# LEAN Project Management

## Implementing LEAN principles to a service industry organisation

Jessica Ekström

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Author: Jessica Ekström

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Supervisor(s): Rosmeriany Nahan-Suomela

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**Abstract**

This study delves into the implementation of LEAN principles in project management processes within a company, focusing on inclusive idea generation, resource allocation, external funding application, and the waiting period for funding approval. It aims to uncover challenges and propose potential solutions in these areas, offering valuable insights for LEAN integration.

The primary objectives encompass understanding the current state of project management processes, identifying areas for LEAN implementation, and offering actionable insights for process improvement.

A qualitative approach was employed, utilizing semi-structured interviews with 20 personnel participants. Ten key questions were posed to address challenges and explore LEAN possibilities in project idea generation, resource allocation, funding application, and the waiting period for funding approval.

Grounded in LEAN principles, the study seeks to eliminate waste, enhance efficiency, and optimize project management processes. LEAN methodologies were applied to assess and improve identified areas within the company.

Key findings underscore the significance of clear leadership, effective communication, and understanding funders' expectations. LEAN solutions include fostering collaborative idea generation, strategic resource allocation, and efficient communication in funding applications. While some areas may entail uncertainty, the overall analysis suggests the potential for LEAN integration to streamline project management processes.

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Language: English
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**EXAMENSARBETE**

Författare: Jessica Ekström

Utbildning och ort: MBA, Vaasa

Inriktning: Business and Digitalization

Handledare: Rosmeriany Nahan-Suomela

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**Abstrakt**

Denna studie utforskar implementeringen av LEAN-principer i ett företags projektledningsprocesser, med fokus på inkluderande idégenerering, resursallokering, ansökan om extern finansiering och väntetiden för finansieringsgodkännande. Målet är att avslöja utmaningar och föreslå potentiella lösningar inom dessa områden, vilket ger värdefulla insikter för LEAN-integration.

De primära målen innefattar förståelse för den aktuella situationen för projektledningsprocesser, identifiering av områden för LEAN-implementering och att erbjuda handlingsbara insikter för processförbättring.

En kvalitativ metod användes, med halvstrukturerade intervjuer med 20 deltagare från personalen. Tio nyckelfrågor ställdes för att adressera utmaningar och utforska LEAN-möjligheter i projektidégenerering, resursallokering, finansieringsansökan och väntetiden för finansieringsgodkännande.

Studien är förankrad i LEAN-principer och syftar till att eliminera slöseri, förbättra effektiviteten och optimera projektledningsprocesser. LEAN-metodik tillämpades för att bedöma och förbättra identifierade områden inom företaget.

De viktigaste resultaten understryker betydelsen av tydligt ledarskap, effektiv kommunikation och förståelse för finansiärers förväntningar. LEAN-lösningar inkluderar att främja samarbetsidégenerering, strategisk resursallokering och effektiv kommunikation vid finansieringsansökningar. Även om vissa områden kan innebära osäkerhet antyder den övergripande analysen potentialen för LEAN-integration för att effektivisera projektledningsprocesser.

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Språk: Engelska
Nyckelord: LEAN, Projektledning, Processer

**OPINNÄYTETYÖ**

Tekijä: Jessica Ekström

Koulutus ja paikkakunta: MBA, Vaasa

Suuntautumisvaihtoehto: Business and Digitalization

Ohjaaja(t): Rosmeriany Nahan-Suomela

Nimike: LEAN Project Management – Working in an Organisational Culture

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**Tiivistelmä**

Tämä tutkimus tutkii LEAN-periaatteiden toteuttamista yrityksen projektinhallintaprosesseissa, keskittyen mukaan ottavaan ideoiden luomiseen, resurssien kohdentamiseen, ulkoisen rahoituksen hakemiseen ja odotusaikaan rahoituksen hyväksymistä varten. Tarkoituksena on paljastaa haasteita ja ehdottaa mahdollisia ratkaisuja näillä alueilla, tarjoten arvokkaita oivalluksia LEAN-integraatiolle.

Pääasialliset tavoitteet sisältävät ymmärryksen projektinhallintaprosessien nykytilasta, LEAN-toteutusalueiden tunnistamisen ja toimintakelpoisten oivallusten tarjoamisen prosessien parantamiseksi.

