

**The influence of agile project teams and team voice on product innovation in a
large South African Investment bank**

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Abstract

The need for product (software) innovation is pertinent now more than ever for companies to evolve and gain a competitive edge. In these tough economic times, companies face intense competition against rivals amid a global pandemic. The rise of small fintech companies sneaking in and taking market share from larger companies is more prominent. Although large companies are aware of this, these companies are still slow to respond to market changes with suitable innovative products. Large financial companies are shifting towards an agile work method with the aim of delivering innovative software products sooner to the market. The agile methodology of work has necessitated the need for agile project teams. The purpose of these agile teams is to respond quicker to customer demands by developing innovative software products. Therefore, there is merit in understanding the influences that agile project teams and team voice have on product innovation.

The purpose of this study is to understand the influences that agile projects teams and team voice have on product innovation. A qualitative study was conducted to gather information on this phenomenon. This inductive, exploratory study has surfaced the components of innovation, the team elements influencing innovation, the contributors to innovation and the effects of groupthink within agile project teams. The insight gained on these concepts has assisted in understanding the phenomenon better.

Twelve participants were interviewed in a Gauteng based investment bank in South Africa. The data received from the interviewed participants showed that agile project teams and team voice have a positive influence on product innovation. However, many issues relating to agile project teams, leadership and product innovation have been discovered which need a significant amount of attention to ensure companies build effective innovation teams.

Keywords

Product (Solution), Innovation, Agile, Team, Voice

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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1st December 2020

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Chapter 1: Introduction to Research Problem

1.1 Introduction

The study explores how agile project teams influence software product innovation in an investment bank setting. The aim is to achieve a better understanding of the components and the contributing factors to product innovation that enhances a company's competitiveness. The information that emerges from this study will help companies understand the critical aspects of product innovation and highlight areas which hinder and contribute to successful product innovation. The study will add to the body of knowledge that exists in extant literature by providing a view from an information technology perspective in an investment banking setting. This chapter provides the background to the research problem, the relevance and motivation, the scope and objectives of the study.

1.2 Background to the problem

A company's competitive advantage is determined by its ability to create more value for customers than rival companies (Ander & Kapoor, 2010), through leveraging knowledge and technology to develop new products and services (Reguia, 2014). More significant value creation depends on a company's ability to innovate successfully (Ander & Kapoor, 2010). Product innovation provides a competitive advantage for companies amongst its competitors (Moura, Madeira, Duarte, Carvalho, & Kahilana, 2019). Companies also drive economic growth and productivity for the country at large (Moura et al., 2019). Therefore, it is incumbent for companies to innovate new products that create more value for customers thus, increasing profitability and driving economic growth (Ander & Kapoor, 2010; Moura et al., 2019; Reguia, 2014).

Similarly, investment banks in South Africa, which provide funding to businesses for country infrastructure projects (RMB, 2020), can increase product innovation. Product innovation adds enormous value for customers, higher profits for companies and contributes more to economic growth. The researcher has extensive experience with product innovation teams and has been employed by some of the top banking institutions in South Africa. These product innovation teams focus on providing innovative online software products to employees who are internal customers and, the external customers. These products are typically web applications and mobile applications. These products help investment bankers effectively construct complex

financial investment deals and assist customers in their interactions with the bank. These products improve the interaction between investors and the bank.

Large companies like investment banks, cannot only depend on out-of-date ways such as cost reduction exercises, improvement of operational efficiencies and improved quality of existing products to drive company success (Edison, Smørsgård, Wang, & Abrahamsson, 2018). Large companies must be able to innovate similar to start-up companies who are quick to respond to changes by developing novel product innovations (Edison et al., 2018). New product innovations create disruptions in the market caused by new entrants who are typically small start-up companies, that fill a gap in the market (Edison et al., 2018; Hopp, Antons, Kaminski, & Oliver Salge, 2018). The small size of these start-up companies allows them to be agile enough to make rapid changes to products or invent new products, thus adapting quicker to customer's changing needs. However, these companies have limited resources to produce at scale. Therefore, it is pragmatic for large companies, like investment banks to be disruptive like start-up companies, as larger companies have a significant amount of resources available to do so (Edison et al., 2018).

Apart from new entrants, who create disruptions in the market, there are also global disasters that create crisis's in the economic realm, forcing companies to make sudden changes to sustain business practices and profitability (Lethole, 2020). The economic disruption caused by the Coronavirus disease of 2019 (COVID-19) (Vergnaud, 2020) pandemic has been devastating to the economy mainly by slowing down consumption and creating new customer demands (BusinessTech, 2020). The pandemic evoked a countrywide lockdown, which required people to work from home to keep businesses in operation. Consequently, the work from home, virtual office, has also sped up the rollout and adoption of technology innovation as a means to keep business operations functioning (BusinessTech, 2020). From the researcher's knowledge and experience, this was the intention of companies as the economy moves toward the centre of the fourth industrial revolution (4IR). The pandemic has also led to rapid product innovation to meet the customer's needs that have changed significantly in order to circumnavigate the pandemic, which has been the "Ultimate Disruptor" (Mwendera, 2020). From the researcher's experience companies such as Rand Merchant Bank (RMB), Standard Bank, and many others have had to pivot to a virtual work environment enabled by technology.

1.3 The innovation environment

As a result of the need for innovation, companies must be quick to adapt and innovate to remain relevant and competitively viable. However, companies must be deliberate in the measures they put in place to drive innovation. For companies to be intentional in their actions, many have implemented agile project methodologies to gain agility and speed in delivering product innovation (Mergel, 2016). In recent years several companies have adopted various contemporary agile methods for example; Scrum - uses processes to manage product innovation (AllianceAgile, 2020); Scaled Agile Framework (SAFe) - uses proven practices and principles to drive product innovation (Leffingwel, 2019) and to gain flexibility in responding to market uncertainty (Serrador & Pinto, 2015). These methods ensure that rather than trying to predict the innovation outcomes, which may lead to more expensive product inventions, it ensures that the innovation process adapts to market changes (Mergel, 2016). The three high-level phases of innovation are; to gain knowledge from external parties such as international companies, consulting groups and customers; use this knowledge and internal company expertise to develop the product and; take the innovation to market (Hsieh, Ganotakis, Kafouros, & Wang, 2018).

Traditional project management methods, for example, the project management body of knowledge (PMBOK) (Saynisch, 2010), demand the full specifications (internal and external expertise) for the product innovation upfront and then follows a sequential approach of delivering the product (Mergel, 2016). This approach develops one part of the product at a time until it's complete, then product testing is completed at the end of the process to evaluate whether it meets the original requirement (Serrador & Pinto, 2015; Mergel, 2016). The traditional project management approach requires more planning upfront; consequently, the project budget, scope of product features and design are determined prior to the development of the product (Serrador & Pinto, 2015). The traditional project management approach guards against altering the scope of product development to be delivered and also product design changes regardless of changes in customer needs (Mergel, 2016). Consequently meaning that interaction with the customer occurs at the conceptual stage of the project therefore, the customer only views and experiences the product after product development (Serrador & Pinto, 2015; Mergel, 2016). The delayed customer's experience of the new product could lead to unsatisfied customers and sunk costs, should the product not meet the customer's needs (Serrador & Pinto, 2015; Mergel, 2016). Customers' changing needs are not

taken into account throughout the innovation process, which leads to an undesired product.

Contemporary agile project management methodologies, however, determine the initial specifications (requirements) upfront and then deliver the product in small increments (Serrador & Pinto, 2015). The agile project team accommodates the customer's needs as it changes. The contemporary methodology demands continuous collaboration (constant communicating and gathering of knowledge) with customers at each increment of the product development phase. Thus, keeping abreast with the changes in customer needs and making quicker decisions (Mergel, 2016; Ndletyana, 2020; Serrador & Pinto, 2015). This approach welcomes the changes in project scope and product design. Consequently, the team can deal with uncertainty as it relates to changes in customer needs which could lead to superior customer satisfaction and effective use of project investment funds (Serrador & Pinto, 2015). These contemporary methodologies require companies to alter behaviours in terms of being open to collaborating with team members at different levels in the company (Mergel, 2016). This allows team members to gain greater participation in the innovation process (Mergel, 2016), which give rise to agile project teams. Agile project teams aim to be quick to adapt and respond to changes brought about by customers (Mergel, 2016; Serrador & Pinto, 2015). Through the use of the agile method principles, agile project teams can improve the flow of work through the team while adapting to market changes by continually collaborating with customers. As a result, the team produces quicker innovations to the market.

1.4 Relevance and motivation

Given that these agile project teams play a fundamental part in the product innovation process, one must consider the influence of the teams voice in the process. Shih & Wijaya, (2017) mentions that an individual's voice behaviour, although it is non-essential behaviour in a given company, brings to attention constructive job-related issues intending to stimulate progress. Team voice is defined as individual team members voices that engage as one unit to articulate ideas, concerns or improvements and share knowledge, about job-related issues for a shared team and company success (Mackenzie, Podsakoff, & Podsakoff, 2011). Agile project teams, consists of employees at different levels in the organisation and external management consultants (Hsieh et al., 2018; Mergel, 2016). They are required to provide more significant contributions to the innovation process; therefore, it is important to understand the influence of the team's voice in product innovation. The

joint voice of individual employees (team voice) in these agile project teams may play a significant role in creativity (Shih & Wijaya, 2017) and product development in the innovation process, which ultimately leads to more notable competitive advantage for the company. MacKenzie et al., (2011) states a team's voice conveys constructive recommendations and ideas that have an effect on key financial indicators in a company for example, sales and profit, thus assisting companies in adapting to market changes.

In addition to team voice, agile project teams are to take collective decisions as it relates to the innovation process. In light of the team voice within an agile project team, it is essential to explore the concept of groupthink. Irving Janis defines groupthink as the likelihood of employees within a group to agree or remain silent when decisions are made, for fear of victimisation of other members in the group (House, 2016). The effects of groupthink lead to a series of destructive behaviours which could ultimately lead to bad decisions (House, 2016). There are many reasons that lead to employees succumbing to groupthink which, may have an adverse effect on product innovation. These reasons will be examined in the literature view (chapter 2). Given the importance of team voice, companies need to be mindful of the effect's groupthink has on project innovation team's and its ability to operate effectively in the innovation process.

1.5 Research objectives

The purpose of this research is to explore:

- The influence that agile project teams and team voice have on product innovation in an investment banking environment
- The different types of agile project team influences, or lack thereof and, the effects of groupthink and how these behaviours influence product innovation
- The role of team voice in utilising internal knowledge and elements of external experience, brought about by incumbent employees and external consulting agencies
- The relationship between agile project teams influence, team voice and the effects of groupthink in the product innovation process within an investment banking context

1.6 Scope of the research

The research will cover agile project team members in information technology (IT) project teams at an investment bank based in Johannesburg. These teams develop innovative products that meet employee financial deal-making abilities with customers. These teams also develop innovative products to meet customer's expectations as it relates to their interaction with the incumbent bank's employees and managing financial investment plans. The incumbent institution, where the research will be conducted, consists of employees of different ages, gender and cultural beliefs. Based on these diverse employee profiles, there may be a reluctance for some people to express their viewpoints and others not.

1.7 Conclusion

It is apparent from the background to the research problem that product innovation is vital for an organisation to create value for the customer and capture market value; thus, contributing to economic growth. Companies are starting to move away from traditional methods to contemporary methods of delivering product innovation in the innovation environment. Contemporary methods take a more customer-centric approach to product innovation, thus necessitating the need for agile project teams to provide innovative products quicker and, the need to develop more customer suited products. Extant literature offers the measures and practices to be taken by companies; however, limited literature exists on how agile project teams and team voice influences product innovation. This research will aid in future research on the influence of agile project teams and team voice on product innovation as it will add to the body of knowledge of existing literature on product innovation in an investment banking context.

Chapter 2: Literature Review

2.1 Introduction

The purpose of this section is to provide an overview of the literature that is essential in defining the need for the research topic. The researcher discusses two primary constructs, the importance of product innovation and the importance of team voice. Each construct is critically reviewed considering the role of agile project teams as a contributor to product innovation and the effects of groupthink as a possible inhibitor of sound product decision-making in the innovation process. The content and context around each of the constructs provide valuable insight into understanding how the constructs will be appraised.

Section 2.2 provides insight into the importance of product innovation by underscoring key innovation components and evaluating the case of Fujifilm and Kodak. Both companies were in the photography industry; however, only one company survived. Section 2.3 highlights the role of an agile project team in the product innovation process and the team elements contributing to successful team operations. Section 2.4 explains the importance of team voice in the product innovation process and some of the fallacies of team voice if not supervised correctly. Section 2.5 provides insight on the impact of groupthink by citing an extreme case of the Challenger space shuttle, which launched in the 1980s.

2.2 The importance of product innovation

Disruptive innovations that enter the market does not necessarily mean that it is detrimental to well-established companies as long as incumbent companies find new ways of creating value for customers (Ho & Chen, 2018). Hopp et al. (2018) explains that several incumbent companies fail to lead the markets that it operates in when other companies introduce innovative products. By diversifying product offerings and changing a company's core focus, rather than continuing down the same path in changing economic times, companies can create new value for customers while producing better financial results (Ho & Chen, 2018).

A case of adapting to change, by embracing market changes through innovation, can be reflected in the case of Fujifilm and Kodak. In the case of Fujifilm and Kodak, Ho and Chen (2018) describe how these two companies controlled the photography market for many years up to the 2000s when the digital era began (Ho & Chen, 2018). Both companies focused on selling photographic film and equipment, and each

owned a considerable share in the market (Ho & Chen, 2018). Despite this, Kodak filed for “bankruptcy protection” in 2012, which was caused by loss of market share due to its inability to innovate and adapt to the digital era timeously. In contrast, Fujifilm was quick to respond by reinventing itself and clutched the opportunity by diversifying through product innovation to gain profits from other lucrative areas (Ho & Chen, 2018).

Often small markets, typically in the low-end, are not given the attention it deserves by large companies, resulting in smaller companies targeting these markets with innovative products (Hopp et al., 2018). Similarly, this can be attributed to the South African banking industry. Through its innovative inferior products, services and ability to adapt to market changes in the banking industry, Capitec Bank, who entered the low-end market in the early 2000s has grown to be one of the major banks in South Africa (Vermuelen, 2018). The smaller underserved or “unbanked” markets were overlooked by large banks who did not see the need to focus on this market. Thus, presenting Capitec with an opportunity to gain massive success in less than twenty years. Whereas the major banks in South Africa such as; the Amalgamated Banks of South Africa ABSA, Standard Bank, Nedbank and others have been in existence for many decades before the arrival of Capitec bank entering the banking industry (Vermuelen, 2018).

There are many other instances where novel products have disrupted incumbent companies to gain more significant market share or a piece of that market. Some well-known examples are; Airbnb’s disruption on the Hotel industry, Uber’s disruption on the public transport services, Netflix’s disruption on movie rentals and live television (Harvey, 2018). Product innovation is linked to sales growth and has allowed companies to venture into new markets to gain new or more significant market share (Hsieh et al., 2018). Thus, increasing the propensity of customers who are willing to pay more for premium and new innovative products that serve customer’s needs (Hsieh et al., 2018). A company’s sales revenue, profits and market share captured can measure the success of product innovation (Reguia, 2014). Therefore, incumbent companies need to anticipate innovation disruption through market research, even if they are to self-disrupt by cannibalising their products to gain more sustainable profits in the future (Ho & Chen, 2018).

2.2.1. Innovation components

Amid the digital age, devising technological solutions is necessary for companies to

keep up with fast-changing customer demands (Hopp et al., 2018). Companies who view digitisation as an enabler to streamlining business processes, rather than a threat to current business models, can gain a competitive advantage (Hopp et al., 2018). Digitisation assist companies in shortening lead times by refining operational processes, thus improving responses to customers (Lyytinen, Yoo, & Boland, 2016).

Companies must acquire customers feedback to identify gaps in product offerings consistently. Continuous testing and learning cycles with customers help companies fulfil product offering gaps as it provides necessary insight into product development (Edison et al., 2018). Users or customer representatives in the company must form part of the innovation process to ensure timely experiments are undertaken to improve product innovation (Bosch-Sijtsema & Bosch, 2015). By continuous collaboration with users and customers, companies can ensure that products developed are fit for purpose. While customer input is essential, (Bosch-Sijtsema & Bosch, 2015) also cautions against the disruption of involving users or customers at every step of the innovation process as this causes delays in product development.

The Schumpeterian view of innovation leans on the premise that innovation does not have to be an entirely new product. Innovation can be achieved by combining existing resources such as; processes, data and technologies, in a new way to provide a unique product offering (Swedberg, 2007). Therefore, product innovation should not only be something brand new. Product innovation must be viewed by the outcome of the combined elements, both old and new, that make up the product offering.

The notion of time is a critical component in two ways. Firstly, speeding up the innovation process helps companies save on product development costs and secondly it allows the company to respond faster to market changes (Reguia, 2014). By responding quickly to market changes the company delivers business value sooner and receives feedback sooner from the customer which helps improve the product offering (Ho & Chen, 2018; Lyytinen et al., 2016; Mergel, 2016). A quicker time to market results in shared value by higher returns on technology investments while adding value to customers.

