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Developing an effective change management framework for agile projects in South Africa

Research Article

by

Kanya Mhlongo

Thesis presented in partial fulfilment for the degree of Master of Business Administration to the Faculty of Commerce, Law, and Management, University of the Witwatersrand

March 2021

DECLARATION

I Kanya Mhlongo declare that this research report entitled 'Developing an effective change management framework for agile projects in South Africa' is my own unaided work. I have acknowledged, attributed, and referenced all ideas sourced elsewhere. I am hereby submitting it in partial fulfilment of the requirements of the degree of Master of Business Administration at the University of the Witwatersrand, Johannesburg. I have not submitted this report before for any other degree or examination to any other institution.

Kanya Mhlongo

Signed at Johannesburg on 31st March 2021

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ABSTRACT

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Thesis title: Understanding the perception and experiences of employees using agile ways of working in their daily operations at AB InBev Africa, for an effective change management framework.

Greater expansion opportunities are on the increase for organisations to scale agile across more business functions besides the common IT, Operations and Development departments. In South Africa, AB InBev has applied Agile ways of working within their operations. However, only 42% of Agile projects are successfully implemented (Standish Group, 2018) as intended in the initial project plan.

Several factors can be attributed to this such as, organisational culture, resistance from employees to accept the product and insufficient support from senior leadership – change management. The direction on how to integrate change management in an Agile project has been quite shallow (Prosci, 2018). Research is needed in both areas to provide new approaches that harmonise change management and employee experiences with agile ways of working.

Johannesburg, March 2021

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Lastly to my number 1 guy, S'phetho Mhlongo – I hope I made you proud. Mommy loves you.

DEFINITION OF KEY TERMS AND CONCEPTS

Acceptance criteria Acceptance criteria provides detail that defines when an Epic or Story is complete and satisfy customer requirement. They contain a check list of the conditions for satisfaction of Epics and Stories and the technical criteria or boundaries.

Agility The ability of a business to respond rapidly to changes in the internal and external environment without losing momentum or vision.

Backlog The sum of all the stories and tasks that will conform the product in its totality. Normally, the backlog is form by features, epics and stories.

Backlog Refinement Backlog Refinement is a ceremony held during the Sprint designed to achieve greater certainty on upcoming work. Stories and Epics on the Backlog are broken down to a greater fidelity to help them be ready for the Squad to work on. The ceremony focuses on the stories that are scheduled to be completed in the next 1-3 Sprints.

Customer Someone who is affected by or receiving the products undeliverables from the team, can be internal or external

Daily scrum (stand-up) Daily stand-ups are 15 minute meetings that coordinate the day's work using a Sprint Board. The whole Squad is present. The stand-up focuses on an update of the Squad members on planned activities for the day and tasks completed. During the stand-up, members can raise blockers and obstacles. Blockers are assigned to a Squad member to resolve outside of the stand-up meeting.

Efficiency Acting or producing with a minimum of waste, expense, or unnecessary effort. Framework A system of rules, ideas, or beliefs that supports a structure. In this case, the Scrum framework is the guideline that supports our Agile transformation and practices.

Impediments Any person, process or system that is negatively impacting the timely delivery of work for the squad. They typically impact multiple stories or items and require people outside the squad to resolve. These are placed on the Impediments Board to ensure they are actioned.

Product An article or service resulting of the team's development process is aligned with the objectives of the product.

Product Owner Product Owners coordinate the 'what' of a Squad and are responsible for end-to-end delivery of a product in line with the Squad Mission. Product Owners own the Squad Backlog and run the prioritization process.

Project A collaborative enterprise of planned work that is finished over a period of time and intended to achieve a particular purpose. In Scrum it will be the sum of all efforts and work to complete a specific product.

Retrospective In a Retrospective the Squad comes together to reflect on the last Sprint and discuss improvements to act upon. The Retrospective will provide a set of improvements to be implemented in the next Sprints. However, only one improvement should implemented be in the sprint.

Scrum Scrum is one of the frameworks that fits the Agile mindset as it allows you to manage routines and projects while eliminating wastes. It summarizes on their 3-5-3 rules: 3 artifacts, 5 events and 3 roles. The term comes from rugby, referring to the game position where all the team is focused on achivieng the same thing: getting the ball in a cross hulk line up of people.

Scrum Master Scrum Masters facilitate new ways of working ceremonies, support Squad members to resolve problems and overcome obstacles and help embed new ways of working.

Sprint A Sprint is a set period of time when specific work has to be completed and made ready for review. Each Sprint begins with a Sprint Planning, based on a squad backlog. During the Sprint, the team holds daily stand-ups with the help of a scrum board. Towards the end of the Sprint, a backlog refinement is held. At the end of the Sprint, the Squad gives a Review to relevant stakeholders. Finally, the team will get together for a retrospective.

Sprint Board Board of tasks (sprint backlog) based on the **Kanban** approach where all stories are arranged visually so everyone inside and outside the team can check the item's status (to do, doing, done).

Sprint Planning Each sprint begins with a Sprint Planning to come to a shared understanding of what work needs to be done and who will do it. The Sprint Planning ensures squad members commit to the work, efficiently coordinate their efforts and focus on the most important and valuable activities.

Sprint Review Provides the opportunity for the Squad to show sprint outcome and get feedback from stakeholders. Review happens at the end of each sprint at squad level, showing the product increment to the stakeholders and customers. Squad (Team) A **Scrum Team** (or squad) is a collection of individuals working together with a common goal to deliver required product increment. The team is small, autonomous and multi-functional. Stakeholders A person with an interest or concern in a product or process. An

indirect beneficiary of a team's effort that can vote on important and specific decisions.

Story A Story is a valuable, testable, working outcome delivered to the customer and aligned to an Epic. It is executed by one Squad to deliver in one sprint. Stories need to be defined in the Backlog Refinement and planned in the sprint planning before the Squad can commence work.

Task A Task is a small unit of work to be completed by one person. A Story can be broken down into tasks if required to get greater clarity on what is required to deliver the story.

Team 3-7 people that deliver a complete product through different Sprints. These teams should be cross-functional and autonomous, so its members have all the skills needed to complete the project.

Waterfall (Project Management) Waterfall is a project management approach where a project is completed in distinct stages and moved step by step toward ultimate release to consumers. You make a big plan upfront and then execute in a linear fashion, hoping there won't be any changes in the plan.

WoW Way of Working, referring to agile ways of working.

1 INTRODUCTION TO THE RESEARCH

1.1 Background and context

This research aims to develop an effective change management framework for agile projects, by examining the perceptions and experiences of employees at AB InBev Africa who make use of agile ways of working in their daily operations at AB InBev Africa. Agile refers to a developmental method that uses an iterative method through frequent consultations with a customer and delivering a project in smaller achievements, within shorter timeframes. (Cao *et al*, 2009). However, before discussing the research conceptualisation in Section 1.2, the first section will introduce the terms and concepts that will be utilised. The research conceptualisation section provides for the research problem statement (Section 1.2.1) and consequently the purpose of this research (Section 0) as well as the research questions (Section 1.2.3). The delimitations and assumptions of the research study are provided in Section 1.3, while the significance of the research study in Section 1.4 provides a preface to the research report in Section 1.5.

1.1.1 An Introduction to Agile Project Management

Agile is a project development methodology that is designed to respond quickly to change. It was first formulated in 2001, primarily for software-based projects. Increasingly, more organisations are expanding Agile to their core business units, taking advantage of the efficiencies that have been reported in the IT space (Edison et al, 2017).

The principles of Agile are guided by the Agile Manifesto (Beck, 2001) which states that individuals and interactions are valued over processes and tools; Less focus is placed on comprehensive documentation, but more on working software; Customer collaboration should exceed contract negotiations; and lastly, Agile values a quicker response to change rather than following a plan. (Fowler & Highsmith, 2001)

Various iterations of Agile exist, the most popular amongst larger organisations being SCRUM (Figure 1). A play on the rugby technique, Scrum is a simple framework for developing, delivering, and sustaining complex products; with the emphasis of teamwork. It consists of teams with associated roles, that deliver a product in short increments, namely Sprints. An Agile project starts with the customer's vision or an identified need.

The customer forms part of the team, a 'squad' in agile terms, and is tasked with the role of a Product Owner. The squad, a cross-functional group of individuals led by a Scrum Master (Project Lead), initiate their *Sprint planning* sessions by understanding the customer needs through formulating 'user stories' which can be broken down into small 'chunks' of actionable tasks that are delivered incrementally in 2 – 4 week periods. The squad's routine starts with *daily scrum meetings*, which are short meetings (no longer than 15 minutes). These daily meetings are used to drive visibility on the squad's velocity, but also importantly to communicate potential impediments that could risk the project being delivered. Squads can make use of the KANBAN tool to drive the visibility of a team's performance, allowing team members to see the state of every piece of work at any time (Atlassian Agile Coach, 2019). It follows a 3-step flow: To Do, Doing and Done. *The sprint review* takes place on a weekly basis with the objective to provide feedback to the Product owner regarding the squad's delivery and is also used as an opportunity to showcase the product. *Sprint retrospectives* follow the review and are only attended by the squad. The intention of retrospectives is for the team to regroup and answer: "What went well with the sprint?", "What can we do better?". Sprint retrospectives are also an opportunity for the squad to work through team dynamics.

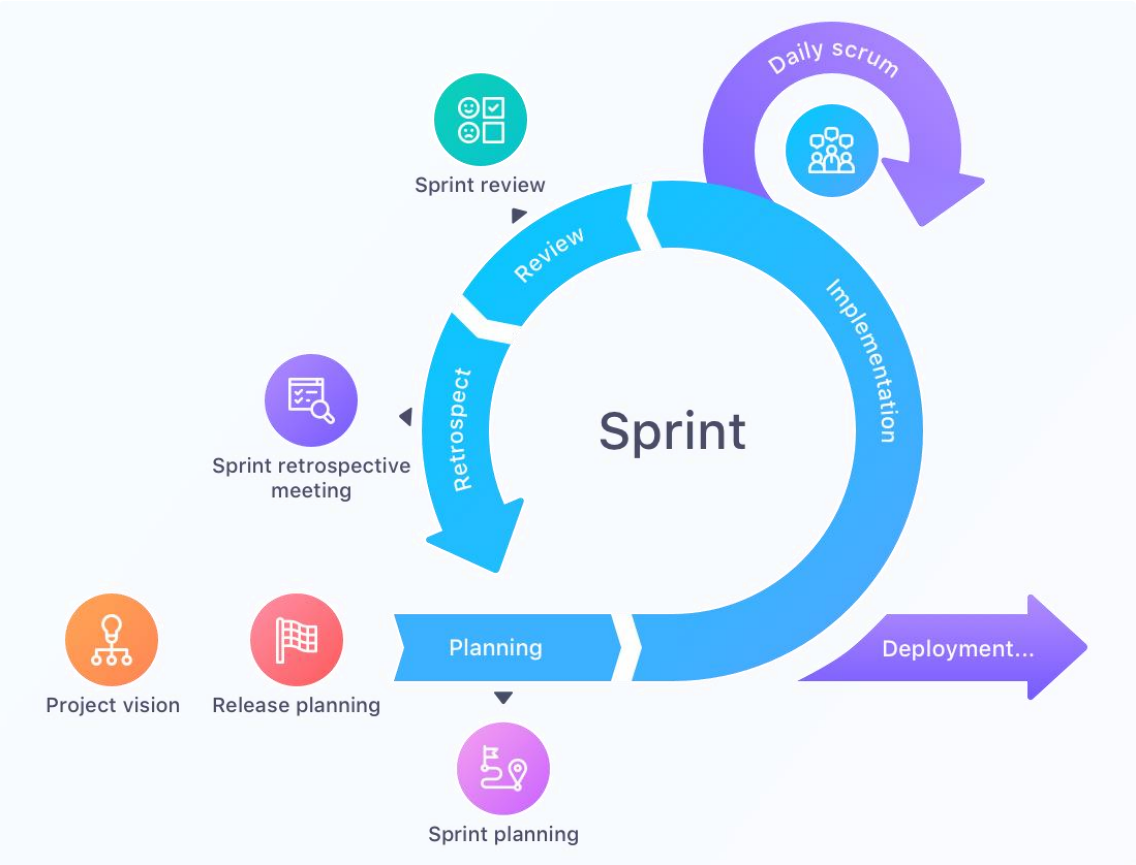


Figure 1 - Agile SCRUM process (Source: Infinity)

1.1.2 Agile as an effective operational tool in organisations

Agile methods continue to gain popularity in South Africa (Noruwana & Tanner, 2012) with more businesses using it as a management tool in project based business functions (Sibotho, 2012), due to their perceived benefits of cost reduction, quick delivery of innovative products and improved employee engagement. Agile removes the hierarchal and siloed approach of the traditional methods, its teams are small and cross-functional, allowing for a more collaborative, interactive, and flexible tool in organisations. (Fernandez & Fernandez, 2008) It also enables organisations to manage their resources effectively by through prioritisation, and in the current ever-changing global market it has become increasingly important to adapt and accommodate any change requirements faster and efficiently (Cao, Mohan, Xu, & Ramesh, 2009).

