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Challenges in Implementing Scaled Agile Framework (SAFe®) in Global Organizations: A Managerial Perspective

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ABSTRACT:

In this era, Agile methodology has had a great impact on project management. Initially, Agile methodology was designed for small companies, but the features like continuous improvement, delivering the best results within a short cycle of time, and leading by example inspired large companies to transform to Agile from traditional methods. The Scaled Agile Framework (SAFe®) has become the most popular model for scaling agile. However, organizations that are already habituated to traditional methods find transformation to the Scaled Agile Framework (SAFe®) challenging for those companies.

The main goal of this research is to find out the key challenges during the implementation of the Scaled Agile Framework (SAFe®) in global organizations and the strategies managers use to overcome those challenges. This research follows a qualitative case study to identify the challenges managers face and also focuses on the strategies managers have applied to solve those problems.

The author used semi-structured interviews to collect data; all interviewees have working experience with the Scaled Agile Framework (SAFe®), and all of them hold leadership positions. A total of four interviews were conducted, and all interviewees received the research topic and questions before the interview. Data analysis was done by the inductive thematic analysis approach. The result of the study shows that the implementation of the Scaled Agile Framework (SAFe®) in a global organization is not easy; managers are facing many difficulties due to this transformation, but the thing is that they have applied various strategies to overcome those issues.

All interviews provided information about challenges and strategies; this study highlights key findings, such as managers face challenges like partial adoption of SAFe® in one organization, resistance to change, communication gaps, and lack of training, and leaders also share effective strategies such as practicing leadership style, improving communications, providing proper training and engaging stakeholders at the early stage of SAFe® transformation. These beneficial insights from managers give instructions for the successful implementation of SAFe®. At the end of the research, suggestions to improve future research are included.

Key words: Scaled Agile Framework, SAFe®, Transformation, Implementation, Changes, Strategies, Leaders, Managers, Leadership, Challenges.

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1 Introduction

1.1 Background and motivation

Project management has adopted Agile methods globally, transitioning from traditional approaches to increase adaptability and efficiency. Though Agile was developed for small-scale and collocated projects, now it is in use in large organizations such as Nokia, Ericsson, Amazon, British Telecom, and several other companies, which makes Agile a marked factor in project management today (Paasivaara, 2017). In general, Agile has different approaches to the traditional project methodologies that emphasize the time, cost, and scope of the project. Agile methodologies collaborate with the client, work in teams, are flexible, and are designed to change. The focus they place on this shows that they are valuable in fluctuating project contexts (Nyandongo & Madumo, 2022). Agile practices are valued for improving workflows, but more empirical evidence is needed to confirm their effectiveness (Putta et al., 2021).

In traditional project management, projects are managed in a sequential structure, while Agile emphasizes taking small iterative approaches. This leads to the next question of how the SAFe® framework can be used to put into practice the Agile approaches in organizations (Nyandongo & Madumo, 2022). SAFe® allows organizations to apply the benefits of Lean-Agile development, such as flexibility and rapid delivery, at scale. Originally, Agile was intended to be used with small, collocated teams, but due to high-efficiency results from large projects compared to the Waterfall approach, larger software project managers are adopting Agile to use in their organizations. This unveils SAFe® as a vital model for increasing the success of projects on a larger scale (Khoza & Marnewick, 2021). For non-agile organizations using traditional Waterfall methods, the question is whether SAFe® can deliver the same Agile benefits, or if challenges stem from internal factors or external influences, potentially leading to unmet expectations (Solakuja et al., 2024). SAFe® has become a focal point for organizations scaling Agile, gaining attention for its ability to reduce time to market and support portfolio strategy and investment funding. Despite criticisms, many organizations recognize its benefits in driving efficiency and achieving business goals at scale (Khoza & Marnewick, 2021) .

SAFe® Agile frameworks come with unique challenges, including the need to change organizational culture, and, if possible, with the support of top management. Effective change requires all team members to hold an appreciation of each other's responsibilities and assignments. Again, human factors are critical, and Agile has been introduced to foster digital transformation, and change is inevitable, most visibly in sectors such as software development (Khoza & Marnewick, 2021). SAFe® challenges include unexpected delays during releases, fragmented feature development across teams, siloed focus by product managers, and a lack of collaboration between software development, portfolio managers, and product managers, leading to disconnected product roadmaps (Nyandongo & Madumo, 2022).

For example, SAFe® comes with typical issues like resistance to change, poor management support, and difficulties in expanding the use of Agile in geographically dispersed or highly regulated environments. However, this, from users, has evidenced the fact that SAFe® can work. Some of the considerations are personnel training, stakeholders' involvement, and leadership to make them appreciate the changes that need to be made in the organization. However, there are certain challenges that organizations face while implementing such tactics for improving outcomes by scaling Agile practices at their organizations (Kalenda et al., 2018)

International organizations deciding to adopt SAFe® are struggling to successfully implement it, as they are still held up by traditional methods. Transformation becomes very problematic when a global organization has been using a traditional model for a long time; in such cases, strong support from upper management and active leadership is needed. By knowing the real issues faced by managers during SAFe® implementation and how they solve those, industry and managers can be aware from the beginning and adopt suitable strategies that increase the possibility of successfully transforming to the SAFe®. This study aims to find out the key challenges at the managerial level. The researcher collects data by interviewing a few leaders who work with SAFe® at an international company. They share their real-life experiences, and the data is analysed using a thematic model. At the end of the thesis, key challenges and overcoming strategies applied by managers are highlighted, and suggestions are provided to improve future research.

1.2 Research Questions

The aim of this research is to analyse the challenges during the implementation Scaled Agile Framework (SAFe®) in global organizations and the strategies managers used to overcome those challenges. Scaled Agile Framework (SAFe®) related research focused on the benefits and the structure of (SAFe®), but the problem arises in international companies during implementation faced by managers also need to focus; otherwise, successful development Scaled Agile Framework (SAFe®) becomes difficult. Finally, this study tries to figure out key challenges with the managerial strategies to solve those problems.

The goal of the thesis is to find out the answer to the following questions:

Main Question:

How do managers of global organizations overcome challenges in implementing the Scaled Agile Framework (SAFe®) in project management?

Secondary Questions:

1. What are the primary challenges that global organizations face when implementing SAFe® in project management?
2. What strategies can managers adopt to overcome these challenges during the implementation of SAFe® in project management?

1.3 Structure

This master's thesis starts with an introduction chapter, describes the thesis topic and motivation for this research, and provides the thesis problem and questions. Chapter 02 is Literature Review, where the theoretical background of Agile is explained from existing literature, journals, articles, and research. Chapter 03-Methodology, this section describes the research model, and method selected for this thesis, and how the analysis is done. Key points from the analysis are briefly described in Chapter 04-Key Findings. This thesis ends with Chapter 05-Discussion and Conclusion, where key findings are described briefly, and provides suggestions to improve future research.

2 Literature Review

2.1 Agile project management

First introduced in the late 1990s, agile software development has fundamentally transformed the field of software engineering through the provision of key concepts like agile adoption, methods and practices, and an understanding of human and social factors (Hoda et al., 2018). Agile project management focuses on addressing the conditions and dynamics that support a project, one of which is the ability to transition between planning and doing in short bursts. It confirms that planning has little impact on implementation and that innovation and development continue to inform how to manage change (Dybå et al., 2014).

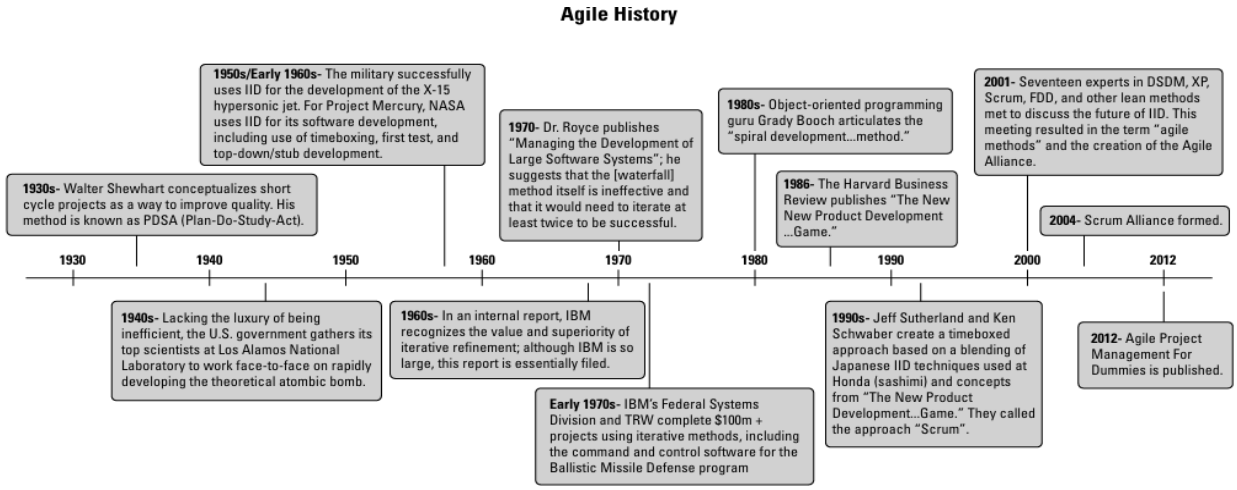

Figure 01: History of Agile (Layton et al., 2020)

Originally, the concept of agile project management stemmed from various methods formulated for the software industry, including Scrum, Lean software development, Crystal, FDD, ASDE, DSDM, and XP. These are called "lightweight" or "agile," and it was this ensemble of principles that was brought together by the Agile Manifesto in the year 2001 to later turn into the focal point for the escalation of agile practices (Conforto et al., 2014). Agile methods are typically used within the 'agile sweet spot,' characterized by small teams of fewer than 50 people working nearby with accessible users and business experts and focusing on non-life-

critical software. While successful in smaller settings, scaling these methods to larger organizations creates challenges, especially in managing coordination across multiple teams (Uludağ et al., 2021).

Agile project management refers to a collection of project development methodologies focused on iterative development and is widely used in software development (Mirzaei & Mabin, 2017). Agile methods, designed to promote flexibility and collaboration, face challenges when applied in large-scale organizations, particularly in coordinating multi-team environments. To address these difficulties, agile scaling frameworks such as Large-Scale Scrum (LeSS) and Scaled Agile Framework (SAFe®) have been developed. These frameworks, created by both agile method experts and practitioners, aim to adapt agile practices to larger settings. As organizations face rising demands to embrace agility, the adoption of these frameworks has grown rapidly (Gregory et al., 2021).

Agile project management offers numerous benefits that contribute to increased customer satisfaction. Teams of development work on tangible product elements that customers can review at the end of each cycle, as defined by sprints instead of the entire project. It is even clear that there is a frequent feedback loop, which is important for the alignment of the further development of the product with the customer's expectations. Also, agile teams plan high-value features first so that they can be delivered early to the market. The processes being embedded by their nature are flexible and accommodate change and new requirements, thus providing a valuable approach to management that can guarantee that the product is developed to suit the current customer's demands and requirements (Layton et al., 2020).

2.1.1 Agile Manifesto

Agile project management follows the core principles of the Agile Manifesto (Dybå et al., 2014). Agile project management is defined by working in short iterative cycles, delivering portions of the project at the end of each cycle. Prior to February 2001, these flexible methods were referred to as "lightweight". However, in Snowbird, Utah, seventeen method developers gathered to establish a common name and values for their approaches. After discussing various options, including "Adaptable", they chose the name "Agile", as it more accurately reflected the methods' nature. The discussions from this meeting led to the creation of the

"Agile Manifesto", which includes four core values and twelve guiding principles, to be explained in the following sections (Mohammed & Jasim, 2018).