Apart from financial and technical resources needed in product innovation, human resources are a critical component in the development of product innovation (Brand, Tiberius, Bican, & Brem, 2019). In order to promote innovation in the workplace, companies must make a fundamental shift away from the traditional way of working, which is more accustomed to by employees. Employees should have a portion of

time at work dedicated to innovation to be creative (Brand et al., 2019). The leaders of innovation have a responsibility to create a work environment conducive for innovation and must also secure the resources required – time, human resources, finance and technology (Brand et al., 2019; Edison et al., 2018)

2.3 The role of agile project teams in the product innovation process

The innovation process entails three high-level phases which are; to gain knowledge from external parties (example: management consultants) and customers; utilise the internal and external knowledge to develop the product and; deliver the innovation to market (Hsieh et al., 2018). The concept of knowledge inertia as explained by, Xie, Fang, Zeng, & Huo (2016), uses past knowledge and experience to solve problems and gain new insights which are essential for product innovation. Agile project methods promote a more collaborative ethos within the project teams which drive project teams to communicate and share knowledge to adapt to the constant change in the market (Inayat & Salim, 2015). Collaboration encourages engagement between product owners, product developers, business analysts, product testers and customers utilising the products (Inayat & Salim, 2015). Inayat & Salim, (2015) states that customer demands are unpredictable; consequently, agile project teams must continuously collaborate to share related product and customer knowledge. Continuous collaboration allows the company to adapt to changes in customer needs to create more certainty in the product innovation process (Inayat & Salim, 2015). Thus, harnessing the knowledge and expertise from agile project teams is key to delivering relevant and meaningful product innovation that is fit for purpose and adds value to customers.

2.3.1. Team elements

Leadership has a huge responsibility in the product innovation process as they not only responsible for securing innovation resources (Brand et al., 2019). The leaders are also responsible for protecting the culture of the team (Mergel, 2016) and establishing a conducive innovation environment which is highly collaborative (Jung, Chow, & Wu, 2003). Employees need an environment where they are free to make mistakes without fear of being reprimanded for undesirable outcomes as these mistakes lead to experiential learning (Jung et al., 2003). Leaders need to encourage team member participation in order to create an open and transparent team space as opposed to the command and control environment (Mergel, 2016). The command and control environment is driven by an autocratic leadership style, whereas the open

and transparent environment is driven by a transformational leadership style (Jung et al., 2003; Mergel, 2016). The outcome of creating a team environment conducive for innovation enhances team motivation driving employees to go above the call of duty, creating superior customer satisfaction (Lam & Mayer, 2014).

It is apparent from the previous section that innovation should occur at a rapid pace for the company and the customer to reap the required benefits. A set of formal ceremonies are required to curb the uncertainty and unpredictability created during the product innovation process (Dönmez, Grote, & Brusoni, 2016). These ceremonies harness the knowledge that comes about from continuous interaction in the innovation process and provides clear accountability within the team (Dönmez et al., 2016). Dönmez et al. (2016) further describe the ceremonies below;

1. The sprint process which requires teams to deliver a model of a product during a predetermined period
2. Sizable product development tasks are broken down into small subtasks which aid in estimating the effort required from various teams to complete the tasks
3. Once the tasks have been assessed, it is then allocated to the various team members to complete within the sprint cycle
4. The team has daily check-in sessions to provide an update on individuals various tasks and raise any threat preventing them from completing within the sprint cycle
5. These repetitive ceremonies create a cadence in the development of products driven by the leaders in the company

Engaging in these ceremonies drives collaboration among the team and its stakeholders. Collaboration is expected in high-performing teams as it allows the team to keep up with customer requirements (Dönmez et al., 2016; Inayat & Salim, 2015) thus, eliminating the development of undesired products. Collaboration improves communication, awareness and alignment to the company's goals (Inayat & Salim, 2015) by driving the co-creation of innovative products between all stakeholders who have a vested interest (Mills, Berthon, & Pitt, 2020). Collaboration also enhances the sharing of pertinent knowledge required during the innovation process as it relates to problem-solving and overall product development (Hsieh et al., 2018; Xie et al., 2016).

Xie et al. (2016) describes the concept of knowledge inertia which apportions

knowledge into three notable areas, procedural, learning and experience. Both new and prior knowledge is required to accelerate innovation, particularly, learning and experience enhance product innovation (Xie et al., 2016). However, procedural knowledge does not improve innovation from a study conducted (Xie et al., 2016). Dönmez et al. (2016) states that ceremonies or routines are necessary to control the process of innovation and Xie et al. (2016) mentions that procedural knowledge (routines) does not have positive results on innovation. It is important to note that procedural knowledge – trying to solve new problems using the same procedures as explained by Xie et al. (2016), should not be confused with the routines of managing the innovation process stated by (Dönmez et al., 2016).

2.4 The importance of team voice in driving product innovation

Individual team members use their voices to challenge the status quo with the intention to improve work-related issues and, develop more effective approaches to problem-solving as opposed to impairment (Mackenzie et al., 2011). When there is consensus within a team about work-related ideas as well as apprehensions, there is a presence of team voice resulting in active communication between team members (Li, Liao, Tangirala, & Firth, 2017). For companies to be agile in response to market changes and make better innovation decisions, companies must encourage voices at lower levels in the structure (Lam & Mayer, 2014). The people closest to where the work occurs are the most knowledgeable about the concerns from customers as well as on work-related issues and can make improvement proposals (Lam & Mayer, 2014).

Agile project teams are at the product innovation execution level (lower level) in the company, and they are responsible for collaboration within the group as well as internal and external customers (Inayat & Salim, 2015). It is, therefore, imperative that agile project teams voices are heard. Liang, Shu, & Farh (2019) explains that a promotive voice improves innovation by the effective use of team knowledge, inspires innovative thoughts and generates new ideas in the innovation process. The authors further explain that a prohibitive voice provides constructive criticism which motivates the team to make improvements to their way of working through team reflexivity. Team reflexivity is a process where a team reflects and adapts the way it works (Liang et al., 2019). Although prohibitive voices provide a critical view (Chamberlin, Newton, & Lepine, 2017), both voices are required in the innovation process as it leads to the most favourable innovation ideas chosen and discarding the unfavourable ideas (Liang et al., 2019). Consequently, team voice forms a

fundamental part in achieving shared success of an agile project team and in-turn, the agile project team's involvement performs an essential role in the product innovation process.

2.4.1. Voice contribution to agile project teams

Although team voice is described as a valuable contributor to innovation, Sherf, Sinha, Tangirala, & Awasty (2018) argues that voice is not always a good contributor. Sherf et al. (2018) describes the concept of voice centralisation, which occurs when the voice of individual team members is not equally raised by each member of the team. The result of this creates a lack of expertise utilisation among the team, impacting team operations and ultimately, product innovation. The general concept of team voice is that it assists with knowledge sharing and expertise which are drivers of high performing innovation teams (Hsieh et al., 2018; Mackenzie et al., 2011; Xie et al., 2016). Voice centralisation is attributed to socially assertive people who thrive on speaking out more than others, usually with their self-interest at heart (Sherf et al., 2018). Therefore, impacting the team's morale and hinders sharing of knowledge and expertise from other team members who may have valuable input. Voice centralisation is less likely to affect the team when there are more reflective individuals who are more self-disciplined and think about their reactions (Sherf et al., 2018).

Organisational leaders must be mindful of the dynamics of voice contribution within the team and address them accordingly. Thus, ensuring they protect the team culture which enable the team to deliver superior products to customers. Customers are generally more satisfied with products that meet or exceed their expectations; thus, creating the alignment between the agile project team and customer needs is vital (Bunduchi, 2017). Customer satisfaction leads to improved financial returns; therefore, voice input from agile project team members, general employees and customers, must be exploited within the confines of the innovation process (Bosch-Sijtsema & Bosch, 2015; Mackenzie et al., 2011; Sherf et al., 2018).

2.5 The effects of Groupthink

It is evident from the literature covered thus far that team voice has a positive effect on organisational success; therefore, leadership must be aware of the effects of groupthink. Groupthink highlights the risks of conformity in team decision-making where there is absence of healthy discussions (Meissner, 2020, p. 241). A threat that

could arise is poor decision-making, contradiction in thinking, incorporating new information incorrectly and framing data in an organised manner (Meissner, 2020, pp. 240–241). Janis (1991), speaks of a well-known story in history about the Space Shuttle called the *Challenger* which launched in the late 1980s and exploded. Although this is an extreme case of groupthink, the story of the *Challenger* can be attributed to innovation decisions taken within agile project teams. The *Challenger* space shuttle launched on 28 January 1986, shortly after it was airborne it exploded and plummeted into the Atlantic Ocean killing all crew members on board. The president of the United States at the time, Ronald Reagan, ordered a report on the possible cause of the accident which was produced after four months. The report highlighted the leading cause for the explosion was a rubber seal that failed in a joint of one of the booster rockets. This resulted in fuel leaking from the rocket, thus leading to the catastrophic explosion. However, the report also concluded there was a flaw in the decision-making process. Janis (1991) believed that NASA was the victim of groupthink that contributed significantly to the disaster. The team responsible for testing the seal highlighted the risk of the seal not being tested below fifty-three degrees Fahrenheit. After a meeting with company executives, the team reversed its no-go decision. It gave the thumbs up for the launch of the rocket to proceed even though the team raised the concern of the seal not being adequately tested, these risks were ignored by the executive team.

2.5.1. The occurrence of groupthink

Groupthink occurs when bad decisions are made because of pressures brought about by certain circumstances (Valine, 2018) such as:

- team members disregard risks
- team members rationalise cautions that oppose the team's thinking
- morals and ethics are ignored
- team members speak ill of other groups
- team members loyalty is questioned if they disagree
- team members remain silent which is misinterpreted as consent
- team members protect their contentment

Groupthink is a “concurrency-seeking” tendency that hinders the decision-making process within the group, thus, leading to poor decisions being taken that lead to dreadful outcomes (Choi & Kim, 1999). The concept of voice centralisation leads to groupthink. A higher voice centralisation results in a lower proportion of team

members willing to voice out their concerns, thus holding back knowledge and expertise which could help address the issues (Sherf et al., 2018).

Groupthink could be linked to the concepts of multidisciplinary, interdisciplinarity and transdisciplinarity. Bernstein (2015) describes each of these concepts; multidisciplinary involves different fields of work and expertise without any blending among the disciplines; interdisciplinarity involves various fields of work and expert knowledge with a high degree of blending and knowledge sharing; transdisciplinarity respects the different fields of work, however, innovatively “re-imagines” the combining of these disciplines. Transdisciplinarity discards the notion of working in separate disciplines as these create silos not conducive for creativity and innovation (Bernstein, 2015). These concepts draw a likeness to the current way in which companies are segregated. The agile way of working, mentioned in section 2.3, seeks to move away from a silo approach to a more transdisciplinary way of work which challenges the current structure of working.

2.6. Conclusion

The literature review provided an overview of the importance of innovation, agile team elements, voice contribution and groupthink. Large companies should not view product innovation as a disruption only caused by small companies but, should embrace it by directing their resources toward product innovation. The importance of product innovation is vital for companies not only to thrive in current economic conditions but more so to survive in the current economic environment. Companies must also understand the components of innovation and agile team influences on the product innovation process. Companies must be wary of groupthink behaviours that influence bad decisions. The literature reviewed showed no clear indication of how agile project teams, team voice and the effects of groupthink influence the outcome of product innovation in an investment banking context.

Chapter 3: Research Questions

The study is focused on answering the four research questions (RQ) below:

3.1 Research question 1 (RQ 1)

How does the role of product innovation contribute to the success of investment banking?

The aim of this research question was to gauge the participants understanding of the importance of product innovation and its components.

3.2 Research question 2 (RQ 2)

How does an agile team influence product innovation?

The purpose of this research question was to understand the team elements which influence product innovation.

3.3 Research question 3 (RQ 3)

How does agile team's voice (employees voice) affect the outcome of the product innovation?

The purpose of this research question was to understand the influence of team voice and other contributors to product innovation.

3.4 Research question 4 (RQ 4)

How does groupthink impact product innovation decisions?

The aim of this research question was to understand the behaviours and the resulting outcomes of groupthink on product innovation.

Chapter 4: Research Methodology

4.1 Introduction

A qualitative research approach was undertaken to gain insight into the components of innovation; the team elements influencing innovation; the notion of agile project team voice influences and the effects of groupthink on the product innovation process. The research took an inductive approach as it focussed on data collected through literature reviews and semi-structured interview questionnaires to develop a theory around the topic (Saunders & Lewis, 2018, p. 113).

Given the qualitative nature of the study, a mono method of data collection was adopted by conducting online voice interviews using Microsoft Teams. Microsoft teams is an online collaboration platform that hosts chats, and virtual (online) meetings. The researcher interviewed individuals in two agile project teams who were all directly involved in developing innovative software products which provided significant information on the research topic, agile project team and team voice influence on product innovation. By allowing participants to express their views provided much insight into the reality of the topic.

4.2 Research methodology and design

The research was exploratory in nature as it solicited new information about the influences of an agile project team and voice on product innovation. The purpose of an exploratory study is to gather new information about a topic (Saunders & Lewis, 2018, p. 115). The research study intended to better understand the influences of agile project teams and team voice on product innovation. This exploratory study has only produced preliminary answers to the research questions that were constructed; therefore, further research will be needed to attain more robust feedback on the topic (Saunders & Lewis, 2018, p. 115).

The use of the phenomenological research strategy was used in this study. This research strategy understands and explains the nature of the phenomenon through first-hand field study to capture and understand people's experiences. The researcher made use of semi-structured questions to guide the online interviews as opposed to face-to-face physical interviews due to COVID-19 restrictions. The global COVID-19 pandemic had necessitated a country wide lockdown which imposed rules that impacted physical contact with people, among other restrictions. Due to social/physical distancing, travel restrictions and non-contact between people, the

researcher's ability to gain access to individuals that were identified for this study was significantly impacted. A reduced group of interviewees open to participating in online interviews, were identified. The online interviews had a considerable impact on usual engagement protocols. Both parties had to grow accustomed to a virtual way of engagement.

Given the time constraints for the study, the researcher used a cross-sectional research design approach. The study is only a glimpse of a situation at a point in time as the data collected from participants are for a one time period (Saunders & Lewis, 2018, p. 130).

Semi-structured interview questions were used to guide the online voice interviews. It was essential for the researcher to be mindful of clarity and tone of the questions, more especially with online interviews as facial expressions and body language was absent from the interviewed participants. The researcher used an interview checklist and set the scene to describe the purpose of the research study as this was paramount before engaging participants (Saunders & Lewis, 2018, p. 158).

The researcher is employed at one of the prominent investment banks in South Africa and works with agile project teams, therefore the study has been based on the banking sector. These agile project teams aim to be quick to adapt and respond with relevant products to the changes brought about by customers or the environment (Mergel, 2016; Serrador & Pinto, 2015). The teams concerned focus is on providing innovative deal origination products to investment bankers and customers. These products are typically web applications and mobile applications, which aid employees in effectively constructing complex financial deals that bring potential investors and the company together.

As a result of the researcher's experience with agile project teams, the research rests on the interpretivism philosophy. This approach focuses on expansion of knowledge as well as the type of information gathered or discovered in combination with the study of "social phenomenon" (Saunders & Lewis, 2018, p. 109). Given this study focuses on social behaviours such as team influence, team voice and groupthink in the innovation process, which the researcher has a considerable amount of experience, the interpretivism philosophy has allowed the researcher to impart this experience in the research conducted. The research focuses on investment banking individual team members who make up an agile project team and their individual voices which make up a team voice, and how these facets influence product

innovation. Therefore, the views expressed by participants are unique to each participant. The different participants experience and profile mix of individuals in the same team may impact the way an individual influences product innovation.

4.3 Population

A complete set of participants is known as the population, that was identified for the research. The agile project teams, making up the deal origination innovation teams in the investment banking division, have been identified as the population for this study. The sub-group of the population (Saunders & Lewis, 2018, p. 138) comprised of both permanent employees and non-permanent employees such as technical vendors or management consultants. The population consists of software development consultants, business analysts, quality assurance testers and team leaders. These roles make up the characteristics of agile project teams. These terms are referred to as participants in the doc throughout this research document. The participants consisted of employees of different ages, gender and cultural beliefs; thus, there may have been a reluctance for some people to express their viewpoints and others not.

4.4 Unit of analysis

The unit of analysis represents the primary of unit that will be used for analysis (Salkind, 2010b, p. 1585) The unit of analysis used in this study was the deal origination IT agile project teams. The composition of the team consisted of individual team members such as software development consultants, business analysts, quality assurance testers and team leaders. These team members are directly involved in developing innovative products in an investment banking environment.

4.5 Sampling method and size

The researcher did not have a complete list of the population that make up all agile project teams in the bank due to, departmental restrictions and accessibility to agile project team members. Therefore, the use of non-probability sampling has been used. Saunders & Lewis (2018) state that diverse methods can be used to identify a sample. A purposive sampling technique was used and focused on two agile project teams of approximately fifteen team members. Purposive sampling refers to a set of people who are selected based on variety of reasons or traits (Salkind, 2010a, p. 1298; Saunders & Lewis, 2018, p. 145). Agile team members were identified based on their accessibility and willingness to participate in online interviews. The

researcher initially aimed at interviewing fifteen of the team members; however, only twelve team members were secured for interviews due to availability of the participants. *Figure 1* demonstrates saturation at the tenth interview as no new codes were created thereafter. Participant 4 is from India and has joined the team in the past few years. From the coding trend in *Figure 1*, some views from participant 4 differ from South African participants, hence showing a spike in codes created. The researcher could not use the interview conducted with participant 3 due to low voice quality of the online interview. Another participant was identified through a referral, who met the participant profile criteria. This participant was interviewed at a later date and replaced participant 3.

