The comparison also revealed that there is a gap between the theory and implementation of Agile. By presenting these differences, this research highlights some misalignment of 'real world' roles with those outlined in the Scrum Guide. This study can be used to guide the future releases of Scrum Guide. It also helps current and future Agile participants understand how roles and responsibilities are implemented in Agile teams.

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APPENDIX A - Ethics approval

22 June 2016

Jim Buchan
Faculty of Design and Creative Technologies

Dear Jim

Re Ethics Application: **16/227 Roles and responsibilities in Agile Software Development**

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

Your ethics application has been approved for three years until 21 June 2019.

As part of the ethics approval process, you are required to submit the following to AUTECH:

- A brief annual progress report using form EA2, which is available online through <http://www.aut.ac.nz/researchethics>. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 21 June 2019;
- A brief report on the status of the project using form EA3, which is available online through <http://www.aut.ac.nz/researchethics>. This report is to be submitted either when the approval expires on 21 June 2019 or on completion of the project.

It is a condition of approval that AUTECH is notified of any adverse events or if the research does not commence. AUTECH approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTECH grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this. If your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply there.

To enable us to provide you with efficient service, please use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at ethics@aut.ac.nz.

All the very best with your research,



Kate O'Connor

Executive Secretary

Auckland University of Technology Ethics Committee

Cc: ccn9045@aut.ac.nz

APPENDIX B - Semi-structured Interview Questions

1. What is your experience in Agile software development?
 - a. How many years have you been working in SD?
 - b. How many years using Agile SD?
2. What is your named role (according to your employment contract) in the development team?
3. What are the responsibilities of your role?
 - a. Describe your activities in a typical day
4. What do you see the main challenges with your role as?
5. What are the other named roles in the core team you work with on a daily basis?
 - a. Briefly, what do you see their responsibilities as?
6. What are the named roles and relevant responsibilities of others in the organisation that interact with the team to get software developed?
7. What do you think the main challenges are with any of these roles?
8. What leadership, mentoring and/or coaching roles are there?
 - a. What are their responsibilities?
 - b. How would you describe their leadership style?IF NOT ALREADY COVERED...
9. What role(s) have accountability for the project management responsibility?
 - a. What aspects of PM are they responsible for?
10. What role(s) manages the Agile SD team and what are their responsibilities
 - a. What management responsibilities do they have?
11. What role(s) is responsible for risk management?
 - a. What aspects of risk management are they responsible for?
12. What roles are responsible for quality assurance?
 - a. What aspects of QA are they responsible for?
13. What roles are responsible for facilitating Agile meetings?

APPENDIX C - Consent to Participation in Research Form

For use when interviews are involved.

*Project title: **Roles and Responsibilities in Agile Software Development***

*Project Supervisor: **Jim Buchan***

*Researcher: **Amar Kashari***

- I have read and understood the information provided about this research project in the Information Sheet dated 10 May 2016.
- 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 be audio-taped and transcribed.
- I understand that I may withdraw myself or any information that I have provided for this project at any time before completion of data collection, without being disadvantaged in any way.
- If I withdraw, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.
- I agree to take part in this research.
- 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 (if appropriate):

.....
.....
.....
.....

Date:

***Approved by the Auckland University of Technology Ethics Committee on 22 June 2016
AUTEK Reference number 16/227***

Note: The Participant should retain a copy of this form

APPENDIX D - Participation Information Sheet

Date Information Sheet Produced: 10 May 2016

Project Title: Roles and Responsibilities in Agile Software Development

An Invitation

My name is Amar Kashari. I am a student from Auckland University of Technology, currently doing a research thesis as partial fulfilment of a Master of Computer and Information Sciences degree. I would like to invite you to participate in my research into the area of Roles and Responsibilities in Agile Software Development (ASD). In particular, this research relates to understanding how the current state of work practice for ASD teams to gain some insights into the roles and their responsibilities and expectations. This will result in a clearer picture of good practice regarding roles in Agile teams, assisting practitioners with decision making and providing a structure for further research in this area.

Please note that your participation in this research project is completely voluntary in nature, you may withdraw or decline your participation without any consequences. None of the participants will be identified in the final research, the information gathered will only be used only for this research, and it will not use to affect your career.

The following list of questions and answers are designed to address the most frequent questions a participant may ask about this particular thesis project. If further information needed, feel free to contact the primary researcher, Amar Kashari. My contact details are printed at the end of this document. It is recommended that you use e-mail to reach me.

What is the purpose of this research?

This research project aims to study the current state of work practice for ASD teams, to gain some insights into the roles and their responsibilities and expectations. This will result in a clearer picture of good practice regarding roles and their responsibilities in Agile teams, assisting practitioners with decision making and providing a structure for further research in this area.

How was I identified and why am I being invited to participate in this research?

You have been identified from the research project supervisor's personal contacts of industry practitioners as someone with expertise in the area of team-based Agile software development.

What will happen in this research?

When you accept this invitation, the primary researcher Amar Kashari will interview you. This interview will be a broadly structured interview in which you will be asked a couple of open-ended questions related to your experience of Agile team. The interview can be held in any place you wish including your work place or any other neutral place if requested. During the interview, the researcher will take notes for analysis later and he will record the interview as a memory aid for clarification of the interview notes taken. The analysis stage of this research project will involve coding the data to identify themes and trends that reflect insights to the practitioners' perceptions of Agile team roles and responsibilities. Please note that it is expected that the recording of the interview will not be fully transcribed. All the data that have references to the organisation and individuals will be removed.

At the end of this research project a report summarising the main findings will be made available to you if requested. In addition, it is expected that papers may be published in academic journals reporting the main conceptual findings of this research project.

What are the anticipated risks and discomforts?

- During the interview, you may feel uncomfortable about sharing your point of view about the research project questions.
- You may feel uncomfortable due to fact that your employer will know you are using the company time for participating in the study.
- You may feel uncomfortable about recorded the interview.
- You may feel uncomfortable that your co-workers or manager may overhear the interview.

How will these risk and discomforts be mitigated?

- To mitigate the first area of potential discomfort, you will be reminded of our guarantee of privacy of all interview data at the beginning of the interview. You are completely free not to answer any specific question, and you can withdraw from participating in the interview at any stage during the interview. In addition, you can request that your interview data be removed from the study before the start of data analysis.

- Stressing that participation in this study is voluntary to both you and your company will mitigate the second possible area of discomfort. We understand that this interview could consume some of your time. We offer to interview you in anytime that is convenient for you and your company including lunch break or after hours. We also guarantee the complete confidentiality of whether or not you agree to participate in this research.
- Recording of the interview is not a conditional of conducting the interview. In the beginning of the interview, you will be asked for permission to record the interview. In addition, you will be reminded that you can request to stop the recording or wiped it at any stage of the interview or after.
- In order to mitigate the last area of potential discomfort, the interview will be held in a soundproof room at the company premises, or, at your request, the interview will be held at a neutral place away from work.

What are the benefits?