In 2001, the "Agile Manifesto" was published, outlining four core values and twelve key principles of Agile methodology (Gorgadze, 2021). The four core values of Agile are:

“1. Individuals and interactions over processes and tools; 2. Working software over comprehensive documentation; 3. Customer collaboration over contract negotiation and 4. Responding to change over following a plan” (Gorgadze, 2021).

The values of the Agile Manifesto are based on fundamental human requirements necessary to successfully survive and accomplish cooperation necessities for the well-being of a group. The above four core values give the Agile transition a focal point through which the organizations can assess their progress towards Agile and relevance to their business needs for flexibility and effectiveness (Hussain et al., 2021). Agile Manifesto values are the opposite of a rigid plan of action and strict hierarchical management control. But for many organizations, the implementation of these values presents a lot of cultural barriers that need to be overcome (Adebayo, 2022).

The values of the Agile Manifesto should be part of any modern software project, even if implemented differently in other settings. Principles like customer satisfaction, clear communication, delivering functional software, simplicity, and self-reflection are crucial. Without these, complex projects are unlikely to succeed (Paulk, 2002).

The Agile Manifesto also consists of the following twelve principles:

“1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

2. Welcome changing requirements, even late in development. Agile processes harness change for the customer’s competitive advantage.

3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference for the shorter timescale.

4. Businesspeople and developers must work together daily throughout the project.

5. Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.

6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

7. Working software is the primary measure of progress.

8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

9. Continuous attention to technical excellence and good design enhances agility.

10. Simplicity—the art of maximizing the amount of work not done—is essential.

11. The best architectures, requirements, and designs emerge from self-organizing teams.

12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly." (Project Management Institute & Agile Alliance, 2017)

Even though Agile methods can work with disciplined models, their implementation must follow Agile principles and address the needs of customers and stakeholders (Paulk, 2002). The principles support such measures that enable the modification of requirements during any of the development phases. Also, customers (or their representatives) are often involved in the process, which offers feedback and reflective information for improvement of the outcomes. These principles are not definitions of agility but steps toward Agile software development that must be followed to produce superior-quality software (Dingsøyr et al., 2012).

2.2 Agile methodologies

Agile methodologies offer a collection of best practices that include detailed guidelines and implementation models tailored to a specific type of environment. Engineering practices are supported by Agile methodologies, but some concrete Agile implementations may be considered as extra-variant, controversial, and less efficient beyond their domains (Paulk, 2002). Agile methodologies have led to the development of several approaches that extend and implement their values and principles, such as eXtreme Programming and Scrum (Salza et al., 2019). Agile methods are flexible and iterative, which allows self-organizing teams and enables the evolution of technology and requirements throughout the development cycle (Lindvall et al., 2002).

In 2025, Agile statistics show significant growth in Agile adoption. Engineering and R&D teams make up 48% of Agile users, a 16% increase from 2022. 86% of marketers plan to adopt Agile, with 94% of organizations supporting these initiatives. Additionally, 87% of Kanban users report greater effectiveness with the method. Furthermore, 32% of Agile practitioners use Objectives and Key Results (OKRs) linked to epics to measure delivery outcomes (*17 Agile Statistics You Need to Know in 2025*, 2025).

2.2.1 Scrum

Scrum is an iterative and incremental system that was developed in 1986, aimed at collaboration. It intends to help integrate product development activities into a collaborative process where cross-functional teams can work towards a common goal of being done and improve that goal over time (Sachdeva, 2016).

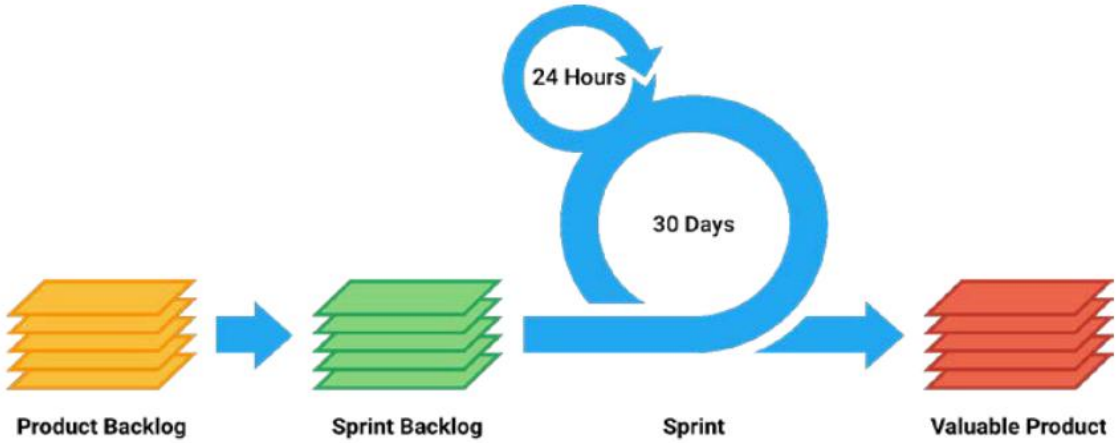

Figure 02: The Scrum lifecycle (Salza et al., 2019).

Scrum roles differ from traditional project management as they do not include a product manager, task manager, or team leader. Scrum has three specific roles those are the Product Owner, Scrum Master, and Development Team (Sachdeva, 2016). The Product Owner works as a link between the development team and the customers, he ensures that the prioritized list of features, which is known as the "product backlog" (Salza et al., 2019). The Product Owner is in charge of the product's vision, collecting and arranging the requirements, controlling the budget, and the ROI (Sachdeva, 2016). The Scrum Master is the person who makes sure that Scrum values, practices, and rules are followed and also coaches the team, Product Owner, and business while enhancing their Scrum practices (Sachdeva, 2016). The Scrum development team consists of developers who work together to create and test incremental updates to the product (Salza et al., 2019). Scrum has four ceremonies that are related to a sprint, ceremonies are: Sprint Planning, Sprint Review, Sprint Retrospective, and

Daily Scrum Meeting (Sachdeva, 2016). In Sprint Planning, the team meets and decides what to do in the sprint that is coming (Salza et al., 2019). Sprint Review is the part where teams show and speak about the tasks completed during the sprint and also receive feedback from the Product Owner. The sprint retrospective examines the work that has been completed and not completed yet and recommends improvements for the following sprint. At the Daily Scrum meeting, each team member claims their progress and is informed about their upcoming tasks, and also shares any challenges they have faced (Sachdeva, 2016). Scrum backlog is the list of tasks written by the development team (Salza et al., 2019).

2.2.2 Extreme programming (XP)

Extreme programming (also known as XP) is one of the initial Agile methods suggested by Kent Beck. XP is one of the approaches aimed at improving software quality by going to the extreme with software engineering concepts (Alsaqqa et al., 2020). Agile software development has been modified to help teams handle technological, workforce, and project specifications alterations. Of all the agile methodologies, the best-known methodologies are XP and Scrum (Medhat et al., n.d.). XP follows different steps as it breaks down planning, analysis, and design into regular, small tasks for the future. The process uses software improvements to benefit from more cost-effective alterations (Beck, 1999). XP teams work on every software development task at the same time, for example: Assessment, Design, Programming, Testing, and even deployment occur with Rapid speed. XP executes in week-long iterations and concentrates on stories—small, valuable features or parts of features, and installs software for internal checking (Liao et al., 2012). The team creates regular, tiny releases that offer essential benefits to customers and users. Customer feedback helps the team adjust vision and release plans to better handle future changes and opportunities. Besides, in the overall release plan at the start of every iteration group makes a brief plan for the next week. The team comes together daily for small meetings and can share project updates at their workspace (Liao et al., 2012).

2.2.3 Kanban

In the 1950s, Lean and Kanban were introduced in the Japanese manufacturing industry. The term Kanban means "signboard" in Japanese and was used by Toyota (Ahmad et al., 2013). Kanban is part of an Agile methodology because it adheres to the lean concept, which concentrates on values, a little part of management, and minimal waste (Gorgadze, 2021). Just in Time (JIT) is a manufacturing technique that aims at delivering the right product at the right place and at the right time, all in a good quality kind of way. Kanban, when combined with a pull system, allows for the implementation of JIT. The primary goal of a Kanban system is to increase a unit's productivity by reducing idle time. When used properly, the Kanban system can be a very cost-effective process. “Principles of Kanban System: Visualize work, Limit work in process, Focus on flow, and Continuous Improvement” (Wakode et al., n.d.). The Kanban board displays each developer's tasks, demonstrates priorities, and sometimes identifies difficulties. Furthermore, its goal is to minimize work in progress (WIP). The Kanban method seeks to make the change in the process faster by having shorter feedback. The main reasons for implementing Kanban are the emphasis on flow and the absence of mandatory iterations (Ahmad et al., 2013).

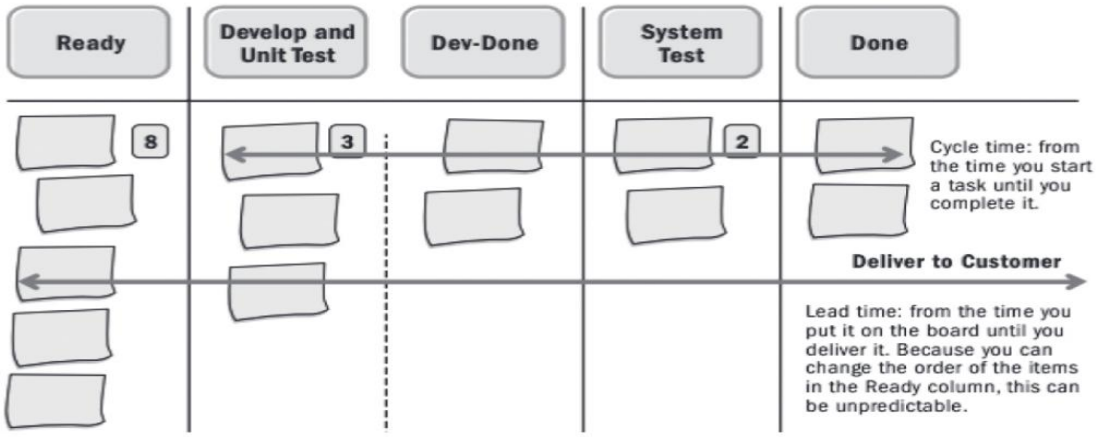

Figure 03: Kanban board (Gorgadze, 2021)

2.3 Scaled Agile Framework

2.3.1 SAFe® background

In 2011, SAFe® was introduced by its creator, Dean Leffingwell (‘Scaled Agile Framework’, 2025). Officially, the Scaled Agile Framework (SAFe®) launched in 2012. The SAFe® framework was developed from version 1.0 and received updates up to 6.0, which was published in March 2023 (Boswell, 2023). SAFe® combines methods from Lean, Kanban, Scrum, and Extreme Programming. SAFe® aids companies in solving their most significant challenges when developing software and systems (Nyandongo & Madumo, 2022). The most common benefits from SAFe® adoption are Employee involvement, worker efficiency, time to market, and quality of product. SAFe®'s four core values are: built-in quality, transparency, alignment, and program execution (Gregory et al., 2021). Earlier, SAFe® worked as a scaling system for software development teams, but the concept of SAFe® has since spread toward various sectors, which involves healthcare, manufacturing, engineering, and financial services (Oke et al., 2024).

2.3.2 Core values and principles of SAFe®

SAFe®’s effectiveness is supported by its 4 Core Values: Alignment, Transparency, Respect for People, and Relentless Improvement. These values guide how all participants should behave and act throughout SAFe® portfolio work. Without these values, SAFe®'s practices won't help companies meet the business results that led them to choose SAFe® (‘Scaled Agile Inc., Core Values’, 2025).