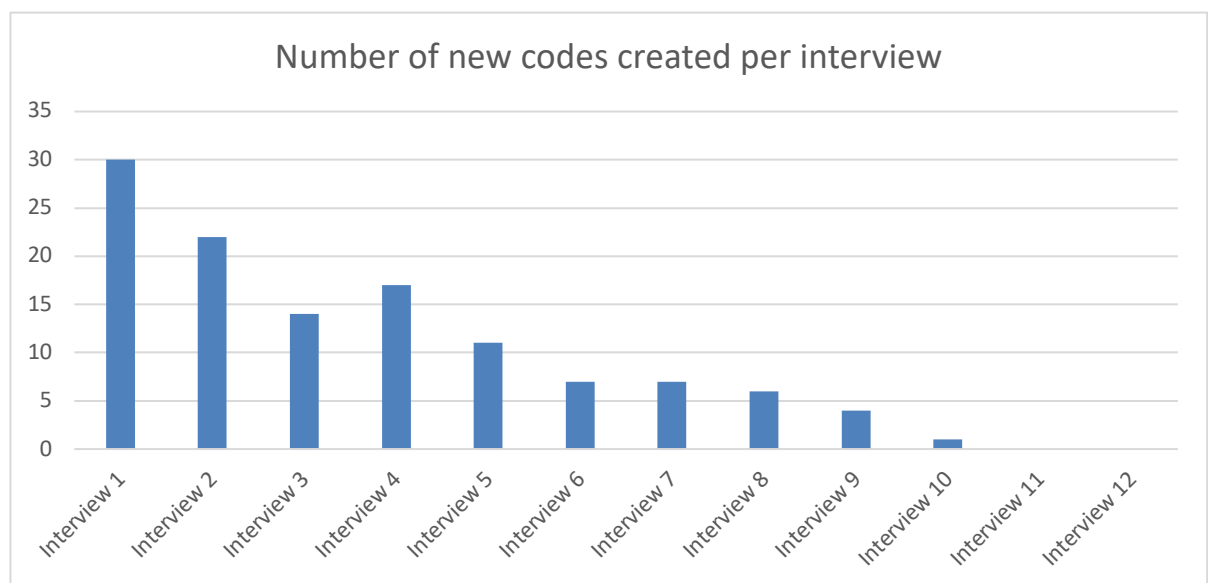


Figure 1: Number of new codes created per interview

4.6 Data collection tool

The researcher used semi-structured interview questions as a measurement instrument to guide online voice interviews. Semi-structured interviews are used in exploratory studies to gain new insight on a topic (Saunders & Lewis, 2018, p. 158). Ten questions were focused across each of the four research questions, which helped the researcher gain information on the research topic. The interviews covered the areas below:

- Product innovation
- Agile project team influence/ s
- Team voice (employee voice)
- Groupthink

Agile project teams work extensively on innovative initiatives for companies and have extensive knowledge of the products they develop (Dyne, Ang, & Botero, 2003). Resulting in the team members ability to identify potential issues with the product innovation approach (Dyne et al., 2003). The interview questions asked were to gain insight into the components of innovation; the team elements influencing innovation, the notion of agile project team voice influences and the effects of groupthink on the product innovation process. Agile project teams do not only have a considerable amount of knowledge on products that are developed but on the impact of those products on customers and business users. Agile project teams participate in various innovation ceremonies (example: product analysis and design sessions) involving some business stakeholders. Therefore, some of the questions were targeted at how agile project teams voice influences business stakeholders who have discovered the need for product innovation based on customer insight. The researcher constructed open-ended interview questions focusing on each of the areas of study mentioned above, which are linked to the research questions of the study, thus, making it suitable to the research topic. *Table 1* shows the interview questions that are related to each research question with bold reference to the areas of study.

Table 1: Mapping of research questions to interview questions

Research questions	Interview questions
How does the role of product innovation contribute to the success of investment banking?	<ol style="list-style-type: none"> 1. Tell me about your role and how it contributes to product (software) innovation? 2. Tell me about product (software) innovation and its contribution to the success of the company?
How does an agile project team influence product innovation?	<ol style="list-style-type: none"> 3. Tell me about the importance of collaboration and knowledge sharing in agile project teams? 4. How does an agile team contribute to successful product (software) innovations?
How does an agile project team's voice (employees voice) affect the outcome of the product innovation?	<ol style="list-style-type: none"> 5. How does your voice contribute to creativity, problem-solving and the overall development of product innovation?

	<ol style="list-style-type: none"> 6. Tell me about your voice and the contribution it makes to the overall team's voice on product (software) innovations? 7. How does your voice contribute to team decisions about the outcome of product innovation? 8. Tell me about your views on product (software) innovation decisions being made?
<p>How does groupthink impact product innovation?</p>	<ol style="list-style-type: none"> 9. Are your comments or contributions (voice) considered or ignored when decisions are taken on the most appropriate product innovation? Tell me more about your answer? 10. When the group (collective team) steers into a particular decision or direction, do you remain silent even though you disagree? Tell me more about your answer?

4.7 Data collection

The researcher scheduled online voice interviews with the participants identified and used the interview questions to start the discussion. The researcher also allowed the conversation to flow from the responses given. Follow-up questions on a particular topic were asked to gain more clarity on the answers provided. The original estimate of the interviews was forty-five to sixty minutes per interview; however, due to the online interview method, interview times ranged from thirty to fifty minutes. The researcher could not refer to body language and expressions and probe on those reactions. The researcher constructed an interview brief and questions that were emailed to the participants before the online interview. An online platform recording tool, Microsoft Teams, was used to record the conversation and then it was transcribed into word-for-word text. The analysis of the data was completed after all interviews were concluded. The researcher used the transcripts to code different units of meaning to help identify any commonality or discord between the participants.

4.8 Data analysis

Once the voice data was transcribed, the data was then prepared using computer-aided qualitative data analysis software (CAQDAS) (Saunders & Lewis, 2018, p. 202). In this research report, the ATLAS.ti tool was used to prepare the data by creating codes for particular units of meaning. Alike answers were identified, utilising repetitive words and phrases (quotations). The codes provided consistency throughout the data analysis and the decline of new codes created, mentioned in section 4.5, indicated saturation. Once saturation was reached, this provided the researcher with the outcomes of the study, which were then interpreted. Similar codes were grouped together which derived themes to the research questions. The transcripts were coded by the researcher, who has limited experience in data coding.

4.9 Reliability and validity

The interview process was semi-structured to ensure that data collected referred to the topic being researched. The use of primary data and literature was used for data comparison. This ensured a better understanding of the phenomenon being studied as it related to the literature that was reviewed, thus, providing improved quality. The data was stored in a private cloud storage account, and a back-up was kept on a physical storage device, which is accessible to the researcher only.

Reliability and validity refer to the trustworthiness of the data collected and is an integral part of the research design (Saunders & Lewis, 2018, pp. 134–135). Reliability ensures that data is consistent and that it reflects the population being sampled (Golafshani, 2003). The same questions were asked to all participants to ensure reliability. Thus, the questions that were asked were all under the same environmental conditions (Online) as this allowed consistency of the data that was collected.

Golafshani (2003) states that validity ensures that “what is being measured” is a genuine likeness of the research and that results are truthful. The research is qualitative in nature which is intended to explore the influences that an agile project team and team voice have on product innovation. Participants were assured of their anonymity in the data collection process, analysis and findings. Participants from two agile project teams were selected to increase the validity of the sample population. The questions posed to participants were opened ended questions in order to

remove any biases or ambiguity that may have emerged. The questions modelled were standardised and utilised in all the interviews.

4.10 Research Limitations

Due to the time limitation of this research, a cross-sectional research design was used, as it only presents a glimpse of participant's experience at the point in time when the study was conducted. As a result, it was limited due to circumstantial changes in the participant's experiences or environmental changes (example: COVID-19) impacting the participant's views. Given that participants consisted of permanent employees and non-permanent employees, certain participants may have been reluctant to share their open view of reality. The information gathered in qualitative research by nature cannot be verified; for example, the answers given by the participants cannot be verified against other information sources. Given the unit of analysis for this study it also limits generalisability, therefore limiting the ability of the study to be replicated in other industries (Salkind, 2010b, p. 1585). The small sample of twelve participants also limits the generalisability. The COVID-19 pandemic, which resulted in countrywide lockdown regulations, imposed personal contact limitations (physical distancing) preventing face to face interviews. Online interviews are limited as the researcher could not gauge body language and facial expressions. Therefore, the researcher could not ask questions relating to those reactions, thus resulting in shorter interviews and less potential information being gained.

4.11 Conclusion

The study followed a qualitative research approach in order to gain knowledge on the influences of agile project teams and team voice on product innovation. The study was exploratory in nature which solicited further information on the topic. The study followed an inductive approach as the data gathered from the interviews helped build the theory around the research topic.

Chapter 5: Research Findings

5.1. Introduction

This chapter focuses on the findings discovered in line with the research questions outlined in chapter 3. The data was collected using online semi-structured interviews with participants in an investment banking technology team. The consistency matrix in Annexure D ensures there is synergy between the literature review, the research questions and the interview questions. The themes that have surfaced through the data analysis are present in this chapter. It provides insight into the influence that, agile project teams, team voice and the effects of groupthink, have on product innovation within an investment banking context. The use of the word 'customer' in this section refers to both, bank employees who are internal customers that serve external clients, as well as external customers who hold financial products with the bank. Participants often refer to software products as 'solutions' which resemble software products. These terms are used interchangeably so as not to alter the participant's meaning of their response.

5.2. Description of sample

The team member roles represented who make up an agile team are; team leader, business analyst, tester and software developers and are all crucial to product innovation across various teams in the technology space. *Table 2* provides a view of team member profiles who have participated in the online interviews. The participant's experience in developing and delivering software products range from ten years to twenty-five years. Each participant plays an integral part in the product innovation process and has extensive knowledge of product innovation. The sample consisted of twelve male (8) and female (4) participants of various ages and were all based on Johannesburg.

Table 2: Interview participants details

Participant Number	Role	Description of role
1	Business analyst	To gather requirements which inform solutions for innovative software products. Performs validation to ensure that products meet business expectations
2	Software developer	Develops software based on customer requirements by writing computer software code
3	Software developer	Develops software based on customer requirements by writing computer software code
4	Software developer	Develops software based on customer requirements by writing computer software code
5	Business analyst	To gather requirements which inform solutions for innovative software products. Performs validation to ensure that products meet business expectations
6	Software developer	Develops software based on customer requirements by writing computer software code
7	Software developer	Develops software based on customer requirements by writing computer software code
8	Team Leader	Coordinates the team and ensures that teams have adequate resources and the necessary tools
9	Team Leader	Coordinates the team and ensures that teams have adequate resources and the necessary tools
10	Business analyst	To gather requirements which inform solutions for innovative software products. Performs validation to ensure that products meet business expectations
11	Business analyst	To gather requirements which inform solutions for innovative software products. Performs validation to ensure that products meet business expectations
12	Tester	Tests the software product to ensure that it meets the intended outcome

5.3. Findings: Research question one – RQ 1

RQ 1: How does product innovation contribute to the success of a company?

The purpose of this research question is to determine the participants understanding of the importance of innovation and the components that makeup innovation from their point of view. The participants recognise the need for product innovation and agree that it is critical for company success; however, some aspects surfaced which stifle innovation.

5.3.1. Components of innovation

Figure 2 displays the six components that resulted from the interviews undertaken with the participants, namely: solutions, resourcing, time, role, differentiation and budget. *Table 3* displays the components influencing innovation in rank order by the highest frequency of use to the lowest number. Participants have presented viewpoints of each of these components mentioned in the following sub-sections.

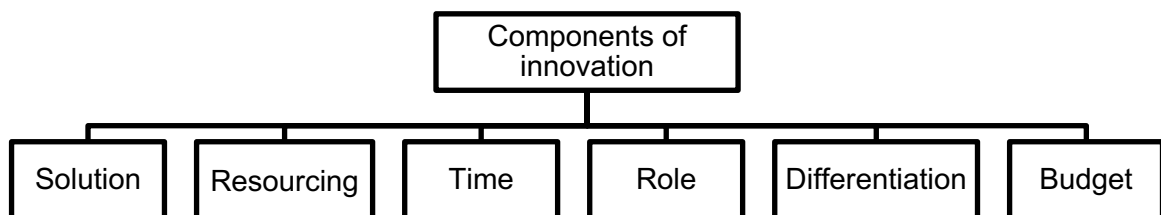


Figure 2: Components of innovation – RQ 1

Table 3: Rank of the components of innovation in order of frequency of use – RQ 1

Rank	Components	Frequency of use
1	Solutions	12
2	Resourcing	7
3	Time	5
4	Role	4
5	Differentiation	2
6	Budget	2

5.3.1.1. Solutions

Participants considered the solutions that are developed contribute to the success of the company and described this as the driving force of innovation. Four sub-components surfaced from the interview data analysed, which are automation, innovation fit, understanding innovation and technology as an enabler. The results of these sub-components are presented below.

Automation

Participants 1, 2 and 11 emphasised the benefit of automation and the positive impact it has on the bank employees (focus groups) who use these solutions. Developing products (systems) that automate the admin-intensive manual process provides the ability for employees, who interact with clients, to move away from a paper-based way of work towards a digital method of work. This digital method creates additional time for these employees to do their actual work, which is to provide advisory services to financial investment customers. This method also creates uniformity in the way of work and reduces manual errors that may come about. Participant 2 and 11 share the same view as the quote by participant 1 below.

Participant 1: “to help these focus groups and other members of the company to kind of streamline their work and automate it so that everything gets done in the same way and we all are using the same solution.”

Innovation fit

Participant 2, 4, 6, 7, 9, 10 stressed the importance of innovative solutions being fit for purpose for the customers who use it. Participant 7, 9 and 10 warned against mimicking other companies by creating innovative solutions that do not serve the needs of the incumbent firm’s customers. Participant 7 and 9 share the same view as the quote by participant 10 below.

Participant 10: “what works for one doesn’t work for the other”.

Participants 2, 4 and 6 underlined the importance of developing solutions that contribute to the immediate customer need, which, requires the agile project team to understand customers’ needs before offering a solution. This results in the solution not being used and consequently wasted effort. Participant 12 mentions that by developing solutions in increments and testing it with the customer, reduces the risk

of developing a product that does not fit the needs for customers. Participant 3 recommends that by understanding the different needs or requirements of customers, it is pertinent to identify innovation patterns. This aids in developing a suitable solution or perhaps identifying a current solution which will need to be tweaked to fulfil that need.

Understanding innovation

Participant 6 displayed a misconception of what innovation is and did not understand that his daily work contributed to the overall innovation of the company. The participant did not view his daily job as a software developer who contributes to innovation, although his role plays an integral part in developing innovative solutions for the company. Participant 10 described how important it is for members within the agile project team to understand the role they play in the innovation process. Understanding the reason why something (solution) is being done would motivate team members to contribute towards a higher purpose. The participant further states that understanding this purpose will promote better product design for the customer as well.

Participant 10: "Most people don't understand the value of why we are doing something. I think once we know why we are doing something, we may have been more motivated, not because you need to meet a deadline."

Technology as an enabler

Participant 2 states that developing new products with the latest technology, enabled the agile project team to deliver new types of solutions which would have otherwise been impossible with legacy systems. Legacy systems are old and outdated and do not provide the agility that is needed to deliver ever-changing customer needs. Participant 6 mentions that for technology to be an enabler, it must be scalable, something that can be a platform for other areas to leverage without having to re-invent a new system.

5.3.1.2. Resourcing

Two general sub-components emerged from the data collected, internal resources and external sourcing. Internal resources which deal with internal human resource issues and external sourcing which focuses on sourcing external management consultants to complete the innovation tasks that should be done internally.

Internal resources

Participant 1 believes that a human element should be considered when developing innovative software. Business leaders try to automate managerial tasks such as sending automated notifications to alert the leader of someone who has not completed their task as opposed to checking in with staff progress and addressing any obstacles. Participant 2 states that a conceptual innovation idea has the required buy-in; however, the lower-level details of developing the product spark different interpretations that delay product development. Participant 8 describes how key performance indicators (KPI) drive incorrect behaviour among members of the agile team. Team members are measured on delivery of a set of requirements by a specific date and need to ensure that this is met to meet the KPI which is linked to remuneration. While the product is delivered, it may be the “worst product ever”, which leads to poor company performance but good individual performance. Conversely, participant 12 explained that leaders often have to deal with non-performance of team members which “doesn’t improve” and leads to member dismissal.

External sourcing

Given the internal issues mentioned above, participant 12 rationalises the need for the company to source human resources from external consulting firms. The participant describes the external team as being “a lot more agile and a lot more innovative” as they not clouded by the company’s bureaucracy and hierarchical structures. The external consultants are billed per hour and are required to deliver products which meet the customer’s needs. Therefore, the innovative products are developed outside of the company and once developed its plugged back into the company as a new product. The use of external resources avoids any key person dependencies, mentioned by participant 4, which is a common occurrence in the company. Key person dependencies have only one person who knows the system well enough to perform certain tasks, and if that person is on annual leave or off ill, the rest of the team waits until the person returns. This delays the work to be completed and slows down the innovation process with a cost to the company.

Participant 4: “we struggle with key man dependency in our organisation for a very long time. This kind of thing delays and also costs money to the organisation.”

5.3.1.3. Time

There were two contrasting sub-components under the theme of time, which was identified through the data analysis. Firstly, innovation speed, which highlights the benefits of going to market or end-users quicker and, the second being the impact of time pressures on the innovative product outcomes. While it is important to churn out innovative products quicker, the positive and negative aspects of speed to market must be understood.

Innovation speed

Participant 2, 7, 10, 11 and 12 emphasised the importance of delivering innovation quicker to customers. Participant 2, 7 and 11 described the benefit to the company by delivering innovation quicker. Participant 2 and 11 comments that delivering innovation quicker helps users of the solution reap “business value” sooner. However, it may not be the final product, thus “saving time” and “saving costs” to the company. Participant 7 explains by going to market sooner it allows the customer to provide feedback sooner which provides the agile project team with the feedback necessary to improve the product iteratively. Participant 10 and 12 stated that unfortunately, the company is slow to change. Customer’s needs are evolving at a rapid speed, so agile project teams cannot spend a long-time defining customers’ exact needs, resulting in slow speed to market. Therefore, a minimum viable product must be delivered sooner as alluded to by participant 2 and 11.