In addition to the contribution to the body of knowledge and influencing practice in the area of Agile, the insights gained from this research will be made available to you and your colleagues and it is hoped that the knowledge gained will be helpful for improving the practice in your company.

How my privacy be protected?

All of the data related to the participant (consent form, tape, and interview notes) will be stored at AUT in a locked cupboard for at least 6 years. After that, the data will be destroyed.

The data from the interviews will be anonymised and analysed for insights and principles that are independent of the interviewee's identity. In addition, personal data will be coded and the data will be stored in a separate place so that the identity of each participant will be separated from their responses.

If participants decide to withdraw from this thesis project for any reason before the completion of data collection, all of the data related to their interview will be destroyed as soon as possible after their request.

Furthermore, your employer will not read the content of this research data. The only people who will have access to your data will be the researcher and the researcher's supervisors.

What are the costs of participating in this research?

Time is the only cost to you. The interview will take less than one hour of your time.

What opportunity do I have to consider this invitation?

Due to time limit for the research, we would expect to have notice of your agreement within one week of you receiving this invitation.

How do I agree to participate in this research?

To follow up on this invitation to participate in this research, please confirm your acceptance by email to ccn9045@autuni.ac.nz. You will also reconfirm your approval to participate in the interview formally by signing the participant's consent form just before your interview.

Will I receive feedback on the results of this research?

If you would like a report summarising the results of this research, please tick the appropriate box on the consent form.

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:

Jim Buchan

Senior Lecturer

School of Engineering, Computer and Mathematical Sciences

Auckland University of Technology

Private Bag 92006

Auckland 1142

New Zealand

Phone: + 64 9 921 9999 x 5455

Email jim.buchan@aut.ac.nz

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEK.

Kate O'Connor

Executive Secretary

Auckland University of Technology Ethics Committee

Email ethics@aut.ac.nz

Whom do I contact for further information about this research?

Researcher Contact Details:

Amar Kashari

Master of Computer and Information Science, Software Engineering Research Lab
(SERL)

School of Engineering, Computer and Mathematical Sciences

Auckland University of Technology

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Auckland 1142

New Zealand

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Email jim.buchan@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 22 June 2016, AUTEK Reference number 16/227.

APPENDIX F – Code

Product Owner

Delivering Backlog items
Developing work practices
Explaining backlog items
Prioritizing backlog items
Communication outside the team
Challenges

Scrum Master

Scrum Guide Responsibilities
Coach Product Owner
Coaching the Scrum team
Create high value product
Enable Scrum in Organization
Facilitating
Help the team understand backlog items
Scrum Guardian
Servant Leader
Teaching Scrum
Work Cross Teams
Challenges

APPENDIX G – Interviews Summary

Interview 1

In Agile everything depends on the context. We start with the work need to be done, work purpose (organization, department or even portfolio/team level), work context (technology, people, skills, time to market), work requirements including constraints and boundaries, and the people we have (their skills, knowledge, personal career goals, limitation and how to structure them to do it or train them if needed).

From that, whatever roles, accountability and focus will emerge. However, this context may not be fixed, it could have a life span, maybe one feature of one product of one release and it can change after that. New people could come and others go, we learn new things and requirements could change.

In the beginning, we need someone to lead but this is not always true. The person who knows lead and the leader role could disappear. Where I came from, everyone is a leader, everyone is a follower. If I know more about this area I will lead, if you know more about that that area you will lead. This knowledge can be about the target market, the organization process, the product itself, or experience in leadership and how to manage teams. In a case of absence of this person, we as a group can lead and experiment together or select one of us to take this role.

Sometimes the organization has an emphasis toward something and we as a team feel they want us to do. For example, organization X decided to bring on Lean Agile practices then it will be some change initiative around that to training and people will volunteer to somehow be selected to fulfil roles to enable it.

The evolution of Agile Coach and Scrum Master roles

Agile coach came as Agile developed in the last decade. There was recognition that in order to help any team to move to Agile, and you do not know anything about Agile, somebody got to help. If you take an approach that is the servant leadership approach than labelling it as Agile coach or mentor will be appropriate.

If you start with Scrum, out of the Scrum guide and then evolve that effectively. I can see absolutely a case, I do not know how many teams will reach this point, where the role of Scrum Master move to something else or vibrate. Because the role of Scrum Master is to help the team understand Scrum and facilitate them. But then if we exist in

a context of an organization that understand all of that then we do not need scrum master. However, if we do not get there, because of the changing dynamic of the team (people, initiative or context), then somebody or a group of people should act like a guide or a reference.

Initially you need someone to manage/guide/mentor people but when they get it. The training wheel can get off the cycle. They could go to help other people who need this help/guidance. Of course, it is good to have someone to help the team get better and have a spared pair of eyes on the team but do we need a specific coach to do this is a debatable point.

My Company Structure

Company X is an accounting software company for small and medium businesses. For simplicity, we can say Company X offers three services to its customers: Company X Business, Company X payroll, Company X practice (bookkeeper). A customer can subscribe to one or all of Company X services based on their need and size. Here in Auckland, we are Company X practice, our office in Wellington is Company X Business and our office in San Francisco is Company X payroll. Super simplistically this how we work.

Each of these three big block or portfolio has GM who has project management experience or use PM practices. In Company X, GM is part of project development not marketing which is different from other companies. GM has a number of project managers (PMs) and each one of them focus on a bunch of customer value solutions. For example here in Auckland (Company X practice) one PM looks after how to manage work, practices, and profitability. Another PM looks to taxes, GST returns and actual mechanic of these things. So each PM own a coherent customer value chunk of area.

Then each PM has a number of product teams and each product team has a Product Owner. The Product Owner here at Company X is different than what is described by Scrum. The Product Owner is responsible for understanding the big picture of the product and owning it and then passing it to the team and helping them understand it. While PM looks upward the big picture and deal with senior stakeholders, roadmap, and budget. Each GM and PM are autonomous in their own area and they can make decision based on their knowledge and understanding of their area. Although they should be transparent and act only within the limits of the resources dedicated to them.

In addition, here we have the concept of head of country manager, heads of bookkeeping and accounting, head of marketing, we have all of these managers who have a view into what should happen and manage their part of the product. All of the managers meet regularly to manage the work in Company X. We are not perfect but we try to make sure what has been said has been done properly and with the same expectation. They meet every 30, 40, 80 days depending on the work.

If we have a new idea, first we define the problem statement and validate that is a real thing. Then checking there is value in progressing this. In this stage, we expect the GM to be aware of it and a PM to own it. Then we prioritize it, usually Product Owner does this but it depends on the size of the idea.

As we talked about a cross-functional team in Agile team I am pushing the idea of cross functional product groups and cross functional portfolio. Just as the team need to have front-end developers, back-end developers and testers the people to develop whatever needed to deliver. But we do not need marketing, designers, security, architecture, DBA or operation engineer all the time in each team but we need them sometimes. Therefore, these roles can work with more than one team as needed. Here we are putting more emphasis on the work that needs to be done not on the role and structure.