1.1.3 Change Management in Agile Projects

Tim Creasey, a globally recognised leader of change management states that effective change management is a cost avoidance technique and a risk mitigation tactic, (Creasey,

2020) required for the successul implementation of projects. It has a strong impact on overall employee morale and an organisations competitive advantage.

From an Agile perspective most change management procedures are time consuming, too complicated, too slow and too late (Deshler, 2017). The milestones of a change management project follow a linear and sequential flow whilst Agile is a more continuous and iterative project (And Change, 2017). Existing change management theories – Lewin's change model, Kotter's 8-steps, ADKAR – are best suited for the traditional project management models, such as 'Waterfall'. (Filfilan, 2019) implies that implementing Agile is not an easy task for organisations and it requires an organisational culture that embraces change. Due to multiple incremental changes prior to the final end-product Agile requires changes to be adapted and implemented in a faster pace. As stated in the Agile manifesto, customers are at the core of Agile project management. Its successes are measured by a user's acceptance of the product and its usability. (Kropp & Meier, 2015) also identified that satisfied customers and continuous effective communication were important success factors of agile projects. Change management needs to adapt to Agile and be able to pivot to employee needs at any given phase of a project (Prosci, 2018).

1.2 Research conceptualisation

1.2.1 The research problem statement

There is limited research on Agile methodologies within the South African context (Noruwana & Tanner, 2012) and recent research has been mainly based on the software development aspect of the business environment. In their research (Standish Group, 2018) found that only 42% of Agile projects succeed and are implemented as part of the initial project plan. Several factors can be attributed to this, such as: organisational culture, resistance from employees to accept the product and insufficient support from senior leadership – these fall under the hue of change management. Research is required, in both areas, to bridge the gap and harmonise change management and agile methodologies for South African organisations seeking to apply agile methodology to their operations.

Discenza & Forman (2007) stated that there is a greater chance of success in projects when customers are informed, providing meaningful input during every phase of

requirements elicitation, product description and implementation. (Prosci, 2017) supports this by attributing early engagement of change managers, consistent communication, senior leadership buy-in and celebrating early wins to an Agile project's success. Agile has exposed weaknesses in conventional change management approaches (Spelman, Fish, & Webb, 2015), most organisational change efforts take longer and cost more money than leaders and managers anticipate (Gleeson, 2017).

Subproblem 1: Failure to incorporate change management in Agile project impacts on employee engagement and job satisfaction

And Change (2017) states that one of the challenges with Agile is that it pays insufficient attention to the individuals that are affected by the changes. (Bogner 2011) observed that although this customer-led Agile approach significantly reduces the magnitude of changes implemented, it does however increase their frequency. Instead of being asked to adapt to a single change, stakeholders now need to accustom themselves to an ongoing series of small, incremental releases every month or two.

Subproblem 2: There is an insufficient application of change management frameworks in Agile projects

There has not been a standard change management framework that supports agile project management in South Africa, and the direction on how to integrate change management in an Agile project has been quite shallow (Prosci, 2017).
Prosci (2017) states that major obstacles to incorporating change management in agile were often symptoms of lack of buy-in into Agile in the first place. (Gandomani & Zulzalil, 2013) adds that cultural issues within organisations need to be taken into consideration, they suggested that Agile transformation should be done using a change management strategy that will considers all significant factors like people, organization, management, process and technology.

1.2.2 The research purpose (aim and objectives) statement

The purpose of this study is to develop a change management framework that is best suited and applicable for agile projects in South Africa, which leads to sustained project implementation success.

The objective of the study is to gain an understanding of the perceptions and experiences of Agile ways of working in a South African operational environment. This will be achieved by sourcing relevant literature and previous studies on change management and agile methodology. A set of qualitative data will be analysed from data collected through semi-structured interviews with employees of AB InBev Africa's continuous improvement function in South Africa, which has implemented Agile ways of working.

1.2.3 The research questions

Question 1: What are the perceptions and experiences of agile practitioners in an operational environment at AB InBev Africa?

Question 2: What learnings from agile practitioners in an operational environment at AB InBev Africa can be embedded into a change management framework?

1.3 Delimitations and assumptions of the research study

ASSUMPTIONS

The qualitative research is driven by human engagements which can alter dependant on the conditions experienced during the time of the research such as, an individual's incentivised target, relationships with stakeholders at a point in time and personal experienced within the organisation. This research assumes that the individuals participating in the interviews and case study are knowledgeable of Agile concepts and its project management methodologies. That they will answer the interview questions in an honest manner, without any other incentive to do so, but to advance the objectives of this research study.

DELIMITATIONS

The study will also be conducted using a group of AB InBev employees within the South African market and will not span across the broader, global organisation.

The research will be conducted within the South African context of applying a change management framework to the agile projects.

1.4 Significance of the research study

70% of change initiatives fail to achieve their goals (Ewenstein, Smith, & Sologar, 2015) thus demand for change literature remains high with leaders striving to perfect their project implementations (Paton & James, 2008). Ewenstein (2015) continue to add that change management has become a critical core competency required for public and private enterprises.

Greater expansion opportunities are on the increase for organisations to scale agile across more business functions besides the common IT, Operations and Development departments. However, the direction on how to integrate change management in an Agile project has been quite shallow (Prosci, 2018). In their article for McKinsey (Handscomb et al, 2018) warned that ignoring the change-management implications of agile is one of the biggest mistakes large organizations often make.

The 14th annual state of Agile report (Digital.ai, 2020) identified customer centricity as one of the top measures for Agile projects success. (Alexander, 2018) further noted that throughout the process Agile is focused on customers, project teams and developers, but neglects the end-user. (Knops, 2020) adds that one of the greatest stumbling blocks in agile is the lack of planning relating to the human aspect of change. When the human aspect of change is managed effectively, fewer obstacles and greater success of Agile initiatives can be achieved (Prosci, 2018).

Therefore, this study will make an empirical contribution to establish an effective change management framework upfront in order to achieve the benefits which Agile promises; and for organisations within South Africa to attain their returns on investment.

1.5 Preface to the research report

To this end, the report has six chapters. Following this introductory Chapter 2 provides a literature review covering the problem, the past studies, the explanatory framework, and the conceptual framework. Chapter 3 discusses the research strategy, design, procedures,

reliability, and validity measures as well as limitations. Chapter 4 and Chapter presents and discusses the findings, respectively, to interrogating our research questions while Chapter 6 summarises and concludes the research.

2 LITERATURE REVIEW

This chapter has three broad objectives; namely to understand the research problem, to identify the knowledge gap, and to develop a framework for interpreting the research findings. Specifically, in Section 2.1, we detail the research problem. In Section 2.2, we review literature on studies that have attempted a similar study or research. With information arising from Section 2.2, we identify and detail qualitative attributes or quantitative variables that are key to this research in Section 2.3 as well as a framework that we will use to interpret our research findings in Section 2.4.

2.1 Research problem analysis [Symptoms, root causes, and consequences of Change management application in Agile projects in South Africa]

The proposed study will provide a change management framework that will guide business leaders through the implementation of agile projects within South African organisations, in order to derive sustained business value and achieve greater levels of employee engagement, therefore competitive advantage.

Theories of Change Management

Change is inevitable in the current world that we live in. Businesses are constantly required to adapt to changes, either driven by economic markets or customer preferences amongst many others. (Das, 2019) found that there were similarities and interlinks between three change management models. Lewin's three states of change, Kotter's eight-steps and Hiatt's ADKAR. He states that the sense of urgency steps in Kotter's eight steps model could be applied to the 'unfreeze' stage in Lewin's model, whose foundation begins with identifying an initial problem. Similarly, the 'A' and 'D' of ADKAR, awareness and desire, could also be mapped to Kotter's 'unfreezing'.

Change management, as a professional discipline in the business environment formed in the 1990s, comprising of standard change strategies which included communications plans, stakeholder engagement, training and impact assessments (Spelman, Fish, & Webb,

2015). However the pioneer of traditional change management was Social-Psychologist Kurt Lewin (1947) who formulated the Planned change model which incorporated: Field work, Group dynamics and the well-known three states of change which remains relevant to date (). (Burnes, 2004) credits this model for its democratic and humanistic approach to change. The three-steps are:

Unfreezing

This stage involves challenging the status quo, identifying the required need for change. Lewin (1947) believed that before change could be initiated, the old ways of working or thinking would need to be 'unfrozen'. He acknowledged this as challenging for humans and could not easily be replicated in various situations.

Moving

Lewin believed that there was is a pattern to changes, and they fluctuate constantly according to environment. The moving stage investigates the trial and error of the change process. Lewin states that planned change is difficult and requires continuous measuring, monitoring and evaluation. People and organisations take time to embrace a new direction, this step also encourages consistent communication and positioning the change as a value-add to those impacted by the change.

Refreezing

Stability. Lewis noted that once a change is implemented, a "refreeze" needs to happen within the organisation. This allows the change to be internalised and institutionalised. Put simply this is to ensure that people adapt to the new normal and build their confidence as they familiarise themselves with the new way of working (Lewins, 1947).

Critics found that the framework assumed that organisations operated in rigid, standard state and that the framework was not suitable for complex and large projects. The model also focused on specific group work and not organisation-wide changes in order to incorporate the dynamic issues of organisation culture. Additionally, (Burnes, 2004) noted that Lewin's framework did not consider organisational politics nor the consideration of two-way communication and non-hierarchical organisations.

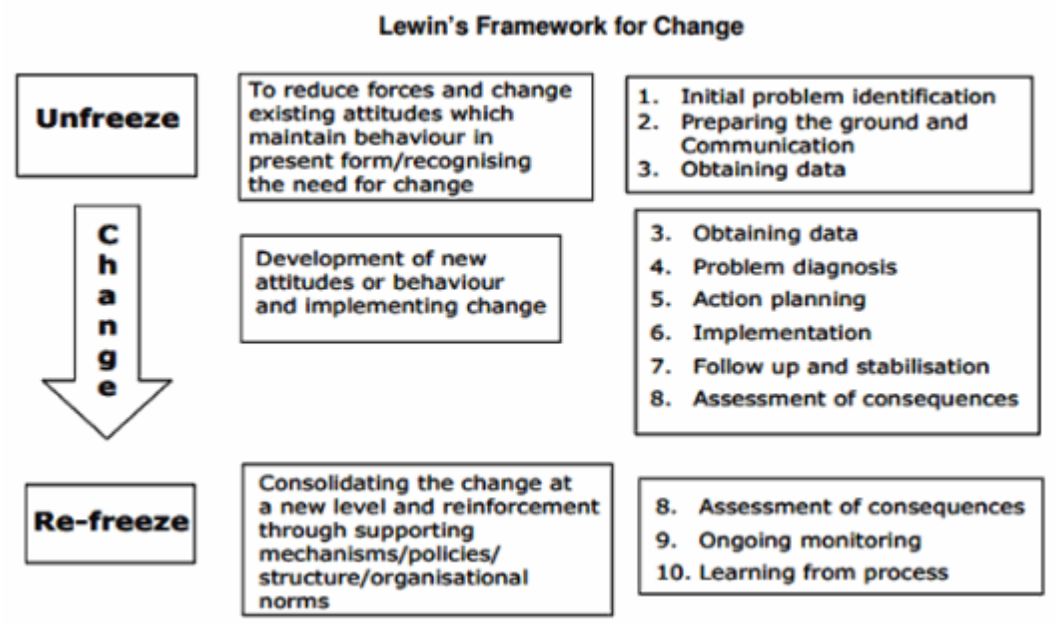


Figure 2 - Kurt Lewin's framework for change

Other change researchers that have made an strides in advancing the change management frameworks and models in recent years include John Kotter (1996) "8 step change model" and ADKAR, a model created by Hiatt (Prosci, 2018) which will be analysed for the purpose of this review.