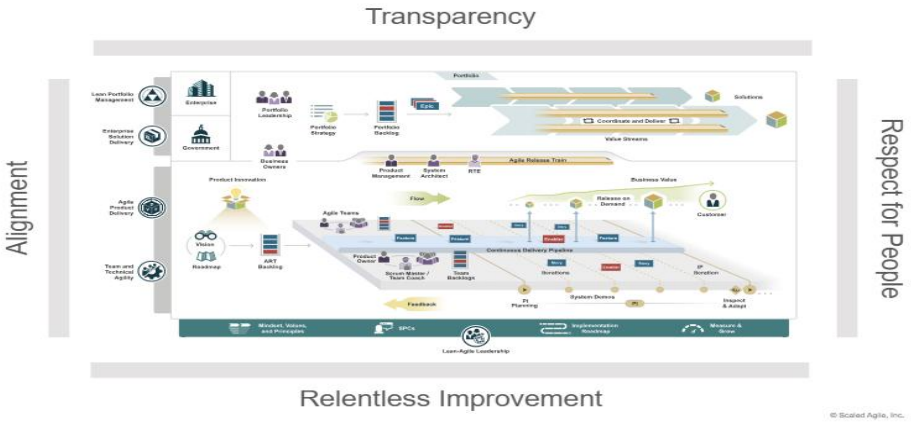

Figure 04: SAFe®’s four core values (‘Scaled Agile Inc., Core Values’, 2025)

SAFe® combines vast knowledge and experiences from different executions into a united system of proven practices targeted to enhance employee engagement, time-to-market, solution quality, and team productivity. SAFe® prioritizes fundamental principles that develop stable practices that evolve well to different enterprise conditions, although not all rules fit every organizational situation. SAFe®'s principles aid groups to stay aligned with the Lean target, such as gaining the shortest sustainable lead time while delivering the maximum quality and value to the public and society. SAFe® incorporates ten fundamental principles developed through Agile principles combined with Lean product development alongside systems thinking principles from observed successful enterprises ('SAFe® Lean-Agile Principles', 2023). Ten underlying Lean-Agile principles serve as the fundamental basis for the SAFe® framework. The tenets and economic principles of SAFe® provide both inspiration and guidance for developing SAFe®'s roles and practices ('SAFe® Lean-Agile Principles', 2023). Those principles are described below:

1. Take an economic view: A basic understanding of the economics of building systems is needed to deliver the best value and quality for people within the shortest time, and at the same time, decisions must be made in an appropriate economic context regularly. The principle illustrates balance trade-offs like risk, cost of Delay (CoD), and various costs while ensuring that growth value streams maintain approved budgets and the SAFe® guards that allow decentralized decision-making ('SAFe® Lean-Agile Principles', 2023)

2. Apply systems thinking: System building organizations and the system under development both apply systems thinking in SAFe® ('SAFe® Lean-Agile Principles', 2023)

3. Assume variability; preserves options: Traditional design selects one design option at the initial stage of the development process, but if the beginning is found wrong, then a delay may occur, so it's better to select more than one design option. Empirical data used to modify the result with the best economic outcomes ('SAFe® Lean-Agile Principles', 2023)

4. Build incrementally with fast, integrated learning cycles: Incremental development with small iterations helps to get quick feedback and minimizes risk. At the initial stage, quick feedback points assist in determining whether companies must take alternative courses through 'pivot' if needed ('SAFe® Lean-Agile Principles', 2023).

5. Base milestones on objective evaluation of working systems: During Lean-Agile development, integration points serve as concrete evaluation checkpoints spanning across the development lifecycle. A scheduled evaluation system enables financial, technical, and fitness-for-purpose governance that ensures returns match initial investments (‘SAFe® Lean-Agile Principles’, 2023)

6. Make value flow without interruptions: ‘Make value flow without interruptions’ is the third principle in lean thinking, and according to this principle, understanding is needed about its properties and their impact on value delivery. Principle #6 focuses on the eight common properties of a flow-based system and suggests specific suggestions for removing challenges to flow (‘SAFe® Lean-Agile Principles’, 2023).

7. Apply cadence and synchronize with cross-domain planning: Cadence provides predictability, while synchronization combines different perspectives. Together with cross-domain planning, this framework establishes key operational mechanisms to achieve success in uncertain project development cases (‘SAFe® Lean-Agile Principles’, 2023).

8. Unlock the intrinsic motivation of knowledge workers: Employee engagement levels increase when leaders provide freedom and objectives, minimize constraints, and develop an atmosphere of mutual influence and a better understanding of the impact of payment. By adopting this principle, organizations achieve the best results for their people and customers, along with the company (‘SAFe Lean-Agile Principles’, 2023).

9. Decentralized decision-making: Quick value delivery can be achieved by decentralized decision-making, which removes delays, increases product development flow, and can provide rapid feedback and innovative solutions with the help of nearest to local expertise (‘SAFe Lean-Agile Principles’, 2023).

10. Organize around value: Most organizations operate with outdated functional departmental designs that slow down their ability to respond during the digital transformation era. Business Agility enables faster value delivery so businesses can adapt to customer demands and market conditions (‘SAFe Lean-Agile Principles’, 2023).

2.3.3 SAFe® 6.0 configurations

SAFe® 6.0 includes four configurations: Essential, Portfolio, Large Solution, and Full SAFe®. Essential SAFe® delivers only the essential elements required for Agile Release Trains to deliver solutions and is the most basic starting point for execution (‘Essential SAFe’, 2022). Essential SAFe® configuration is the most basic type of SAFe®, which includes the Team and Program layers (PremierAgile, 2023). The objective of the team level is to deliver value. SAFe® team incorporates Scrum or Kanban and sometimes adopts Extreme Programming (XP) for development purposes. SAFe® teams proceed with an iterative approach that breaks the entire project into sprints, and the duration of the sprints is two weeks (PremierAgile, 2023).

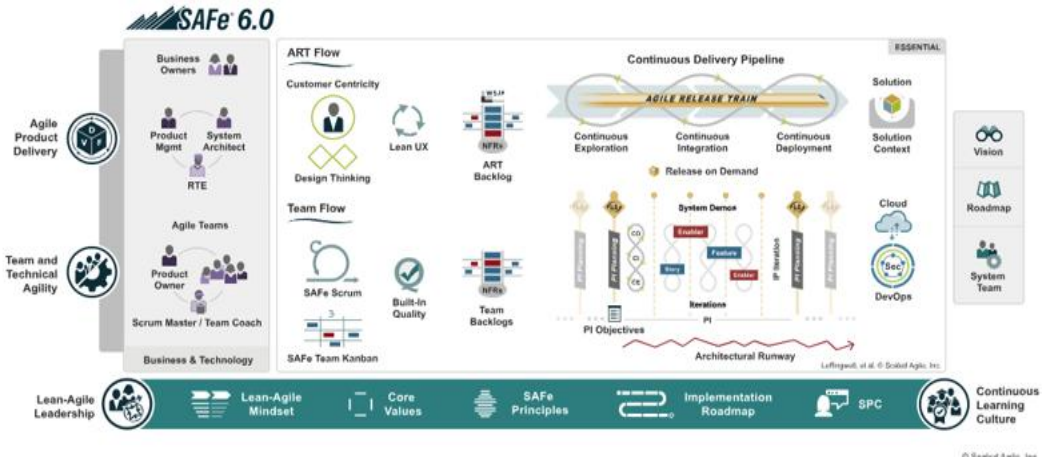

Figure 05: Essential SAFe® (‘Essential SAFe’, 2022)

Large Solution SAFe® is for organizations creating large and complex solutions that do not involve portfolio factors (‘Large Solution’, 2022), but it is connected to the Essential SAFe® configuration (PremierAgile, 2023). Many ARTs are combined in Large Solution SAFe® to establish value (PremierAgile, 2023). Large Solution SAFe® leverages Lean systems engineering practices so that it can give support for the development, deployment, and operation of large-scale solutions. It encourages companies to develop and operate large-scale solutions that necessitate extensive collaboration outside the scope of a single ART and additional roles, artifacts, events, and coordination to develop these solutions(‘Large Solution’, 2022).

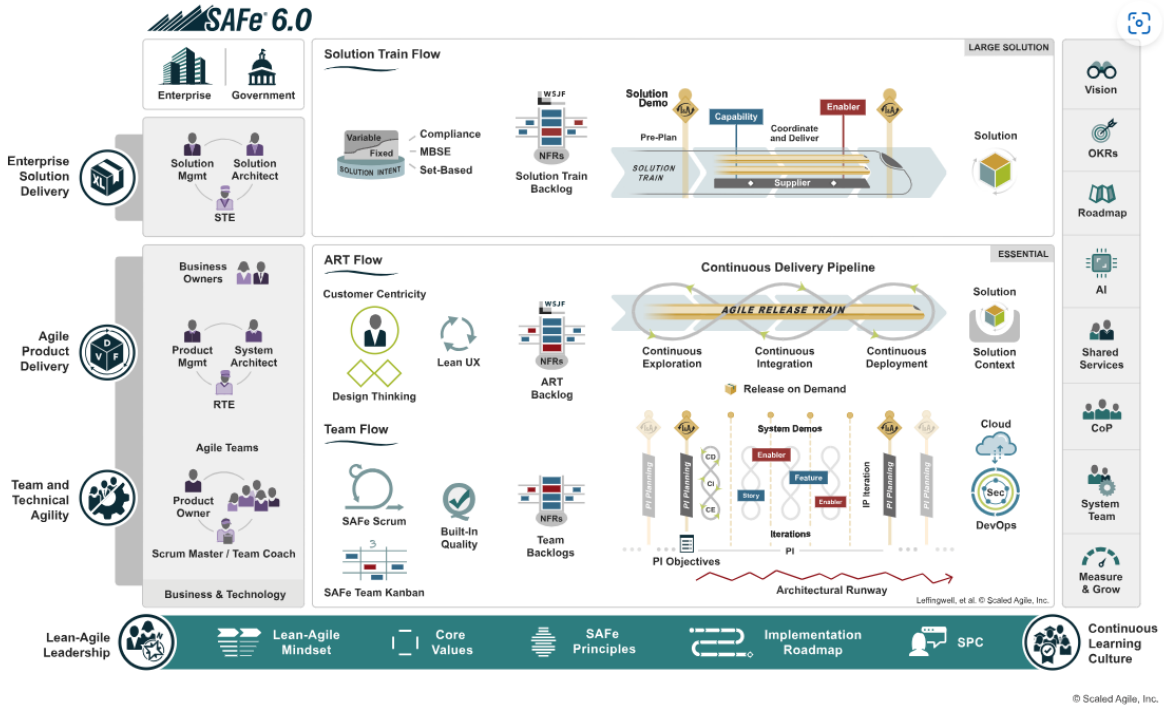

Figure 06: Large Solution (‘Large Solution’, 2022)

The SAFe® Portfolio comprises value streams delivering valuable solutions to customers within a common funding and governance structure(‘Portfolio’, 2025). The SAFe® Portfolio consists of the Portfolio, Program, and Team layers(‘Portfolio’, 2025).