Time pressures

Although there are benefits to delivering innovation quicker to market, there are also some fallacies on innovation. Participant 4 mentions that time pressures lead to team members not following the practices agreed by the team to ensure better delivery of innovation tasks which creates confusion amongst the team. Participant 6 and 7 made it known that due to time pressures that are imposed on the team to deliver innovation quicker, “shortcuts” are taken to shorten the delivery time of products to customers. While these shortcuts are made transparent, it may not be sustainable from a technical perspective as it may reach a point where it will need to be enhanced in order to be scalable to cater for future customer demand. So, the allocation of more time will allow the agile project team to derive more sustainable and more innovative products. Participant 11 adds that time pressures also shortens the time for members in the team to learn from previous successes or failures thus, may risk

being opened to repeating some of the mistakes.

5.3.1.4. Role

The importance of roles in agile project teams highlights the need for multiskilled individuals necessary for product innovation. These roles play a specific part in determining the landscape of innovative products that are developed. These roles influence product innovation toward a specific outcome to meet customer expectations while delivering business value to the company. The two sub-components that we noted were role importance, focusing on the specific contributions and role distinction, focusing on the importance of what the role encompasses.

Role importance

Participants 1, 2, 7, 9 and 12 shared similar views on the importance that specific roles play in the innovation process. Participant 1 and 2 explain that the role of a software developer is not only to develop the software but to also influence innovation by determining the best way to design the software components and to ensure superior user experience. Participant 7 shared the importance of the business analyst role in interpreting customer needs and decoding this into technical terms so that software developers can develop a product that meets those needs. Participant 9 defines the role of testing as a critical step to meeting the customer's expectation through rigorous validation of the product to the original customer need. The testing role also influences the product design based on the outcome of the testing. Participant 12 highlights the importance of the team leader role in ensuring that teams have the necessary human and technical resources needed to operate with maximum efficiency.

Role distinction

Given the extensive tenure in product innovation, participant 3 and 6 stressed the importance of ensuring that roles are clear and have specific functions. Participant 3 suggests that by ensuring roles are clarified and have specific functions, this limits the confusion that often occurs on who should be responsible for certain innovation tasks. This causes delays and uncertainty within the team leading to non-performance and demotivation of the team. Participant 6 adds that agile project team members should trust other equally skilled members to “give you the best solution” as it is within their area of expertise.

5.3.1.5. Differentiation

Differentiation, as pointed out by the participants, refers to the need for the company to set itself apart from other similar companies servicing the same customer market. The participants identified one main aspect which influences differentiation among competitors which perpetuates the importance of pioneering innovation which deliver value to the customer.

Pioneering innovation

Participant 2, 4, 5 and 10 advocated the necessity for the company to have the courage to pioneer innovation as this adds great value to the customer and the company. Participant 2 explains that perpetuating in old systems does not enable the agility that is brought about by new technology, as mentioned in section 5.3.1.1. If companies want to be different, it will need to “be the pioneer for that solution”. Participant 4 provides an example of the incumbent company move away from a long-standing technology provider because other, more innovative solutions added more value for the company. Participant 5 and 10 expands on the importance of innovation for customers by simplifying banking, in terms of, placing digital products in the hands of the customer, for example, mobile banking as opposed to walking into the branch.

5.3.1.6. Budget

The concept of budget refers to the amount of money budgeted for innovation. The main concern raised by participants is the lack of funding provided for innovation and the priority given to innovation when budgets are projected for a financial year. The lack of funding gave rise to the sub-component, resource constraints.

Resource constraints

Participant 8 stated that innovation is not given the appropriate priority when there is a cost-reduction drive. This particularly happens when there is a change in leadership, and the new leadership does not understand the innovation decisions that were made and the possibilities that lie ahead. Participant 3 and 12 zoned in on the impact lack of funding has on resources that are needed in the innovation process. In 2019 the company’s innovation and research development budgets were significantly marginalised with the aim to focus more on the current core banking platforms. This has significantly reduced the technical and human resources, among

others, needed in the innovation process.

5.3.2. Summary of research question one

Six main components emerged from the interviews with participants, solutions, resourcing, time, role, differentiation and budget. From these themes, twelve sub-components surfaced, which are summarised in *Figure 3*.

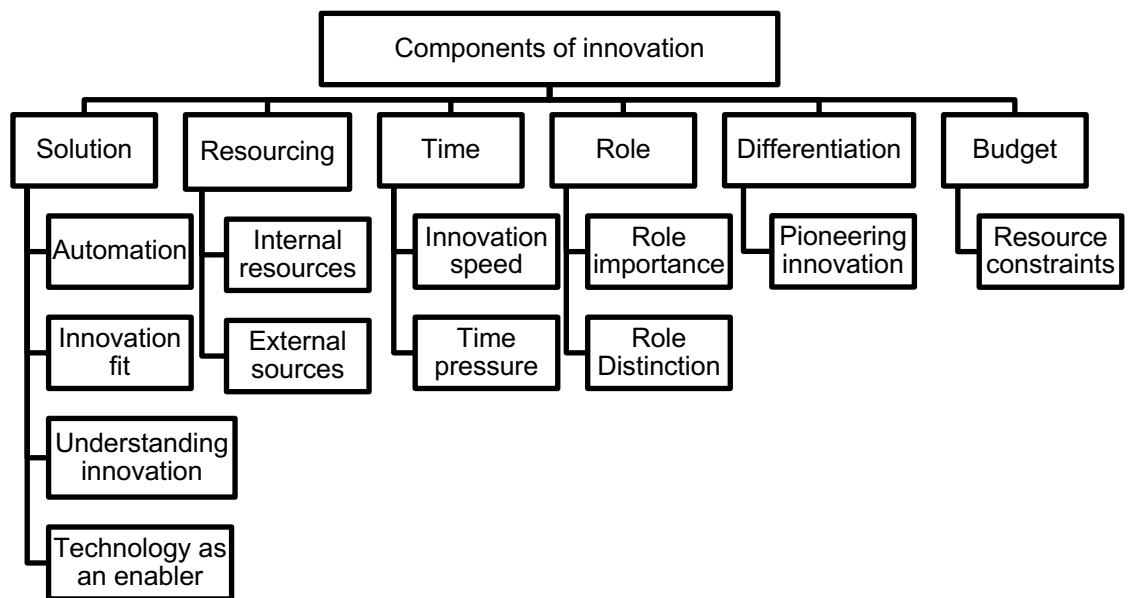


Figure 3: Summary of the components of innovation

The components of innovation identified, influence innovation in its different ways, encompassing both positive and negative aspects. From the six main components mentioned in *Figure 3*, the solution was dominant among the majority of the participants and was also the highest-ranked component. Participants believe that developing solutions is a fundamental component of product innovation.

5.4. Findings: Research question two – RQ 2

RQ 2: How do agile project teams influence product innovation?

This research question intends to discover the elements that agile project teams embody which drive product innovation. Participants express the need for intangible elements which drive innovation. These elements are behaviours that agile project teams see as vital for agile project teams to influence product innovation.

5.4.1. Team elements of innovation

Figure 4 displays a graphical view of the team elements that innovation that have emerged from the interviews conducted with participants which include, culture, collaboration, knowledge, way of work, and process efficiency. Participants articulated culture, collaboration and knowledge as dominant elements that are essential for driving innovation. Table 4 displays the team elements that drive innovation in rank order by the highest frequency of use to the lowest number.

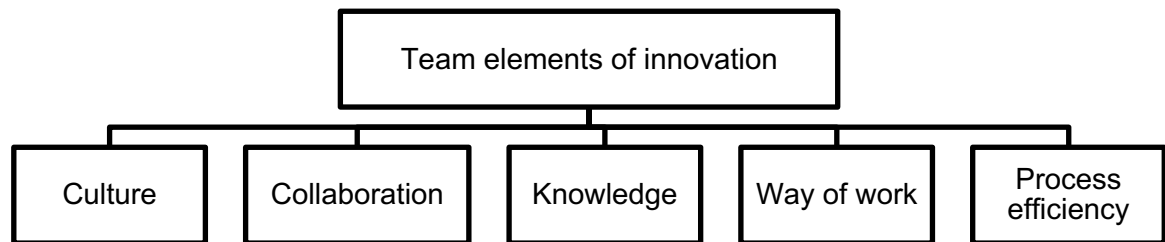


Figure 4: Team elements of innovation – RQ 2

Table 4: Rank of team elements of innovation in order of frequency of use – RQ 2

Rank	Elements	Frequency of use
1	Culture	10
2	Collaboration	9
3	Knowledge	8
4	Way of work	5
5	Process efficiency	4

5.4.1.1. Culture

Participants considered culture as the main element in driving innovation in agile project teams. Culture represents the way people behave in the company, and it's essential that in the innovation process, a healthy culture is created which supports the innovation process. Four sub-themes were noted through the analysis of the data, change, innovation DNA, empowerment and environment.

Change

Participant 4 and 12 pointed out the importance of a change in the current market environment. Participant 12 states that it is not enough doing what has always been done to make the company successful; innovation plays a significant role in business today. Participant 4 stated the incumbent company must innovate as part of day-to-

day work in order to remain relevant in the market of competitors. Participant 12 explains, “when a company has been successful for too long, it thinks that everything you’ve got is part of the winning formula”, this success breeds complacency. Companies are competing for the same market, and for the company to “remain in existence”, let alone dominate that market, innovation must be something that needs to be done all the time. There is constant change in the market, and the company must adapt.

Innovation DNA

Innovation DNA is described by participant 4 as something that is part of what agile team members should do every day. Human DNA exists in every part of a human’s body (MedlinePlus, 2020) similarly, innovation should be part of agile team members daily work every day. Participant 4 mentioned when innovation is in our DNA employees begin to continuously question whether the products being developed are the right ones by continually asking themselves, “Is this the best way of doing something?”

Participant 4: “Understand what we are trying to achieve and make sure that its part of our normal daily job, to make sure innovation is part of it.”

Participant 8 mentioned the incumbent company must innovate in everything that it does. Once innovation becomes a culture, it gains greater buy-in from stakeholders and creates curious mindsets among employees.

Empowerment

Participant 2 explains that when a team is empowered, it creates a sense of motivation and often leads to team members going “above and beyond” the call of duty. The benefits of empowerment lead to innovation tasks “being delivered ahead of time” and the product that is developed surpasses the expectation of what was initially outlined. Participant 6 stated that by removing the limits placed on team members or “giving them fewer limits to deal with”, gives them the freedom to explore and deliver a much more innovative solution. However, there seemed to be a lack of empowerment as decisions were made for them.

Environment

Participant 8 paints the picture of having a safe environment where team members are able to share their “creative and innovative ideas”. An environment where their ideas will not be rejected because it may sound farfetched. Participant 11 explains that it is “healthy” to have an environment where people from different skillsets can voice their ideas as this sets the foundation for innovation.

5.4.1.2. Collaboration

Alongside culture, is collaboration, which participants felt is imperative to embody within the agile team as this opens myriad of creative ideas and solutions among a diverse group of people. The data surfaced three sub-themes, co-creation, unified understanding and silos, which play an essential role in collaboration.

Co-creation

All participants had a strong belief that collaboration was the foundation for the co-creation of innovative solutions within the company.

Some participants responses aligned with the notion of collaboration which aided in the area of problem-solving, as other team members who may have experienced similar issues when developing a product and, are able to provide a fresh perspective.

Participant 1: “other team members might notice something you probably don’t notice, or they might bring new insight you never thought of”

Participant 6: “Bounce ideas off each other and as a collective come up with the appropriate solution to solve the problem.”

There is practical information that the wider team brings to the fore that helps reconsider decisions or designs that were initially thought of when developing a product.

Participant 5: “This is some information I didn’t know and now that you know this information, do you really think this is a good idea? and I’ll say, now with more information, bad idea.”

Collaboration opens the lines of communication with bank employees (internal customers) who are essential in designing products for the intended customer.

Participant 4: “You might be thinking about how we are going to solve this problem, but business might have a better solution.”

Participant 7: “You contact business as you like, you don’t have to wait for the whole project to be analysed, so you tend to get feedback quicker.”

Participant 11: “The business owners of the application, I have that sort of close connection with them.”

Although collaboration leads to the co-creation of innovative solutions, there is a lack of collaboration among certain teams and stakeholders. Participant 1 mentions there are different work cultures therefore, collaboration only happens to some degree. Participant 7 explains that when product innovation decisions are made at an executive level, there is a lack of collaboration with the lower levels in the company. Participant 12 states that in terms of collaboration, “I don’t see it happening much horizontally”, that is across divisions.

Participant 7: “there needs to be a clear process of how it comes down to everyone in the organisation”, “clearly some of the projects, it just shows that collaboration wasn’t there at all because you find that teams are developing the same product”

Unified understanding

It is important for the entire team to have a common understanding of the goals the company is aiming for, as it relates to product innovation. Participants 1, 4, 6, 7 and 8 believe that unified understanding is vital for the success of product innovation to ensure alignment of the goal/s. Participant 1 and 4 explain that once the team has a common understanding of the goal the team members can act swiftly in achieving the goal because there is no uncertainty on the outcome the team desires to achieve. Participant 6 and 8 make reference to “speaking the same language” between the business stakeholders and the technical stakeholders. It is important to confirm understanding of the end goal or product to ensure the right products are developed. When there is a lack of understanding, this creates back and forth discussions which are time-consuming and jeopardises the products speed to market as referred to in section 5.3.1.3. Participants 2 and 7 highlights the importance of a common team understanding by the team speaking with one voice. Having different voices deters the team from achieving the set goal, as stated by participant 2. It sets people down

a path of confusion. The concept of voice will be discussed in more detail in research question 3 and further in chapter six.

Participant 2: “having people with conflicting voices detracts from achieving that, and it again starts people on the journey of people diverting into all these different directions therefore negatively impacting the end deliverables.”

Silos

The term silo refers to teams operating in isolation of one another as opposed to operating in an integrated or collaborative manner. Participant 2 mentions that “the longer we go without collaborating, the deeper into our silos we get. This results in the different ways of work among teams who are dependent on each other for them to develop the end product. Participant 5 describes silos that occur between different roles among the same team. This limits collaboration with the team and ultimately impacts on product innovation. From experience, participant 6 states that more innovation comes from companies where there are “very few silos”. The general premise of these companies is a “high degree of collaboration and knowledge sharing”. Given the negative impact of silos, participants 3, 8 and 11 underline the importance of building relationships in achieving cooperation in the innovation process. The benefit of building relationships enhances cooperation between business and technical stakeholders, it helps different stakeholders respect each other’s domain, and it improves communication regarding the development of the end product for customers.

5.4.1.3. Knowledge

Knowledge in this context refers to the different types of knowledge that exist within an agile team and the value of sharing that knowledge. The three sub-themes derived from the data analysis are, knowledge sharing, prior knowledge and expert knowledge.

Knowledge sharing

Participants 2, 4, 5, 6, 10 and 12 mentioned the importance that knowledge sharing has as a driver of innovation. The general premise is that knowledge sharing accelerates innovation and ensures consensus among the team or inter-dependent teams in reaching innovation goals. Participant 2, 5 and 12 stress the point of bringing past experiences “to the table” which are new ideas to the team, as these

experiences improve the team's responsiveness to new demands. Participant 4 explains that knowledge sharing allows team members of a different skill set to learn new skills that remove the dependencies on the key person, thus allowing business continuity. Like collaboration, knowledge sharing, as depicted by participant 1 and 10, helps team alignment to the innovation goal. This alignment improves product delivery and improves the speed of delivery. Participant 6 alludes to the improvement of team member onboarding, where new team members who join the team can "start adding value in a short space of time" as they have several people in the team who have a wider knowledge base.

Prior knowledge

Prior knowledge suggests that team members bring with them a set of experiences which provides a new perspective to the problem at hand. The value of prior knowledge not only speeds up product development, as explained by participant 2, it also sets the team up to be more innovative. The lessons learnt from past experiences present an efficient way of developing products in the future. Participant 5 mentions that prior knowledge helps define the outcome of product innovation to what was originally designed and what was originally thought to be possible.

Expert knowledge

Expert knowledge about the needs of customers must be known to the agile project team. This knowledge shapes the product and helps the team to make continuous enhancements as customers' needs change. Participant 4 and 5 zones in on how important it is to have expert technical and customer knowledge in defining the solution. There is a huge gap between business stakeholders who are close to the customer and technical stakeholders who are distant from the customer. Participant 3, 7 and 8 expand on the knowledge gap between business stakeholders and technical stakeholders. This knowledge gap impedes product decision-making; therefore, it's essential for both groups of stakeholders to learn each other's domain in order to make sound decisions.

5.4.1.4. Way of work

The way of work defines the path to successful, quick to market, innovations that are well thought out and meet or exceed the expectations of customers. The two sub-themes that are derived from the data analysed are value and method.

Value

Participants 3, 4, 7, 10, 11 provide insight, from a technical perspective, on the value of the agile way of work within agile project teams which contribute to successful product innovation. Participant 3 and 4 share the view that an agile way of work allows the team to deliver value sooner and iteratively develop the product according to changing customers' needs. The traditional project method only allowed the customer to view and test the product once it was completely developed, which could take between six to nine months. Participants 7 and 11 explains that the agile way of work increases the pace in which innovation happens and helps keep the bank abreast with the fast-changing requirements of the customer. Participant 10 mentions the structure of the agile way of working helps clarify roles within the team, which limited the chaos that previously existed. Participant 3, 7, 9 and 10 share the view that although technology stakeholders practice an agile way of working (daily stand-ups, sprint reviews and planning), business stakeholders who are closest to the customer, do not practice an agile way of working. Participant 3 states that this "stifles innovation and the benefits of an agile team."