Kotter's strategic eight-step model for transforming organisations

Kotter's eight-step model (**Error! Reference source not found.**) was developed after a study across a diverse group of organisations to identify issues related to failed change initiatives. Key outcomes of the model were that the change process is everchanging and undergoes multiple phases (Mento, Jones, & Dirndofer, 2002). The eight steps of the model can be categorised into three themes namely: *Creating a climate for change; Engaging and enabling the organisation* and *Implementing and sustaining for change*.



Figure 3 - Kotter's eight-step change model (Source: Gary Tremolada Wordpress)

Kotter (1995) emphasised the importance of the first steps of the model for establishing buy-in from the organisation and the requirement of have strong leadership to drive this influence. He also notes external recruitment as a key tactic in driving change, as when organisations are undergoing changes new perspectives, cooperation (Appelbaum et al, 2012) and adaptation are needed to reinforce the upcoming change to employee groups. Once the foundation in the first three steps is established the next important aspect is communication. The researcher found that a good transformation vision can be formulated, but organisations do not embed it with employees effectively. He observed that organisations at times only hold a single meeting or send electronic communication to employees (Kotter, 1995).

Although the model can be used as starting point of change, it cannot be followed for continuous change. (Appelbaum et al., 2012) add that the model is too broad, and could be difficult for large organisations to implement it.

ADKAR

The ADKAR model was developed with the objective to enhance change in individuals. It focused on the deep diving the root cause of failure. (Hiatt, 2006) believed that individuals had an impact on successful change implementations within organisations. ADKAR is an acronym that stands for Awareness, Desire, Knowledge,

Ability and Reinforcement (Hiatt, 2006). These five components ensure that individuals and organisations can successfully implement change initiatives namely:

Awareness of the need for change

This step explains the reasoning and thought that underlies a required change and emphasis is placed on the importance of communication.

Desire to support the change

Can be linked to decision-making, a personal decision which individuals make to advance and adapt with their environmental changes.

Knowledge of how to change

This step focuses on knowledge transfer and training to be able to sustain changes.

Ability to demonstrate skills and behaviours

An individual's capability. The test between theory and practice.

Reinforcement to make the change stick

This is a continuous improvement step where routines are established, and changes are entrenched in an individual's behaviour.

ADKAR Element	Factors Influencing Success
Awareness of the need for change	• A person's view of the current state • How a person perceives problems • Credibility of the sender of awareness messages • Circulation of misinformation or rumors • Contestability of the reasons for change
Desire to support and participate in the change	• The nature of the change (what the change is and how it will impact each person) • The organizational or environmental context for the change (his or her perception of the organization or environment that is subject to change • Each individual's personal situation • What motivates a person (those intrinsic motivators that are unique to an individual)
Knowledge of how to change	• The current knowledge base of an individual • The capacity of the person to gain additional knowledge • Resources available for education and training • Access to or existence of the required knowledge
Ability to implement required skills and behavior	• Psychological blocks • Individual ability • Intellectual capability • The time available to develop the needed skills • The availability of resources to support the development of new abilities
Reinforcement to sustain the change	• The degree to which the reinforcement is meaningful and specific to the person impacted by the change • The association of the reinforcement with actual demonstrated progress or accomplishment • The absence of negative consequences • An accountability system that creates an ongoing mechanism to reinforce the change

Figure 4 - Factors influencing ADKAR success (Hiatt, 2006)

ADKAR, (Das, 2019) observes, can be utilised to support change management training within organisations and steer change management undertakings such as communication, training, sponsorship and coaching.

Change Management in Agile Projects

Despite agile professionals having identified several critical success factors (Chiyangwa & Mnkandla, 2018), studies have shown that only 42% of Agile projects succeed at implementation (Mersino, 2018). Applying traditional change management frameworks to Agile projects is a challenge, the rapid pace of a project using Agile means that change management practitioners must continuously refine and focus their work (Creasey, 2017). Change practitioners have listed the accelerated change, frequency of stakeholder engagement required and altering user's adoption considerations as challenges that are faced when applying change management to agile (Spelman, Fish, & Webb, 2015). (Gandomani & Zulzalil, Effective factors in agile transformation process from change management perspective, 2013) suggested that an agile change management strategy should be prepared after the receognitition of the challenges, obstacles and barries experienced by organisations, and its people. It is therefore important for this study to peruse the failures and success factors of agile projects. In their study (Chow & Cao, 2008) classified the failure of agile projects into four categories with coincide with the change management requirements:

Organisational. Chow & Cao (2008) listed a lack of executive sponsorship, management commitment as contributors within organisations, and like many other researchers they placed culture at the centre of failed agile projects, stating issues such as the culture being too traditional and political as key factors.

People. People issues are at the heart of the agile movement, and much of the paradigm change is aimed at empowering individuals by supporting reasonable goals, shorter feedback cycles, ownership, and flexibility. People within the organization are not the only ones affected by the introduction of agile methods. Stakeholders, particularly customers, might need to play significantly different roles. Many agile methods require (or at least strongly suggest) onsite customers, significant customer interaction and feedback, and customer input for acceptance testing. Attention to process matching and customer education is necessary to smooth the transition.

Processes. Process design is one major challenge for early phases of collaboration within business functions, (Schuh et al, 2017) also observed that process owners need to be clearly defined and receive adequate guidelines for efficient process flows. Applying agile processes to legacy systems, whether within maintenance or as new development, raises numerous issues (Boehm & Turner, 2005) Legacy systems generally are not easy to

refactor or disassemble to accommodate agile replacements that need to build capability in increments.

Technical. Refers to a lack of complete set of technical knowledge, tools and technology within project teams, and when there has not been clarity of an appropriate Agile practice to be able to drive a project's achievement.

When applied correctly agile methods make not only the customer more satisfied but also the members of the development team. This leads to improved job satisfaction and therefore a lower turnover, which in turn results in the economic benefits for an organisation (Melnik & Maurer, 2006). Researchers account the realisation of this benefit to multiple critical success factors which interlink with change management as stated below:

Organisational readiness. Agile does not begin at the stage of projects and implementation, but rather Agile is required as an initial change of the broader organisation's way of working. However, organisational resistance to this change was identified as the top challenge to Agile in the 14th Annual State of Agile report (Digital.ai, 2020). Surveys conducted over the past couple of years have noted organisational culture as a main contributor to failed agile projects.

In their empirical study (Strode, Huff, & Tretiakov, 2009) found a significant correlation between organisational culture and agile methodologies, stating that factors such as: the organisation values, feedback and learning; social interaction in the organisation is trustful, collaborative, and competent; the project manager acts as a facilitator; the management style is that of leadership and collaboration; the organization values teamwork is flexible and participative and encourages social interaction; the organization enables empowerment of people; the organization is results oriented; leadership in the organization is entrepreneurial, innovative, and risk taking; and the organization is based on loyalty and mutual trust and commitment. Change is assisted by enthusiasm and participation, an organisational culture that promotes ownership and self-management. Managers need to identify the potential resistance factors and ensure that there are 'motivators' built into the processes.

Ensuring that all parties are aligned. People will accept change when they know that it is necessary and when they understand the 'why', (Ewenstein, Smith, & Sologar, 2015). Leaders should have structured messaging of the vision behind the required change. However, most organisations offer poor communication and transparency which causes employees to question the change due to a lack of mutual trust (Strode, Huff, & Tretiakov, 2009). Ewenstein (2015) offers that managers should communicate the upcoming change continuously, at every opportunity – formal or informal. Although this factor is not exclusive to Agile projects (Strode, Huff, & Tretiakov, 2009), it is a key requirement for an Agile project's success

Effective Communication. By making use of digital and verbal communication to engage with all employees. Transparency and openness are highly valued in agile, (Kropp & Meier, 2015) keeping customers informed and receiving feedback timeously are key to enabling a continuous improvement and learning environment. (Schuh et al, 2017) suggest engaging with stakeholders at a level that they can understand for them to interpret the changes as a value-add. When people are engaged in the planning phase of the project and are kept abreast to the upcoming changes, better buy-in and receptiveness to change will occur. Different measures are taken by the team in order to keep the organization as well as the customer informed about progress and to get feedback quickly.

(Kropp & Meier, 2015) identified three major communication scenarios required in Agile teams to be successful. Firstly, they found that team members in a project must have effective communication amongst themselves. Secondly, the team must establish clear communication routines with customers and end-users alike. Lastly, the team must establish good communication with executives, their sponsors and management.
(Paton & James, 2008) state that traditional workshops and trainings are no longer effective as change management tools in the current day in age.

Leveraging existing knowledge and identify subject matter experts. Agile is a continuous learning process. Therefore, within the SCRUM process, sprint retrospectives are held which allow all team members to share their previous sprint experience, to feedback on what went well and what could be improved. Hence, this success factor is one that is embedded in Agile DNA. The lessons learned should be incorporated in the planning phase of the next sprint to identify barriers that would hinder the project from achieving its goals or

identifying subject matter experts (SMEs) and stakeholders who could be leveraged to influence the successful deployment of the end-product. Each Agile team should have a mix of resources with the skills and knowledge required to develop a production-ready solution, this team should include a Change Management practitioner (Gorans & Krutchen, 2014)

Ensure the tools and technology are in place. The rapid build and deployment of iterations due to the nature of agile projects require systems and resources that have capacity and capability to test products before they are launched to end-users (Gorans & Krutchen, 2014). Studies found that when end-users experienced faults with a new system, they were less likely to make use of it again due to a lack of confidence in its performance. Additionally, at times of transition and transformations organisations may have multiple systems in place and moving from one system to the next can be a highly tedious, error prone process (Schuh, Gartzen, Soucy-Bouchard, & Basse, 2017). Therefore, this becomes a critical requirement of change management within agile projects.
Executive Sponsorship includes sponsorship and buy-in from senior leadership. Executives are intended to own the vision and set about the motion for change within the organisation as pioneers and influencers that all employees can follow.

Agile projects in the South African context
South African researchers of Agile methodology emphasise that resistance to change is the main contributor to failed Agile projects in local organisations (Noruwana & Tanner, 2012) (Sibotho, 2012) (Chiyangwa & Mnkandla, 2018).

(Sibotho, 2012) conducted a case study to understand the challenges and benefits of Agile projects in the South African banking sector. His findings supported Agile as an effective project management tool as found in the literature. However, through his research study he was able to deduce that business users were not fully satisfied with Agile due to a lack of trust with the new products that were developed. Sibotho observed that when project teams did not manage and initiate communication with business users, the project resulted in failure. He suggested that Agile teams need to apply methods to build relationships with business users to ensure project success, that a strong working relationship between project teams and business users enabled knowledge sharing and mutual understanding.

With regards to Agile project teams, Sibotho found that the project team were at times not satisfied with Agile due to multiple changes requirements in the middle of the project. This would result in additional work for the squad, as they would have to split the requirements to cater for all business functions. Similarly (Chiyangwa & Mnkandla, 2018) found that Agile's non-hierarchal approach caused chaos, as too many people had an input into the project and this derailed and at times delayed the project's delivery.

In dealing with resistance, a number of strategies can be used (Noruwana & Turner, 2012) suggested *Corridor salesmanship*, driven by the Scrum consultants, to influence and drive the conversations across the organisation about Agile. These conversations become an opportunity to clarify any misconceptions regarding Agile. Another suggestion was *Agile training* to all role players in Scrum. The training's objective would be to clarify the Scrum role players, the key principles and tools used in Scrum.