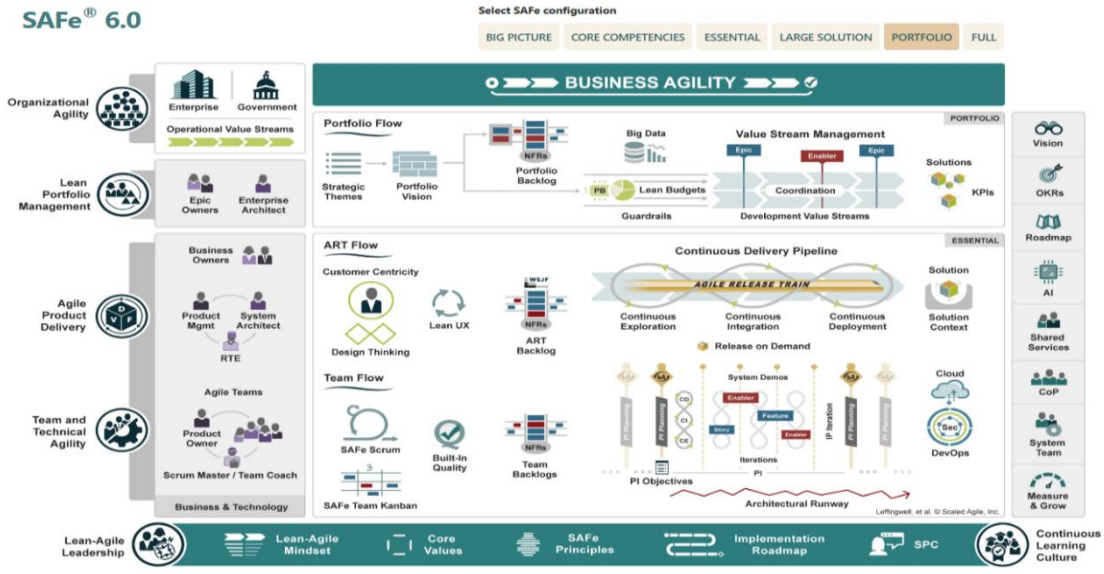

Figure 07: SAFe® Portfolio (‘Portfolio’, 2025)

Full SAFe® is the combination of all configurations (*SAFe 6.0 Framework*, 2025).

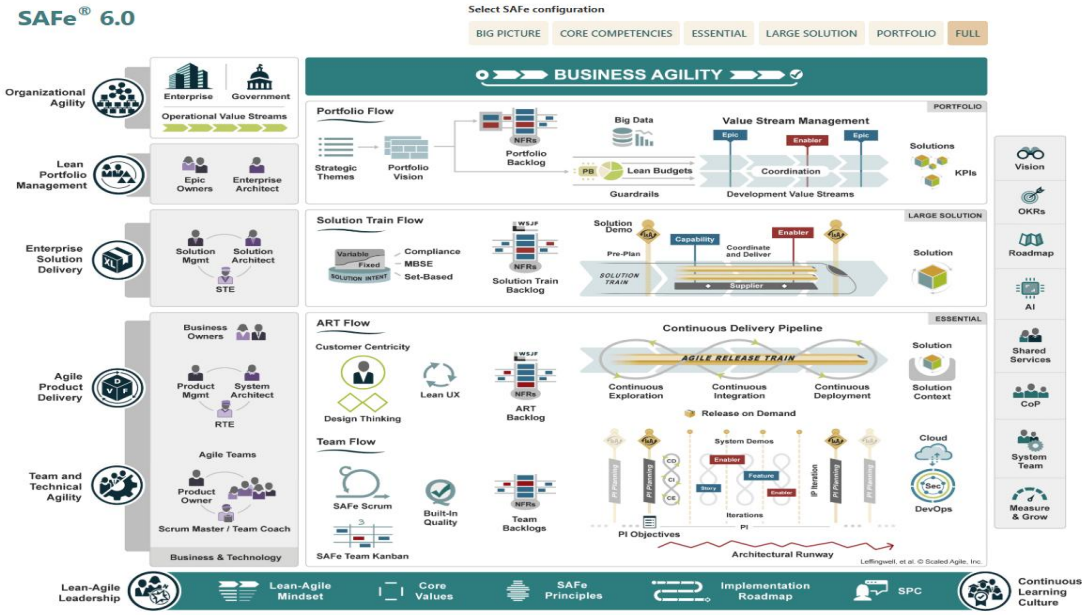

Figure 08: Full SAFe® (*SAFe 6.0 Framework*, 2025)

2.3.4 Agile Release Train and Agile Teams

Agile Release Trains (ARTs) include many agile teams, working with a common vision and roadmap. ARTs are created by 50 -125 people, who share a set of business and technology goals. ARTs are cross-functional and include all important features required to define, create, validate, release, and execute one or more solutions where needed('Agile Release Train', 2025). An Agile Release Train (ART) is a fundamental component of the Scaled Agile Framework (SAFe®), developed to bring together multiple teams within a common objective. ART coordinates planning, execution, and delivery across the teams and ensures that big, complex projects stay active during changing conditions (academy, 2025).

An agile team is a group of people who are assigned the duties of executing a project using the agile framework. Agile teams are small in size, consisting of about 5-11 people (Belyh, 2022). An Agile Team is a cross-functional group consisting of people with all of the abilities required to define, create, test, and provide value incrementally. Each group member is typically dedicated to a single Agile Team ('Agile Teams', 2021).

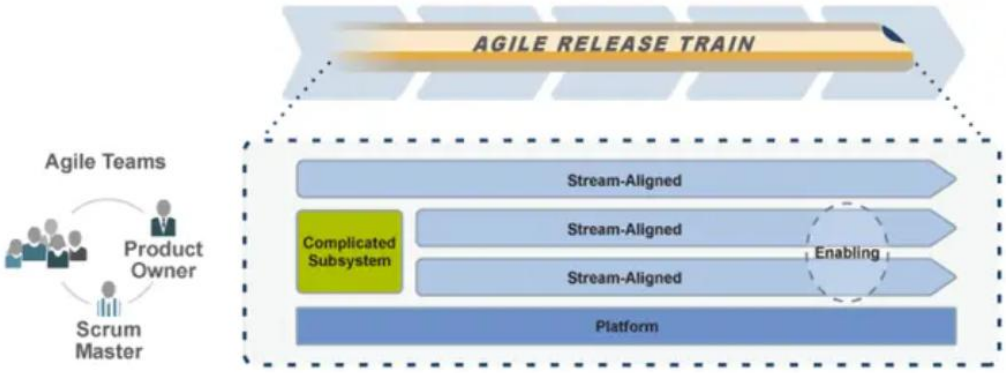

Figure 09: SAFe® Agile Team (Scaled Agile Inc, 2023).

Every SAFe® Agile team consists of two key roles, the Scrum Master and the Product Owner (‘Agile Teams’, 2021). The product owner is the person who has comprehensive knowledge of the product, the necessary features, and the objective of developing the product. The scrum master plays the role of the team leader, he helps the team perform its activities efficiently (Belyh, 2022).

Agile Release Trains (ARTs) provide constant benefits to customers in alignment with the Planning Interval (PI) Goals. Agile Release Trains (ARTs) maintain Planning Intervals (PI), such as Agile teams practice iterations. Duration of PIs is usually 8 to 12 weeks long (‘Planning Interval (PI)’, 2025). PI planning plays an important role in SAFe®, it is a program for an Agile Release Train (ART) that includes Agile teams and ART leadership to provide mission, vision, and committed objectives (‘Planning Interval (PI)’, 2025).

2.3.5 SAFe® roles

The framework for SAFe® roles is divided into four categories: Agile Team, Release Train, Solution Train, and Portfolio. Scrum Master, Scrum Product Owner, and Development team roles are included in the agile team. The Agile Release Train (ART) consists of agile teams that perform jointly in the ART. Some important SAFe® roles are involved in ART, these include Release Train Engineer (RTE), Product Manager (PM), System architect, and Business Owner (BO) (‘Key SAFe Roles | QRP Belgium’, 2023).

RTEs facilitate PI planning events, find and reduce risks, resolve dependencies, and facilitate communication and collaboration between teams. RTEs act as a bridge between the ART and

stakeholders to ensure growth and informed actions (thepmprofessional, 2024). At the Agile Release Train (ART) level, the Release Train Engineer (RTE) acts as an essential agile leader and coach (‘Key SAFe Roles | QRP Belgium’, 2023).

The product managers (PM) are liable for combining technique, design, and business perspectives in developing software products and product portfolios. The same duties are related to the Product Owner (PO) role in agile methods (e.g., Scrum). Both the Product Owner and the Product Manager roles frequently compete (Tkalich et al., 2022). User story prioritization belongs to the Product Owner, whose well-defined stories are easily understandable by all personnel (W. O. A, 2022). The Product Manager owns the backlog (‘Key SAFe® Roles | QRP Belgium’, 2023) and PMs prioritize and describe features (W. O. A, 2022). System architects have the goal to ensure that the solution being built fulfils the customer's requirements. System Architects define and communicate technical and architectural views for an Agile Release Train (ART) (‘Key SAFe® Roles | QRP Belgium’, 2023) and Business Owners are the key stakeholders at ART, who are eventually liable for the business outcome(W. O. A, 2022).

SAFe® Large Solution integrates three new main roles: Solution Architect/Engineering, Solution Management, and Solution Train Engineer (STE). The last level, SAFe® Portfolio, includes two main roles: Epic Owners and Enterprise Architect (‘Key SAFe® Roles | QRP Belgium’, 2023).

2.4 Challenges in implementing SAFe® agile project management

Agile methods were introduced in 1990, which is a plan-driven approach and different from traditional methodology. Scaled Agile Framework (SAFe®) is the most popular multi-team agile method, but the SAFe® Agile method faces criticism because, in terms of resource and project management service, it is demanding and costly (Ciancarini et al., 2022). Organizations face many challenges during the implementation of SAFe®, such as change resistance, problems with establishing an agile mindset, teams lacking freedom, an agile framework, and staffing roles**.** There are some particular challenges of SAFe®, such as those associated with PI planning, value streams, and agile release trains(Putta et al., 2018).

Challenges	Description
Change Resistance	Both management and employees resist change because of not believing in Agile as the new savior.
Over-Commitment from External Pressure	Customers will request long-term features which may not be available in the new release plan and therefore the team is pressurised to give premature feature commitments.
Balancing between Development Efficiency and Building Generalist Teams	In the case of complicated products, it becomes difficult to manage the team and transfer the knowledge in order to deliver a working product.
Difficulty Managing Non-Feature Work	There are other product management activities such as system documentation, change request and problem reports that are not feature related, more especially with large complex products.
No Proper Investment in Place	Transformation problems become evident in organizations when they do not invest in training and coaching.
	Failure to provide funding for training and coaching creates difficulties for organizations in the digital transformation. New tools for Scaled Agile and rearranging physical spaces also needs some investments.
Difficulties in Employing Scaled Agile	The misunderstanding of Agile concepts makes it difficult to apply Scaled Agile in practice.
Coordination Challenges in Multi-Team Environment	Coordination of project team in several team is a challenge to organizations. Independent team model challenging.
Different Approaches Emerge in a Multi-Team Environment	Different approaches cause conflict.
Hierarchical Management and Organizational Boundaries	Boundaries can cause conflicts more especially in large organizations where there is a need for middle management.
Requirements Elicitation Challenges	Management misses the requirements at a higher level. No clear understanding of long- and short-term goals.
Quality Assurance Challenges	Quality assurance affected. Not easy to accommodate all requirement testing.
Incorporating Non-Development Tasks in the Transformation	Not all functions change easily. The pace of delivering cannot be adjusted easily.

Figure 10: Challenges of Scaled Agile (Khoza & Marnewick, 2021)

Challenges affect the smooth implementation of Agile scaling frameworks within organizations, so to achieve successful scaled Agile implementation, one needs to understand and solve those challenges(Khoza & Marnewick, 2021).

There are some common challenges organizations face during the implementation of SAFe® such as, Resistance to Change- Companies often meet resistance from employees because they are habituated to traditional methods, Insufficient Training and Knowledge- A good understanding of Agile principles and SAFe® method is required to implement SAFe® properly but sometimes organizations do not provide sufficient training that creates confusion and bad performance. Misalignment of Organizational Structures- Sometimes existing organizational structures conflict with SAFe® principles in that situation misalignment occurs, Ineffective Communication- successfully implementing SAFe® depends on clear and open communications, due to lack of communication delays can happen, Overly Complex Implementation- SAFe® is complex by nature so when organizations attempt to apply all of

SAFe®'s elements at once instead of scaling incrementally creates difficulties, Inaccurate Metrics and KPIs- Using wrong metrics which are not related to business goals causes incorrect progress monitoring and minimizes the effectiveness of SAFe®. Metrics give an overview of the business's progress and quality ('SAFe Implementation', 2024)

There are some common problems at the time of using Scaled Agile (SAFe®), such as a Lack of Flexibility, Primarily Top-Down Decision Making, Misunderstanding of Epics, Prioritizing Epics, Conducting Release Planning Sessions, Producing High-Quality Code, and Organizing Work (CSPO, 2019).