My Role

I work with multiple cross-functional teams. My roles include: facilitating sessions (most standards Agile type meetings), working with Product Owner and project manager (Roadmaps, Specification by example, Story mapping), mentoring, teaching, validate great ideas (utility and profitability). I also work with GM level and down.

I help people to decide what they want to do, give them some advices or constrains. Help them define when they going to deliver it (for example by using story points). Define quality and objective measures. Help them understand each other as individuals, communication preference, skill sets ... all of that. For any team you need to understand what they are working on and why (business drivers). Know what skills set we have and decide what to use what not.

I facilitate Weekly GM/PM meeting, team meeting and one to one meeting with team members. Usually I have primary focus and secondary focus and it is different from time to time. So right now, this type of work is my primary focus and something else is my secondary focus. Because every team is different and every time is different too.

I got two people with my role type job here. Different places have different job title and different places have different culture. For example, in Melbourne the term is iteration manager rather than Agile coach, Agile team facilitator or scrum master.

There is no simple answer to how to deal with conflict because every situation is different. If I am aware of it and I am asked to, I can involve but there are traditional HR who deal with it.

Interview 2

What is your experience in Agile software development?

I am working as Agile team facilitator for 10 months so far. Before that, I was education manager responsible for educational content creating. I have no experience working with development teams.

What are the responsibilities of your role?

My responsibilities now include: work with the development team to help facilitate the meetings and how they want to work together or which method they want to use (because we are not specifically scrum). Then it is my responsibility to make sure that the team is keeping doing the meeting and whatever they agreed to. I also assist with any personal development they need to on individual basis. I work with the product manager to help them understand the backlog items. I generally tell people I work with development teams to help them be more awesome.

Describe your activities in a typical day

I have two type of typical days. First, days full with planning meeting and refinement. I do stand-up meeting with the team and then I do any of the other meetings they need (I facilitate their planning, refinements, retrospective). I also have one on one meeting with BA or some of the team members. Then if I am not working with the team I do personal professional development continually up skilling myself on Agile.

What do you see the main challenges with your role as?

One of the main challenges of my role is sometimes when I came up against difficult personalities and challenges. This usually happen in the first weeks when we are working together. When I need, I have support from other Agile coaches who work with me here at this company.

Not having a technical background is not one of these challenges. I have been here long enough to observe some of this knowledge. I always have people I can ask about what I need.

The biggest challenge is managing the personalities, it is about I observe about people and what they are doing is an actually thing not based on my basis or lack of knowledge.

What are the other named roles in the core team you work with on a daily basis?

In the two teams I work with, we have: Product Owner (One is official BA, the other is QA who is acting like BA) and development team (Developers, QAs) in each team. In one of the team, we have Architect who is part of the scrum team, in this team who also have Product knowledge specialist as part of the scrum team but not the development team. I also work with my Agile coaches.

What are the named roles and relevant responsibilities of others in the organization that interact with the team to get software developed?

Our team interact with product and knowledge specialists from the accounting department because our software is an accounting software. We interact with Product knowledge specialists, people who worked with the customers for really a long time. We interact with the various team leads that lead the development teams (I and HR work with them from HR and personal development perspective). HR involved sometime. We have product-marketing people to find out what is changing what is new so they can create the front page and supporting documentation. Sales people who let us know what is happening in the market and we tell them what is coming up. This like, Architecture, infrastructure, DevOps and security people are now working closer knowing when stuff is ready to be release.

What leadership, mentoring and/or coaching roles are there (you do)?

There is nothing official, but I do professional personal development for my team members, making sure that they are getting enough stimulation, they are happy. What they want to work on, I can help by talking to them, their team leads or product managers to see what we can do. I am mentoring one of the BA just to see how she is going and if I can over any perspective or arrange any training, opportunity, help she need. Outside my team, I help people mostly young women to start in technology. All this in not necessary officially my role but this is what I do.

What leadership, mentoring and/or coaching roles are there (your managers do)?

I report to An Agile coach who mentor me and help me. We do regular one on one session. It is like Retrospective meeting for me. I talk about what is going wrong what is happening. We also do some personal development plans and talk about some area I want to improve on. I recall a moment when one team was not working on its best. I was able to identify it needed someone with more experience so my manager came and manage that process for a while.

What role(s) have accountability for the project management responsibility?

Product manager. He is responsible for the roadmap, for his particular portfolio of product. It is for him to image what need to happen. He works with stakeholders with the customers with the business and figure out what is the business value for that. Then break it down for the near roadmap for the team.

The two product managers I work with operate as a Product Owner as well, they work as part of the scrum team on a on a daily basis.

I do not do project management.

What role(s) manages the Agile SD team and what are their responsibilities

Product manager: Leading the team to deliver the value.

Team lead: leading the team from technical side.

What role(s) is responsible *for* risk management?

Product manager but it depends on the team. We have a small team and in this team the product manager is the responsible of the risk management. But in a different team we have a senior developer who is technical lead who is responsible for the risk management. They are doing the risk-managed mode right now. I think this is more the case across the other teams as well. We also identify risk through daily meeting and try to solve it early.

What roles are responsible for quality assurance?

We have a team of QA but It is everyone responsibility to make sure the definition of done is met, all the tests are passed, etc.

What roles are responsible for facilitating Agile meetings?

Myself, and if I am not available we have people who also can help.

If I worked here as a developer who is going to be my direct manager?

Your direct manager will be technical lead or practice lead. We taking away the direct management out of the teams so the team you work with will have no direct managers. Your direct manager will be someone who is their role only to do HR side of the management.

You have access to technical lead, you will be directed from Product Owner or a product manager but they are not your direct managers. You work with those managers and leads as a team mate. You go to them for their expertise type questions or any leadership around the product. But the person who does my performance review, approve my pays will not work with you on daily basis. This person get feedbacks from the people you are working with.

As a developer, what meetings should I attend?

If they are doing scrum, you will attend the scrum meetings. Then it is up to you what other things that you required to do. We have a policy that if the meeting is not relevant you do not have to be there.

Do you think the role of project management will disappear after Agile, what do you think?

I think it is deferent and it depends what kind of work you are doing. If you are doing an infrastructure within the organisation, you need a project managers. Then if you are getting up into the bigger vision of where the road map is across multiple projects then your project management skills will be used. There is no specific project management but you can take these skills and do deferent things within the organization. So Product Owner or BA those are excellent places to bring these project management skills. Then you may have product industry knowledge a different view on those sorts of things.

Do you think a project manager can be suitable to be Agile coach?

Possibly, depending on what is their mindset is. Because the biggest thing about being Agile coach is to be Agile team facilitator. Who you are as a person and if you understand what is Agile mindset is.

Agile coach and facilitator have some crossover with the project manager but unless you have that ability to deal with human and understand the mindset of Agile is a bit deferent. It also depends on the company and on the product you are working with.

What are the gaps on Agile coach role?