2.2 Research knowledge gap analysis [Methods, data, findings, and conclusions of studies and frameworks of change management]

There is growing recognition of Agile concepts and the value that is realised when they are implemented in organisations. Such as cost reduction, quick delivery of innovative products and employee engagement. As a result, substantial research has been conducted on Agile – its concepts, practices, methodology and integration to organisational transformation strategies. A numerous number of past studies on Agile have been in the IT, software and engineering sectors. In their research (Noruwana & Tanner, 2012) suggested follow up to their study could be an in-depth investigation of the level of adoption and penetration of the agile methodology in South Africa, its failures and successes, what the limitations and benefits are. Therefore, this research will discover satisfaction and engagement levels of respondents that apply Agile ways of working in their daily routines.

In previous years research has been based on questions which organisations have posed. The initial question was "Why do we need to adopt agile practices?" then (Sidky & Arthur, 2007) in their study aimed to answer the "How do we proceed to with adopting agile

practices?" question and a more recent study from (Gandomani, 2013) incorporated the change management aspect of the Agile transformation process. His study was applied using the case study research method, the human element to the previous studies that were undertaken. Considering this, the present study aims to develop an effective change management framework that will be applicable to Agile projects within organisations and complement its critical success factors, as mentioned in the earlier part of this literature review.

Critics found that the Lewin's framework assumed that organisations operated in rigid, standard state and that the framework was not suitable for complex and large projects. The model also focused on specific group work and not organisation-wide changes in order to incorporate the dynamic issues of organisation culture. Additionally, (Burnes, 2004) noted that Lewin's framework did not consider organisational politics nor the consideration of two-way communication and non-hierarchical organisations.

Although the Kotter's theory can be used as starting point of change, it cannot be followed for continuous change. (Appelbaum et al., 2012) add that the model is too broad, and could be difficult for large organisations to implement it.

ADKAR, (Das, 2019) observes, can be utilised to support change management training within organisations and steer change management undertakings such as communication, training, sponsorship and coaching. However, Agile sprints can be faster than the planned approach that ADKAR applies.

There is inadequate research and testing of these frameworks on the operationalised Agile ways of working and the also on the application of change management within those specific projects. More especially within the South African context. (Barlow et al.; 2011) in their study raised a concern that they could not find articles with complete success stories of Agile lifecycles in large organisations. An understanding of these projects and the impact that their success has on overall employee engagement and job satisfaction are crucial for the development of an effective change management framework.

2.3 Summary and conclusion

2.3.1 Summary of literature reviewed

The use of agile methodology within organisations is on an increase, with more companies eager to reap the benefits that agile promises in order to gain competitive edge, manage costs, improve employee engagement and ensure customer satisfaction through quick delivery of new products.

Whilst agile studies have identified critical success factors of agile practices, researchers agree that not enough studies have been done on the post implementation and change management required in operational agile projects.

2.3.2 Proposed research strategy, design, procedure and methods arising from the literature reviewed

The research strategy of this study with be qualitative which as an inductive approach. Qualitative research can be defined as the collection and analysis of non-numerical data, in the form of text, video or audio etc. The aim is to understand concepts, opinions, or experiences in order to gather in-depth insights into a problem or generate new ideas for research (Bhandari, 2020). In the recommedations of their study, Gandomani (2013) suggest that previous experiences should be studied and outlined as a change management framework from internal experiences in organisations.

To select the research method of this study a critical review of the six types of qualitative was undertaken. The six types of qualitative research methods are used in widely in organisations and research institutions. These are Phenomenological, Ethnographic, Grounded theory, Case study, Historical and Narrative; having studied the various types the three listed below were initially selected as possibilities for this study:

Ethnographic Model

Originating from Anthropology studies, the ethnographic model involves the researcher being entrenched with the community and its practices, in order to achieve their research questions. (McCombs, 2019) It is best suited for observing cultures, teams and communities. Although ethnography has its advantages to the research that will be conducted in this study, such as the deep knowledge gained from immersing oneself to the organisation or community, it would not a viable option due to time.

Grounded Theory

In their research article (Gandomani, 2013) recommended Grounded Theory as the best strategy to codify change management. Grounded theory looks at large subject matters and tries to explain why a course of action evolved as it did. Businesses make use of the model for net promoter score questionairres that measure customer satisfaction and loyalty. The model's compatibility to this study was appropriate, however grounded theory is based on developing new theories which will not be done in this research study.

Case Study

According to McCombs (2019) a case study is an appropriate research design when a researcher aims to gain concrete, contextual, in-depth knowledge about a specific real-world subject. It allows researchers to explore the key characteristics, meanings, and implications of the case by using interviews, surveys etc. Case studies keep research studies focused, manageable and enable efficient use of resources.

Therefore, having studied the various research methods, this study will be conducted using the case study model, and semi-structured interview method. In order to formulate a study that encapsulates the human interaction and change management within agile projects a case study of the AB InBev organisation within South Africa is best suited to answer the research questions of this study.

3 RESEARCH STRATEGY, DESIGN, PROCEDURE AND METHODS

In Section 1.2.3, we have posed two questions that this research report intends to answer—that is, 'What are the perceptions and experiences of agile practitioners in an operational environment at AB InBev Africa?', 'What learnings from agile practitioners in an operational environment at AB InBev Africa can be embedded into a change management framework?', We have since reviewed literature and developed an interpretative as well as conceptual framework that will guide the choices of techniques we will use. This chapter identifies and describes research approach, design as well as procedure and methods that we employ in this research to collect, process, and analyse empirical evidence. Broadly, it has three objectives; namely, to identify and describe the research strategy (Section 3.1), the research design (Section 3.2), as well as the procedure and methods (Section 3.3). The chapter also describes the reliability and validity measures (Section 3.4) that this research applies to make it credible as well as the technical and administrative limitations of the choices we make (Section 3.5).

3.1 Research strategy

Qualitative research can be defined as the collection and analysis of non-numerical data, in the form of text, video or audio etc. The aim is to understand concepts, opinions, or experiences in order to gather in-depth insights into a problem or generate new ideas for research (Bhandari, 2020). In the recommedations of their study, (Gandomani, 2013) suggest that previous experiences should be studied and outlined as a change management framework from internal experiences in organisations.

In the journal article "Enabling agility in product development through an adaptive engineering change management" (Schuh et al, 2017) make use of the qualitative strategy as part of their study. Methods of the case study included observations, semi-structured interviews and workshops with stakeholders. The aim of the study was solving the problem of inefficient engineering changes and to develop a framework for improvement. The intention of the framework was to underlie an opportunity for improvement in the case company's ability to efficiently carry out product change requirements.

The researchers selected the qualitative strategy when they found that alternative strategies and approaches did not establish a sustainable solution for efficient change management. By making use of the case study method the researchers were able to observe the application and impact of the proposed framework and the benefit that the organisation derived from it.

3.2 Research design

The research design is a framework for planning a research study. It sets the parameters of the study to be conducted, and includes data required, the time and place of the research, participants and source etc (McCombes, 2019). (Bryman, 2012) lists five common research designs, namely: cross-sectional, longitudinal, case study, comparative, and experimental.

This study will be conducted in the form of a case study research design. In order to formulate a study that encapsulates the human interaction and change management within agile projects, a case study of the AB InBev organisation within South Africa is best suited to answer the research questions of this study. The company has incorporated Agile in their daily operations, to stay ahead of their competitors and to react faster to their customer's demands.

Schuh et al, (2017) make use of the case study method for the research design for their study "Enabling agility in product development through an adaptive engineering change management" with the aims and objectives outlined in the aforementioned section. Using a case study for this research will provide a human aspect and experience to a software-based project management concept, Agile.

3.3 Research procedure and methods

This section documents the actual procedure and the methods employed in this research to collect, collate, process, and analyse empirical evidence. Broadly, we detail the data and information collection instruments (Section 3.3.1), the target population and sampling of respondents (Section 3.3.2), the ethical considerations during the research process (Section 3.3.3), data and information collection process and storage (Section 3.3.4), data and information processing and analysis (Section 3.3.5) as well as the background

description of the respondents who provided empirical evidence for this research study (Section 3.3.6).

3.3.1 Research data and information collection instrument(s)

A research data collection method is the instrument used to gather data that helps or enables the researcher to directly answer the questions in their study. The most commonly used types of research data collection instruments are **observation schedule**, which is used to understand something in its natural setting and **interview schedule**, an instrument used to gain in-depth knowledge of people's perceptions and opinion on a certain subject. This study will be conducting the interview schedule as a research data collection instrument.

The study aims to understand the perceptions and experiences of teams working within agile projects. The study will be in the form of semi-structured interviews and an online survey. Semi-structured interviews use open ended questions allowing for discussion with the respondents.

Using the previous studies on perceptions and experiences of users, I will develop a set list of questions for the semi-structured interview to get themes from the data that will answer the research questions of this study. This will then be analysed using the thematic analysis method.

3.3.2 Research target population and selection of respondents

Research target population

A target population is the entire research group that a researcher can draw conclusion from. AB InBev, at its offices in Sandton, South Africa, have rolled out the Agile practices as a way of working. As part of the talent pipeline initiatives interns have been recruited to join the Continuous Improvement Department – a pioneer of Agile for the Africa Zone. These interns are assigned into teams and tasked with implementing improvement projects using Agile Scrum methodology. The target population also includes leaders of the department and an Agile coach. This is a group that interacts and enables Agile within the broader organisation and targeting them provides key insights that will enable the development of the framework for this study.

The respondents of this study are:

- Classified by gender, inclusive of LGBTI+.
- Within the age bucket (25-45 years).
- Employed by AB InBev in either permanent or fixed term contract.
- Currently engage with agile ways of working daily.
- Educated with undergraduates or diplomas as a minimum criterion.

The number of respondents for saturation are defined in the table below:

Respondent Role	**Total Number**
Project Interns	40
Agile Coach	1
Leaders	1

Saturation can be defined as the point in qualitative research where data collected from respondents is sufficient to substantiate and answer the research questions (Saunders & Sim, 2018).

3.3.3 Ethical considerations when collecting research data

Kanya Mhlongo is a supply chain professional with broad experience at AB InBev, more so within the Procurement and Continuous Improvement functions. Working at the World's number 1 brewer has sparked an interest in how organisations can continuously improve and gain advantage against their competitors. A natural leader with a passion for people development, she is intrigued with how decisions taken in organisations can impact an individual's performance, but also not ignoring the collective power and influence that people have which can be an advantage or a detriment to an organisation. With a global mind-set she applies thought to changes. Having a clear vision that is effectively communicated and understood across the organisation is something that she strives for.

During the study, the researcher will observe research ethics as required by the University Ethics Committee. The researcher will not jeopardise their research in any way, either through deception or by dishonest to the respondents. They will cause no harm or in any way stress the respondents, be it physically or developmentally. The researcher will not negatively impact the respondent's self-esteem. Consent will be obtained from the

respondents prior to their participation in the research. Additionally, all data will be secured, and no identities will be revealed from the study.

3.3.4 Research data and information collection process

Research data collection involves the generation of data that is used to answer the researcher questions and advance the objectives of the study. Researchers can select from a number of data collection modes including participant observation or ethnography, interviews (face-to-face, telephone, or internet-based), focus group discussion, documents, each with their own benefits and advantages.

This study will make use of the internet-based interview, and telephonic interviewing research mode. Internet based interviews are semi structured. The technological aspect becomes an advantage to the researcher due to platforms for data storage and less use of paper. The researcher can extract the data with ease. Another advantage of internet-based interviewing is on the respondent's end where respondents can take part in the interview in their own time and comfort, but within the timelines provided by the researcher. By using interviewing in this study, the researcher gains an in-depth understanding of respondent's perceptions or opinions on a topic. Due to the Covid-19 pandemic and social-distancing measures, there will not be face-to-face interviews conducted. To prevent loss of data, all information collected in this study will stored in cloud-based systems and backed up using an external hard-drive.