Method

Participants 1, 2, 10 and 12 explain the concept of being in a position to "fail fast and learn fast". The concept does not promote failure in a negative manner but rather that it's important to develop a product and test it with customers and receive their feedback as quickly as possible. This allows the team to gauge whether the product meets the customer expectation or not. And if not (failure), then the team can learn from this test with customers and improve on the product and not waste months or even years developing a product that does not cater to customer needs.

5.4.1.5. Process efficiency

Process efficiency is a critical component to the execution of product innovation and is therefore important within agile project teams. Process innovation is noted as the sub-theme in the context of an agile team's daily operations.

Process innovation

Participants 6 and 9 provide examples of the way process innovation adds structure to the chaos created in product innovation. It enhances operational efficiencies within the team by improving the flow of work through the team. Participant 12 states that

the agile approach to working improves product delivery and limits the need to procure external resources from management consulting firms. As a result, process innovation within an agile team is paramount to ensure a faster speed of delivery of product innovation.

5.4.2. Summary of research question two

Figure 5 depicts the five themes that surfaced during the interviews with participants, culture, collaboration, knowledge, way of work and process efficiency. These themes give rise to thirteen sub-themes which describe the elements that are evident within a product innovation team.

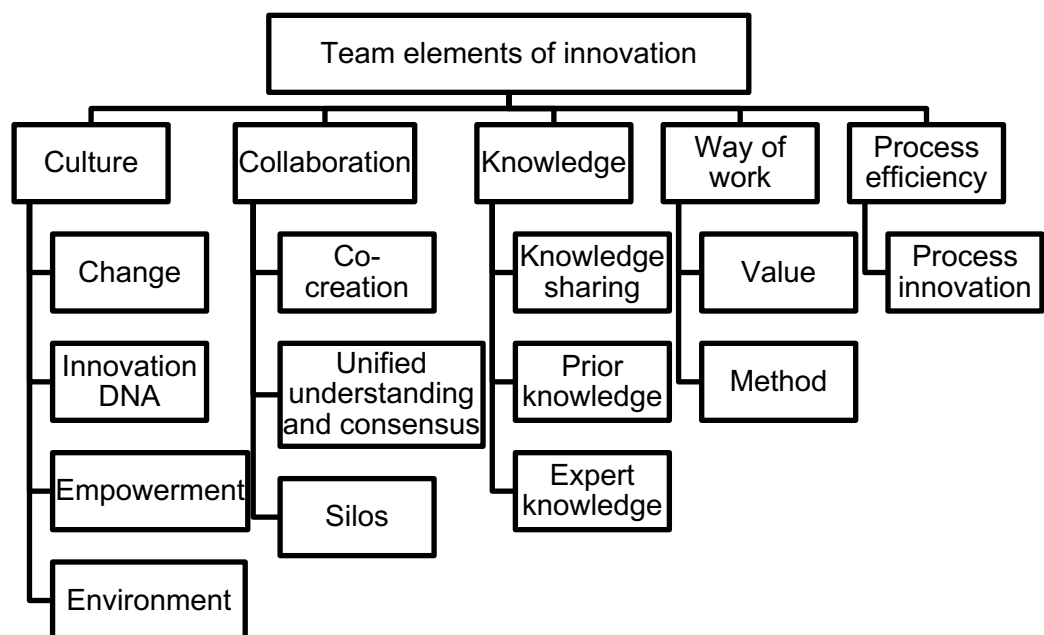


Figure 5: Summary of the team elements of innovation

The team elements that are described influence the development of product innovation. The culture was the highest frequency as it represented the ethos that is needed in the team to ensure significant development of product innovation. Collaboration and knowledge are critical elements that build the foundation for an agile team to thrive and also describes the adverse effects if this is not in place. The way of work is a value-add to the team, particularly in delivering products to market sooner and receiving feedback quicker in order to improve the product. Although the focus is on product innovation, it is commendable to implement process innovation in the daily operations of the team. This creates operational efficiencies within the product innovation process.

5.5. Findings: Research question three – RQ 3

RQ 3: How does an agile team's voice (employee voice) shape the outcome of product innovation?

5.5.1. Contributors to innovation

The focus of this research question is to understand how agile team voice guides the outcome of the solution that is being developed. During the data analysis, it was determined that voice has a significant contribution to the development of product innovation both positively and negatively. Apart from voice, the data also revealed other contributors to innovation which are depicted in *Figure 6*, customer, vision, and leadership hierarchy. *Table 5* displays these contributors in order of high to low frequency of use, indicating that voice is the main contributor to product innovation.

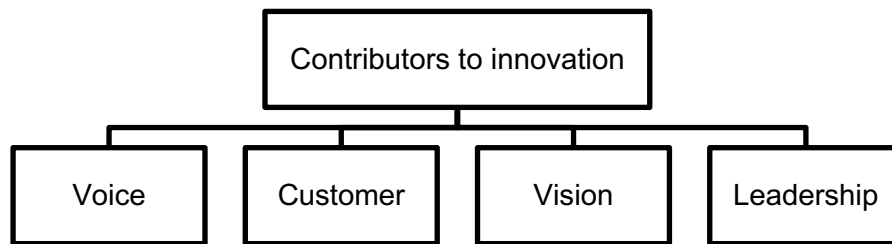


Figure 6: Contributors to innovation – RQ 3

Table 5: Rank of contributors to innovation in order of frequency of use – RQ 3

Rank	Factor	Frequency of use
1	Voice	20
2	Customer	5
3	Vision	4
4	Leadership	2

5.5.1.1. Voice

All participants expressed their opinions of how great of an impact voice has on the outcome of product innovation. Voice is the verbal communication either horizontally (across teams of a similar nature), or vertically (across company hierarchies). These views are based on current and past experiences at other companies. The four main sub-themes of the data are grouped into, value, impact, status quo and the risk factor

Value

Participants 1, 3, 4, 9, 10 and 12 articulated the value of their voice, if heard, adds enormous benefit to the direction in which product innovation proceeds. Participant 1 states that voice helps define products by voicing ideas on creating a particular feature. These ideas spark conversations amongst the team, which lead to healthy debate, and in turn, leads to a better product outcome. Participant 3 mentions that in some cases voices which are raised late into the development cycle tend to be disruptive but, it does result in the voice being heard because it is essential information that is needed for the product being developed. Participant 4 explains that “if you understand your platform (software product) your voice will be heard”. So, it is crucial to understand the intended use of the product being developed as you then speak from an informed point of view, and your voice is heard. Participant 9 says that even if you suggest something entirely different for the current solution but, delivers the same outcome, your voice will be heard. Participant 10 and 12 share similar views on the team’s voice which has enormous value than an individual voice as the team comes across as a group of experts in the field of product innovation.

Participant 12: “I guess the team’s voice is a lot more focal because at least that level is an appreciation of us being the experts in the space.”

Impact

Participants 1, 2, 10 and 12 stress the importance of having a voice and the effect it has on product innovation. Participant 1 and 2 mentions that voice helps deliver the intended product for the customer. By asking questions that were not thought of at the conceptual phase of the product innovation, the agile team can develop an enhanced product. This also helps in identifying gaps in the initial thinking. Participant 10 states that when something does not make sense your voice can be raised, and because of your expert view, it will be heard thus positively changing the final product. Participant 12 advises that at a company level, “the principal is that all should have a voice and should be brave enough to raise it”. However, that does not always happen at the lower levels.

Participants 4, 5, and 8 highlight the importance of the collective voice from a team perspective. The only way to arrive at an innovative solution is to get the collective voice input in developing the product. Participant 6 mentions that it is paramount to get “collective buy-in” on how a product should be developed.

Status quo

Participants 3, 5, 9 and 12 emphasises the importance of building trust with customers so that your voice is heard. By consistently proving yourself as an expert in the field and taking the time to learn about something outside of your area of expertise, this build trust. Once that trust is earned, one is able to challenge the status quo from an informed and knowledgeable point of view.

Participant 3: I don't let the fact that I need to toss it up and do it now stop me from questioning and asking questions around how things could potentially work.

Risk factor

The risk of not having a voice or voices are being diluted, brings with it a threat to product innovation. Participant 2 explains that when teams and companies start getting bigger, there are hierarchies that are created which leads to a voice becoming fainter. This results in a mindset change where “people don't feel like they should be held accountable or they don't feel like they should be contributing more than what they should”. Participant 3 shares a similar view to participant 2, where business stakeholders and IT stakeholders start to merge; it's usually a businessperson who tends to lead the consolidated team. In this setting, the voice of IT becomes fainter. Participant 12 comments on the structure of the hierarchy, which is not inclusive of a technical person at the appropriate level of the company; hence the voice of IT is not heard.

Participant 12: “I think a seat at table should be at the highest level being where the strategy is defined.”

In these settings, the general premise is that when the expert voices are not heard, this introduces risk to product innovation, and this could lead to adverse product offerings.

5.5.1.2. Customer

Understanding the customer is of the utmost importance when developing a product that will cater to their needs. Two sub-themes emerged from the data analysis, which will be discussed in more detail, centricity and insight.

Centricity

Participants 8, 9 and 10 mentions that customer-centricity is vital for product innovation because it defines how the customer experiences the product. So, every product design must be done with the customer in mind. Participant 8 explains the purpose of the business analyst role is to work closely with the product design team. When a gap is identified, that would have a negative effect on customer experience; then it is essential to close the gap by brainstorming a solution. Participant 9 states that if customers adopt a product, it has been designed from a customer point of view. Participant 10 adds that when a product is not designed with the customer in mind, it actually creates customer frustration which leads to a negative experience.

Insight

Given the importance of customer-centricity mentioned above, it is essential to gain customer insight when developing products. Participants 3, 7, 9 and 10 draws on the importance of having good customer insight before trying to create an innovative product. Participant 9 mentions that appropriate market research must be done upfront.

Understanding the opportunity, the agile project team is solving for, is fundamental in understanding the value it adds to the business.

Participant 3: “It’s very important to understand the software that you are developing, what it’s used for and how it’s used in business. It’s not just a piece of update functionality or whatever your busy doing; it is enabling some real business value.”

Participant 7: “So, what I try and do is understand the problem and opportunity itself from a business context or perspective before you actually deep dive into the how and the technical part of it.”

The business stakeholders who are closer to customers must gain more insight into the needs of customers before deciding how a product should be developed.

Participant 10: “So, business stakeholders just need to be more insightful on what the customer wants.”

5.5.1.3. Vision

From a conceptual level, the agile project team must understand the strategy of the need for product innovation. This vision helps the team develop the product with a

purpose in mind that is linked to the company strategy. Strategy is the sub-theme that surfaced through the data analysis.

Strategy

Participant 7 mentions that “innovation should be taken into the context of the business strategy and target market for that innovation”. It should be questioned if the team is focusing on the right product design.

A continuous reminder of the strategy and a link back to why the team is developing a product adds a sense of purpose to the innovation.

Participant 10: “If they don’t have a vision, they won’t have that motivation.”

The innovation teams must continuously have a vision of the strategic intent of product innovation

Participant 12: “it’s a vision not only from the executive level, which I think is also a challenge sometimes, but a vision from internal as technology teams.”

5.5.1.4. Leadership

Leadership influences the priorities of the agile project team and drives these priorities with individual team members. When a leader has a particular background, for example, business operations focused, it is likely the leader will place the most emphasis on that. The sub-theme organisational structure was identified from the data analysis.

Organisational structure

Participant 3 and 12 explains the organisational structure is to merge business operations and IT and appoint leaders that are only operations focussed. This creates a lack of focus on IT and limits the technical aspects which are drivers of innovation. Participant 8 adds that leadership drives the priorities of the department and with the lack of focus on IT, IT teams end up just delivering whatever is being asked, and this leaves no room to innovate. Thus, the technical team has no voice as it is dominated by the leader who has a particular focus. Participant 5 mentions the new generation where leaders drive more open communication and are less likely to create knowledge silos which are created by the structure that we’re typically accustomed too.

5.5.2. Summary of research question three

Four main contributors came to light from the data that was analysed, voice, customer, vision, and leadership. From these contributors, eight sub-themes were derived, which are summarised in *Figure 7*.

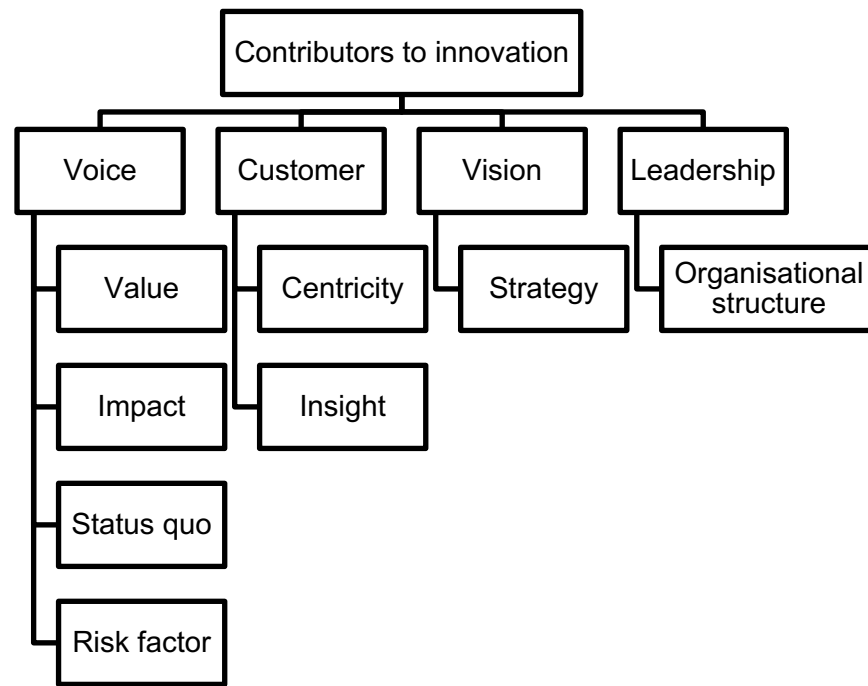


Figure 7: Summary of the contributors to innovation

The contributors to product innovation that surfaced from the interviews have a significant influence on product innovation. Voice was the principal theme in this research question as it was the highest-ranked contributor. Voice adds enormous value to the agile project team and impacts the customer as the receiver of the innovation. Voice continually challenges the status quo, which steers the product toward a particular outcome that is fit for purpose. While the agile team's voice plays an important role in the innovation process, the voice of customers, the company's vision, and the leadership also contribute to successful product innovation. Hence, these rudimentary items must be considered as valuable contributors to innovation.

5.6. Findings: Research question four – RQ 4

RQ 4: How does groupthink impact product innovation decisions?

The research question aims to determine whether the concept of groupthink exists in the innovation process. It was established that groupthink does exist in the product agile project teams. The data that was analysed using cause-and-effect elements

which are behaviours and outcomes, is shown in *Figure 8*. The cause-and-effect facets identified under the elements are waste, participation and inclusive decision-making, risk and lack of listening are displayed in *Table 6*. These facets will be discussed in order of behaviours resulting in the outcomes.

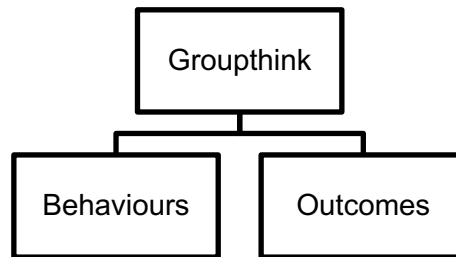


Figure 8: Cause-and-effect elements of groupthink – RQ 4

Table 6: Rank of cause-and-effect facets in order of frequency of use – RQ 4

Rank	Element	Facets	Frequency of use
1	Outcome	Waste	5
2	Behaviours	Participation and inclusive decision-making	4
3	Outcome	Risk	3
4	Behaviours	Lack of listening	2

5.6.1. Participation and inclusive decision-making

Throughout this chapter, there is mention of business stakeholders and the IT stakeholders. The business stakeholders are the closest to customers who invest their money in the financial institution in question, and the IT stakeholders build software product (solutions) based on business stakeholders’ requests. These solutions are both for internal customers (bank employees) who service external customers and also for external customers to the bank. Segregation exists between the business stakeholders and the IT stakeholders, which leads to a “them and us” dynamic. This dynamic causes unhealthy engagements between the two groups and leads to a lack of collective participation in developing innovative products that meet internal (bank employees or end-users) and external customers’ needs. Business stakeholders do not view themselves as part of the collective innovation team.

Participant 2: “So all the developers, the testers, the BA’s, the designers were all working as a team to deliver the product, but the business layer just abstracts itself from this bigger team.”

Business stakeholders believe they are more superior as they deal with the clients, and IT stakeholders should just execute on their product innovation requests without question.

Participant 5: “I don’t think software development and all of that skill is being seen as a specialist skill and the behaviour I see in the business is very much; we will still tell you what to do, so all product development is still, also in the book, seen as a cost and not as an investment. So that to me is also a bit flawed.”

It is common that business stakeholders voice counts more than the IT stakeholders voice due to the stature of business stakeholders within the company. Thus, greater team involvement is required.

Participant 8: “there isn’t anyone who is matching the technology voice, from an innovation perspective, with a business voice, you know because I mean you can’t innovate if you don’t know the business, do you get me, so without that business voice in that collective team, there’s a piece of the puzzle missing.”

Participant 12: “at the highest executive level of the organisation, there’s no technology representation. That comes at lower levels, and it also means that as a team, a technology team, our voices not heard at the highest level.”