After implementing SAFe® in any company, they face one common challenge: a lack of flexibility. The structure of SAFe® is fixed, and the responsibilities of team members are also fixed. In the SAFe® Framework, Primarily Top-Down Decision-making depends on managers and other leaders, so it may create an unnecessary burden on project managers, and it can make other team members dissatisfied with the task. Organizations face different problems related to the SAFe® Epics. Misunderstanding of Epics is one of those. Normally, epic means long-term ongoing projects, but in SAFe®, it has a different meaning, such as an enterprise needs to evaluate significant operational projects for investment-related potential before starting them. Another challenge is Prioritizing Epics. Safe® prioritizes epics depending on business value, which may cause difficult decisions as individuals determine which projects should be prioritized. SAFe® conducting Release Planning Sessions, which involves collaborating with people but getting a successful meeting is also a challenge. Through these sessions, getting positive outcomes and clear guidance is also difficult for Scaled Agile. Organizing Work is also a common challenge in SAFe®. The SAFe® framework works with broad teams numbering in the hundreds, which causes the structure to align with large group work enterprises. Determining work timelines is also difficult due to massive batching, so teams are not able to predict a time to complete tasks (CSPO, 2019).

Table 01. List of Challenges in SAFe® Implementation (Khoza & Marnewick, 2021; Putta et al., 2018; CSPO, 2019; 'SAFe Implementation', 2024).

Challenge	Description
Resistance to Change	Leaders and team members resist the transformation from traditional to Agile frameworks.
Lack of Agile Mindset	Employees struggle with the adoption of Agile principles and thinking.
Teams lose freedom	Teams have limited freedom due to upper-level control.
Issues in Staffing Roles	Designing roles based on responsibilities within SAFe® (e.g., RTE, Product Owner) is a challenge.
Problem with PI Planning	Planning Increments among members creates complexity.
Insufficient Training & Knowledge	A lack of training in SAFe® practices leads to poor implementation.
Organizational Misalignment between Structures	Traditional structures and the SAFe® structure create conflicts with Agile
Communication Gap	Communication gaps are a reason for misunderstandings and delays.
Complicated development	Applying SAFe® components at the same time creates confusion.
Inaccurate Metrics and KPIs	Inaccurate selection of KPIs hinders Agile performance tracking.
Lack of Flexibility	Due to SAFe®'s framework, changing is difficult as per the requirement
Top-Down Decision-Making	Decision comes from upper management, which demotivates employees
Misunderstanding of Epics	Misunderstanding of the Epics creates a challenging situation.
Difficulty Prioritizing Epics	Prioritizing epics deepen on value which become reason for tension
Organizing work in large teams	Sometime handling large number of employees become difficult.
Difficulty determining timelines	Maintaining the timebox is another problem with SAFe® implementation.

2.5 Lean-Agile Leadership

SAFe® Framework has seven competencies of Business Agility, and Lean-Agile Leadership is one of them. Every core competency is based on a particular assessment, which enables the organization to assess its competence ('Lean-Agile Leadership', 2025). Managers, executives, and other leaders have the responsibility to adopt, succeed, and continuously grow Lean-Agile development, and competencies lead to business agility. Only Leaders have the right to

change and enhance the improvement of the system, and they can build up the context that enables high-performing Agile teams to thrive and generate value('Lean-Agile Leadership', 2025). Organizations that practice Lean-Agile leadership include the principles of Lean and Agile development to achieve flexibility, teamwork, and continuous advancement while maximizing the delivery of value and reducing unnecessary processes(Master the Three Dimensions of Lean-Agile Leadership, 2023).

Lean-Agile leaders don't just assist change; they lead by assisting the industries in understanding and improving their value delivery. Organizations can achieve a core strength in Lean-Agile leadership through the development of leaders' knowledge and skills based on the three dimensions (Knaster & Leffingwell, 2020).

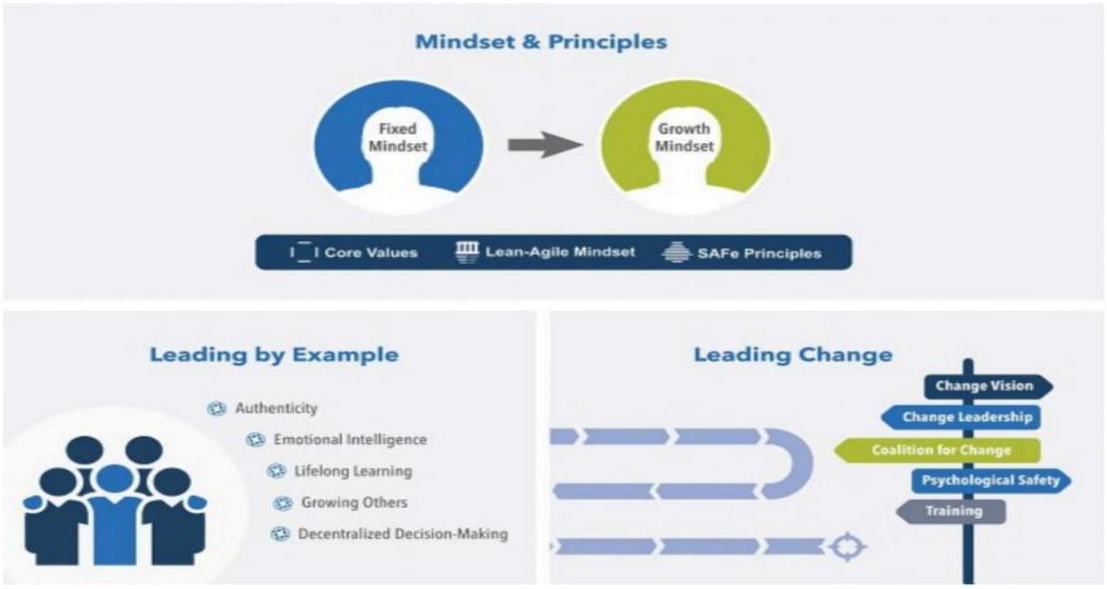

Figure 11: The dimensions of Lean-Agile leadership (Knaster & Leffingwell, 2020)

Mindset and Principles:

The first dimension of Lean-Agile leadership competency is focused on mindset and principles. Leaders need to understand lean thinking and SAFe® principles to teach others (Knaster & Leffingwell, 2020). Organizations need an agile mindset to achieve fast and flexible adaptation in today's fast-moving environment (Master the Three Dimensions of Lean-Agile Leadership, 2023).

Leading by Example

Leading by example is one of the important dimensions of Lean-Agile Leadership. Leaders provide guidelines and actions for the industry and specify which path they will follow. Team members will adopt the established behaviour pattern that the leader designs in this dimension of leadership (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Leaders who lead by example should demonstrate the following actions:

Customer-Centric- Leaders need to fulfil customer needs and support their teams through collaboration for high-quality service delivery (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Collaborative- Leaders must create teamwork by developing open communication systems and active listening practices, and building an environment with mutual trust and respect(*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Continuously Improving- Leaders should develop an active program of continuous enhancement while giving teams the power to identify and handle issues that require improvement (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Leading change- Leading change is the last dimension of the Lean-Agile leadership competency. The role of the Lean-thinking manager-teacher enables leaders to construct Lean enterprises through their mindset and toolbox for business agility development. The delivery of quick value combined with smooth processes, pleased customers, and engaged staff results in straightforward advantages. Successfully changing needs leaders who actively lead transformation by developing the right conditions, preparing people, and providing essential resources to reach established goals. Achieving the success of an organizational change depends on Agile, Lean, and DevOps initiatives. Leaders' actions have a big impact on an employee’s commitment to support the change(Knaster & Leffingwell, 2020).

A Lean-Agile leader has an important role in building a culture of collaboration, continuous improvement, and customer-focused innovation(*Master the Three Dimensions of Lean-Agile Leadership*, 2023).The role of a Lean-Agile leader involves:

Setting the Vision- A lean agile leader is a person who establishes a clear vision for the industry, leaders identify the organization's strategy, and make sure that employees

understand and agree with it. The leadership of Lean-Agile helps all individuals move toward one unified organizational target (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Creating a Culture of Collaboration- Lean-Agile leaders must recognize the importance of collaboration because this is the key to success. Leaders must provide an environment where team members can find a suitable zone to share thoughts and can work combine to solve the problem (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Providing Guidance and Support- Lean Agile leaders have the responsibility to give instructions and assistance to the team members, which helps them build up the skills, and these skills help to achieve success. Leaders have the responsibility for mentoring the team members and providing training and resources (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Ensuring Continuous Improvement- Lean-Agile leaders create an environment of continuous development, which allows employees to try new methods for enhancing their processes through learning. Leaders create a workspace that interprets failure as a chance for personal improvement and that maintains a daily commitment to enhancing performance (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Aligning the Organization- Lean-Agile leaders align the industry with a practical objective, which means every person in the company should work for the same goal and encourage cooperation among departments (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

Facilitating Communication- Communication is the key to developing an Agile mindset. Lean-Agile leaders create the link between different teams and stakeholders, which means individuals should be on the same platform with the same objective (*Master the Three Dimensions of Lean-Agile Leadership*, 2023).

A summary table of leadership strategies and skills of "Lean-Agile Leadership" is provided below:

Table 2. List of Lean-Agile Leadership Strategies and Skills (Knaster & Leffingwell, 2020); (Master the Three Dimensions of Lean-Agile Leadership, 2023) .

Leadership Role	Key Strategies	Skills
Mindset and Principles	Understand and progress Principles of Agile and Lean	Clearly understanding of SAFe® principles; Instruct team members and design an Agile mindset.
Leading by Example	Set a behavioral modification model for employees by showing the behaviors they want.	- Give attention to the customer - Encourage teamwork - Carefully listen to what people say - Focused on continuous improvement
Leading Change	Allow organizational changes by increasing involvement.	Provide a better working environment and prepare employees for changes.
Setting the Vision	Give employees a clear plan and work together for one goal	Identify a clear goal, and the aim of the company must align with the team's.
Creating a Culture of Collaboration	Encourage transparency and working together.	Team problem-solving. Develop trust, allow open communications, and try to solve the team's problems
Providing Guidance and Support	Provide instructions and help people develop skills	Arrange training and feedback sessions when needed
Ensuring Continuous Improvement	Encourage educational culture.	Inspire employees to experiment, no matter if failure occurs, try to improve, and check the performance regularly
Aligning the Organization	Verify the general integration of the company.	Inspired departments to work together to achieve one goal
Facilitating Communication	Coordinate all teams and participants.	Develop open communication among teams and stakeholders

SAFe® implementation leads businesses to continuously improve their agility while following principles from Agile and Lean practices. Leaders at every level must effectively guide and maintain the transformation towards this new working method. Leaders possess the power to modify and advance systems that regulate work operations. Leaders establish organizational conditions that permit Agile teams to prosper and create value delivery. Leaders demonstrate lean thinking and operational approaches to establish organizational examples that serve both guidance and motivational coaching to others (Knaster & Leffingwell, 2020).

2.6 Conceptual Framework

Figure 12: Conceptual Framework for Managing SAFe® Implementation Challenges in Global Organizations.

This study develops a conceptual framework that expresses the leadership thinking process to overcome complex situations during SAFe® implementation in any international industry. This conceptual framework shows: Lean-Agile Leadership Competencies → Strategies → Overcome SAFe® Implementation Challenges, which captures the intense interaction among leadership style, way of thinking, and outcome from that condition.