3.3.5 Research data and information processing and analysis

Research data and information processing

Once data is collected through an instrument of choice, researchers can now delve into analysing and formulating themes from the respondents.

Transcribing

Transcribing is the process of converting speech to word. There are different methods of transcriptions, namely Verbatim, Intelligent verbatim and Edited transcription. For the purpose of this study, Intelligent verbatim will be used.

Thematic Analysis

The process whereby the researcher analyses interview transcripts, or other qualitative data from various source. The aim is to identify key themes, patterns and concepts from

the data. One of the approaches used in thematic analysis is the six-step process (Braun & Clarke, n.d.):

1. Familiarisation as an initial step refers to getting to know the data.
2. Coding summarises responses using shorthanded or coded themes.
3. Generating themes as a next step looks at the coded data and develops patterns or themes which can be categorised into even smaller code patterns.
4. Reviewing themes – this is the process of building the research formulation through reviewing, combining and discarding themes until an applicable one for the research is found.
5. Defining and naming themes, formulates what each theme means and assists in ensuring that we understand the data better.
6. Writing up. This last step involves writing up the findings in a logical manner that follows the standard research template, Introduction, Methodology, Results and Conclusion.

Applying the inductive approach to the thematic analysis enables the data to determine the themes of the study. Key to the thematic analysis is ensuring that the adequate tools and technology requirements are in place to perform accurate and reliable analysis.

Research data and information analysis

Research data analysis is the most crucial part of any research, it provides a summary of the data collected from respondents. Qualitative analysis follows 5 steps, namely prepare and organise; review; develop a coding system; Assign codes to the data and lastly, identify the themes or patterns within the data. Some of the data analysis approach options in qualitative research are: *Content Analysis*, which categorises common words and phrases in responses. *Thematic Analysis* interprets patterns and themes within the data. *Textual Analysis* analyses the structure of the content and designs in text, and lastly, *Discourse Analysis* studies the language and communication of the data.

This study will utilise Thematic analysis as a data analysis tool, this is to further explore the impact agile project's success has on individual job satisfaction.

3.4 Research strengthens — reliability and validity measures applied

Reliability and validity are research concepts that measure the quality of the study. These terms are looked at together in qualitative research. The extent to which results are measured to have consistency and accuracy in terms of their representation can be referred to as reliability. It is based on how well the results, used in another time frame, can be reproduced (Golafshani, 2003) and the ease of understanding of the research structure. Researchers have stated that one cannot look at reliability independantly from validity, as the two go hand in hand, such that in qualitative research reliability is the consequence of validity.

Validity measures the accuracy and trustworthiness. According to Lincoln and Gumber (1989) the four main types of validating research in qualitative research are:

Credibility: the credibility of a study is determined when coresearchers or readers are confronted with the experience, they can recognize it.

Dependability: To achieve dependability, research must be logical, clear and traceable.

Transferability: Can also be looked at from a scaling point of view. The ability of other researchers to apply the research to other studies of interest.

Conformability: Ensures that the data used in the study is in fact derived from the data sources stated. Researchers should clearly structure their findings making use of headings for ease of following the paper. (Creswell & Miller, 2000) further outline the three types of tests used to measure validity: Construct, Content and Predictive validity, which test the variables set out in the research design of a study. A contentious topic amongst researchers – some researchers believe that validity is not applicable to qualitative studies. Creswell & Miller (2000) furher argued that validity is relevant to what the researcher believes at that particular point in time. In this study validity is measured through data integrity with transparent, unbiased questions for ease of understanding.

3.5 Research weaknesses—technical and administrative limitations

This research assumes that the individuals participating in the interviews and case study are knowledgeable of Agile concepts and its project management methodologies. That they will answer the questionnaire in an honest manner, without any other incentive to do so, but to advance the objectives of this research study. The study also focuses on the South African context of applying a change management framework to the agile projects.

This study is conducted closely to the end year Christmas break. It is likely that some of the targeted population will be on holiday break. AB InBev peak season also begins in October, this might cause delays to timeline and respondent questionnaires.

4 PRESENTATION OF RESEARCH FINDINGS

4.1 Methodology

The data used for the research was collected through semi-structured interviews with employees of AB InBev's Continuous Improvement department in the Africa Zone.
In order to receive a large data set with varying experiences a web-based interview as well as telephonic interviews were conducted, with a total number of 55 respondents from the organisation.

Respondents included the Director of Continuous Improvement; a Master Black Belt and Agile Coach; a Continuous Improvement Manager and 52 project interns. The 52 project interns are part of the organisation's Talent Attraction Programme (TAP). The Talent Acceleration Programme is an intensive 36-month programme which attracts the brightest most driven graduates and nurtures their talent by providing relevant experiences right from the start. and are recruited as new hired with none or minimal previous work experience. The new recruits are then onboarded into the organisation, introduced to the high-performance culture, and are provided with appropriate, relevant training to ensure their success.

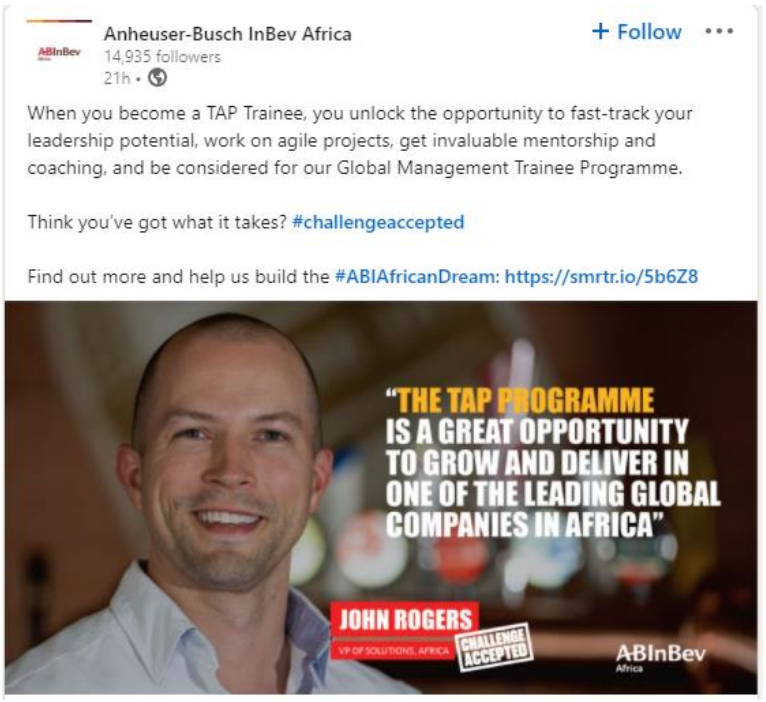


Figure 5 - AB InBev's Talent Acceleration Programme (Source: LinkedIn)

The 52 project interns participating in the research have held various Scrum roles, a majority as team members, but also leading projects as scrum masters and product owners.

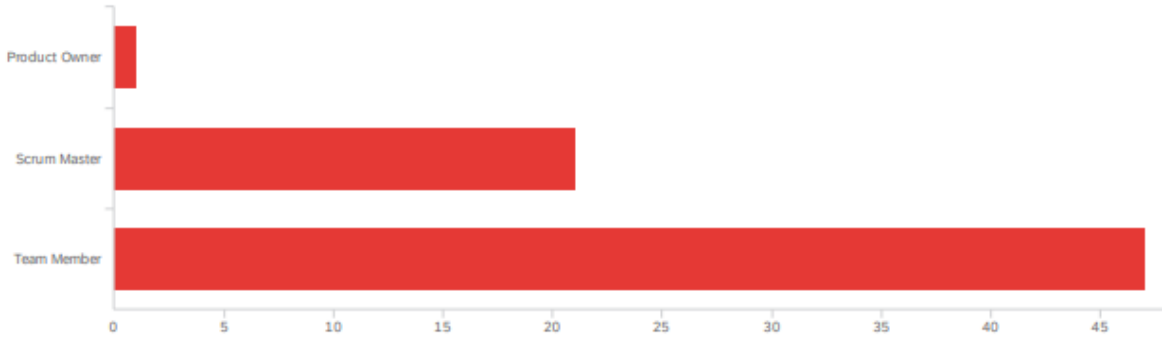


Figure 6 - Agile roles of research participants

A number of projects within the organisation make use of Agile methodology, however the Continuous Improvement department is set apart as it makes use of Agile Scrum methodology in its daily operations. Participants of this research are additionally assigned to projects, as scrum master or team member in the respective squad, to work on various projects across the organisation that drive efficiencies and automation; improve processes and elevate customer satisfaction/customer experience.

Interviews were conducted late December 2020 and early January 2021. Participants welcomed this moment of reflection and pause considering the disruptions caused by COVID-19 pandemic for the alcohol industry in South Africa, but also because of the number of projects that they had been assigned to. One respondent sighed a relief, stating "*there is no room for a cool down period.*" The Director of Continuous Improvement also noted that with Agile, *"you're so focused on today, but don't reflect holistically on how far you've come.*"

Participants were asked three structured 'yes/no' questions to validate their responses,

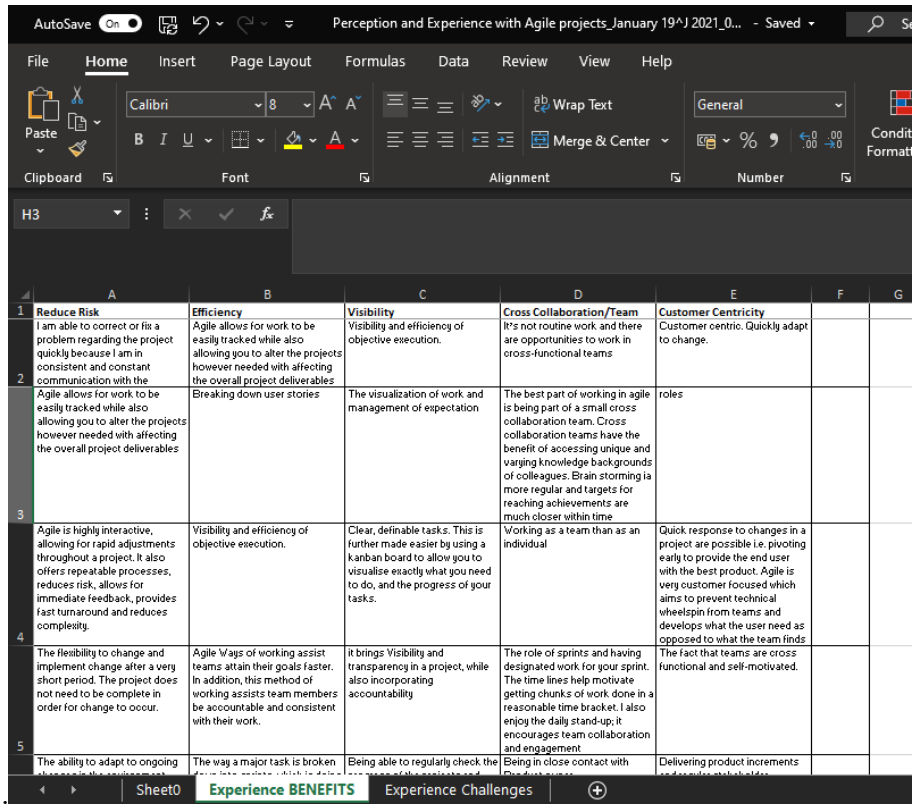
1. Are you currently working on Agile projects?
2. Do you believe that Agile adds value to your organisation?
3. Would you recommend Agile ways of working to your peers?

These were followed by open-ended questions.

The data was then analysed using the Thematic Analysis method. Thematic analysis represents a systematic framework to code qualitative data in order to identify patterns across the data themes were found in the data collected through semi-structured interviews and the online questionnaire.

The thematic analysis involved a process of familiarising and deriving themes from the data. The collected data from the interviews was transcribed into text on printable paper, which was then re-read and organised repeatedly to identify key patterns in the participants responses.