There is a clear distinction between business stakeholders as being more superiors than IT stakeholders, thus, causing a lack of critical participation. This results in qualified technical resources, not raising their points of concerns or suggestions about product innovation as they are not taken seriously. After a while, they just keep silent.

Participant 3: “You can’t continue fighting it”. “They don’t take you seriously enough to understand where your concern is coming from and then address it either in a different merger of a solution, potentially. But if they don’t, you’ll eventually have to enable the failing to happen in order to move on to what would work.”

Participant 5: “Breakdown barriers in your mind about roles and who is allowed to speak to who. Breakdown ‘us and them’, that would be my advice cause that’s where knowledge sharing and collaboration happens, organically.”

“And because I think if we collectively take accountability for both the good and the bad together, then that is a great goal for an agile team to work towards.”

5.6.2. Listening

From the previous sections, it is evident that team members are not heard. It is imperative, for the success of product innovation, to listen to the voices of reason across the team. Participant 6 states this requires that team members among both disciplines (business and IT stakeholders) show up with an “open mind”. Participant 1 and 7 mentions that it is vital for team members to listen to understand the concern or suggestion at hand so the appropriate action or decision can be taken.

Participant 1: “there should be a sense of listening more and speaking less.”

Participant 6 explains that different parties involved in product innovation must be willing to listen. If there is no willingness to listen, then it is likely that team members will remain silent, and this leads to an adverse outcome.

5.6.3. Waste

The lack of participation, lack of inclusive decision-making and lack of listening results in the wrong or duplicate product being developed. Participants 2, 6, 7 and 10 explain that a lot of the time products are developed that are not used, or it exists elsewhere in the business, therefore it is no longer needed. The teams’ voice is not heard when these concerns are raised. Eventually, once there is a failure of the solution, business stakeholders then approach the agile team to implement the solution proposed by IT resulting in wasted time and money.

Participant 2: “So, for example, we’ll bring up a solution to say I don’t think that’s how this should be done, and business would say I think that’s how it should be done. And then there’s a whole back and forth, and then we end up trying to implement it the way business thinks that should be done and once it’s built the business then recognises or realises what we were saying”

Participant 6 mentions that when the expert voices are not voiced out or considered, this leads to an unfavourable product that is being delivered to the customer. Participant 7 and 10 share the sentiment that decisions are made without proper buy-in and expert knowledge from the right people (inclusion), and this leads to incorrect products being developed.

The impact of developing the incorrect product results in waste time and resources that could be better utilised if there were proper consideration for the experts in the innovation process.

Participant 1: “So, then it creates a gap that wastes a lot of time, in development time, and the software that needs to be delivered then takes longer to be delivered. It doesn’t feel like it’s an agile way of doing things.”

5.6.4. Risk

Business stakeholders put undue time pressure on the technical teams to deliver products knowing it will introduce risk to the company. The risk is associated with loss of capital funding, loss of valuable time and reputational risk.

Participant 6: “They know what problems are going to rise, and they’re willing to accept that risk.”

5.6.5. Summary of research question four

The two cause and effect elements of groupthink, behaviours and outcomes were presented, and this has surfaced four facets, participation and inclusive decision-making, listening, waste and risk, which are represented in figure 8 below.

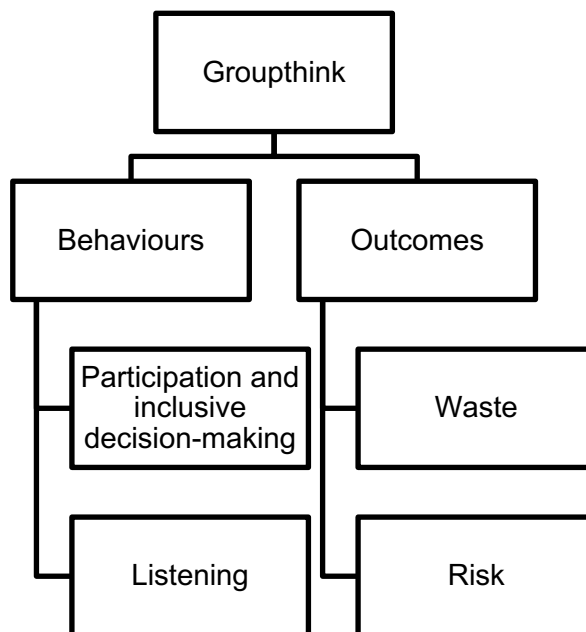


Figure 9: Summary of cause-and-effect elements of groupthink

From the topic of behaviour, it was noted that participation and inclusive decision-making do not happen at all levels and there is an unhealthy divide between business

and IT stakeholders. This divide has created a one-sided approach to product innovation. It was also noted that due to the superiority of the business stakeholders the expert voices in the agile project team are not heard which results in team members remaining silent. The impact of these behaviours has toxic outcomes leading to wasted time and resources and introducing avoidable risk into the company.

5.7. Conclusion

This chapter has characterised the results from the ten interview questions which were presented to participants. These questions were based on four research questions, which were described in chapter three. The results of research question one highlighted the components influencing innovation. It was determined that participants believe product innovation is vital in the success and survival of the company, particularly in the time of intense competition and the digital age. The participants felt that developing software solutions was paramount among other components such as, resources required, speed to market, employee role influence, company differentiation and innovation budget. The results of research question two summarised the team elements which influence product innovation. The participants believed there must be a culture of innovation and it is vital that innovation is part of their daily jobs and not an event. Amongst culture, there were other fundamental elements which influence innovation from a team perspective, namely collaboration among team member, harnessing knowledge, way of working among the team and process efficiency within the team. The results of research question three underlined key contributors to innovation. Participants expounded on the immense significance that voice has in the innovation process. The participants believe the value of team voice has a significant impact on the outcome of product innovation. However, it does pose a risk to the company when these voices are not heard. The results of research question four bring to the fore behaviours and the resulting outcomes of groupthink. Participants felt there was a general divide between business and IT stakeholders which leads to a lack of participation, lack of listening and team members remaining silence when they don't agree with a decision. This creates waste and introduces risk to the company.

Chapter 6: Discussion of research findings

6.1 Introduction

The purpose of this section is to discuss the results that surfaced in chapter 5 and weighing it up with the literature review completed in chapter 2. The aim of this chapter is to determine whether there is likeness to the literature or reveal any new findings that may come to light concerning the influence of agile project teams and team voice on product innovation. This chapter presents the results related to each of the research questions mentioned in chapter 3. The main theme that emerged under each research question is discussed in association with key aspects from the literature reviewed (chapter 2). The use of the word 'customer' in this section refers to both, internal customers (bank employees) that serve external clients, as well as external customers who hold financial products with the bank. Participants often refer to software products as 'solutions' which resemble software products. These terms are used interchangeably so as not to alter the participant's meaning of response.

6.2 Discussion of research question one – RQ 1

RQ – 1: How does product innovation contribute to the success of a company?

This research question intends to understand the importance of innovation from the participants' point of view and what they deemed as essential components of product innovation.

6.2.1 Components of innovation

As explained in chapter 5, the components of innovation highlight a number is critical aspects of innovation. Six components; solution, resourcing, time, role, differentiation and budget, are discussed.

6.2.1.1 Solutions

A solution in the context of product innovation refers to technical solutions that are developed by agile project teams. These solutions simplify customer and employee interactions through innovation, consequently contributing to the company's success. It reduces manual administrative tasks using technology software. The four sub-components that emerged were, automation, innovation fit, understanding innovation and technology as an enabler, are discussed below.

Automation

Given the digital age, companies who view digitisation of business processes as an enabler, rather than a disruption to its normal course of business, are likely to capture the competitive advantage it has to offer (Hopp et al., 2018). Participants emphasised the benefit and relevance that automation (digitisation) had on the improvement of admin-intensive business processes. It was noted that seizing the opportunity to digitise business processes creates additional time for bank employees to spend with customers. The core function of bank employees is to advise customers on financial investment decisions and to ensure value is created for customers as well as the company. By moving away from a paper-based way of work to a digital method of work has allowed bank employees to bring in more business for the company. While the technology team has embraced digitisation, from the researcher's experience, there is reluctance from bank employees as they view innovation as a disruption to their daily work. Thereby, proving to be a real challenge to implement these solutions.

Innovation fit

Participants stressed the importance of the products developed, must be fit for purpose. Although it is crucial that companies continually innovate, it is equally important that the product is suitable for the intended customer or market (Edison et al., 2018). Participants warned that imitating its competitor's products may not suit the needs of the incumbent company's customers. It is imperative for the innovation team to spend time to understand customers' needs and continuously test products with the end-user. Understanding customer needs reduces the risk of the product not being suitable for the intended customer or user. The participants' view is in line with Bosch-Sijtsema & Bosch (2015), who also states that it saves the company on research and development costs. Participants noted, what works for other companies may not work for our company.

Understanding innovation

Participants displayed a lack of understanding of the meaning of innovation and how it relates to their daily jobs. According to the Schumpeterian view of innovation – a new way of combining old or existing resources in a new way to form a new product is considered innovation (Swedberg, 2007). Some participants felt their jobs as software developers did not contribute to innovation as it was not a novel product in the industry. Though, daily, these participants combined old data and existing

software code in a new way to develop software products. Participants mentioned, is it important that agile team members, who are responsible for product development, understand the value product makes to the business as this will give the agile team members a greater sense of motivation.

Technology as an enabler

Lyytinen, Yoo, & Boland (2016) indicates while people are becoming increasingly aware of the importance of automation in the process of innovation, there is a significant emphasis on how technology can enable product innovation and unlock business value. Participants supported this view and explained that technology, particularly newer technology, helps deliver better product types that are not possible with legacy technology. From the researchers' knowledge of financial institutes, banks have been around for a long time and have old core banking technology (legacy). These legacy technologies do not provide the scalability or reach what is required for product innovation.

6.2.1.2. Resourcing

Participants described that resourcing, particularly human resources, are vital in the innovation process. There are two nuances of human resources, internally and external to the company.

Internal resources

Many issues occur with internal employees (Agile team members) which affect the innovation process. The participants provided many different views on how innovation can be approached and what areas product innovation should address. There is also a lot of debate that happens in the product development phase, which causes delays. This is because of innovation decisions made at the top level of leadership without participation from the lower levels or the IT department. KPIs are structured according to traditional project management approaches (Serrador & Pinto, 2015). Therefore, requiring that innovation and the specifications are determined up-front and work towards a predefined date. This results in a lack of innovation, as user input throughout the innovation process is vital to providing the information needed to create a customer-centred product (Bosch-Sijtsema & Bosch, 2015).

External resources

As a result of the bureaucracy and the challenges described above, leaders are under time pressure to deliver on a conceptual innovation idea resulting in the need to seek external team resources. These external team members are typically from consulting companies who will execute what is being asked of them with little concerns, as they bill the company for the hours spent on product development. While this speeds-up innovation, or product development instead, there is a lack of a vested interest in the company from the external consultants. As opposed to external management consultants', the company employees, which form part of the company, live and breathe the company values and buy-in to the strategy of the company (Rivera, 2017). From the researcher's perspective, speeding up product development only addresses the symptom of the slow pace of delivery of product development which lacks innovation. The cycle keeps repeating itself; therefore, it is in the company's best interest to ensure that the source of employee issues is addressed timeously.

6.2.1.3. Time

The emphasis of speed is an essential component in product innovation as it reduces product development time; thus, providing companies with a higher return on its IT investment (Reguia, 2014). This also gives a company an advantage over competitors as it allows for business value to be delivered sooner to the market in order, to get customer feedback sooner and adapt to customer demands (Ho & Chen, 2018; Lyytinen et al., 2016; Mergel, 2016). Two sub- components emerged; innovation speed and time pressure, are discussed below.

Innovation speed

The participants largely agreed with the literature as they understood the benefit to the company and the agile project team. Participants zoned in on the business value that speed to market creates, and the time and cost savings to the company. It was also mentioned that getting customer feedback quicker allowed the agile team to improve the product sooner, therefore adapting the product to the customer's needs. However, participant 10 and 12 mentioned that the incumbent company is slow to adapt as there too much time spent on defining exactly what customers need as opposed to delivering a minimum viable product and then improve on it.

Time pressure

While it is important to focus on speed to market and reducing product development

time, both should be managed effectively. Participants raised issues that currently place under undue pressure, which led to team members not following agreed principles and processes and even taking “shortcuts”. This often leads to a product that is not sustainable as it cannot be scaled to cater for future customer demand. This time pressure also shortens learning the time, which leads to mistakes which could have been avoided. Therefore, it is paramount that companies do not introduce undue time pressure on product development with the sole focus of speed to market only.

6.2.1.4. Role

The role of each team member plays a significant part in product innovation, and this value is recognised in product innovation (Edison et al., 2018; Lyytinen et al., 2016). Two sub-components emerged; role importance and role distinction, are discussed below.

Role importance

Product or software developers are not only responsible for writing the software code but for also designing the outcome of how a product should function. This is an often-different product to the initial product design proposed by the business analyst who translates the requirements from the customer. The testing role acts as a customer in the innovation process to ensure the product design meets customer expectations (Bosch-Sijtsema & Bosch, 2015; Edison et al., 2018). These team members are in constant contact with the customer throughout the innovation process.

Role Distinction

Since there are many roles which are necessary for the innovation process and specifically in the product development phase, it is key to ensure that each role has the clarity of its function. The impact of not having role clarity results in confusion and uncertainty which causes delays.

6.2.1.5. Differentiation

Product differentiation is vital in setting the company apart from its competitors by outpacing them in terms of financial returns (Ho & Chen, 2018; Reguia, 2014). Pioneering innovation provides new customer value for customers as described by Michael porter through the differentiation strategy (Reguia, 2014).

Pioneering innovation

Participants supported the concept of being a pioneer in innovation as this portrays a good company image. The incumbent company being a customer to a technology provider, has moved away from that provider as there was a lack of innovation. Consequently, the provider was not able to cater to the company's needs. Similarly, the lack of innovation will deter customers away from the incumbent bank.

6.2.1.6. Budget

For product innovation to thrive, it must be able to have the necessary budget to be able to procure the resources that it needs to operate. Therefore leaders who wish to embrace product innovation must secure a budget and the resources required (Edison et al., 2018) to avoid constraints.

Resource constraints

Participants raised the concern of the lack of funding for innovation, and this results in the lack of resources needed for innovation. Leadership changes result in non-continuity of the innovation strategy (Ho & Chen, 2018), mainly when there are cost reduction exercises. From the researches experience, budgets are sliced on innovation first during economic strain, whereas this should be the time the company should find innovative ways to make money through novel product innovation.

6.3 Discussion of research question two – RQ 2

RQ – 2: How do agile project teams influence product innovation?

This research question aims to understand the team elements influencing product innovation. Agile project teams display many elements which are key to the development of innovative products.

6.3.1 Team elements influencing innovation

There were five elements which emerged from the data analysis mentioned in chapter 5, culture collaboration, knowledge, way of work, process efficiency. These elements will be discussed in the following sections.

6.3.1.1 Culture

Participants considered culture, a vital element making up the behaviours that influence product innovation which supports the view from Cooper (2011) & Inayat & Salim (2015). Therefore, leaders must shield the culture of the team to ensure effective team performance (Mergel, 2016). The four sub-themes that emerged were change, innovation DNA, empowerment and environment, are discussed below.

Change

Participants recognised the need for change in order for the company to gain a competitive advantage in the current market conditions. It was further stated that it is not enough for the incumbent company to continue doing what has made the company successful in the past. This view is congruent with the Edison et al. (2018) view on the need for change through product innovation. Participants also allude to the point that success breeds complacency and the effects of complacency can lead to the destruction of a company as described in the kodak case (Ho & Chen, 2018). Competition in investment banking is far too competitive to remain complacent; therefore, change is necessary for the workplace to drive product innovation.

Innovation DNA

The agile project team is required to churn out innovative products on a continuous base for the company to adapt to customer's changing needs (Dönmez et al., 2016). Participants comments matched this view by mentioning that it is essential that innovation is part of our DNA as it must be something that we continuously do. From the researcher's knowledge, these agile project teams follow specific practices which allow them to create a cadence of continuous product innovation development (Dönmez et al., 2016).

Empowerment

For the agile team to be innovative, it must have the freedom to make the appropriate decisions in the day to day operations of the team (R. Cooper, 2011; Edison et al., 2018). Not only does this speed up product development, but it also gives the team a sense of ownership. This creates enhanced team motivation which leads team members going above the call of duty as stated by participant 2. Going above the call of duty leads to better customer satisfaction (Lam & Mayer, 2014). Participants concurred with the literature on how empowerment leads to team motivation and

enhanced engagement; however, it was not evident in their current work environment. Employees are not given the freedom to make the necessary decisions which should be in their mandate. These barriers establish limits in the product innovation process.

Environment

It is imperative for the leaders of the company to encourage team members to participate in the agile team approach (Mergel, 2016). The participants shared thoughts of an environment where team members can freely voice out their creative and innovative ideas even though it may sound farfetched. However, the current environment does not support this view as it is very much a command and control (Mergel, 2016) conduct. There is much-needed leader intervention required to change the environment around to support the agile way of work.

6.3.1.2 Collaboration

The need for collaboration is vital in high performing agile project teams in order to create successful product innovation and development (Dönmez et al., 2016; Inayat & Salim, 2015; Mergel, 2016). Constant collaboration improves communication and awareness, helping teams keep up with changing customer requirements (Inayat & Salim, 2015). The three sub-themes that emerged were co-creation, unified understanding and silos, are discussed below.

Co-creation

Participants shared the sentiment of Dönmez et al. (2016), Inayat & Salim (2015), Mergel (2016) about the importance of collaboration. There was a consensus that collaboration helped speedup problem solving with the help of the knowledge and experience of other members. There was also an alignment between the participants' responses with that of agile authorship co-creation by Mills, Berthon, & Pitt (2020). Collaboration is required from multiple team members responsible for designing and developing the end product for the customer; this includes business and technical stakeholders (Mills et al., 2020). Participants noted that when the lines of communication are open between team members, it allows the collective team to create a better product offering to customers.