It should not be, if there is in a company it means that they are not looking to this problem correctly. For example, the scrum mater is not responsible for the personal development outside of the team but because there is a need for it we do it. The end goal of Agile is to get the development team to do their work in a way that they are happier and producing work faster in a way that is sustainable of the company. Everyone should work together to achieve this goal if it did not happened someone is not doing his job correctly.

Do you attend all Agile meeting?

As many as I can, I am schedule to do them all but sometimes I get busy with something else. In the teams we have people we call them code facilitator who can pick up the activity that need to happen when I am not there.

If someone needs your help, how they can contact you?

They can just come and talk to me, we use Google Hangouts. We sit near the team.

Do you have any saying on who work in the team?

No, the team selects itself and everyone chooses where and what they want to work.

What if one of the team was not able to deliver (new developer)?

It depends on the situation. We identify these issues on daily stand up. If we see new developer stuck in a task for more than a day, we make sure they pair up with an experience developers to make sure that they get things done. If we see people who are constantly not getting the job done we have one on one meeting with them or get their technical lead or practice lead to have a chat with them. But essentially we make sure that situation does not happen by solving it early on. I can be involved in these meetings it depends on the team member because by then if it is that serious it is up to the management team. I am involve with what kind of help you need, what we can do to help you make it done, what else we can do to support you with that.

What do you think about the role of Agile coach in practice, is it similar to that one come out of scrum?

It depends on where they work. In a big company like us, no, but in small companies where there is only two to three teams it could have more boundaries. We have crossover between the people managers, human resources that can confuse the situation sometimes. But my believe as Agile coach we are here for the people so it is our responsibility to do whatever we can to have good working environment and for the developer to thrive and became the best development team that they can. Sometimes we are mentors, sometimes we are pure coaches, sometime some of the things we do may look like we are managers but we should not ever be managers.

Interview 3

How many years have you been working in software development and Agile?

I have been working in software engineering since 1988. My first introduction to Agile was in 2000. I started working in the current company in September 2014. I worked in deferent roles around Agile (Agile coach/scrum master/team lead). My current name role is Delivery coach.

What are the responsibilities of your role?

I am a Delivery coach, which means an Agile coach. I would coach people into Agile practices. However, I try to avoid using the term Agile. We try to be Agile not do Agile. I gain this mind-set during the years. This mind-set is to stop thinking about Agile as a believe system you should follow but as practices you could use what is good for you at a certain point of time and place.

I would be the person who makes sure core Agile practices are followed. I help my team to understand the value of Agile practices. I make sure we get outcomes and we give everybody a voice. I do personal coaching to help people solve their problems themselves. I describe myself as a servant leader.

Can you describe your activities in a typical day?

Currently I am handling over some stuff of my role to someone else in the USA. Usually I would go to a standup for a couple of the teams. Then I facilitate some meetings. I also go to a demos and retrospectives. Yesterday I went to run a health check for the team (we use Spotify health model check). I used it to know what people are struggling with and help them.

What do you see the main challenges of your role being?

The first one come to my mind is for teams and all the clever software engineers and testers to see the value of things such as standup meetings, elaboration sessions and other Agile practices. I help my teams understand the value of these practices by using some history in our work to remind them how not following the right practices could result in a not clear picture of what we should do. I also use retrospectives to ask powerful questions about how this sprint was and what made it good or bad.

It is important also important to help people understand the language that is acceptable in meeting and constructive criticism is OK.

I see people have the mentality of thinking that they are the workers and they have a boss and their boss will and should tell them what to do or they will not do anything. I try to boost that the whole team is commitment to be accountable and we work together toward a shared goal.

One of the challenges too is how to deal with deferent personalities from deferent cultures. And to change the mind-set of the whole company to be Agile not just do Agile. We have a long history of the mentality of that bosses do whatever they want.

What are the other named roles in the core team and the organization you work with on a daily basis?

Product Development Director: who and when

Product Owner (internal face) /Product director (External face): What and Why

Solution Architect: How (The big picture).

Team lead: They are the line manager of all the people in the team (They are not necessary technical).

Technical BA (Business analysts who understand tech very well): They stay outside of the team, they help team elaborate one the stories and give the team more details as they need just enough just in time. However, they do not own stories but the team own it for that the team have more commitment to do it. They do acceptance criteria and diagrams.

Field coordination office: They coordinate the releases that going out with our clients. Sometimes people say that we do not need project managers in Agile. This is wrong, it is more you need someone to coordinate the releases. In the past project managers used to have the mindset of command and control rather than a servant leader and this could be a big challenge for them if they want to be scrum master.

Scrum master: a facilitator.

The team: Developers and testers.

DevOps: Help the teams release software.

I report to line of business call XXX, the product development director reports to him, product director reports to him, and Product Owner reports to the product director. We have hierarchy but it flexible. In the 21st century you are expected to work across functional.

What leadership, mentoring and/or coaching roles are there?

Having people who can facilitate who can have workshops to help people understand how some of these tools can use effectively and make sure that we are following the twelve Agile principles. Facilitation and personal coaching. I would coach a coach. I have someone in Bangkok I coach every Friday for half an hour and I coach a woman here once a week as well. I want to help grow internal coaching capability. So people can do Agile meeting and games, can do conflict resolution, they can help people become masters.

What role(s) have accountability for the project management responsibility?

It would be a collective. We have Field coordination office that do something like project management but they are also servant leaders. We have Product Owners also involved in some of project management; the seniors in the teams would be involved. And the team itself would be as accountable as everybody else rather than just relying on the boss. We are getting to that but we are still far away before the team really thing that he got the ownership.

What role(s) manages the Agile SD team and what are their responsibilities?

I would not call it manage at all. At the moment, the team lead will lead at the traditional senses from the line management point of view. But most of management responsibilities are coordinated.

What role(s) is responsible for risk management?

Product development director (who and when): They will drive the teams to work on it, demo it, and feedback. They are accountable for delivering the software that is on the backlog. The Product Owner/ product director (what and why) is on the hook to get it delivered.

What roles are responsible for quality assurance?

Generally the team (definition of done, code review, standard of the coding, testing, security).

What roles are responsible for facilitating Agile meetings?

Myself or other Agile coaches.

Final thoughts?

Agile made the job of the manager harder because if you are trying to foster strong shared commitment and ownership in the team then you have to give up control. It is a balance of having the team to grow and deliver software at the same time.

Interview 4

How many years have you been working in software development and Agile?

I have been working in software development for 19 years. I worked with Agile for 5 years,

What are the responsibilities of your role?

As Senior Product Owner, I am responsible for Creating, maintaining and delivering items on the backlog for the entire solution.

Describe your activities in a typical day?

I do a lot of meetings. A typical day for me include spending sometime on our strategic backlog, a very high level backlog we have. Also working with a project director or project manager on what is coming from the market and what need to happen to that height level backlog. Then I may spend sometime with more senior technical people to try to understand for this piece of work how we can deliver it and how big it is. Then I spend more time with one or more of our teams on the more detail level break down that piece of work. I spend time with what we call product support where I spend time with our clients who taking our software and try it. I have internal team who are delivering the software to our clients to understand how they are going with the deliver, do they have any need, is there anything missing. Finally, some work on actual process and practice development, trying to develop the Product Owner practice. I am a kind practice lead for Product Ownership as I am a Product Owner myself.