This framework does not see difficulties and strategies as individual parts; presented like this, it is a constant delivery of decisions created by the lean agile leadership model. This provides powerful insight, like whether strong leadership produces better approaches and better approaches bring the best outcome.

This framework starts with the Lean-Agile leadership competencies that design the way managers think, understand the difficulties, and select the action to take. Lean-Agile leadership competencies involve the capacity to lead by example, the suitable zone for decentralized decision-making, a welcoming feedback environment, and a determination to continuous improvement. This part of the framework presents how managers find out the issues and give structure to the situations, not only the steps they take.

The next part of the framework is strategies that create a bridge between internal competencies and outside effects. In this stage of the framework, it is not only focused on tools and techniques but also on how managers select their strategies based on situations.

This stage highlights strategic agility, how managers give instructions from a Lean-Agile leadership view, and pick a suitable style to solve problems, such as arranging coaching, involving stakeholders, and making a suitable PI planning cycle based on the situation. Lastly, this framework does not depend on one fixed style, it represents that managers should have the right mindset, otherwise, wrong strategies can be chosen by managers, which can create a worse situation.

The last part of the framework is the overcome from those challenges to the successful implementation of SAFe®. This is the step where people can see the implications of strategy and leadership models. This conceptual framework acknowledges that solving the difficulties is not easy, though many challenges are available, but it is possible by applying the right leadership style. This Conceptual Framework helps to visualize how lean agile leadership helps to transform in SAFe® in real life.

3 Methodology

This section will represent the chosen strategies for the methodological development of this thesis. This chapter describes the research method, data collection, and data analysis process in detail.

3.1 Research Design

A Qualitative Case Study Approach

This study selects single-case qualitative research methods to investigate Challenges in implementing the Scaled Agile Framework (SAFe®) in Global Organizations from a managerial view, because Qualitative methods are especially appropriate to understand insights from the depths of leadership experience. One international company that currently using the Scaled Agile Framework (SAFe®) was selected for this research.

For this research, the author will gather data by interviewing a few managers and analysing their real-life experiences, so it can be said that a qualitative research approach would be the best selection for this study. Qualitative research brings attention to inquiry about the meaning that an individual or group of persons refer to a social or human being issue. qualitative research originates from Sociology, anthropology, and all of the humanities, and

assessment in evaluation. Qualitative research includes gathering and examining data to understand the perceptions that are not numerical (Bhandari, 2020). In qualitative research, the researcher analyses problems in their context, and the purpose is to produce meaning and take opinions from practical experience. By the method of research, the author can value uniqueness, society, social justice, and culture in the context of valid information, even with their character in nature. This approach includes data collection, essentially utilizing observations, interviews, and engagement (Asenahabi, 2019).

Though the study will be based on a single case company and only 4 leaders will be interviewed. The case study is a very popular way to examine interviews, which can help find out the best data of an international company briefly. The case study is considered one of the most common approaches to doing a research project, and it provides a useful way because it exhibits various research traditions. Case studies mostly include detailed investigations and information throughout a time within the events within their environment. The primary aim is to develop a research project based on the background and processes that explores the problem that will be researched (O'Gorman & MacIntosh, 2015). A case study is a detailed examination of the specific unit represented, which is limited by time and events. A case study is an investigation that concentrates on analysing, detailing, and Projecting (Asenahabi, 2019).

One international company was selected because it can give real-life knowledge about challenges and key insights about overcoming way used by leaders. Considering all those things about the study, it is decided to adopt the Qualitative Case Study Approach.

3.2 Data Collection Methods

Research data was collected by interviewing managers, The data collection approach started with semi-structured interviews from 26.03.2025 to 17.04.2025. The interviewees have been chosen based on their leadership roles, who have worked with SAFe® at an international company. Qualitative research methods help to get good insights from the experiences and aid in making decisions, For this purpose, qualitative research needs valid data and deep analysis of that data (Barrett & Twycross, 2018). To collect qualitative data, interviews are the most common method. The aim of the qualitative research interview is to add to a set of information that is intellectual and hypothetical, which relies on the practical experiences of the interviewees (DiCicco-Bloom & Crabtree, 2006).

The interview searched for knowledge and tried to understand the challenges managers face with SAFe® and the strategy for overcoming these difficulties. The researcher gathers knowledge about semi-structured interviews and prepares the guidelines and interview questions. All interviewees had been sent an interview invitation with the research topic and objectives. An interview is a detailed conversation among participants which have the goal of gaining in-depth knowledge about the subject (Alshenqeeti, 2014). Based on the setup of questions, interviews are categorized as Structured, semi-structured, and unstructured (Fontana & Frey, 2005). The important characteristic of a Structured interview is that it has an organised set of preset questions, and the interviewer and interviewees do not have flexibility. An unstructured interview is open-ended and allows participants freedom and flexibility to prepare, execute, and also have the freedom to set up the questions of the interview (Alshenqeeti, 2014).

The author tried to design semi-structured interview instructions after knowing the details about semi-structured interviews from the existing literature. The name of the company and the interviewees' names are not disclosed due to confidentiality. At the beginning, there was some discussion about the thesis object, then I took permission to record the interview with the transcript. The interview language was English: the maximum length of the interviews was sixty minutes, with a maximum of thirty-five pages of transcript. Every participant answered the same questions; the follow-up questions were derived from their responses.

Table 03: Summary of Interview Participants and Their Experience with the SAFe® Framework

No	Name	Designation	Experience with SAFe® Framework	Interview Mode	Interview Date	Duration
1	**AAA**	Department Director	9 years	Online	17.04.2025	50 mins
2	**BBB**	Product Managers and line managers for half of the Product Owners each	4 years	Online	04.04.2025	45 mins
3	**CCC**	Line Manager for Architects and Tech Leads	7 years	Online	01.04.2025	40 mins
4	**DDD**	Line Manager for Scrum Masters	6 years	Online	26.03.2025	50 mins

3.3 Data Analysis

Following a semi-structured interview data collection approach, the researcher chose to apply the inductive thematic analysis approach for data analysis. This approach is chosen so that the author gets all the important points that do not rely on any set approach of analysis.

Thematic analysis (TA) is one of the approaches used to find, evaluate, and understand the ideas known as 'themes' in qualitative data. various types of Thematic analysis are available for qualitative researchers. To produce codes and themes from qualitative data, TA offers easily available and methodically based processes. The goal of a TA is not only to compile the material of the data but also to explain a significant part of the data based on the research objectives (Clarke & Braun, 2017). Theme analysis can be mentioned as a flexible data analysis method, and this method enables research strategies to take a new angle to find new ideas, at the same time to maintain data, and to make a summary of main points It also has a structural approach (Willig & Rogers, 2017).

Data analysis mainly focused on getting deep knowledge about the challenges managers faced and what strategies they used to overcome those issues. All the interviews were conducted online and recorded with a transcript. Analysis starts with reading the transcript, and the researcher reads the transcript several times. First, he took one transcript and highlighted the key points and made his notes; in this way, he made initial notes for the interview. After having initial notes, every key point was given a name with a code, which helps to identify the point that the interviewee said. Then the author makes groups for each different key point and tries to make interconnections between all interviews, which means finding out the common and uncommon points explained by the managers. The researcher organizes real data into two types, one for the challenges and another for the ways to overcome those problems, as described by the interviewees.

4 Key Findings

This research is based on the challenges managers faced during the implementation of SAFe® and analyzes how they overcame those challenges. The key findings focus on the challenges and the techniques managers used to handle those problems. From semi-structured

interviews with managers, many key points have emerged related to difficulties, and they expressed many leadership styles and ways to solve them. Notably, the challenges and solutions are highlighted by managers and have already been found in the literature. All those terms are briefly discussed in this section.

First, the researcher discusses about challenges faced with SAFe® and then the strategies leaders explain to solve those problems.

4.1 Challenges Encountered with SAFe® Implementation

Adopting something new is always challenging; implementing SAFe® is no different. Before and after implementing SAFe®, leaders face different types of problems, and at the same time, they try to find solutions. During the interview, managers briefly describe their experience with the problems and the strategies they used to solve those difficulties. Some challenges briefly described are given below:

1-Top Management Support

2-Partial Organizational Adoption

3-Resistance to change

4-Lack of training

5-Loss of independence

6-Communication Gap

7-Prediction and Forecasting

8-PI planning and Cycle Planning

9-Tools and Techniques

10-Insufficient Time for Development

11-Misunderstanding about SAFe®

12-Problems with Stakeholders

4.1.1 Top Management Support

From the interview, one point is noted that to implement SAFe®, strong support from top management needs to be ensured.

"*The first one is the get the kind of upper management support for it because it's a big change, and because on the same time, when doing this transition, we need to deliver the software. Let's say our solutions to the business*." (Interviewee-**AAA**)

That means the transition to SAFe® is a major change of organization that takes place at the same time with existing company operations and software delivery, so it needs to ensure that this transformation will not make any kind of disruption of current project or situation, support from top management will come when leaders can make sure about no negative things will happen by this transformation. Achieving this trust and support for top management of the big challenge and without any kind of support from top management, SAFe® transformation is not possible.

4.1.2 Partial Organizational Adoption

It is observed from the interviews that in one organization, some departments are using SAFe®, and they accept this transformation, but others are still stuck with traditional methods.

"*As it is not the full organization that is transforming, and parts of it are then working in some kind of product management, for example, and then to adopt between these. So* SAFe® *perspective, I think that it is the most challenging*" (Interviewee-**DDD**)

While some parts of one company go ahead with SAFe® and others do not, it creates a misalignment in the workflow. Mentioned by one manager that this type of partial adoption of SAFe® creates conflicts between the departments, as delays can happen.

4.1.3 Resistance to change

Some challenges are mentioned by all interviewees, and resistance to change is one of them. This is one of the major challenges managers faced at the time of SAFe® development.

"*Individuals who don't feel that they would like to change as much as the information needs. But also for the people who engage in transformation, that they don't need to try to cater to these few persons that really resist the change*."(Interviewee-**DDD**)

It is a natural observation by the employees that it is good to stay with known working methods and shifting to another method needs more effort, energy, and time. Employees feel that by working in cross-functional teams, they must lose their priority, and now maybe employees have expertise in one field. In this way, they can also lose this importance because other employees also have the chance to adopt the same skill. The employee who already has expertise in any field, learning something new, has become a source of fear for that person. Less confidence in managers is also another reason that resists shifting into new methods, besides those the traditional methods are one important reason to resist. People who are using traditional methods believe that this is the fastest way, as they do not have much knowledge about SAFe®.

4.1.4 Lack of training

Interviewees explain, SAFe® implementation has a big impact due to a lack of training and insufficient training. One interviewee mentioned that SAFe® training normally arranges for the leaders, like Product Owners and Scrum, not for all team members, so that team members cannot gain much knowledge about the SAFe® framework.

"*So, you may need sufficient training or some time for meetings, you need to overcome this problem, like understanding and debugging thinking*". (Interviewee-**CCC**)

And,

"Typically, in a SAFe® transformation, I would say you give a more profound training to key roles like change, audience, product owners, Scrum Masters, and then maybe a bit lighter training for the teams." (Interviewee-**DDD**)

This caused misunderstandings, and people do not wish to work with SAFe®, which is challenging for the leaders. Sometimes, they offer training, but learning new rules and systems takes time and energy, so employees are not interested in training. Interviewees explain, SAFe® implementation has a big impact due to a lack of training and insufficient training. One interviewee mentioned that SAFe® training normally arranges for the leaders, like Product Owners and Scrum, not for all team members, so that team members cannot gain much knowledge about the SAFe® framework. This caused misunderstandings, and people do not wish to work with SAFe®, which is challenging for the leaders. Sometimes, they offer training, but it will take time and energy to understand the SAFe® model, so employees are not

interested in training. Another point was observed that employees are busy with daily work, so the training for new things feels like an extra weight to them.