Key words in the responses were highlighted to form themes. The data was then systematically organised under multiple headings, which could later be grouped into specific themes, and transposed into an excel spreadsheet. The excel spreadsheet was used to better visualise the themes and to count the comments under each theme. Using the excel spreadsheet also allowed me to recheck and familiarise myself with the themes, and to apply them to the results tables in section.4.2.



	A	B	C	D	E	F	G
1	**Reduce Risk**	**Efficiency**	**Visibility**	**Cross Collaboration/Team**	**Customer Centricity**		
2	I am able to correct or fix a problem regarding the project quickly because I am in consistent and constant communication with the	Agile allows for work to be easily tracked while also allowing you to alter the projects however needed with affecting the overall project deliverables	Visibility and efficiency of objective execution.	It's not routine work and there are opportunities to work in cross-functional teams	Customer centric. Quickly adapt to change.		
3	Agile allows for work to be easily tracked while also allowing you to alter the projects however needed with affecting the overall project deliverables	Breaking down user stories	The visualization of work and management of expectation	The best part of working in agile is being part of a small cross collaboration team. Cross collaboration teams have the benefit of accessing unique and varying knowledge backgrounds of colleagues. Brain storming ia more regular and targets for reaching achievements are much closer within time	roles		
4	Agile is highly interactive, allowing for rapid adjustments throughout a project. It also offers repeatable processes, reduces risk, allows for immediate feedback, provides fast turnaround and reduces complexity.	Visibility and efficiency of objective execution.	Clear, definable tasks. This is further made easier by using a kanban board to allow you to visualise exactly what you need to do, and the progress of your tasks.	Working as a team than as an individual	Quick response to changes in a project are possible i.e. pivoting early to provide the end user with the best product. Agile is very customer focused which aims to prevent technical wheelspin from teams and develops what the user need as opposed to what the team finds		
5	The flexibility to change and implement change after a very short period. The project does not need to be complete in order for change to occur.	Agile Ways of working assist teams attain their goals faster. In addition, this method of working assists team members be accountable and consistent with their work.	it brings Visibility and transparency in a project, while also incorporating accountability	The role of sprints and having designated work for your sprint. The time lines help motivate getting chunks of work done in a reasonable time bracket. I also enjoy the daily stand-up; it encourages team collaboration and engagement	The fact that teams are cross functional and self-motivated.		
	The ability to adapt to ongoing	The way a major task is broken	Being able to regularly check the	Being in close contact with	Delivering product increments		

Figure 7 - Themes identified transposed to an Excel sheet

Whilst reviewing the themes a connection was forming from the themes with a high similarity to (Chow & Cao, 2008) critical success factors and the People, Process and Technology Framework (PPT). PPT is one of the oldest operational improvement frameworks within the business environment. It is used in organisations to drive operational efficiencies. For a change strategy to succeed, these three dimensions need to be integrated and well-integrated to build capability.

The People, Process and Technology strategy ensures that:

1. The right **people** are placed in roles where dynamic teams are formed for cross-collaboration. Enabling an environment of continuous improvement through training, growth opportunities and new challenges.
2. Having **processes** that are well designed and appropriated for the organisational culture.
3. People and processes can only work well when there are **tools** to support them and drive efficiencies. Tools ensure that there is visibility of performance and that it is measured accurately.

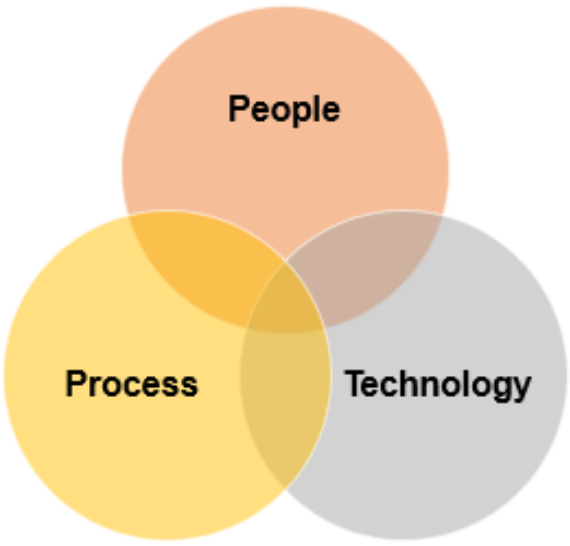


Figure 8 - People, Process and Technology Framework

4.2 Results

As a result of the thematic analysis described in section 4.3, the interview data determined three main themes and thirteen sub-themes. Table 1 below displays the main themes and the sub-themes of the perceived benefits of Agile ways of working, with a description and examples of participants' responses. In the same format, Table 2 shows the challenges experienced with Agile ways of working.

Table 1: Themes and Sub-Themes of the perceived benefits of Agile Ways of Working

	Main Themes	Sub Themes	Description of Sub-Themes	Example of Perceived Benefit
1	People *(n = 20)*	Recruitment and Onboarding *(n = 3)*	The implementation of agile ways of working requires employees that embrace the culture of high performance.	*"For most of the grads it was their first job. We raised them in an Agile way without needing to convince them"*
		Cross-Collaboration *(n = 9)*	Scrum squads form the foundation of agile projects. These can be team members from various parts of an organisation – skilled and self-motivated.	*"Cross collaboration teams have the benefit of accessing unique and varying knowledge backgrounds of colleagues."*
		Roles and Responsibilities *(n = 2)*	Each team member in a squad has clear roles; Product Owner, Scrum Master and Team members. The	*"Roles and responsibilities are defined and you are able to track your progress on a project"* *"…while also incorporating accountability"*

	Main Themes	Sub Themes	Description of Sub-Themes	Example of Perceived Benefit
			requirements for a specific sprint are assigned to each team member accordingly.	
		Customer Centricity *(n = 6)*	The highest priority in agile ways of working is to satisfy the customer and improve their overall experience.	*"Agile is very customer focused… teams develop what the user need as opposed to what the team finds interesting"*
02	Process (n = 47)	Efficiency *(n = 29)*	Agile allows projects to 'fail fast and fail forward', which is cost effective. Additionally, delivering the customer's product incrementally improves overall satisfaction.	*"Breaking down user stories… Short sprints allow for short feedback loops allow quick removal of impediments that may delay completion of the project."*
		Reduced Risk *(n = 18)*	Constant engagement with the customer ensures that the team are clear on requirements and standards for the project.	*"Transparency of risk and its effects on the success of the project… and course-correct if its's required."*
-3	Technology *(n = 11)*	Scrum Tools *(n = 5)*	The Kanban board is a key feature in agile projects – To do, Doing and Done.	*"Clear, definable tasks. This is further made easier by using a Kanban board to allow you to visualise exactly what you need to do, and the progress of your tasks."*

	Main Themes	Sub Themes	Description of Sub-Themes	Example of Perceived Benefit
			Scrum also has many phases that the team make use of to increase interaction and promote team support in projects.	
		Visibility *(n = 6)*	The visibility of the projects, and the team's daily stand-up meeting assist to balance the workload amongst the team, and also remove any duplication in the work. Senior Leadership buy-in is instrumental in agile success.	*"Teammates will take non-performance until a certain point, because it reflects on the whole team." "Through the visibility of projects at EXCO we were able to identify project duplication in different areas of the business."*

Table 2: Themes and Sub-Themes of the challenges experienced with Agile Ways of Working

	Main Theme	Sub-Theme	Description of Sub-Theme	Examples of Experienced challenges
1	People *(n = 22)*	Team dynamics *(n = 12)*	Agile depends on teams working together and brings together people with different work ethics and backgrounds.	*"Some work is dependent on other people." "The varying backgrounds of team members make for some difficulties in reaching consensus."*
		Time consumption *(n = 4)*	Scrum lifecycle has important phases that make the methodology succeed	*"Is a daily stand-up really necessary? Can't it be held once every two days? I say this because*

	Main Theme	Sub-Theme	Description of Sub-Theme	Examples of Experienced challenges
			– Product Backlog creation, Sprint planning, Daily scrum, Sprint review and Retrospectives. When involved in multiple projects this may be time consuming, and possibly feel like micro-management.	*there have been numerous occasions where I have had to repeat the same thing I said in a previous daily stand-up."* *"Leadership is concerned with the team's burndown. So you have really smart people scrambling to push things around in Kanban."*
		Lack of training *(n = 6)*	Ensuring that the team and wider organisation are upskilled and trained continuously enables project team success, and customer satisfaction.	*"Most people don't fully understand the different roles within the Agile methodology, so it becomes difficult to implement Agile fully and effectively."*
2	Process *(n = 14)*	Scrum Methodology in Operations *(n = 8)*	The application of Agile methodology from software development to daily operations is not an easily adaptable change. The organisation is both an agile and non-agile environment.	*"The 2-week deadlines can add a lot of pressure and become very tiring."* *"OPERATIONAL WORK TENDS TO BE DIFFICULT TO CONDUCT WITH AGILE!"* *"Different maturity levels within the organisation"*
		Frequent changes (n = 6)	The success of agile is its flexibility to adapt to changes, this was further	*"Things can change rapidly. Makes it hard to learn and master all aspects necessary."*

	Main Theme	Sub-Theme	Description of Sub-Theme	Examples of Experienced challenges
			inflated by the 2020 Covid-19 pandemic and the financial disruption caused to the business.	*"Sometimes the flexibility can happen more frequently than the agreed sprint which then derails the progress of the sprint."*
3	Technology *(n = 4)*	Tools to measure success *(n = 4)*	Measuring the impact/success of the projects completed or products developed is a challenge as the business KPI's are not aligned to the project.	*"Agile can be difficult due to misalignment in departments due to targets"*

5 DISCUSSION OF RESULTS

5.1 The Agile Experience in an Operational Environment

5.1.1 People

Teamwork was one of the main responses contributing to the research. Participants were quick to acknowledge it as one of the aspects that they most enjoyed about Agile ways of working – however, many also mentioned it when asked to elaborate about their least favourite parts of Agile ways of working. As with any process that involves the human factor, it is not surprising that participants will have both the highs and lows to experience.
"Agile forms the basis of teamwork, it's a team sport not an 'I' work. No one wants to bring the team down – you will be exposed. Teammates will take non-performance until a certain point, because it reflects on the whole team."

People are generally motivated and inspired by different things. In addition to that, ensuring that people are equipped with the tools and training to conduct their daily responsibilities adequately, and stretching their capabilities through challenging tasks and growth opportunities can lead to overall success. In the Scrum methodology, projects are successful when there is a good **customer relationship** and **cross- collaboration** with various departments to deliver a product. It was clear during the interviews that the respondents understood the 'why' of the projects that they were working on and that the overall objective was to improve customer experience.

"I am able to correct or fix a problem regarding the project quickly because I am in consistent and constant communication with the costumer."

Participants in the study elaborated that working within **cross-functional** project squads was one of the highlights of Agile ways of working. The exposure to multiple business functions/departments and the continuous learning opportunities are believed to be some of the advantages of applying Agile methodology within organisations.
"The best part of working in agile is being part of a small cross collaboration team. Cross collaboration teams have the benefit of accessing unique and varying knowledge backgrounds of colleagues. Brain storming is more regular…"

Empowering employees maximizes the resource itself and generates commitment, which in turn generates future value for the business. (Zaraket & Gharios, 2018) Participants felt empowered by working in self-managing teams and not having to do mundane, routine work.

"The exposure to multiple business functions/departments and the continuous learning opportunities are some of the advantages of applying Agile methodology within organisations."

"I like the aspect of self-managing teams."

"It's not routine work and there are opportunities to work in cross-functional teams."

Senior leadership in the study responded that **recruiting** people that complement the company's culture key to an organisation's future success. The company had a strategy to bring in new recruits that had had minimal work experience, as catalysts of the change they wanted to see in the organisation. *"For most of the grads it was their first job. We raised them in an Agile way without needing to convince them. they became influencers and disruptors of the change that we needed."*

However, because the organisation has "*different maturity levels"* of Agile deployment, the participants were beginning to feel a strain in their collaborative squad. As they began to work within their scrum squads and interacting with employees from various business functions, their experience with agile, according to the responses was difficult and not adequately supported. Participants cited a **lack of knowledge and training** as issues when working with the broader organisation on projects. Because of the ever-changing projects, participants were exposed to new stakeholders/customers/team members from across the organisation. This meant having to start each project with training sessions.