What do you see the main challenges with your role as?

Not having enough time. I worked as a Product Owner in two companies. In both cases there is always more work to do than the time available for you. You have to be good at prioritising your own workload. Because there is always more stakeholders, teams, more of everything that you have time to deal with. In the same way you prioritise your product backlog you have to prioritizing your time.

What are the named roles in the core team and the organization you work with on a daily basis?

I work across the business. This is the thing with Product Owner, as I tend to work with the team I work across the business. I have five teams that directly contributing to my product. I have more team across the business that indirectly contributing. Then I have teams consuming internally as well as clients teams consuming externally. So my team is the whole company.

What are the other named roles in the organization?

My Primary points of contacts are:

Architects (High level technical directions and technical analysis of what we need to deliver and also Architecture roadmap).

Delivery leads (in some companies they call them development manager): I work with them to try to understand how our teams are going, are we in track.

Product manager/Product director: They are my primary stakeholders in term of the people I am delivering to.

Client representative: They role is working directly with clients.

What are the challenges of these roles?

As senior people, we share the same challenge. That is time. We have more to do than time available for us. Then the challenges depend in the role itself. Taking development manager for example, the challenge they have how the teams are going, if they need help, coaching their team. In the other hand, a product director challenge is trying to predict the market.

What role(s) have accountability for the project management responsibility?

That is interesting questions because project management is distribution. We do have project managers within the business but their roles are client delivery, we also have

internal project managers who manage regains, they help to make sure that project delivery and what the clients need in that regain are in synched and highlight any issues or if something is missing from the roadmap.

What role manage the software development team?

We have development manager and team lead. They are doing line management. The Product Owner is responsible about what the team is actually working on from the backlog.

What role(s) is responsible for risk management?

Risk management is shared. Across all these roles.

What roles are responsible for quality assurance?

The delivery team. My responsibility to expect a certain level of quality and the team responsibility on deliver on that level if quality. . We also use some tools like definition of done.

As a Product Owner, do you do any kind of leadership?

I have two other Product Owners working with me. I love to think of myself as coach not a manger. I am trying to coach them to be better Product Owner. Generally, in the Product Owner role you have to show quit strong leadership so that people are inspired by your vision. As I said none of the people management in the team is done by me so I can do go to someone and tell them to do something. But it is leading by vision not leading by line management.

Could you please tell us about the two Product Owners who work with you?

They are more junior Product Owners; they do not have anyone to report to them. Their responsibility is similar to mine. But, they have responsibility in a specific area of the platform. I have responsible for delivering a whole iteration but they are responsible for delivering a specific capability in that iteration. One guy responsible for APIs and core documentation management. The other women who work with me responsible for data management.

If you hire a Product Owner who has previous experience, do you think they can use that experience in your company?

I think Project owner and project management (Project ownership is an element of project management it is all part of that project discipline) are not very well understood discipline in New Zealand, quite new for New Zealand. In my experience as I worked in two companies, I found there were transferable skills but I came from banking into health so I have to relearn the domino. The technical principles are the same but the domino is not that transferable. So I think across the industry starting to be a common knowledge about what it means to be a Product Owner but every company does it differently as well.

As a Product Owner, do you do any coaching?

Yes, as I said I coach the two Product Owners who work with me. I also formally coach a few other people within the business. By coaching, I mean trying to find what they are finding hard and provide suggestion as to how to do it better.

Does having a technical experience help Product Owner?

My experience says yes it is useful for a Product Owner to have a technical experience but you have to be careful what effect having a technical background could affect how you conduct yourself. As a Product Owner you are in the problem space you are not in the solution space and as a former developer it is very easy to drift into solution something where you need to focus on the problem side. But, a technical background helps if the team comes to you with different solutions to choose from in order to deliver to a customer.

The most important skill for Product Owner is communication and more specially vision communication. It is the ability to deliver the problem to the development team.

Would you describe this company as a structured and hierarchy or Agile and flexible?

We are a bit of both. We are less structured than a lot of other companies. It is very flat organization but having said that there are some elements across the business. We are divided into lines of business (I am from intelligent integration). Within each line of business, there is a product group (within intelligent integration there are four product groups, me and others and we integrate with some of them). Within each product group there is a technical director/Architect, a product director and a delivery lead/development manager.

People in our company stay in their team but teams are cross-functional. We have developers' team, testers team. For example, we have UX team but a UX person can go and help the other teams as well.

I report to a product director, the product director report to line of business owner, the to line of business owner report to the CEO.

We have 1300 employees globally. 500 or 600 here and the rest are around the world.

What are the challenges of flat structure company?

Communication, but I would take the challenge of communication over the challenge of hierarchy. Hierarchies slow things down.

Interview 5

Talk to us about your job please?

Large amount of my role is similar to a traditional business analyst in term of understanding what the requirements are and articulate those in a way that the team can actually build it. But the natural of our environment is kind of do whatever need to be done. For example, we want to publish an API documentation so the developer can use it and help themselves rather than sending pdf. I am also starting to takeover Product Owner type of responsibilities so owning the priority of what is in the backlog and what get worked on. At the same time as we get through the functional requirement type of things I get in back of my mind how important or valuable is this piece of work right now? Then I can make a priority call so I can we need to do some work on that now because it has high value. What going to happen if we do not do it, any financial implication if we do not do it, can we make money of doing it.

Do you have an experience in working in software development?

I have been around software development since mid-90s. I am in business side of software development. My role was always been understanding from business side the functionality that the product need to have and the non-functional requirements.

Do you have a project manager?

We have a couple of teams, one team per product. I am across two products.

How many years have you been working in Agile?

18 months. My first introduction to Agile was in 2006 or 2007. I was a project manager at a local bank. Then I moved to BA.

How do you see the move from traditional Waterfall to Agile, is it good or bad?

We love Agile because we are able to do the constant value assessment, constant priority judgment. So, every two weeks we can choose what to do based on how important it is. On the other side it makes life really hard, because we often put something down in favor of something else. This is hard on the team because, they were building this piece of functionality and now you tell me to move to something else.

What are the main challenges of your role?

Because I am central point, I am called a million times a day. I do not have time to sit and learn API. I also need to remember everything about two and half projects I am working on.

Who are you interacting with?

I interact with developers, QAs, Sales team, the rest of the product and marketing team, with the banks we work with, other companies our company interacts with. We use direct conversation to talk, use some tools sometimes.

Do you do any kind of project management/leadership as part of your role?

Yes, I pretty much do that whole priority assessment. I am following up with people outside the team who need to deliver stuff. Anything that the team needs from people outside the team it is my responsibility to identify what is needed and how we can get it.

We do not have the concept of leader in our team. We self-manage and we all take responsibility for what we supposed to do. I try to lead by example, I try to mentor people by encourage them to talk to other people to learn and help them understand.