Laadullinen lähestymistapa otettiin käyttöön, ja siinä hyödynnettiin puolistrukturoituja haastatteluja, joissa oli 20 henkilökunnan osallistujaa. Kymmenen keskeistä kysymystä esitettiin käsittelemään haasteita ja tutkimaan LEAN-mahdollisuuksia projektien ideoiden luomisessa, resurssien kohdentamisessa, rahoituksen hakemuksissa ja odotusajan rahoituksen hyväksymistä varten.

Tutkimus perustuu LEAN-periaatteisiin ja pyrkii poistamaan hukkaa, parantamaan tehokkuutta ja optimoimaan projektinhallintaprosesseja. LEAN-menetelmiä sovellettiin tunnistettujen alueiden arviointiin ja parantamiseen yrityksessä.

Tulokset korostavat selkeän johtajuuden, tehokkaan viestinnän ja rahoittajien odotusten ymmärtämisen merkitystä. LEAN-ratkaisuihin kuuluvat yhteistyöhön perustuvan ideoiden luomisen edistäminen, strateginen resurssien kohdentaminen ja tehokas viestintä rahoitushakemuksissa. Vaikka joillakin alueilla saattaa olla epävarmuutta, yleinen analyysi viittaa LEAN-integraation potentiaaliin projektinhallintaprosessien virtaviivaistamiseksi.

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Kieli: Englanti
Avainsanat: LEAN, Projektinjohto, Prosesseja

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# 1 Introduction

All businesses must make money to remain solvent and stay in business. The need for profitability is clear, it is how to get there that is the tricky part. One way to achieve this is to create more value for the customers while creating less waste for the business. This is commonly called LEAN project management.

LEAN project management prioritizes the delivery of a project by maximizing value and minimizing waste. It does this by systematically eliminating waste in the value stream of the LEAN process. LEAN project management relies on continuous improvement. That means that every process in the overall business value stream is improved by applying the principle of greater value and reduced waste. The LEAN manufacturing methodology has five LEAN principles, value, value stream, pull system, continuous flow, and perfection.

Toyota pioneered LEAN manufacturing, but this thesis will focus on applying LEAN principles within the service sector, rather than solely within manufacturing.

When the Toyota Production System (TPS) was first introduced, it allowed the car company to improve value for its customers. The proof is that the (then) small car manufacturer has become one of the largest automakers in the world. Although the term "LEAN manufacturing" didn't emerge until the 1990s, the advantages of LEAN project management were apparent.

Implementing LEAN principles in project management processes offers several advantages. It provides greater visibility into the manufacturing process, allowing teams to have a comprehensive understanding of each stage. This enhanced visibility contributes to more informed decision-making, granting teams better control over project activities.

Furthermore, the empowerment of teams is a significant outcome of LEAN implementation. By fostering a culture of continuous improvement and eliminating waste, teams feel more in control of their work, leading to boosted productivity and elevated morale among team members.

LEAN methodologies also offer alternative approaches to deliverables, providing flexibility in project execution. This adaptability is crucial for responding to changing requirements or unforeseen challenges, ultimately contributing to faster project completion.

The streamlined processes and reduced issues in LEAN projects result in quicker project timelines. Teams can respond more efficiently to challenges, resulting in fewer obstacles and delays, ultimately expediting project delivery.

Financially, LEAN implementation leads to boosted profits. By adding more value to the process and minimizing waste, organisations can optimize resources and improve their bottom line. This focus on efficiency and value addition aligns with customer expectations, leading to increased customer satisfaction.

In summary, the implementation of LEAN principles in project management not only improves visibility, control, and decision-making but also positively impacts productivity, morale, project timelines, profits, and customer satisfaction.

As companies harvest these benefits, they have more funds to invest in workers, tools, and equipment. This sets in motion a positive cascade, generating additional value and further minimizing waste within the production system. It's a mutually beneficial situation in the optimal business sense.

The need for profitability in businesses is undeniable, yet achieving it requires navigating through various challenges. One effective approach to enhancing profitability is through LEAN project management, which focuses on maximizing value for customers while minimizing waste within the business. This methodology, originating from LEAN manufacturing, emphasizes continuous improvement and adherence to key principles such as value, value stream, pull system, continuous flow, and perfection.