Unified understanding

Constant collaboration aids in a shared team understanding of the products developed and the goals the team is working towards achieving. This shared understanding allows team members to reach consensus quickly in the direction product innovation should take. This limits the development of undesired products as there are regular team check-in sessions to clarify any uncertainties that may deter members in a different direction than the goal, thus, reaching consensus (R. G. Cooper & Sommer, 2016; Dönmez et al., 2016). It also allows team members to speak with one voice to the conceptual decision-makers on the direction of innovation and in making better product innovation decisions (Lam & Mayer, 2014). The lack of understanding leads to adverse product innovation decisions, and time wasted caused by back-and-forth discussions about the product developed.

Silos

Participants draw on the lack of collaboration with likeness to departmental or team silos. While there is considerable benefit in collaboration, there are barriers which exist between different departments, teams and skill groups within the same team, in the incumbent company. This is akin to the multidisciplinary concept which Bernstein (2015) describes as different fields of work and expertise without any blending among the disciplines. There is reluctance to share information on ideas and ways to achieve goals, which creates misalignment to the company's priorities. This leads to a different way of work for teams and individuals who are working towards achieving the same goals. Therefore it is the leaders' responsibility to drive open collaboration among the teams to eliminate the barrier, which is a threat to product innovation (Mergel, 2016).

6.3.1.3 Knowledge

The concept of knowledge relates to different categories of experience that exist in an agile team. Xie, Fang, Zeng, & Huo (2016) mentions that knowledge is the centre of product innovation therefore companies should harness the knowledge at its disposal to improve innovation. The three sub-themes that emerged were knowledge sharing, prior knowledge and expert knowledge, are discussed below.

Knowledge sharing

Participants recognised the value of knowledge sharing as an essential element in accelerating product innovation. It is noted that knowledge sharing within the team and among other interdependent teams create consensus on the innovation goals

as a collective team. Participants displayed, through their responses, how the use of existing knowledge helps to train new team members so that new members can start adding value sooner. It was mentioned that knowledge is transferred across skill groups to ensure that business continues to operate if a member from a skill group is not available. Thus, removing the dependency on key persons.

Prior knowledge

The value of prior knowledge from past experiences speeds up product innovation. Team members do not have to spend long periods trying to design a product or resolve a technical blocker when developing products, as the team members with prior knowledge share information from past experiences. This information is disseminated through constant collaboration with team members and across different teams. The use and access of existing knowledge in the aforementioned and prior knowledge correlate with Xie et al. (2016) the notion of, the enabling effects of knowledge inertia.

Expert knowledge

A knowledge gap was highlighted between business stakeholders and technical stakeholders in understanding customers' needs. Agile project teams must understand the importance of customers' needs and their involvement in product innovation (Bosch-Sijtsema & Bosch, 2015). However technical stakeholders are distant from customers' needs and business stakeholders are closer to customers' needs but distant from the technical possibilities. This knowledge gap must be addressed to ensure that agile project teams develop customer-centric products.

6.3.1.4 Way of work

The agile way of work follows rigorous procedures to deal with the chaos created by innovation. This allows the team to be reliable to deliver on the product development and enables the team to adapt to customer demands (Dönmez et al., 2016). The two sub-themes that emerged were value and method, are discussed below.

Value

Participants agreed that the agile project team was able to adapt better to new needs from customers. The team was able to make changes to products as it was being developed by continually following daily check-in, sprint reviews and planning

procedures. These procedures provided the team with the necessary knowledge about the production items to focus on, which is of the highest value to customers. Thus, providing stability in product development and delivery as pointed out by Dönmez et al. (2016). Business stakeholders who are close to the customer do not practice the agile way of work due to lack of buy-in. This stifles innovation, as there is a divide on how the team should operate.

Method

Traditional methods allow the customer to view the product after six to nine months, where the contemporary agile method promotes continuous collaboration with customers and bank employees. This allows the team to fail fast and learn fast by testing the product with customers early in the development cycle as opposed to testing the product with the customer after six to nine months. This saves time and money and helps develop the right product for the customer (Mergel, 2016).

6.3.1.5 Process efficiency

The nature of the agile way of work offers process efficiency during the product development phase of innovation. The team is given the freedom to define the processes or guard established processes (Dönmez et al., 2016). The sub-theme that emerged was process innovation, discussed below

Process innovation

The freedom of establishing processes by team members within the team, allows the team to improve the flow of work through the team more efficiently. This enhances the teams' product delivery performance and results in faster innovation lead times and speed to market.

6.4 Discussion of research question three – RQ 3

RQ – 3: How does an agile team's voice (employee voice) shape the outcome of product innovation?

The purpose of this research question is to understand how team voice influences the outcome of product innovation within agile project teams. In addition to understanding the effects of team voice, many other contributors were also identified.

6.4.1. Contributors to innovation

Voice was identified as the primary contributor to product innovation, among other contributors such as customer, vision, and leadership. These contributors will be discussed in further detail.

6.4.1.1. Voice

Voice represents verbal communication by team members within the agile project with the aim of improving product innovation (Mackenzie et al., 2011). From the data presented in chapter 5. The four sub-themes that emerged were value, impact, status quo, and risk factor, are discussed below.

Value

The value of voice helps the product innovation process by making valuable propositions, invokes new concepts, and helps with practical problem-solving. Participants viewed their voice as adding tremendous value to the outcome of product innovation. Voicing out ideas help define the product that is being developed by igniting thought-provoking discussions among the team which help in the co-creation of a product. These discussions help team members become more innovative by articulating their rationale behind the idea. From the researchers' experience, this leads to solution propositions and further research which team members undertake to validate their ideas. Understanding the technical environment in which one works is key to having ones' voice heard as team members speak from an informed point of view. A team's voice is more effective as it encapsulates the voice of a group of specialists rather than an individual opinion.

Impact

The resulting impact of voice leads to questions being raised which help steer innovative product development in the right direction. These questions help identify product innovation gaps in the conceptual solution. The collective buy-in in product development is essential in constructing a product that is well thought out and fit for purpose. The expert views in the team must be heard so that buy-in is received or gaps are identified.

Status quo

Mackenzie et al. (2011) explains that team members challenge the status quo in an effort to improve the outcome of the work to be carried forward and not to hinder it. Building trust with customers is imperative when challenging the status quo. As an expert in the field of product innovation, it is incumbent on agile project team members to consistently learn the needs of the customer and provide expert technical insight. Challenging the status quo from an informed and knowledgeable point of view is more rewarding.

Risk factor

There is risk associated with not having a voice as this means that expert knowledge and insight is not revealed. Therefore, a voice that is not raised does not lead to the best possible outcome for product innovation. Participants also mentioned that sometimes voices could be disruptive when it is raised late into the product development process. Sherf, Sinha, Tangirala, & Awasty (2018) states that voice is not always helpful and can have harmful effects on product innovation. People who are more vocal than others tend to have a dominating effect on the team's voice which affect other expert voices being heard (Sherf et al., 2018). The dominating voice comes across as less concerned and smothers the use of expertise within the team. When teams start to get bigger, individual voices become fainter, resulting in the dominating voice being heard more than others. The merge of business stakeholders and IT stakeholders into one department results in the IT voices becoming indistinct, due to the leader who is more business orientated rather than IT orientated. These issues pose a risk to product innovation.

6.4.1.2. Customer

The alignment between the innovative product and the customers' requirements leads to superior customer satisfaction (Bunduchi, 2017). Customer satisfaction leads to improved company financial performance (Mackenzie et al., 2011) therefore, it is in the company's best interest to ensure that product innovation is centred around customer input (Bosch-Sijtsema & Bosch, 2015). The two sub-themes that emerged were centricity and insight, are discussed below.

Centricity

There was consensus among participants around the notion of customer-centricity and the improvement it makes to customer satisfaction. Business analysts ensure that product design incorporates the needs of customers, leaving no gap that may

lead to unfavourable customer experience. The alignment of product specifications to customers' expectations is reflected in the adoption of the product by the customer. Measuring adoption by tracking customer usability of the product can determine how customer-centric the product is. Low adoption is a result of a bad customer experience meaning the product did not incorporate the customer's needs.

Insight

Obtaining customer insight throughout the innovation process results in the product satisfying customers' needs. The agile project team needs to have good customer insight before designing the product. A better understanding of the customer outcome leads to business value that is created for the company. It is crucial that experiential testing is conducted with customers in order to gain new insight through the fail and learn principle of the agile way of work (Bosch-Sijtsema & Bosch, 2015).

6.4.1.3. Vision

The shared vision of members in the agile project team provides alignment to the product innovation strategy and also leads to trust among the team (Kremer, Villamor, & Aguinis, 2019). Strategy is the sub-theme that emerged and is discussed below.

Strategy

Participants agreed that, alignment of the product innovation strategy and alignment to the vision, is fundamental. The strategic intent of product innovation must always be visible to the agile project team. Continuous validation of product solutions must occur to ensure the alignment of the company's strategy.

6.4.1.4. Leadership

The employees who lead product innovation determine the direction of the agile project team. Therefore, it is key that leaders create an environment where innovation can thrive (Kremer et al., 2019). In creating this environment, it is incumbent for the leader to consider all stakeholders in the innovation process. Organisational structure is the sub-theme that emerged and is discussed below.

Organisational structure

Organisational structures aim to position the resources of the organisation in a specific formation to achieve the organisations' goals (Edison et al., 2018). The merge of departments in the incumbent company was an effort to create better innovation by closing the gap between customers and the innovation team which allowed sharing of information. However, participants explained that if the leader is business operations focussed, the priority for the department will be business operations focussed and, if the leader is IT focussed then the priority for the department will be IT focussed. The study conducted revealed that incorrect leader skillsets are placed into these roles, therefore, there is one-sided focus on business operations only. This creates demotivated and disengaged IT team members which stifles product innovation. Therefore, leaders that are responsible for managing the department must focus on both business operations and IT possibilities to meet customers' needs.

6.5 Discussion of research question four – RQ 4

RQ – 4: How does groupthink impact product innovation decisions?

The purpose of this research question is to determine whether groupthink exists within the innovation process and the effects of this on product innovation. Groupthink is evident in the innovation process.

6.5.1. Groupthink

Groupthink occurs when there is disregard for apparent risks; therefore, concerns raised are rationalised by the greater team (Valine, 2018). Groupthink is also evident when there is a lack of team members who raise their voice even though they disagree with the outcome of the discussion (Valine, 2018). The behaviours and outcomes will be discussed in sections to follow.

6.5.1.1. Behaviours

The behaviours which surfaced from the results shared in chapter 5 are the participation of business stakeholders and the lack of listening from business stakeholder.

Participation

Business stakeholders are close to external customers who have business relationships with the bank. They either deal with customers directly or lead teams

(end users) who deal directly with customers. As mentioned in the previous section, customer insight is vital in determining a suitable product for the customer. Hence, the agile project team requires business stakeholder input to develop innovative products that meet customer or end-user needs. Throughout the results from the interviews conducted, there is reference made to the business and IT stakeholders. There is a clear divide between these teams which can be drawn to the concept of multidisciplinary. Multidisciplinary is work of multiple disciplines with a lack of integration between these disciplines thus creating silos (Bernstein, 2015). Business and IT stakeholders working silos while trying to achieve the same goal. Business stakeholders' hand down customer requirements to the technical team and then wait for the product to be developed. There is no active participation from business stakeholders in the innovation process, and they do not view themselves as part of the innovation team. The belief is that IT stakeholders should carry out business stakeholder's product innovation requests without questioning the rationality of the product decision. The agile project team is viewed as a cost to the company and not an investment hence, business stakeholders – who belong to profit-making business units, have more authority over the enabling teams such as IT, HR, training and finance. This results in members of the agile team, not raising their voice as it does not change the outcome of the product decision or how it should work. The team develops a product knowing that it will fail to meet customers' needs which, results in rework, causing a waste of time and money at the expense of team demotivation.

Lack of listening

There is a lack of listening by business stakeholders as the voice of reason from IT stakeholders are silenced. Bosch-Sijtsema & Bosch (2015) mention that customers/users do not really know what they require from a system. Therefore, when a product is conceived, the voice of IT is vital in determining an innovative product that is best suited to customers' needs. Participants were adamant there is a lack of listening from business stakeholders, and their response is only to satisfy the concerns of the IT team without any action taken to address the concerns raised. If companies are to be more innovative, there must be cohesion between business and IT stakeholders.

6.5.1.2. Outcomes

The outcome of groupthink results in waste of resources, thus, introducing risk to the company itself. Waste will be discussed in more detail.

Waste

The effects of groupthink in the product innovation setting results in the wrong product or an identical product being developed. Often products are developed with little or no customer input, therefore, these products are not adopted by customers as it does not meet their needs. Products are also duplicated across the company as a result of the IT stakeholders voice not being heard. Liang et al. (2019) explains that expensive product innovation blunders can be avoided by articulating concerns to be addressed, which lead to better-suited customer products. Buy-in from all product innovation stakeholders is necessary. The risk associated with developing the wrong product is the loss of innovation capital funding, loss of time, reputational risk to the company and loss of team morale.

6.6 Conclusion

From the discussion, it is clear that participants are well aware of the importance of product innovation and the value it adds for the customer and the company. There is a general likeness between the findings and the literature. One of the notable concerns from the discussion is the divide between business stakeholders and IT stakeholders. This divide could largely be attributed to the organisational structure and culture within the company.

There was a high degree of interest and passion shown by participants on product innovation. It seemed that participants can't express their passion due to this divide between business stakeholders and IT stakeholders. This causes team demotivation and ultimately impacts successful product.

Chapter 7: Conclusion

7.1. Introduction

The study was aimed at understanding the influences of agile project teams and team voice on product innovation. The literature was not clear of the positive and negative impacts of this phenomenon and particularly in the investment banking context. Innovation is not only a means for companies to gain a competitive advantage over its competitors; it has now become a necessity for survival in the current economic times. Therefore, companies must understand the essential aspects surrounding product innovation,

7.2. Principal findings

The principal findings are centred around central topics that emerged under each research question; RQ-1 uncovered the components that makeup product innovation; RQ-2 determines the team elements that influence innovation; RQ-3 explains the contributors to innovation; RQ-4 discusses the behaviours and outcomes of groupthink.

7.2.1. Components of innovation

The study surfaced components of innovation that participants deemed essential in their current work environment. The solutions that were developed were believed to be the most important component of innovation as these solutions met customer-specific needs using technology. Resourcing was also noted as a critical component. The company used internal and external resources to develop innovative products. External parties were mainly used due to the company bureaucracy and barriers which leaders should be aware of and address. Time was considered an important component as it addressed the speed of product innovation from conceptualisation to market. It also revealed the undue time pressure being placed on the agile project team to develop and deliver product innovation. The role of each team member is vital to provide a complete, well-rounded product; however, role distinction is crucial as sometimes the lines are blurred when it comes to individual accountability. Product differentiation is of the utmost importance when competing in the banking industry, and companies need to pioneer product innovation to win the market. Innovation must be part of the day-to-day operations and not an event that occurs every once in a while. Hence the required budget allocations must be apportioned for innovation to continue.

7.2.2. Team elements of innovation

Culture was the most frequent theme that emerged from the findings. For the company to thrive in product innovation, change to the current way of operating and thinking is needed. Innovation must be part of the company's DNA, and the teams that are entrusted with developing innovative products must be empowered in an environment that is conducive for innovation to thrive. Collaboration was noted as the second most important element. Collaboration is vital in the innovation process as the team co-creates innovative product with business users and customers, thus tailoring products to customer's needs. However, a unified understanding amongst the team is crucial to ensure alignment with the company's goals. Collaboration also breaks down silos which exist in various teams; hence, presenting barriers to product innovation. Knowledge was the next important element which described the significance of knowledge sharing among the agile project teams as it eliminated key person dependencies. Prior knowledge and expert knowledge help the team enhance its problem-solving capabilities whilst improving on the speed of developing products. The agile way of work added huge value to the team by implementing a method of work which ensured that teams operate using principles which are conducive for the IT department. The way of work method also allows team members to contribute to process innovation within the team, which creates team operational efficiencies.

7.2.3. Contributors to innovation

Voice was undoubtedly the most frequent contributor to innovation highlighted by the participants. Voice was described as the ability to provide valuable input to production innovation by evoking new ideas and igniting conversations that lead to a better product outcome. The impact of voice helps identify gaps which would not have been discovered otherwise. Voice helps gain greater buy-in to the product being developed due to the inclusion of collective voices into the innovation process. Voice also challenges the status quo and does not accept the way things have always been done. However, it must be noted that it is essential to build trust before challenging the status quo, an idea or concept from an informed point of view. There is also risk associated with certain voices not being heard due to dominant voices overpowering expert voices (centralised voice), thus, stifling innovation. The customer was the next significant contributor to innovation. Developing customer-centric products requires the agile team to gain customer insight into the innovation process. Continuous collaboration and product testing with customers are vital; however, it must be closely

managed so as not to disrupt the product development process. The product innovation strategy and vision of the company must be made visible to the team to ensure alignment with their daily work. Leadership undertakes an integral role in the innovation process by protecting the culture of the team and ensure it has the required resources for product innovation. Organisational structures have a fundamental role in product innovation as it positions the resources in a manner that is either conducive for innovation or not.

7.2.4. Groupthink

The effects of groupthink are evident in the behaviours of agile project team members which lead to adverse outcomes. There is a clear divide between business and IT stakeholders, resulting in a lack of vital participation required from business stakeholders in the product innovation process. There is also a lack of the team's voice being heard which leads to sub-optimal products being developed, introducing risk to the company, which results in wasted resources.