4.1.5 Loss of independence

Normally, employees have given right to manage their work according to their way, they are allowed to make decisions independently, but things in SAFe® are different. For example, the Product Owner creates team backlogs based on the importance of work. This is the reason of making discomfort and opposition among those employees who are used to freedom. One interviewee explained that people had lots of freedom, and with this freedom, sometimes they worked with the line, which does not align with the aim and does not meet the target of the department.

"I think one of the reasons people had a lot of freedom, which also resulted in the people doing things that were maybe not always in line with what the target of the department." (Interviewee-**CCC**)

Under the SAFe® experience, workers lose control and need to work together with the team so that the product owner can make plans for the teams. This creates fear among employees, maybe they are going to lose their jobs. This challenge is like a psychological challenge, where employees think they are not needed for this.

4.1.6 Communication Gap

For the successful implementation of SAFe®, clear communication is the most important. One interviewee explained that people had lots of freedom, and with this freedom, sometimes they worked with the line, which does not align with the aim and does not meet the target of the department. Companies frequently change their working methods due to improvements, which create confusion about job responsibilities and misalignment among teams and leaders. In this situation, leaders are facing a problem with maintaining fast and transparent communication. Leaders explain that it is very difficult to keep every employee on the same line, and sometimes clear communication needs individual meetings, or sometimes needs group discussion. Clear communication affected the outcome. Leaders need to maintain clear communication not only with their employees but also with stakeholders. It is observed by the leaders that due to unclear communication, teams do the wrong things.

"*But I mean, communication is always a challenge that you lose kind of in an organizational change.*" (Interviewee-**CCC**)

And "*Would it solve the problems, and then for the important part, really carefully make the communication so that you explain what the problem is and what your solution is by SAFe®, and then you explain very carefully why you think it will solve the problem.*"(Interviewee-**AAA**)

4.1.7 Prediction and Forecasting

Leaders need to forecast project outcomes and the period at the initial stage of SAFe® development. So, before diverting to another method, this clarity and predictability become a challenge for the managers because they need to work with teams from different departments who are working with other traditional methods. Leaders need to make extra efforts to address this problem.

"*One of the challenges we had before the transformation was transparency. Another one was predictability, and we then try to address these by the transformation, and also then communicate actively*." (Interviewee-**DDD**)

4.1.8 PI planning and Cycle Planning

In SAFe®, Program Increment (PI) planning and sustaining adaptability in release cycles becomes complex for the managers, though they need to work with the team that still holds up to traditional methods.

" *Inaccurate metrics and KPI is one more challenge here, and the problem with Pi planning.*" (Interviewee-**DDD**)

In some situations, leaders extended the Program Increment (PI) duration to adjust the time with the industry's schedule. Delays occur for this reason, and the work process becomes slow, though employees thought they had much time to complete their task.

4.1.9 Tools and Techniques

Adopting new tools and techniques to support SAFe® is another issue for managers, although the structure is given by the framework, which already uses tools like Jira and Palarion need to be redesigned to adjust to SAFe® 's terms like epics and backlogs but the thing is universal tools have some limitations and inflexibility, so that adjust with SAFe® framework teams need to take help from central IT team. So, this makes the full process slow and critical. Those tools and techniques are new to managers and employees, so they do not understand the process

of using new tools and techniques, so special training needs to be arranged. All those things take time and cause delays.

4.1.10 Insufficient Time for Development

Every transformation takes time; transformation from the existing method to SAFe® needs to give enough time. One interviewee mentions that transformation does not refer only to understanding the new rules of activities; it also means that teams should be actively involved.

"We thought that it would take time for these kinds of more advanced methods, it would be too complicated." (Interviewee-**AAA**)

Without giving enough time to transformation, the organization cannot get the best outcome. Sometimes, this time pressure feels like fear; for this reason, employees take this transformation toward the new structure as pressure and resistance to change, and they ignore the development process.

4.1.11 Misunderstanding about SAFe®

People are working with SAFe®, but they still do not have a clear understanding of SAFe®, how SAFe® works, and how to apply it. Employees are concentrated only on their duties and responsibilities; they don't try to see the big picture. So, the less knowledge about SAFe® creates confusion among teams. People often think that this new structure can quickly fix present issues, so they do not need to think about the adaptation of SAFe®, and a few people have a misunderstanding that SAFe® will completely replace current development methods. So, leaders need to remove this type of misunderstanding by arranging clear communication.

"Still struggling with SAFe®, and I would say that the root cause for this is that you really, truly don't understand. Therefore, you misunderstand the SAFe® as well. Some people are following the SAFe® by the book to kind of rigorous. So, they don't understand that you still need to have the flexibility." (Interviewee-**AAA**)

4.1.12 Problems with Stakeholders

Managers faced problems with maintaining stakeholders during the SAFe® transformation. Stakeholders do not understand changes; they become confused about delivery time and start to give objections. Stakeholders become afraid about what they will receive and whether does organization will be able to keep their promises.

"The first one is this lead time reduction because we had very long lead times on our deliveries, and the stakeholders have complained a lot about this."(Interviewee-**AAA**)

In that case, managers need to give extra effort to reestablish faith and clarify the worth of the transformation. In this situation, managers need to involve stakeholders at the beginning of transformations.

4.2 Managerial Strategies to Overcome SAFe® Implementation Challenges

4.2.1 Communication and Transparency

To successfully implement SAFe®, managers must ensure clear communication and transparency. All interviewees focused on straightforward, honest, and ongoing communication, and they mentioned that not only meetings are enough, but also individual interactions are needed. Managers distribute information about transformation and every individual plan with teams, and at the same time, they should involve stakeholders at the beginning of information sharing.

"*Improving our ways of working, so that we very openly invite and actively invite our stakeholders." (Interviewee-**DDD**)*

And *"Well, I think it's about communication and not only big events, but for the managers' management team to go and talk to the people and understand their problems, actually, and understand their fears, and also have this close kind of communication."*(Interviewee-**BBB**)

Sometimes managers need to arrange a personal discussion. Leaders make a roadmap and arrange PI planning sessions to have better transparency. Leaders like Scrum Masters and product owners play key roles in developing clear communications, they should arrange feedback sessions when there is any misunderstanding created**.** Leaders create an environment where employees feel free to have open conversations and discussions, and where questions and concerns from anybody are always welcome. It was observed that teams become more confident when they have the right to open a conversation and are encouraged to take on the responsibilities.

4.2.2 Leadership Practices

Leadership practices are a very crucial part of implementing SAFe®, they can help to remove resistance and aid teams to achieve a clear understanding of SAFe® and encourage them to work together from different parts of the industry. Leaders should adopt a leadership style

based on the complex situation and depending on the group's maturity. Leaders go with teams with independence, but few select different methods like a mixed style. The same leadership style does not apply to all teams, because all teams are not equally experienced. Few teams may be highly experienced, while few are not. So, a less experienced team needs strong guidance and explicit guidance when they gain experience and have a clear understanding, then leaders can move them to coaching from where they can become confident and can work for continuous development. 'Leading by example' is one of the leadership style that help to create trust and more involvement of employees. Regular feedback sessions, individual meetings, group discussions, and clear communication all those things are all focused on during coaching leadership style.

"Personal communication openness, leading by example, and getting feedback on also. The leadership there takes a lot of time, especially for line managers," (Interviewee-**BBB**) and

"Some teams can deal with this, the coaching style. But some teams require more directive leadership, and some teams in somewhere in between, so. Kind of reinvolved with the typical, it is. Consultant and so on. Talk about self-driving teams and so on." (Interviewee-**AAA**)

Managers also try to find out the most trustworthy team members from the team who involve them in the SAFe® transformation process because other people have faith in what they say, and, in this way, managers can remove resistance, and this helps to adopt the shift easily. Leaders also focus on arranging training and encouraging investment in enough time for continuous improvement.

4.2.3 Cross-Functional Team

An organization has different departments, and each department has responsibilities. In SAFe®, every team has individual tasks; due to this, problems like miscommunication, delays, and issues with delivery times are created. If teams from different areas work together, for example, by working in cross-functional teams, those problems can be solved**.** Cross-functional teamwork can reduce miscommunication, helps to solve problems very fast, and in this way, people can share their ideas, problems, and find out solutions together.

"One of the things that we tried to achieve was these cross-functional teams. With the help of the cross-functional teams, we also had knowledge from several areas so Previously, the release was tested by another organization, but now the testing people were in the same team, and testing people usually are not. They are not programmers, but when you put the."(Interviewee-**CCC**)

4.2.4 Role-Based Training

At the beginning, people did not have much knowledge about SAFe® practices and Agile principles, which brought uncertainty, anxiety, and poor acceptance. Managers express that training, especially role-based, is very much required for the successful implementation of SAFe®. Based on job responsibilities industry should arrange training. Leaders like scrum masters, Managers, product owners, and also team members should receive particular instruction based on their responsibilities. Training needs to be provided early so that it can remove confusion, increase trust, which helps to continue improvement. By training, people get a clear understanding of their responsibilities, and new staff members also have access to constant training possibilities.

"We need to group and have a bigger group for these trainings but also offer that to new ones. So that's one of the things, then maybe also acknowledging the fact that a transformation."(Interviewee-**DDD**)

4.2.5 Application of Tools and Techniques

Suitable choice and arrangement of tools and systems are needed for the successful implementation of SAFe® in the global organization. It was expressed by the interviewees that tools play an important role in supporting planning teams. Different types of tools are used at different levels, like JIRA, Confluence, and Polarion are very important elements to SAFe® practices. To handle team-level tasks and sprint tasks, JIRA was mainly used, and planning at higher levels and aligning stakeholders was mainly done by Polarion, besides JIRA and Polarion. Confluence is used for finding out all things in one place and archiving information and distributing documents. Suitable choice and arrangement of tools and systems are needed for the successful implementation of SAFe® in the global organization. It was expressed by the interviewees that tools play an important role in supporting planning teams. Different types of tools are used at different levels, like JIRA, Confluence, and Polarion are very important elements to SAFe® practices. To handle team-level tasks and sprint tasks, JIRA was mainly used, and planning at higher levels and aligning stakeholders was mainly done by Polarion, besides JIRA and Polarion. Confluence is used for finding out all things in one place and archiving information and distributing documents.

"And there were two core tools which support this, where the Confluence and especially JIRA, which we use for team-level management. So we the kind of high-level planning and communication is done through Polarion." (Interviewee-**AAA**)

This technique helps to remove copy activities, keep the members and managers on the same line, and develop unity among teams. Besides selecting tools, the automation processes provided a big technical plan of action that helps to make easy task and reduce delivery time. There are many activities that are created by hand tasks, for example, testing manually, but by using automation methods, teams' work becomes quicker with fewer mistakes. IT teams help to set up, configure, and combination of those tools and techniques to support SAFe® activities.

4.2.6 Improving Predictability

At the time of SAFe® transformation, to develop trust and transparency with teams and stakeholders, Prediction plays a vital role. If during the change, the forecasting about deliveries is less than expected, it creates conflict and misinterpretation between managers and stakeholders. So, leaders should be focused on predictability; they use metrics by which they track lead time and work progress. Leaders are always welcoming of open-ended communications. Predictions are not only important for ensuring good outcomes but also help to figure out working improvement by time.

4.2.7 System Thinking

To find out challenges in the early stage of transformation, systems thinking is needed mentioned by the interviewee. It was noted by managers that technical activities, which are basically handled by the engineering teams, sometimes need to be broken down into individual parts so that they can focus on particular issues. This process creates sub-optimization, by which teams can solve their little problems. In systems thinking, managers inspire people to gather knowledge about the whole system, how their issues relate to other departments, and what impact it has on the full organization. Managers arrange continual coaching and discussion about the whole system so that they can have a clear understanding of their tasks and can relate this to what impact this has on the outcome.