While LEAN project management has traditionally been associated with manufacturing, its principles are increasingly being applied to service industries. However, there remains a gap in understanding how LEAN methodologies can be effectively implemented in service-oriented organisations, particularly in project management processes. The article by Radnor et.al (2012) explores the application of LEAN principles in healthcare settings and highlights the challenges and barriers to implementation in service-oriented organizations. The paper by Burgess et.al (2010) discusses the unique challenges of implementing LEAN practices in healthcare organizations and emphasizes the need for further research to address these challenges. A study conducted by Mazzocato et.al (2010) examines the application of LEAN principles in hospitals and identifies barriers to implementation, including resistance to change and organizational culture issues.

This research aims to address this gap by exploring the application of LEAN principles specifically within the context of project flow, decision-making processes, and cash flow management in a service-based company.

Existing literature highlights the advantages of LEAN implementation in project management, including enhanced visibility, empowered teams, flexibility in project execution, streamlined processes, quicker project timelines, increased profits, and improved customer satisfaction. However, much of this research focuses on manufacturing settings, leaving a gap in understanding how these benefits translate to service industries.

By investigating the gap between LEAN service industry principles and the current operational state of the company, this study aims to provide valuable insights into effective LEAN implementation strategies tailored to service-oriented organisations. Specifically, the research seeks to identify challenges related to project flow, decision-making processes, and cash flow management, and propose solutions rooted in LEAN methodologies.

While previous research has explored the benefits of LEAN implementation in project management, there is limited empirical evidence on its application in service industries. This study aims to fill this gap by conducting an in-depth analysis of the challenges and opportunities associated with implementing LEAN principles in a service-based company.

In summary, this research seeks to contribute to the existing body of knowledge by providing practical insights into the application of LEAN project management principles in service industries. By bridging the gap between theory and practice, the findings of this study have the potential to inform more effective and efficient project management processes in service-oriented organisations, ultimately leading to improved profitability and customer satisfaction.

Having established the foundational principles of LEAN project management and identified the gaps in existing literature, the next step is to delve into a real-world application of LEAN methodologies. While LEAN principles have traditionally been associated with manufacturing, the service sector presents a unique landscape where these principles can be adapted and applied in innovative ways. In this transition, we pivot from the theoretical underpinnings of LEAN to a practical exploration of its implementation within a service-oriented organization.

Toyota's pioneering efforts in LEAN manufacturing have set a benchmark for efficiency and productivity in the manufacturing industry. However, as industries evolve and customer demands change, there is a growing need to explore how LEAN principles can be extended beyond manufacturing settings. The selected case company operates within the service sector, offering an intriguing opportunity to examine the applicability and effectiveness of LEAN methodologies in service-oriented project management. Through an in-depth analysis of this company's experiences, challenges, and successes, we aim to uncover valuable insights into the practical implementation of LEAN principles in a non-manufacturing context.

## 1.1  Company Introduction

The Vaasa Region Development Company (VASEK) was founded in 2003 and is jointly owned by seven towns and municipalities on the West Coast of Finland.  These are Vaasa, Korsholm, Vörå, Malax, Korsnäs and Laihia. VASEK advocates and strengthens growth and competitiveness in the region. VASEK promotes and reinforces growth and competitiveness in the region. This is done by improving the preconditions for business activities in the Vaasa region in cooperation with the regional authorities, municipalities, local action groups, and enterprises (VASEK, 2023).

VASEK's role and priorities are in both the company's operations and regional development activities. These are guided by the company's strategy, which is updated annually. The owning municipalities mentioned above are the top points of development, and from which the themes of the company's strategy are derived. VASEK receives many companies' challenges through the daily work with customers, which gives the needs when assessing ideas for new projects. As the region is known for its entrepreneurial spirit and traditions, it is also equipped with a strong will to succeed. Outsourcing and the increasing use of subcontractors contribute to the fact that more and more small and medium-sized companies are being established. The company's main objective is to help SME's grow and be a part of the flourishing Vaasa Region - one of Finland's most attractive and innovative environments for companies and employees (VASEK, 2023).