The training sessions were not only to train the business team members on agile practises but considering that the continuous improvement squad teams were new to the business environment, with minimal work experience, training was required for them to familiarise themselves with the basics of the various business functions. These interactions can discourage squad teams and cause mistrust in an already dynamic business environment, *"Social change is always a difficult challenge. A lot of uncertainty and trust levels are low."* but it also defeats the purpose of agile ways of working, which promote a fast-paced environment, quick removal of impediments to allow squad teams to deliver results to their customers. Participants of the study found this to be time consuming.

"There is a lack of skilled product owners from the business side. Most of the people involved in requirements – primarily business stakeholders and Business Analysts– are new to Agile."
"Not having enough facilitators can challenge the interactions of newly formed teams. This can lead to some frustration among team members."

5.1.2 Processes

If there is one thing that all can agree on is that Agile drives **efficiencies**. The collaboration of teams, customer visibility and the constant communication amongst the squad teams enable quicker decision-making and delivering a product incrementally so that testing, piloting and user experience can be improved.

Participants of the study expressed that breaking down user stories (breaking down the project tasks) into sizeable, attainable tasks as a highlight of using **scrum methodology** in the organisation. They attributed this to the feeling of achievement, having completed something that would propel the project forward within a two-week sprint. Unlike the traditional ways of working where big targets are set and reviewed every quarter, agile ways of working kept the participants honest in their outputs and accountable to the team.
"Agile Ways of working assist teams attain their goals faster. In addition, this method of working assists team members be accountable and consistent with their work."
"The way a major task is broken down into sprints, which is doing partial pieces of work that eventually add up to one outcome."
"Work gets done in a more efficient manner"
"Quick wins and the focus Agile gives to immediate problems"
"Delivering product increments and regular stakeholder feedback"

Within the theme of efficiencies in the process, the participants believed that agile ways of working **reduces risk** by:
"Enables you to improve and enhance the quality of a project as you build it as opposed to the waterfall approach where impovements can only be done upon completion or near completion of the project."
"Transparency of risk and its effects on the success of the project."
"The ability to pivot quickly to changing circumstances."
It does however need to be noted that the absence of **decisive leadership** on agile projects can cause a wheelspin of unmeaningful work and poor use of resources. It

requires leadership that empowers the product owner to take decisions on the direction of a project. *"It is a challenge when Product Owners report to Senior leaders. Change Management should be sitting at Exco level, Senior Leadership should be brought along the journey. Also why it takes a long time for adoption and transition. Change strategy and journey needed in organisations. Scrum teams should be cross collaboration between departments, however forming teams in Agile can be difficult because of contention of resources, misalignment in departments due to targets or workloads." "The organisation and POs are not yet at that level. More growth opportunity for sure."*

One of the critical failure factors identified in Cao & Chow (2008) research paper was the importance of **organisational readiness.** Within that theme, they found that executive sponsorship, culture, commitment and the size of the organisation are the contributors to the failure of agile implementation. Similarly, in our interview the Agile Coach for AB InBev's Africa Zone expresses that "*Agile is a culture shock… culture is the main issue. Change in the organisation is the key contributor to project failure.*" The Continuous Improvement Manager agrees by stating that *"One of the things that we don't do enough of is piloting. It not only allows to test, but also a good marketing opportunity to get buy-in on the change. Taking the learning." "People have an idea, put money to an idea, hold on to the idea and just won't let go of it."*

Participants attribute the historic ways of working as a challenge in their experience with Agile. They shared that projects would continue beyond its timeline, as customers *"use Agile as an excess to constantly change the work that needs to be done."*
"Ghosts of waterfall never go away. Waterfall is structured, gave people illusion of milestones. You could hit all milestones, but your project could still fail. That is still there with the way we've implemented Agile."
Whilst two vocal participants mentioned that *"Operational work tend to be difficult to conduct with agile" and "The methodology is not effective for highly operational environments (non-project work)."* I reviewed the data to pin-point where the issue was, and a number of participants share that agile ways of working is time consuming and tedious. The amount of 'scrumming' with the team, and continuous communication took them away from the project deliverables whilst others mentioned that operational work seems to continue with no end.

Although the Agile Coach believes that the transition from traditional ways of working to agile should be an easy one, the number of projects in an operational environment should be considered to avoid employee burnout leading to poor product deliveries. Data from the research shows that the participants are exhausted with the pace of agile ways of working. They are constantly on the go and believe that the goals that they set for a project are unrealistic estimates that do not account for the work required. They are not finding time between projects to rejuvenate themselves.

"The time frame we have been given to finish projects, some projects are larger than others and take more time. The work is usually not split in a way that gives a person enough time to complete a task in two weeks."

5.1.3 Technology

From the data collected, this theme received the least responses, for both the good experiences and challenges faced questions. Providing the appropriate relevant tools and technology to employees is an important measure for overall employee engagement in organisations.

The 2020 COVID-19 pandemic led to South Africa going into a hard lockdown and organisations had to adjust to work-from-home strategies. Agile ways of working added necessary value in AB InBev South Africa's business operations. The scrum methodology ensured that the team's routines continued and made continuous communication with the customer possible. Project visibility was available to all stakeholders through electronic storage of document, project tracking platforms as well as communication platforms amongst teams.

"One thing that Agile promotes is a daily connection. Everybody was working remotely but dialled in every morning because of the Agile steps – daily scrum; sprint backlog; daily reviews and all the visibility tools."

"I also enjoy the daily stand-up; it encourages team collaboration and engagement."

Having the visibility tools in place allowed senior leaders to take decisions on projects without waiting for a Steerco session. The driver of visibility was also the scrum tool used for the daily scrum meetings, Kanban, which visualised the 'To do, Doing and Done' phases of a project.

Quick decision making, the structures in place enable this – daily scrum, daily scrum master's huddle and the daily Executive Action Team (EAT)."

"The kanban board to allow you to visualise exactly what you need to do, and the progress of your tasks."

The main discontent that both the leaders of the organisation and the agile practitioners could agree on was the need have accurate measures put in place, and the tracking of the right KPI's through alignment across the organisation.

"Visibility is key, but we aren't measuring the project effectiveness."

"Agile, coming from a software already has a user experience metric. In corporate, no one understands this. Happiness Metric and Team Health is very important"

These matrices would be an effective management tool for leaders to understand how a team is performing and whether there were any issues that needed to be raised with stakeholders, training that was needed or an intervention.

In Agile fashion, I included one NPS question 'Would you recommend Agile to your peers?' to determine the team's satisfaction with Agile ways of working and the result was a positive 55.77 points, with 65% promoter. Certainly, there is room for improvement on areas that the participants had raised in the People and Process themes.

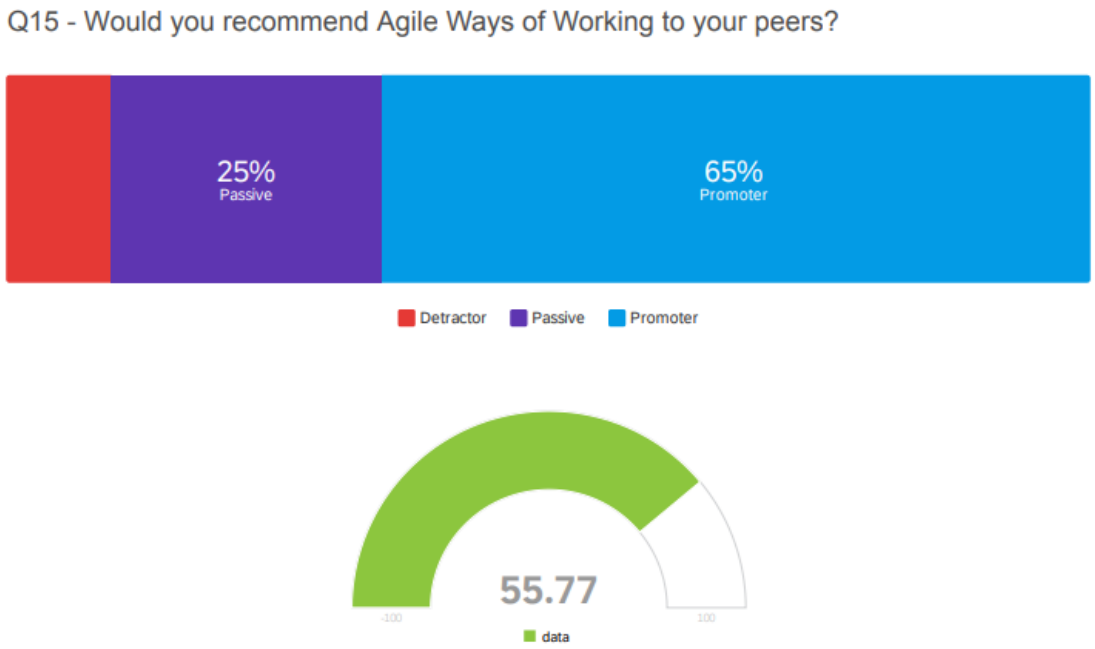


Figure 9 - Results of NPS question posed

6 CONCLUSION

The objective of the study was to gain an understanding of the perceptions and experiences of Agile ways of working in a South African operational environment.

6.1 Summary

The research sort to answer the below research questions:

Research Question 1: What has been the experience of agile practitioners in an operational environment at AB InBev Africa?

Research Question 2: What learnings from the experience of agile practitioners in an operational environment at AB InBev Africa can be embedded into a change management framework?

Applying Agile ways of working into an existing operational environment can be risky. should have strong leadership buy-in. Change management as a role should sit within the Executive Committee.

Agile transformation is a significant change and can cause resistance from people that are used to their historic or current ways of working. What AB InBev managed to do by recruiting new team members was a good strategy. These new recruits into the Talent Acceleration Programme have driven this change and filtrated into other business functions imparting their knowledge of agile ways of working. The investment into upskilling them through continuous learning initiatives and providing the tools and resources that enable them to drive results, is evident. However, scrum methodology succeeds on teamwork. Once the new recruits were exposed to the wider business, their experience with agile was tainted. Decisions were taking longer to be made. Customers and Product Owners were not clear on their responsibilities due to a lack of training. Additionally, the new recruits had little knowledge of the business and could not advocate as confidently without receiving brief training sessions about the functions that they were assigned projects to. It is best to have the entire organisation adopting to Agile rather than a few strategic departments, especially if the projects will be for the greater organisation and require resources to join the Agile project teams.

Organisations must be able to measure individual capacity to take in more projects and make overall team health a priority in order to reap the benefits of Agile methodology in the operational landscape.

6.2 . Conclusion

Although applying Agile to an operational environment can be valuable to a multinational organisation in terms of cost savings, developing a high performance culture and reduced bureaucracy, however as analysed in the results section of this paper, the overall experience can become time consuming and mundance for employees. The agile teams should not be driving the change without support from strong leadership buy-in and structured change management.

Organisations that seek to apply agile ways of working into their operations can best be guided by (Gandomani, 2013) general plan for change management which focuses on applying change management to each of the operational aspects and project levels – People, Process and Technology.

A change management framework for agile should not only be applied in specific projects, but rather be an organisational change. A continuous cycle which, in agile manner, seeks to remove impediments, drive continuous improvement and monitor progress transparently. A change management framework that is able to adjust and bend according to the data that is collected from sprint reviews, retrospectives and project implementation statuses.