7.2.5. Overview of agile project team influence on product innovation

Figure 10 is a graphical representation of how an agile project team and team voice influences product innovation. Team elements, contributors and groupthink all form part of agile project teams which influences the components of product innovation thus, shaping the outcome of innovative software products.

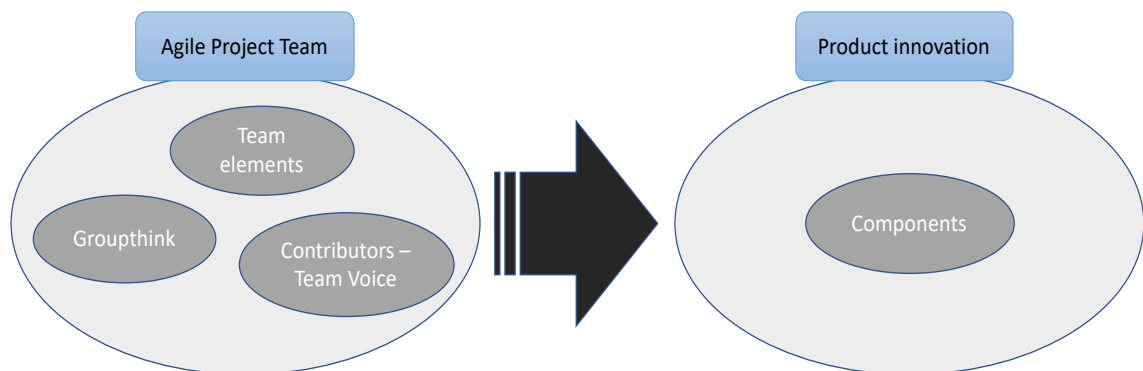


Figure 10: Overview of agile project team and team voice influence on product innovation

7.3. Implications for leadership and other relevant stakeholders

Using a qualitative research method, this study was able to explore the components of innovation, the team elements influencing innovation, the various contributors to

innovation and the effects of groupthink on innovation. The study has spawned a list of considerations for the leaders of innovation and other stakeholders who have a vested interest in innovation. Jung et al. (2003) states that leadership is identified as the most important factor in the innovation process as they influence creativity and performance. There are a few practical measures that leaders are able to take:

- Leadership must capitalise on the power of the agile process. Company bureaucracy presents barriers to innovation and should be actively managed. This creates undue time pressure which stifles innovation.
- Ongoing financial budgeting for innovation must be undertaken. Leaders can also carve 'innovation time' into day-to-day operations. This will allow team members to invent creative solutions.
- Leaders have a responsibility to protect the culture of the team (Mergel, 2016) by allowing open communication, leaving room for failure and learning.
- Leaders must encourage voice participation and actively break down departmental (skilled group) silos.

7.4. Limitations of the research

The limitations of the study can be attributed to an exploratory nature of qualitative research which results in discovering information that cannot be verified.

- There was a small sample size which limits the generalisability of the study
- There was no homogeneity in the chosen sample as participants consisted of employees of different ages, gender and cultural beliefs. There may have been a reluctance from some people to express their viewpoints and others not
- Online interviews resulted in the interviewer not being able to gauge expressions and body language
- The study was conducted from an IT perspective and did not include the views of other stakeholders.
- Interviewer bias may have influenced the participants' response given the tone in which the questions were presented (Galdas, 2017).
- The interviewer is also employed at the company, which may have influenced participants responses.

7.5. Suggestions for future research

The following are suggested areas of study based on the understanding and awareness gained:

- This study was written from an IT perspective, and further studies should be undertaken from a business perspective
- The concept of Transdisciplinary should be further studied to understand the relatedness to traditional banking institutes in South Africa.

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Appendix 1: Ethical clearance

MastersResearch2020 

Ethical Clearance Approved

To: 19384522@mygibs.co.za

Inbox - 19384522@mygibs.co.za 21 August 2020 at 12:12

M

**Gordon Institute
of Business Science**
University of Pretoria

**Ethical Clearance
Approved**

Dear Wesley Soligram,

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

[Ethical Clearance Form](#)

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

Appendix 2: Student/ Supervisor agreement

MBA STUDENT/ SUPERVISOR AGREEMENT

This document must be read in conjunction with the following GIBS policy documents:

The GIBS MBA Student Regulations The GIBS MBA Integrative Business Research Regulations – i.e. Green Pages

Any grievances, personal problems or disagreements that may arise between a postgraduate candidate and the supervisor must be referred to the GIBS MBA Research Management team, care of the Research Manager, Jennifer Theodoridis – theodoridisi@gibs.co.za (as well as the Research Officer, Rembu Mulaudzi – mulaudzir@gibs.co.za)

Name of student:

Wesley Clyde Soligram
.....

Student number:

19384522
.....

Student email address:

19384522@mygibs.co.za/ wesley.soligram@gmail.com
.....

Name of Supervisor:

Dr Richard Meissner
.....

Supervisor email address:

RMeissner@csir.co.za
.....

Agreement undertaken by THE STUDENT

Mr Wesley Clyde Soligram

..... (insert name)

accepts and undertakes the following roles and responsibilities:

1. Abiding by the relevant rules and regulations of the Gordon Institute of Business Science.
2. Ensure that all interactions with the Supervisor – either written or in person, always remains cordial.
3. Working independently under the guidance of the supervisor and ensuring that she or he stays abreast of the latest developments in the field of study.
4. Agreeing with the supervisor, and abiding by, a time schedule which outlines the expected completion dates of various stages of the research work, i.e. prepare and submit a detailed project plan (See Supervisor section, #5 below).
5. Attending pre-scheduled meetings with the supervisor and being adequately prepared for these consultation sessions (See Supervisor section, #6 below).
6. Submitting written work at times agreed upon by the student and the supervisor.
7. Taking account of the feedback provided by the supervisor before subsequent submission of written work.
8. Undertaking to submit the proposal and final report within the prescribed time for the completion of the degree and to plan accordingly.
9. Accepting responsibility for the overall coherent structure of the final dissertation or report and, as far as possible, submitting written work that is free of spelling mistakes, grammatical errors and incorrect punctuation.
10. Informing the supervisor of any absence or circumstances that may affect the research progress and timeline.

Agreement undertaken by THE SUPERVISOR

Dr Richard Meissner

..... (insert name)

accepts and undertakes the following roles and responsibilities:

1. Abiding by the relevant rules and regulations of the University.
2. Ensure that all interactions with the Student – either written or in person, remains cordial at all times.
3. Assisting the student in building knowledge and research skills in the specific area of postgraduate study and relevant to the level of the degree.
4. Ensuring that the proposed research project is feasible, of an appropriate level for the degree under consideration, and that the necessary resources and facilities will be available to enable the student to complete the research timeously.
5. Providing information on the conditions to be met in order to achieve satisfactory progress/performance and assisting with the construction of a written time schedule which outlines the expected completion dates of various stages of the research work.
6. Being accessible to the student by attending meetings in line with a schedule agreed upon in advance by the supervisor and the student and being prepared for the meetings.
7. Implementing an arrangement for student supervision in cases where the supervisor is away from the University e.g. sick leave, sabbatical leave, or leaves the employ of the University, and communicating these arrangements to the student timeously.
8. Accepting submission of written work at intervals agreed on by the student and supervisor, providing constructive comment and criticism within a time frame jointly agreed on at the start of the research, and informing the student, in writing, of any inadequacy relating to progress or work, in relation to the expectations previously agreed on by the student and supervisor.
9. Assisting the student with the production of the dissertation or report, providing guidance on technical aspects of writing including discipline-specific requirements.
10. Meet all assessment and pre-arranged feedback deadlines.

THE STUDENT AND THE SUPERVISOR:

Confirm that we have read and understood this Memorandum of Agreement and agree to accept its content for the duration of the period of study in respect of the degree as specified below.

Name of student:

Wesley Clyde Soligram
.....

Student number:

19384522
.....

Signed at Johannesburg on 21 June 2020

Student's signature


.....

Name of supervisor:

Dr Richard Meissner
.....

Supervisor's signature:


.....

Signed at Hartbeespoort on 20 April 2020 (date)

Appendix 3: Informed Consent form

Dear *Participant Name*

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on the influence of team voice on product (software) innovation and am trying to find out more about the positive or negative effects of this. Our interview is expected to last about an hour and will help us understand how agile project teams voice influence on product (software) innovation. **Your participation is voluntary, and you can withdraw at any time without penalty.** All data will be reported without identifiers and participants information will remain confidential. A copy of this consent will be sent to you for your records. If you have any concerns, please contact my supervisor or me. Our details are provided below.

Signature of participant: _____ Date: _____

Online voice interviews:

Do you consent to the session being recorded: Yes No

Do you consent to participate in the interview: Yes No

Voice confirmation received (if online): Yes No

Researcher name: Wesley Soligram

Email: wesley.soligram@rmb.co.za

Phone: 0826753587

Signature of researcher: _____ Date: _____

Research Supervisor: Dr Richard Meissner

Email: rmeissner@csir.co.za

Phone: 071 677 6262

Signature of researcher: _____ Date: _____

Appendix 4: Company consent to conduct research

● Buys, Kgotso

14 August 2020 at 09:37

KB

RE: RMB Introductory letter - MBA research to be conducted
To: Soligram, Wesley

Hi Wesley,

This is good. I am happy to approve.
Please contact the team members directly to arrange the interviews.

Good luck.

From: Soligram, Wesley <Wesley.Soligram@rmb.co.za>
Sent: 12 August 2020 10:12 PM
To: Buys, Kgotso <kgotso.buys@rmb.co.za>
Subject: RMB Introductory letter - MBA research to be conducted

Dear Kgotso,

I am currently a student at the University of Pretoria's Gordon Institute of Business Science (GIBS) and completing my research in partial fulfilment of an MBA.

I am conducting research on the influence of team voice on product (software) innovation and am trying to find out more about the positive or negative effects of this phenomenon. In order to gain insights on this area of interest, I require Rand Merchant Bank's (RMB) permission to interview twelve to sixteen RMB's staff members. An interview is expected to last about an hour and will be conducted on Microsoft teams. This study will help us understand how agile project teams voices influences product (software) innovation either positively or negatively. **Participation is voluntary, and participants can withdraw at any time without penalty.** All data will be reported without identifiers and will remain anonymous.

If you have any concerns, please contact my supervisor or me. Our details are provided below.

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Appendix 5: Consistency Matrix

Research question	Sections is the literature review	Interview questions	Data Collection tools	Analysis technique
How does the role of product innovation contribute to the success of a company?	2.2	Tell me about your role and how it contributes to product (software) innovation? Tell me about product (software) innovation and its contribution to the success of the company?	Online semi-structured Interviews	Descriptive data analysis (Using CAQDAS)
How do agile project teams influence product innovation?	2.3	Tell me about the importance of collaboration and knowledge sharing in agile teams? How does an agile team contribute to the successful product (software) innovations?	Online semi-structured Interviews	Descriptive data analysis (Using CAQDAS)
How does agile project team's voice (employee voice) shape the outcome of product innovation?	2.4	How does your voice contribute to the creativity, problem solving and overall development of product innovation? Tell me about your voice and the contribution it makes to the overall team's voice on product (software) innovation? How does your voice contribute to team decisions about the outcome of product innovation? Tell me about your views on product (software) innovation decisions being made?	Online semi-structured Interviews	Descriptive data analysis (Using CAQDAS)
How does groupthink impact product innovation decisions?	2.5	Are your comments or contributions (voice) considered or ignored when decisions are taken on the most appropriate product innovation? Tell me more about your answer?	Online semi-structured Interviews	Descriptive data analysis (Using CAQDAS)

		When the group (collective team) steers into a particular decision or direction do you remain silent even though you disagree? Tell me more about your answer?		
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Appendix 6: Project plan

Phase	Activity	Duration	Completion date
Supervisor engagement	Meeting-1 with Supervisor	1 hour	18 June 2020
Research proposal	Complete purpose, literature review and proposed research methodology	3 weeks	22 June 2020
Elective	Strategy and general management New venture creation Persuasion Dynamic innovation	11 days	7, 8, 10, 11, 12, 17, 18, 19, 24, 25, 26 July
Ethical clearance	Complete ethical clear application	1 week	16 July 2020
Literature review	Complete literature review	1 month	31 July 2020
Participant interviews	Set up interviews with participants	1 week	31 July 2020
Elective	Strategy and innovation	3 days	4-6 August 2020
Supervisor engagement	Meeting-2 with Supervisor	1 hour	7 August 2020
Data collection	Meet with participants	2 weeks	31 August
Data Analysis	Transcribe and analyse data	1 Month	30 September
Supervisor engagement	Meeting-3 with Supervisor	1 hour	9 October 2020
Global module	Global module	9 Days	10-18 October
Research report	Complete research report	1 Month	31 October 2020
Research report	Review of research report	2 weeks	13 November 2020
Research report	Submit research report	1 day	1 December 2020

Appendix 7: Interview questions

I am conducting research on the influence of team voice on product (software) innovation and am trying to find out more about the positive or negative effects of this phenomenon. This interview is expected to last about an hour and will help us understand how agile project teams voice influence on product (software) innovation.

Respondent details

Name:

Role in the agile team:

Date:

Time:

- **Product innovation (Title not mentioned to the respondent)**
 - i. Tell me about your role and how it contributes to product (software) innovation?
 - ii. Tell me about product (software) innovation and its contribution to the success of the company?

- **Agile project team influence/ s (Title not mentioned to the respondent)**
 - iii. Tell me about the importance of collaboration and knowledge sharing in agile teams?
 - iv. How does an agile team contribute to the successful product (software) innovations?

- **Team voice (employee voice) (Title not mentioned to the respondent)**
 - v. How does your voice contribute to the creativity, problem solving and overall development of product innovation?
 - vi. Tell me about your voice and the contribution it makes to the overall team's voice on product (software) innovations?
 - vii. How does your voice contribute to team decisions about the outcome of product innovation?
 - viii. Tell me about your views on product (software) innovation decisions being made?

- **Groupthink (Title not mentioned to the respondent)**
 - ix. Are your comments or contributions (voice) considered or ignored when decisions are taken on the most appropriate product innovation? Tell me more about your answer?
 - x. When the group (collective team) steers into a particular decision or direction do you remain silent even though you disagree? Tell me more about your answer?

Appendix 8: ATLAS.TI CODE BOOK

Individual codes

- Adoption of innovation
- Always speak up
- Area of expertise
- Ask for input (Voice)
- Automation of manual systems
- Build trust
- Business and IT divide
- Business stakeholders not agile
- Challenging the status quo
- Change requires innovation
- Client centric innovation
- Co-creation of solutions
- Collaboration between team members
- Common team understanding
- Company bureaucracy - Outsourcing
- Complexity of innovation
- Continuous team voice
- Creating additional time
- Culture of the current generation
- Customer Centricity
- Dangers of silos
- Digitization banking processes
- Diluted technical skills
- Driving cost effectiveness
- Empowering the team
- Expert knowledge not acknowledged
- Fail fast learn fast
- Faint voice
- False assumption of voice
- Fear of ridicule
- Fit for purpose
- Fix the mistakes
- Freedom to explore
- Full circle of understanding
- Greater team involvement
- Hierarchy in structure
- Human element

- Identifying gaps
- Identifying innovation patterns
- Importance collective voice
- Importance knowledge sharing
- Importance of agile way of working
- Importance of Building relationships
- Importance of business knowledge
- Importance of buy-in
- Importance of listening
- Importance of past knowledge and experience
- Importance of pioneering innovation
- Importance of product innovation
- Importance of strategy and vision
- Importance of technical knowledge
- Importance of voice
- Inconsistence practices between teams
- Inconsistent voice input
- Incorrect/ duplicate product
- Incremental innovation
- Inefficient innovative process
- Innovation budget constraints
- Innovation DNA
- Issues of innovation
- Key man dependencies
- KPI drives behaviour
- Lack Innovation understanding
- Lack of business involvement
- Lack of collaboration
- Lack of knowledge sharing
- Lack of product innovation focus
- Lack of solution understanding
- Lack of strategy understanding
- Leadership influence on product innovation
- Limited business knowledge
- New way of thinking
- One team culture
- One voice
- Operational efficiencies
- Organisational structures

- Outsource innovation
- Pressure from top leadership
- Pressure of timelines
- Process Innovation
- Product design
- Product innovation is new
- Product rework
- Psychological safety
- Quick wins
- Recommendation for innovation
- Remain silent
- Risk factor
- Role in innovation process
- Role influence on product innovation
- Safe environment
- Scalable innovation
- Solution not used
- Speed of delivery
- Staff Performance issues
- Success breeds complacency
- Team alignment to goals
- Team demotivation
- Team size
- Technology as an enabler
- The importance of role distinction
- Time pressure stifles innovation
- Time to learn
- Understand business value
- Understand customer needs
- Understand the target market
- Understanding Agile
- Undesired solutions
- Value of voice
- Value the naive view
- Visibility of agile
- Voice confidence
- Voice influence on product
- Voice is heard
- Voice is heard late

- Voice not heard
- Wasted time and resources
- Willingness to listen
- Wrong decisions

Code groups

- ◇ Budget
- ◇ Collaboration
- ◇ Culture
- ◇ Customer
- ◇ Differentiation
- ◇ Knowledge
- ◇ Leadership
- ◇ Listening
- ◇ Participation
- ◇ Process efficiency
- ◇ Resourcing
- ◇ Risk
- ◇ Role
- ◇ Silence
- ◇ Solutions
- ◇ Structure
- ◇ Team dynamics
- ◇ Time
- ◇ Vision
- ◇ Voice
- ◇ Waste
- ◇ Way of work