## 1.2   Objectives and Research Questions

The object of this thesis is to investigate the implementation of LEAN principles within a company's project management processes, focusing on inclusive idea generation, resource allocation, external funding application, and the waiting period for funding approval. The study aims to uncover challenges and potential solutions in these processes, providing valuable insights for the integration of LEAN methodologies.

VASEK is jointly owned by seven towns and municipalities on the West Coast of Finland, and partly funded by external sources. The problem that is re-faced is the flow in projects, as one project does not end as another project starts. This leads to a state when the project managers work full speed, over 100% when at other times have to go at a lot slower pace, which could be considered as problem number one. Many of the employees work as project managers within different types of projects. Some projects are extended over three years or more, while others are only two years.

Another challenge is the long decision-making process when applying for external funding, how so to say "keep the boat floating" between the projects, calling this problem number two. A third problem is the long process of actually getting the money to the account after having submitted the payment application, as this procedure takes at least nine months, up to two years, which in turn leads us back to problem number two.

In the future, this is what the company wants to avoid, and hopefully by LEANing some of the processes, a better flow and pace in the projects can be achieved and project managers less stressed with a suitable workload.  This leads us to the research questions.

The main task of this master's thesis is to describe a process using LEAN's method to eliminate waste and get a better flow/workload in the projects as well as a steady cash flow.

The study will be based on the following three research questions:

> 1. How can general project management benefit from integrating LEAN processes for project execution before obtaining funding approval?
>
> 2. How can the company LEAN its processes in future projects prior to funding approval?

3. Is the company able to eliminate waste and get a better flow between project execution and external funding?

Based on your research questions, it appears that you aim to explore the integration of LEAN processes into general project management practices, particularly focusing on project execution before obtaining funding approval. Additionally, you seek to understand how the company can optimize its processes in future projects to streamline operations prior to funding approval and whether it can effectively eliminate waste and improve flow between project execution and external funding. In summary, your research aims to investigate the benefits, challenges, and potential strategies associated with implementing LEAN methodologies in project management, with a specific focus on enhancing efficiency and effectiveness in the pre-funding approval phase.

The desired result is hopefully a process that can and will be used to eliminate waste by using a LEANed process.

Statements and assumptions which are made in this thesis are based on previous written literature reviews. The reader should therefore assume that statements in this thesis, which lack references, are taken from various occasions and situations.

## 1.3   Research Methodology

This qualitative study aims to explore the integration of LEAN principles into project management processes, specifically focusing on the phase preceding funding approval. The research design incorporates various methods to comprehensively understand current project management practices and the potential application of LEAN methodologies. The study addresses three key research questions.

The investigation begins with an extensive literature review to establish a theoretical foundation. This involves a thorough examination of scholarly works on the project (Womack & Jones, 1997). A detailed case study analysis is conducted to provide insights into current project management processes. This qualitative approach allows for an in-depth exploration of the nuances of project execution before funding approval. Qualitative data is collected through structured interviews with project managers and team members

(Miles;Huberman;& Saldana, 2013). These methods allow for a nuanced understanding of perceptions, experiences, and potential challenges related to LEAN implementation.

Based on the findings from the literature review, case study analysis and interviews, a theoretical framework is developed. This framework synthesizes theoretical underpinnings and practical insights, providing a structured guide for integrating LEAN principles into future projects prior to funding approval. The study concludes with actionable recommendations for implementing LEAN principles in project management processes.

## 1.4   Structure of the Study

The structure of the study has focused on LEAN in a service organisation, instead of LEAN in a manufacturing organisation. In the realm of service organisations, where the dynamics of project management play a pivotal role, this study delves into the application of LEAN principles to enhance efficiency, reduce waste, and optimize project flow (Womack & Jones, 1997). The structure of the study is designed to address the research questions.

The study kicks off with an extensive literature review, navigating through scholarly works that specifically address LEAN applications in service organisations. Understanding the unique challenges and opportunities in service-oriented project management sets the stage for the subsequent investigation. To provide a real-world context, a case study analysis is conducted on a service organisation's project management processes. This includes examining the intricacies of project execution before the green light of funding approval.