Do you think Agile helped make the company more flat?

Yes, here we have four levels of management, the CEO, someone reporting to him, my boss and me. This is really great. I want to talk to anyone in this company I can just go and talk to them, if I want to go to talk to the CEO I can just go and talk with him. He does not have a desk, he will be somewhere around the office I will go and find him.

In our meeting with the development team, we all meet together.

What role(s) is responsible for risk management?

We do not formally identify risk. But, me and/or product manager always having constant discussion the feedback into that value. We say if we do not do this work, it may have implications. We also have a risk manager who manages that at the organizational level.

What is your source of information?

From everyone, but mainly from our product manager because he understands our project. Operational support, business support teams, help desk.

How many development team do you have here?

We got three main teams, and 5 or 6 developers on other side. In each team, we have QA, we usually have two QA per team. Product analysis we have generally one per team but I am across two teams. I attend scrum meeting with two teams. We have Scrum Master who can facilitate meeting. Our Scrum Master has other roles as well.

What are the gaps in your role?

I do not know everything; I am always learning new stuff. There is always information I do not know I need to figure it out. This is also one of the awesome parts of my role, I get paid good money to ask questions.

Could you describe atypical in your work?

We have morning standups, I have two standups with the two team I am working with. But, every day is completely deferent. Learning new things and also meeting different parties. If we have different opinions, we sit and talk.

How do you see your role now comparing to your pervious role?

It is more fun now, in waterfall world you try to answer every single answers at the beginning and you then go to back box and then you are not try to learn anything. But in Agile we need to answer enough to get started and the whole culture is that we learn stuff and we will change what we do based on what we learn. It is not easy to do.

Do you attend scrum meeting?

We follow scrum, I attend retrospective.

Who is responsible for hiring people?

We have HR responsible for that, we have full time recruitment agent. They interview people, other developer interview then too. When I worked here, I met with the product manager and HR manager.

In case of conflict between people, how it solved?

We are Agile so we follow that it is always the team responsibility so we help them.

How can you decide the priority?

I talk with the product manager and we also talk with the team about it.

Final thoughts?

Scrum master: make sure the meeting is happening and he keep us to track. We've got two scrum masters between two or three teams. But, it is not their full time job so one of the Scrum Master is a QA lead, the other is also technical digital payment lead. We have two Agile coaches coming and they will be doing the Scrum Master role.

We used e tool and physical board to write our Agile stuff. We duplicate user stories one tool and physical board.

Interview 6

How many years of experience you have working with software Agile development?

Since 2000, so 16 Years with Agile and 17 years with software development and I have been working in this role for only 6 months. Previously I have been project manager, business analyst and general consultant but always in Agile software development. Before all this, I was a software developer.

Do you have a project manager in this company?

The structure here is that we do not have project managers. Our structure is that we have a team lead and this team lead is effectively a project manager and I guess in some way they will perform the role of Product Owner. We also have a product analysts who is like business analyst they own the low level details but in many part they do the part of the Product Owner as well. So the two of them share that role, they are experts in a particular part of the product and they collaborate very closely. When there is a project to be managed under that umbrella one of them will be the project manager for that project. So the work and the name of the people are interchangeable.

What are the responsibilities of your role?

I make sure that the ideas our chief officer has get delivered in a way that make sense for the product and company, to achieve the company's goals and to achieve the goals of our product.

What are the main challenges of your role?

Making sure that the project reflects what it need to and what our customers want from it and it gets delivered in a way that it make sense for the product as a whole. So the product is coheres product and the team is happy and in the right structured. So part of my role is making sure team structure is right and people are doing the right kind of work. So, the head of the product is not just about the product but it is also about building a team that build a product.

Could you please describe a typical day at work?

Today is a typical day, I talk with you about the process which we do the work and that something I really enjoy and focus on. We like not just do the work we like to think how we do the work and plan how we do the work and constantly improve it. Next today I am doing a webinar to some of our partner in Singapore and Australia about some new features that we delivered to the product. Others things I am doing is helping team lead manage the projects so I have three teams' leads reporting to me. I look at the project they are working on it at the moment and make sure they have the right people to deliver it. I look into how this project fit into our overall plan.

Could you please talk about the three team leads you work with?

I report to chief product officer. We align our teams with the goals of our customers (retailers). The first team help our customer to sell more products. The second team help our customers to spend less time and money while they are running their business. The third team helps to make the experience of using the product as good as it can be. In each team, we have a team lead, product analysts, developers and QAs.

Do you attend scrum meeting?

We do not have scrum meetings but we have stand ups. My personal opinion about scrum is that it seems like it was invented by cooperate to help with the process of introducing Agile. I feel it is really good idea, let say you are a bank and you have a history of delivering old fashion waterfall projects. You need to convince your bosses

that Agile is possible to do. I think they cannot be convinced unless they have a brand a product that you can sell to. In many way I think that scrum is the product that to be sold.

We do not follow any type of prescribed Agile. I think why we do that is the people who work here they always worked with Agile. A lot of the young people who work here have never worked in waterfall method. So, they do not need a brand or a template to follow.

Back to your question, each team have a daily stand up meeting and they talk about what they are doing as a team. It is not necessary daily some tomes it is weekly depending on how intense the project is.

Do you attend these meetings?

No, I do not. I attend a meeting where all team leads attend and people from the payment team and marketing team. It called a current lunch standups and we talk about all things that we are pushing into production.

I think one of the reason why Agile is good for us is because the software development software delivery process and that is continuous integration and deployment. I can't imagine working in any other way but Agile. I do not know any other way that can be better fit for us.

Could you please talk more about the natural of the team leads?

I think everybody need someone to report to, I think the fact that we have team lead does not contract with that we are doing Agile. But they also own one area of the product and you have to figure out how to use your team the best way possible to archives these goals.

What are the backgrounds and the natural job of the teams leads?

I think this is great question because it is different. One of them is a very experienced business analyst, one is very experience in retails and retails technology, one is very experience front end developer. They all have their own backgrounds and skills to their work.

Who does the role of project manager?

The team lead will say why and the product analysts will say how. The team lead will have external focus (they will talk to different retailers, the product analysts will have

internal (they will talk to different department of the company). The team lead is high level view and the product analyst is very detailed. The team lead is about team leadership and portfolio and product leadership whereas product analyst is more focused on the project leadership. As you can see inside the team they have different responsibilities and they decide how they can divide these responsibilities based on how high or low level it is and often times on the skills of the person.

It may be difficult to replicate another company because it is relying on these people who work with.

Do you have a Scrum Master or Agile coach?

No. I think this is because not only scum is for cooperate and does not apply for us but also everyone here knows how Agile works, it is their second nature.

What role responsible for risk management?

For security risk, there is a director of security. I would say chief product officer but I do not know if he spends sometimes concentrating on that. We all feel like quality is something that we are responsible for.

It is interesting when we went to Silicon Valley and talked with companies there about their Agile process we found that often their product delivery team do not have QAs or testers so in their model developers are responsible for quality.