4.2.8 PI Planning and Splitting Activities

Duration of Program Increments (PI) affects the SAFe® transformation. Due to longer Program Increments (PIs), teams become slow about tasks, so that delays can occur. If a full quarter of months is given to employees to deliver the task, they become slow and sometimes hold the task because they thought they had enough time to deliver; this is one of the reasons for delayed delivery. To reduce this type of problem, managers find out ways they can split PIs into smaller and can be handled without facing difficulties.

"That's the benefit of the larger scale framework, and then if we decided to apply, I would say quite a lot of the tools that were in the SCADA framework in 2019. So we had the PI planning and the Programming increment of course sprints. We were somewhat familiar from before, but we decided to go with shorter sprints, so we changed to two, two-week sprints." (Interviewee-**BBB**)

They inspired teams to work in two or three short stages inside the PI series. Managers think about a time box where sprints are fixed within two weeks, which helps employees to improve the estimation time of deliveries and make sure about the working progress. Managers noted that by splitting tasks, they can increase team engagement and achieve better outcomes, which satisfy stakeholders more than before.

4.2.9 Stakeholder Engagement

To achieve top management support during the SAFe® transformation, engagement of stakeholders is needed. Stakeholders needed to be convinced about the delivery and make them ensure that the new transformation will not have any kind of negative effect on the deliveries and project outcomes.

*"We are kind of in a very kind of key position there to convince them that nothing is broken, that even solid. This will pay off in better performance."(*Interviewee-**AAA**)

Managers engaged stakeholders and tried to explain to them why changes are important and how they help to solve all difficulties. Managers try to maintain clear communication with stakeholders, and at the beginning of transformation, they wish to involve stakeholders to get support from upper management easily.

4.3 Interpreting Findings through the Conceptual Framework

The conceptual framework described in section 2.6 is connected strongly with the key findings of this study. The conceptual framework represents three stages: Lean-Agile Leadership Competencies, strategies, and overcoming the way of SAFe® implementation challenges. Practical experiences shared by managers provide clear evidence.

Leadership competencies instruct the managers to think. From the interviews, it was noted that with an effective and active Lean-Agile leadership model, managers can handle very systematically the complex situations during SAFe® implementation. As an example, managers skip the top-down decision-making rule and allow for welcoming feedback sessions. This provides insight into decentralizing and building trust. Depending on the maturity of teams, managers are flexible in adopting their leadership style. Managers share their thoughts with teams not only to take action on the task. Finally, leadership mindset designs its framework depending on the industry's requirements.

The second step of the framework is appropriate strategies, which come from leadership thinking. From the key findings, it can be noted that managers apply strategies based on the challenges; they do not rely on one fixed system. Such as to remove when facing communication gaps, they arrange an in-person meeting, not only depending on the group discussions, and arranging training based on responsibilities is another example of choosing the right strategies based on the situation.

The last stage of the framework is overcoming challenges to successfully implement SAFe®. This step represents the successful adoption of SAFe®. The most important fact is that the success of SAFe® development does not depend on one strategy; managers need to be very active and apply systems thinking depending on the environment.

5 Discussion and conclusion

The Scaled Agile Framework (SAFe®) has lots of benefits, so organizations are moving to SAFe® from traditional methods. Transformation is always challenging, but to achieve something good, transformation is necessary. The main aim of this research is to deeply understand the challenges during the development of the Scaled Agile Framework (SAFe®) in an international

company and also find out the key solutions leaders used to solve those difficulties. In this research, some experienced leaders from one international company were selected for the interview. Managers share their practical experiences from which the author picks up the key points. Existing literature and research also provide much information about the Scaled Agile Framework (SAFe®) transformation.

5.1 Key Finding Interpretation

The research questions aim to find out the key challenges and strategies managers used to implement the Scaled Agile Framework (SAFe®) in international companies. The main question of this study is 'How do managers of global organizations overcome challenges in implementing the Scaled Agile Framework (SAFe®) in project management?', which can be addressed by giving the answer to two secondary questions. These are:

(1) What are the primary challenges that global organizations face when implementing SAFe® in project management? and

(2) What strategies can managers adopt to overcome these challenges during the implementation of SAFe®?

Question 01) What are the primary challenges that global organizations face when implementing SAFe® in project management?

From the interview, the practical challenges faced by the managers during SAFe® implementation are noted. To successfully implement SAFe®, finding out only the challenges is not enough; the way to overcome those issues also needs to be found. Managers described both sides during the interview. They explain challenges like, getting support from management, not full organization adopt SAFe® and rest of organization still using traditional methods, people still resist to change, not enough training is arranged, employees lose freedom, communication gap, need strong prediction and forecasting in the stage early of transformation, PI planning and Cycle Planning, less knowledge about Tools and Techniques, Insufficient time for Development, misunderstanding about SAFe®, Problems with Stakeholders.

The challenges mentioned by interviewees are also found in existing literature. Research data focused on some key challenges and strategies, which also match with existing literature.

According to Khoza & Marnewick (2021) described about resistance both management and employees are not interested in transformation due to a trust issue. If anything goes wrong, then the delivery time will be delayed, and transformation will be difficult if the leaders fail to arrange enough training and tools for the new structure. In traditional methods, teams work in an independent model, but in SAFe®, managers need to provide a cross-team working environment, so a lack of this type of working environment is another challenge. For that, leaders need to maintain clear communication among stakeholders and teams. Due to not having enough training and tools, teams do not understand short and long-term goals. In addition, Erin Aldridge (CSPO, 2019) has described about lack of flexibility, primarily Top-Down Decision-making, and Organizing Work. So, it can be said that problems described by the interviews are also met with existing literature, though challenges come in different ways in different situations.

Question 02) What strategies can managers adopt to overcome these challenges during the implementation of SAFe® in project management?

To overcome those challenges, managers use some strategies, like communication and transparency. To improve communication and transparency, the manager needs to arrange feedback sessions, frequent meetings, and individual meetings. Then, the leadership practice is very important to create a working environment with a cross-functional Team. Training should be arranged according to responsibilities. Managers should have clear knowledge of tools and techniques. Leaders should be aware that predictability, to successfully implement SAFe® system thinking is very crucial. PI Planning and Splitting activities should be focused, and at the initial stage, stakeholders should be encouraged to get support from upper management. Those are mentioned by the leaders.

According to existing literature, Organizations that apply Lean-Agile leadership include the principles of Lean and Agile development to gain flexibility, teamwork, and continuous advancement can maximize the delivery of value and reducing unnecessary processes (*Master the Three Dimensions of Lean-Agile Leadership*, 2023) and Lean-Agile leaders not only focus on assisting change, they lead by assisting the industries in understanding and improving their value delivery. Organizations can gain a core strength in Lean-Agile leadership through increased leaders' knowledge and skills based on the three dimensions (Knaster & Leffingwell, 2020).

Managers also focused on leadership practice during the transformation. Each interviewee described their leadership style. They were told to lead by example, and they should open for personal communication. Existing studies explain that leaders must improve teamwork by developing open communication systems and active listening practices, and building an environment with mutual trust and respect, and leaders should to fill customer needs and support their teams through collaboration for high-quality service delivery (*Master the Three Dimensions of Lean-Agile Leadership*, 2023). Leaders should have a roadmap and a way to work by which they can build trust with teams. They provide proper support and focus on the speed of change. The strategies that managers must follow to successfully implement SAFe®. Besides all of those, managers express how they can understand about successful adaptation of SAFe®. Initially, success can be analysed by the lead time, as 90% of the time, teams are able to deliver on time. Success can be observed by team conditions and stress levels. In addition, stakeholders' feedback and delivery capacity also indicated the implementation of SAFe®. Various challenges have arisen during transformation into SAFe®; however, by using a strong leadership style and following SAFe® principles, overcoming those problems is possible.

5.2 Managerial Implications

Findings from this research express that for successful transformation into the Scaled Agile Framework (SAFe®), it needs strong and active leadership. Managers should have Lean-Agile competencies and apply leadership strategies all over the organization, not just in their own department. By using the right leadership strategies, managers can change and develop this transformation. They should have a mindset and should follow principles. Managers must have the mind to accept changes, and managers need to lead by example. They will provide the right guidance and support to teams. To improve communication and transparency with teams and stakeholders, they can arrange individual and open group meetings, welcoming feedback sessions. A friendly working environment where nobody is afraid to share their opinions. Though the tools and techniques are very new to everyone, managers must ensure necessary and regular training. Transformation needs sufficient time, so they have to be patient, and they need to develop predictive power at the early stage of transformations so that they can plan PI in the right way. Transformation is not possible without top management support; to ensure this support, they need to involve stakeholders from the beginning.

5.3 Theoretical Implications

This research has active theoretical implications; some new points of view arise when compared with the body of current knowledge. This study agrees with the existing studies, Khoza & Marnewick (2021), and Erin Aldridge (CSPO, 2019) mention some issues like resistance to change, communication, training, and working environments. All the interviewees mentioned those issues and agreed with the information from the literature.

Another theoretical implication about SAFe® Principle #9 -Decentralized Decision-Making. From research data, it was observed that if organizations depend on the upper-level decisions, it creates conflict and makes the transformation process difficult (Knaster & Leffingwell, 2020), described about "leading change" that managers should provide power to employees, if they do not do it, transformation will be much more challenging.

Additionally, managers have some strategies like arranging training based on responsibilities, creating a cross-functional working environment, and improving transparency. Given the theoretical aspects by Master the Three Dimensions of Lean-Agile Leadership (2023), described about leadership model based on customer orientation, creating cultural collaboration, and focused on continuous improvement.

From the study, it can be considered that SAFe® gives a structured framework, and the successful implementation of SAFe® highly relies on Managerial strategies

5.4 Limitations

Though this study provides important key insights about challenges and the successful transformation of (SAFe®), this research has some limitations, too. First of all, data was collected from one international company, so it can be said that information found from this organization may not match with other organizations due to company size and structure, working process, and stage of Agile transformation may not be similar to this company.

Additionally, the researcher conducted interviews with a few numbers of managers, which does not cover all departments of the industry. So, it can be said that this data collection did not cover information from team members, Product Owners, Scrum Masters, stakeholders, or non-technical departments. For this reason, much important data may be missed.

Furthermore, this study focused on only the managerial perspective, which skips much information from the sector. During the adoption of SAFe® in one organization, not only managers but also stakeholders, top management, and team members play an important role.

Another limitation is the research timeline; the researcher has an educational timeline. The author needs to cover the full research within time, as this has a big impact on data collection and the data analysis process. Due to this limitation, researchers cannot go for deep research. The outcome of this research reflects this limitation

5.5 Suggestions for Future Research

Depending on the findings of the research, some fields of research can be included and suggested to improve in future research. Primarily, during future studies, researchers can involve more than one organization to gather information from different views. If it is possible to accumulate information from more than one company who have adopted or is adopting SAFe® ®, it will help to compare information and get more accurate facts.

Secondly, future research can include a few more interviewees for the interviews. Interviewees from different positions, like Scrum Master, Product Owner, stakeholders, and non-technical people, are needed to successfully transform into SAFe®.

Additionally, data can be collected from various sectors and researchers should not only rely on one particular team, but they should also involve technical and non-technical teams, teams who are already transferred to SAFe®, who are willing to transfer, and who are shifting; all types of teams should give importance to getting information about SAFe®, successfully transforming SAFe®.

A suggestion for future studies is that researchers can adopt mixed methods. In this type of system, they can use more than one method for study. The author can use qualitative and quantitative approaches at the same time. Interviews can provide information that belongs qualitative style, and survey data provides quantitative information. By using this combined approach more correct result can be obtained.

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