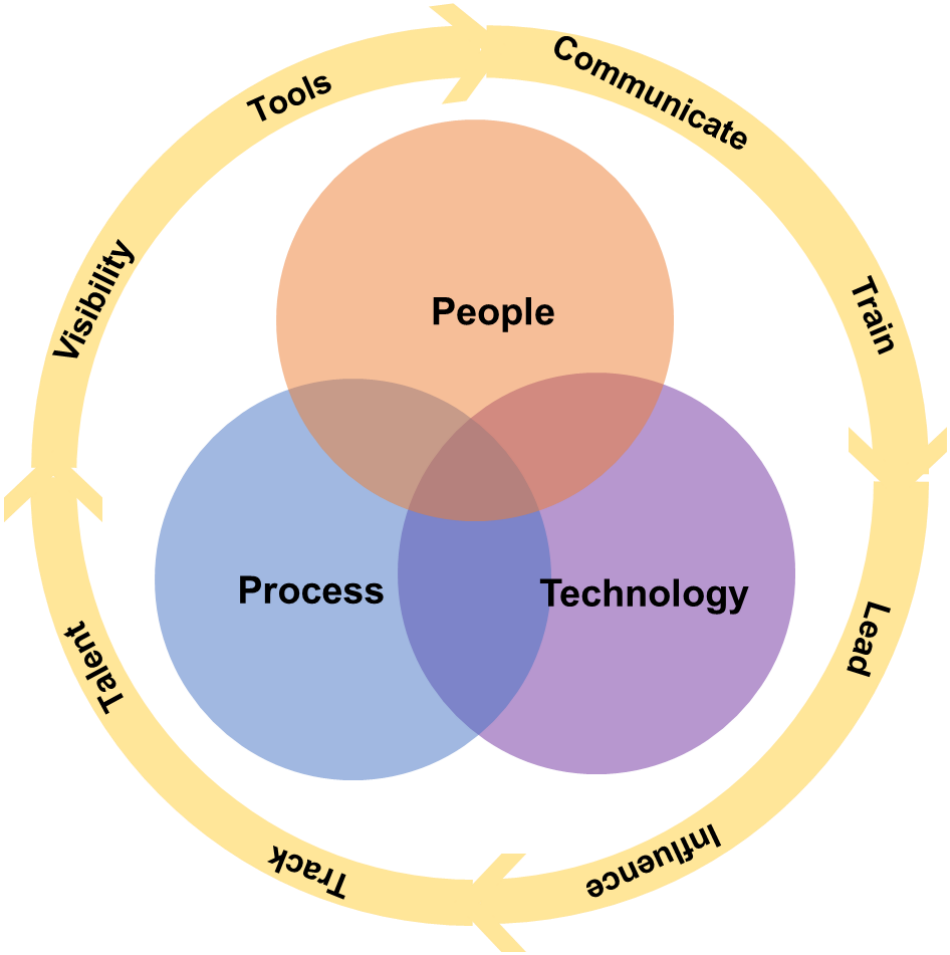


Figure 10 - An effective change management framework for Agile

6.3 Limitations

The limitations of a thematic analysis are acknowleged.

The research was conducted on one organisation and department only, and this could have a biased notion to the experiences of this team. As part of the research, data was collected by an individual through recorded telephonic semi-structured interviews, the interpretation of the data might have been interpreted differently had this been a team.

Additionally, the research does not take into account the environment that the team might have been working in during the time of the data collection, and what its impact would have been on the team at the time.

6.4 Recommendations

Applying Agile methodology in an operational environment should be a strategic change project that begins with buy-in from the Executive Teams. As part of the change, a pilot project with stakeholders from across the business should be initiated with the same selected people used as catalysts or influencers of agile WoW for the business. A coaching programme to widen the network of facilitators should be put in place with continuous training and dynamic adaptation to business needs.

Agile Analyst roles should be taken into consideration for the tracking and measurement of Agile project KPI's. These roles would be key in providing project insights for senior leadership to enable them to take faster decisions about continuing or cancelling projects.

Future studies of agile project management should look at the feasibility of agile in an operational environment and its impact on employee turnover.

7 REFERENCES

Alexander, M. (2018, June 20). *Agile project management: 12 key principles, 4 big hurdles*. Retrieved from CIO Africa: https://www.cio.com/article/3156998/agile-project-management-a-beginners-guide.html

And Change. (2017). *Change Management meets Agile, how does that work?* Retrieved from Wonder and Change: https://www.andchange.com/themes/change-management-meets-agile/

Appelbaum, S., Habashy, S., Malo, J.-L., & Shafiq, H. (2012). Back to the future: Revisiting Kotter's 1996 change model. *Journal of Management Development* , 764-782.

Atlassian Agile Coach. (2019, October 2). *What is Kanban?* Retrieved from Atlassian Agile Coach: https://www.atlassian.com/agile/kanban

Barlow, B. (2011). Overview and guidance on agile development in large organisations. *Communications of the Association for Information Systems.*, 25-44.

Beck, K. (2001). *The Agile Manifesto.* Retrieved from Agile Alliance: http://agilemanifesto.org/

Bhandari, P. (2020, June 19). *An introduction to qualitative research*. Retrieved from Scribbr: https://www.scribbr.com/methodology/qualitative-research/

Boehm, B., & Turner, R. (2005). Management challenges to implementing agile processes in traditional development organizations. *IEEE Software*, 30-39.

Braun, V., & Clarke, V. (n.d.). *Thematic Analysis: A reflective approach*. Retrieved from University of Auckland: https://www.psych.auckland.ac.nz/en/about/thematic-analysis.html

Bryman, A. (2012). *Social Research Methods: 14 Edition.* New York: Oxford.

Burnes, B. (2004). Kurt Lewin and the Planned Approach to Change: A re-appraisal. *Journal of Management Studies* , 977-1002.

Cao, L. e. (2009). A Framework for adapting agile development methodologies. *European Journal of Information Studies*, 332-343.

Cao, L., Mohan, K., Xu, P., & Ramesh, B. (2009). A framework for adapting agile development methodologies. *European Journal of Information Systems*, 332-343.

Chiyangwa, T. B., & Mnkandla, E. (2018). Agile methodology perceived success and its use: The moderating effect of perceived compatibility. *South African Computer Journal*, 1-14.

Chow, T., & Cao, D.-B. (2008). A survey study of critical success factors in agile software projects. *The Journal of Systems and Software*, 961-971.

Creasey, T. (2017). *Adapting and adjusting change management in an agile project*. Retrieved from Prosci: https://blog.prosci.com/adapting-and-adjusting-change-management-in-agile

Creasey, T. (2020, September 21). *The costs of poorly managed risks*. Retrieved from Prosci: https://blog.prosci.com/the-costs-risks-of-poorly-managed-change

Creswell, J., & Miller, D. (2000). Determining validity in qualitative inquiry. *Theory into practice*, 124-131.

Das, V. (2019). Comparative study of Kotter's and Hiatt's (ADKAR) change models. *Journal of Leadership and Management*, 263-271.

Deshler, R. (2017, November 6). *How to adapt Agile to a change management approach*. Retrieved from HR, People and Strategy: https://blog.hrps.org/blogpost/How-to-Adapt-Change-Management-to-an-Agile-Approach

Digital.ai. (2020). *14th Annual State of Agile Report*. Digital.ai.

Edison, S., Rehberg, B., Danoesastro, M., & Sherman, M. (2017, July 19). *Taking Agile beyond Software*. Retrieved from Boston Consulting Group: https://www.bcg.com/publications/2017/technology-digital-organization-taking-agile-way-beyond-software

Ewenstein, B., Smith, W., & Sologar, A. (2015, July). Changing change management. *McKinsey Digital*, 1-4. Retrieved from McKinsey Digital.

Fernandez, D. J., & Fernandez, J. D. (2008). Agile Project Management - Agilism versus Traditional Approaches. *Journal of Computer Information Systems*, 10-17.

Filfilan, K. (2019, April 9). *Should your organisation be embracing agility*. Retrieved from Raconteur: https://www.raconteur.net/business-strategy/leadership/agile-ways-working/

Fowler, M., & Highsmith, J. (2001, August 1). *The Agile Manifesto*. Retrieved from Software Development: http://users.jyu.fi/~mieijala/kandimateriaali/Agile-Manifesto.pdf

Gandomani, T. (2013). Towards a comprehensive and disciplined change management strategy in the Agile transformation process. *Research journal of Applied Sciences, Engineering and Technology*, 2345-2351.

Gandomani, T., & Zulzalil, H. (2013). Effective factors in agile transformation process from change management perspective. *International Conference on Advance Information System, E-Education & Development* (pp. 1-6). Malaysia: Researchgate.

Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report* , 597-607.

Gorans, P., & Krutchen, P. (2014). *A guide to critical success factors in Agile delivery.* Washington: IBM Centre for the Business of Government .

Handscomb, C., Jaenicke, A., Kaur, K., Vasquez-McCall, B., & Zaidi, A. (2018). How to mess up your agile transformation in seven easy (mis)steps. *McKinsey & Company*, 1-6.

Hiatt, J. (2006). ADKAR: A model of change in business, government and community. *Loveland: Prosci Learning Centre*.

Knops, K. (2020). *Change Management in an Agile environment*. Retrieved from KVP Solution: https://www.kvp-solution.com/blogs/news/change-management-in-an-agile-environment

Kotter, J. (1995). Leading Change: Why transformation efforts fail. *Harvard Business Review*, 59-67.

Kropp, M., & Meier, A. (2015). *Agile success factors - A qualitative study about what makes agile projects successful.* Zurich: FHNW and ZHAW.

Lewins, K. (1947). *Lewin's change management model*. Retrieved from Mindtool: https://www.mindtools.com/pages/article/newPPM_94.htm

McCombes, S. (2019, June 13). *How to create a research design*. Retrieved from Scribbr: https://www.scribbr.com/research-process/research-design/

McCombs, S. (2019, May 8). *How to do a case study*. Retrieved from Scribbr: https://www.scribbr.com/methodology/case-study/

Melnik, G., & Maurer, F. (2006). Comparative Analysis of Job Satisfaction in Agile and Non-Agile Software Development Teams. *Extreme Programming and Agile Processes in Software Engineering* (pp. 1-5). Finland: Department of Computer Science, University of Calgary .

Mento, A. J., Jones, R., & Dirndofer, W. (2002). A change management process: Grounded in theory and practice. *Journal of change management* , 45-69.

Mersino, A. (2018, April 1). *Agile Project Success Rates are 2X Higher than Traditional Projects*. Retrieved from VItality Chicago: https://vitalitychicago.com/blog/agile-projects-are-more-successful-traditional-projects/

Mersino, A. (2018, April 1). *Agile projects success rates are 2x higher than traditional projects*. Retrieved from Vitality Chicago: https://vitalitychicago.com/blog/agile-projects-are-more-successful-traditional-projects/

Noruwana, N., & Tanner, M. (2012). Understanding the structured processes followed by organisations prior to engaging in agile processes: A South African Perspective. *South African Computer Journal*, 41-58.

Noruwana, N., & Turner, M. (2012). Understanding the structured processes followed by organisations prior to engaging in Agile processes: A South African Perspective. *South African Computer Journal*, 41-57.

Paton, R. A., & James, M. (2008). *Change Management: A guide to effective implementation.* London: Sage Publications Ltd.

Prosci. (2018). *Change Management and Agile.* Prosci inc.

Saunders, B., & Sim, J. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant*, 1893-1907.

Schuh, G., Gartzen, T., Soucy-Bouchard, S., & Basse, F. (2017). Enabling agility in product development through an adaptive engineering change management. *Procedia CIRP Volume 63*, 342-347.

Sibotho, M. (2012). Challenges and benefits of agile project management in a South African bank: A case study. *Unpublished* .

Sidky, A., & Arthur, J. (2007). A disciplined approach to adopting agile practises: The agile adoption framework. *Innovations in systems and software engineering* , 203-216.

Spelman, K., Fish, B., & Webb, C. (2015). *Agile change lessons from the front line.* Sydney: Deloitte Touche Tohmatsu Limited.

Standish Group. (2018). *Standish Group Chaos Study* . Chicago: Standish Group.

Strode, D. E., Huff, S. L., & Tretiakov, A. (2009). The Impact of Organizational Culture on Agile Method Use. *42nd Hawaii International Conference on System Sciences* (pp. 1-9). Hawaii: ResearchGate.

Zilberfeld, G. (2015, January 14). *The New Agile: Why Is Agile So Popular?* Retrieved from DZone: A Devada Media Property: https://dzone.com/articles/new-agile-why-agile-so-popular