Do you meet the developers?

Not formally, but here anyone can talk to anyone. If they see me around they can come and talk to me. But I have one on one meeting with the team leads every two weeks and we talk about people in the team.

What are the challenges of your role?

My challenges are related to people and products essentially. Technology at the moment is not a challenge because we have really strong technology team. We found that the current work process really work for use when we have good understanding of the people and their skills. If we grow in size we should look if our developers should report to other developers for example and analysts report to another analysts. We share how we work with other IT companies and learn from each other. For example, we know in other companies technical people report to technical people.

As I said we always think about our people to make sure we are doing things right and our people are happy. Sometimes we move people to do something that is not right for the company or product but it is right for that person as we recognize that people being happy is good for the company in the long term.

Product is the other challenge. Making sure that the product reflects the need of the future market. The other members from other departments are happy with the product and our team having great time in building good things.

Why do you think Agile is better than the traditional method waterfall?

Because you can see results faster.

Does Agile help to make the organisation more flat?

When you look at our structure we are not flat and we do have hierarchy. I think when people say we have flat structure I think it is not really about the formal structure but in the style they run the company. I feel in our company anyone can talk to anyone we are very open we are not hierarchy it is not a military sort of thing. Nobody is afraid to say what they think, that thing is part of our culture. I could not imagine a software Agile team working very well in a very cooperative structure environment. They may work well in their own team and the layer above them but not at higher level and this is why scrum is successful because these teams need scrum to explain themselves. This gives more conservative people more comfort.

What are the gaps in your role?

Things I think is a weakness in Agile is knowing what the end is going to be. For example, we say in 20 weeks' time we will finish but actually, we do not know what we are going to deliver. We know we are doing a list of things but we do not know what we are ending with. So, the customer really do not know what they are going to get in full details. Agile is great for getting things done, it is great for iterating and improving things, it is good for delivering value quickly, it is great for discovering things early, it is great for keeping what your customer want and deliver it. But, it is not great to predict too far into the future to say exactly what they will have at a point of time.

But how you deal with stuff that needs to make decision early like infrastructure design?

This is why we have platform team, our platform team is constantly iterating on the infrastructure development. So, they always try to set the best infrastructure they can. Another reasons Agile work at the moment in addition to that people are more casual at work and they are more tolerance at changing requirements and work but also technology is changing and become more accessible and easier to use (could computing).

You said you went to America and visited some companies there to see how they work, what is the main difference you saw?

Nobody is working using scum or another Agile. Everyone is like us using their own way to work. Everyone spoke their language of Agile. Everyone knows Agile and it is second nature to them. Everybody knows what is stand-up, very few people were using planning poker or looking at burndown chart. They were doing everything quite casually. The main deference is their team structure, their team structure did not have QAs or product analysts and their team lead were called project managers and they did not have anybody reporting to them form their delivery team. We met with huge company like Netflix we saw the differences but we think we are not very deferent from them and we work in very smiler way.

Do you do planning poker here?

No, we do almost no estimation. We follow simple philosophy, write what you want to do and do it! So no real estimation more than this will take few weeks or more weeks.

What about definition of done?

We do not have definition of done but we do write down our goals for the project and what success looks like and when we are done what our users will be able to do. We use combination of user stories and description and analysis document. To make sure that when developers finish they can read the list of the capabilities that the futures meant to have. In reality, analysts and developers work so closely together and the written definition can evolve as the project goes. They maybe get to a point of not done but the value has been delivered.

Do you have a meeting in each of iteration?

No, delivery here is constant, and the time frame is always different. This is maybe unusual thing in NZ for Agile but it is not unusual thing for the world.

We slowly release to people which mean you can login and see something and I can login and see something else and this is how we get away with not having a definition of done. So, value is defined but finish is something that we never think about.

Interview 7

How long have you been working in software development?

Since I left university in 1997, so 19 years.

How long have you been working in Agile software development?

I would say 2008.

What are the responsibilities of your job?

I am responsible for delivery of projects and maintenance of a number of a customer facing applications. So any application mobile application, Internet sites, or anything a customer touch in any way. I deliver project that build new application and I build team that support system applications and do that in an alignment with the organization strategies.

What does delivery mean?

Our company here is a branch of our company in Australia and one of the challenges that in Australia it is bigger than here. So, you got a lot of those job titles like delivery management, portfolio management, BA, PM, Scrum Master etc. Those roles have evolved in Australia within a bigger organization where it make sense to have a quite a degree of specialization and it is not only in job title but also in domino. In Australia, you would have a whole team looking at identity management, online security or some aspect of something. So, the delivery management role in Australia is more specialist in some area and then will be another role such as profile management but we do not have those layers. We have delivery management and then it goes up to executive management so the breadth of what we look after is much larger. I and my colleagues look after a wider set of applications however the amount of people who look after those things is a lot smaller. So, my role means something deferent in Australia than here because of the scale.

To answer your question I would say it is quite general role. The best way to describe is in term of responsibility of that role. You imagine that set of application that people interact with and in order to achieve our strategy in doing what we want to do, we need to building new application, new mobile apps, etc. We also need to make sure that in middle of night if an application goes down it can work again. We do all the things that involved in this area which are: delivery of projects, maintenance of systems, it involves all those kind of things and doing stuff with all the roles associated with that.

I have a group of developers, BAs, PMs and testers that report to me and that team of people responsible in their way to do all those sort of things. Sometimes we organize together into groups of people that delivering a project, others will be organised together into teams of people that support application. So I got the delivery responsible so she is delivering a project, the support responsible for supporting the project, the line management reporting of staff management. So, those people in my team report directly to me in a matrix structure in term of performance and hiring. This is quite deferent to Australia where it will be only one of those functions. You will be doing a kind of people management role, you will be doing project management, or you will be doing support role. So it a quite wide space because we cannot afford to have such a specialization in roles we are a small group of people here in NZ and the revenue is not that much, is just does not work.

Is there a coaching elements?

Yes and No. So, as part of any leadership role there is a coach expectation from it. Yes we do have a way of working team, which covers Agile coaches, and lean coaches, we work very closely with them, and we help each other out. There is also a coaching function as well.

What are the main challenges with your role?

The challenge of being broad enough. We try to make the balance between breadth and depth. So, we want to be broad enough to be able to have a high level conversation about going to market proposition about new business idea and also talk tech to a development team. It is how to be Jack-of-all-trades without being a master of nothing.

Do you have Scrum Master or Agile coach here, what are the differences?

Yes, Scrum Master would do the doing (stand-ups and all the things you read about in the scrum guide). Where Agile coach shows people how to do that, he will not be the

Scrum Master but he will enable others to be the scrum masters or a Product Owner or any other Agile role.

What are the responsibilities of Product Owner?

Very similar to scrum guide. They are the one who say this is how the product will look like. More often, they will be working with more than one teams but it depends.

How many members do you have the scrum team?

It can vary we try to keep it scrum like 7 + or - 2. But, if we have more people we divide them into domains and each dominos. Generally with scrum team you have a group of different people working in a team including Dev, BAs, Testers, etc. The PM role will be done by the iteration manager and he can work across teams, he is like scrum of scrum type of thing. The scrum team can have their way of working as long as one representative can come to scrum of scrum and able to talk about some futures. We find it better to let the team decide how they work by themselves. Here we do not have a development team we only have scrum team. People here are hired as BAs, testers, PMs. I know that in scrum team, you should have no role but I think it is practically difficult to do that. For example, if you are talking about testing or test automation. It is actually quite a specialist thing. So, if you want to balance team that can do things and you hair Java developers they are going to be very good at development but they are not going to have as much technical skills in testing like someone who work as a tasters. For practical reasons we try to hair people with deferent skills but when they are in the team, we try to be as fixable as possible by cross training within the roles. We try not having barriers between roles.

What role responsible for project manager?

That will be a blend of group of people. Scrum Master or what we call iteration manager here will be responsible about a large chuck of PM things. Delivery manager would generally be accountable for the actual delivery of things so another bunch of PM responsibilities. We also have a PM role, which will end up performing a group of iteration manager role. So when we hire people we hair PM and she will end up doing iteration manager role along with delivery manager. So, both delivery manager and iteration manager will do the project management. They could do the scrum events, daily stand-ups, retrospective, sprint reviews etc. I would go to meetings when I need.

Who manage the Agile team?

Everyone in the organization will have a line manager and they will do things like performance, objectives, career developments etc. That person may be the delivery manager. Then someone will be accountable to be scrum master, they will run each sprint and make sure story cards are delivered. So, it is a matrix of management between java developer and their Scrum Master and line manager.

How do you manage risk?

A number of ways, we try to build risk in what we do. In scrum activity, we always try to encourage people to call risks as when they see them. We have risk registered and we have chief risk officer. We also divide things in very small releases.

What about quality assurance?

Each one of our scrum team is responsible for delivering code with a certain level of quality. We try to build quality in all the way from story definition, what is the acceptance criteria for this particular piece of work. We have various layers of testing thought software delivery life cycle from unit testing developer would do to integration testing and then all other soft of testing we have at various stage of the project life cycle like penetration testing, security, production verification testing, business verification testing.

What about leadership?

It is similar to management we have Scrum Master for that team of we have big project we have programme manager or iteration manager overseeing the different scrum teams. We have line management for individuals and then we have delivery manager who is responsible for entire programme of a sub-program.

How does the line manager part works?

We used to work in way if you are tester an experience tester will be your line manager but we are moving from that to what we call domain model. So, I am the manager of the people who work in my domain. So, I have developers, testers, BAs who report to me.

Interview 8

Do you have an experience working as a software developer?

No,

What was your previous role before you become Agile Team Facilitator?

I was on a project management role on a digital agency and before that, I was business analyst.

How many years of experience you have been working with Agile?

3-4 years.

What are the responsibilities of your current role?

I am embedded in two cross-functional teams at the moment. I organize Agile ceremonies like Planning, Retrospective and Sprint Review. I facilitated those meetings as well so making sure we having good and deep discussion, everyone is contributing, and we have clear outcomes. I also do coaching with some other teams so I go to their meetings and facilitate their discussions. I also do some training with other coach facilitator around the business. We have a meeting every couple of week so we try to get together and support each other.

Could you please describe a typical day at work?

A lot of meetings. It usually starts with a daily stand-up with my own team with other Agile team facilitators, my manager, and the Agile coach. Then I move to a stand up to my cross-functional team the development team that I am embedded with. So then, I may move to refinement sessions with them too. In the afternoon, it may one on one catch up with Product Owner or panning meeting or one on one meeting with someone about something. I did recently a one on one meeting with one of people in the team and helped her to make other listen to her.

What do you thing the main challenges with your role?

The emotional side of it, related to people and being self-aware. It is the soft skill stuff is the biggest challenges. I make sure meetings are useful.

What is the other name role in the core Agile team you work with?

We got an Agile coach and in Wellington we have only one other Agile team facilitator. We also have a product delivery manager which lead the Agile team here.

What about the team that you embedded in?

We have four developers, one QA, a full time Product Owner only working with our team and one graduate developer as well. The graduate developer only comes once a week. In other teams, Product Owner could work cross teams.

What are the main accountability and responsibility of the delivery manager?

A big part of it is hiring more Agile team facilitators. Because currently there are 20 teams and only two of us doing this role. Their primary role is to help deliver software quicker. Their role also structuring the team, is everything right, do the team have everything to deliver, do the Product Owner have everything it need to do their role.

When we met another Agile coach here in Auckland he told us that the DevOps people are coming back to the core Agile team is this happening here as well?

Yes, we have a DevOps person coming to our team this week. Having him made a big difference already.

To whom do you report?

I report to the new delivery manager before that I used to report to a technical lead.

Do you have any people reporting to you? Even developers?

No, our developers report to a team lead, and the team lead (developers) sit outside the team that report to them. For example, the team I have we got two team leads. They are part time developers, part time team leads. They could be a developer in one team and a team lead to another team.

What are the responsibilities of the team lead?

They deal with any HR matters, performance issues and professional development, helping them with training. It is not from technical perspective they lead but from line management.

Do the team lead have responsibility for code quality for example?

No, I do not think so.

How do you manage quality?

Code review, the testers and at the end of every sprint we have a demo or a review session where developers demonstrate their work.

Do you do any leadership?

My role is more about motivation, collaboration, and the team working together. I think it is more about influence. It is more subtle leadership.

What about other team members? Does anyone take leadership?

I think in every team a natural leader appears at some stage. In the team, I work with them all senior developers none marked as a leader. It happened like naturally. They do not get that title but they perform the role.

Who does the project management in the team?

I think it falls between Product Owner and Agile facilitator or scrum master. The Product Owner is responsible for what the team is producing, the quality of it, does it satisfy the customers, does the stakeholders involved. As Agile team facilitator I am responsible for how team is doing it, are they happy in the work they are doing.

I used Scrum Master due to my previous experience in another company. The word Scrum Master is not used here. And I think that is because here we are more focus on the mindset of Agile rather that you should do Scrum.

What roles responsible for risk management? In what way?

I would say the Product Owner. As they are responsible for the out product (quality, features that the customer wants).

What are the main challenges working with Agile team?

Some people here had a bad history with Agile adoption so sometimes it is difficult to get some people to use it.

Do you need to have a technical experience to be Scrum Master or Agile coach?

It will be help full. But, as I said I did not work as a developer and I can do it!

How many teams you work with?

At the moment, I am embedded only in one team. I help about four more teams and offer them some coaching rather than sitting and working with them from day to day.

Could you please give us some example of issue you faced during your work with Agile?

It is always hard when you put different people to work together because you have deferent personalities, communication style, and speed of work.

What are the challenges of the Product Owner?

How the Product Owner and Agile facilitator work together because the boundaries are not clear yet.

What do you think the challenges of the team leads?

Time management because they are developers themselves and they do HR.