Qualitative data is collected through interviews with key stakeholders in service-oriented projects. This approach aims to capture insights into the perceptions and expectations of project managers and team members regarding the integration of LEAN processes. Recognizing the interactive nature of service projects, a hands-on workshop is organized. Here, stakeholders collaborate to explore practical applications of LEAN principles in service-oriented project management, providing valuable qualitative data on the feasibility and acceptance of LEAN methodologies.

Findings from the literature review, case study analyses and interviews the study constructs a theoretical framework (Radnor & Bucci, 2007). This framework is tailored to the service

context, offering a structured guide for the integration of LEAN principles into future service projects prior to funding approval.

## 2 Theoretical Framework

Chapter two in this thesis includes the theoretical framework in LEAN project management in a service organisation. The theoretical framework draws upon literature related to LEAN management, project management, and resource optimization. It considers how LEAN principles, focused on continuous improvement, waste reduction, and efficient resource allocation, can be strategically integrated into the company's project execution processes. The framework aims to provide a theoretical basis for understanding the potential impact of LEAN thinking on enhancing the flow and effectiveness of projects, particularly in the critical phase before funding approval.

The theoretical framework for the research focuses on integrating LEAN principles into the project execution processes of the company, specifically prior to funding approval. The framework is structured around three main research questions.

The study delves into the examination and analysis of the current processes employed in executing projects prior to securing funding. This involves a comprehensive exploration of existing project management methodologies within the company.

Building upon this foundation, the second research question focuses on the potential integration of LEAN principles into future projects before obtaining funding. Here, the study seeks to understand how LEAN management philosophies can be applied to optimize resource utilization, enhance workflow, and improve overall project efficiency. The exploration encompasses LEAN thinking methodologies, including visual controls and continuous improvement practices, to identify tools and techniques that can be seamlessly incorporated into the existing project management framework.

The third research question explores the prospect of eliminating waste within project management processes to achieve a more seamless flow between project execution and external funding. This involves an in-depth investigation into the concept of waste in project management, with a specific emphasis on how LEAN principles can contribute to

waste reduction. The study aims to understand how the elimination of waste can lead to a smoother transition from project execution to funding approval, potentially reducing delays, expediting decision-making processes, and improving the overall flow of projects within the organisation.

The research questions collectively form a comprehensive exploration of the intersection between traditional project management practices and LEAN principles, with a specific focus on the critical juncture preceding funding approval. The study seeks to provide valuable insights into how LEAN thinking can be strategically integrated to enhance project management processes, contributing to a more efficient and effective project execution workflow.

## 2.1 What is Project Management?

This chapter will describe how project management usually is described, and in next chapter LEAN project management will be described.

The terms "project" lack a universally accepted definition. Different organisations define projects in different ways. Many one-off initiatives that fall outside of routine work cannot really be called "projects". But the basic principles and methods of project management can still be applied (Kuster, et al., 2011).

According to (Portony) project management is the process of guiding a project from its beginning through its performance to its closure. Project management includes five sets of processes, which are described in more detail in the following five sections:

**Initiating processes:** Clarifying the business need, defining high-level expectations and resource budgets, and beginning to identify audiences that may play a role in your project.

**Planning processes:** Detailing the project scope, time frames, resources, and risks, as well as intended approaches to project communications, quality, and management of external purchases of goods and services.

**Executing processes:** Establishing and managing the project team, communicating with and managing project audiences, and implementing the project plans.

**Monitoring and controlling processes:** Tracking performance and taking actions necessary to help ensure project plans are successfully implemented and the desired results are achieved.

**Closing processes:** Ending all project activity.

In the preceding discussion, we delved into the multifaceted realm of project management, exploring its diverse definitions and fundamental processes outlined by scholars such as Kuster et al. (2011) and Portony (2013). As we transition into the next chapter, we will further explore the intricacies of project management, focusing specifically on the LEAN methodology and its application in project management contexts.

➢ **5 S for Service Organisations**

According to Sarkar (2006) 5 S is an approach to quality improvement that can take an organisation to new heights when implemented effectively. 5 S stands for sort, set in order, shine, standardize and sustain. 5S is that it is a change initiative that can alter a company's outlook on quality. By implementing 5 S in an organisation will change the mindset of employees and facilitate continuous improvement, it will improve the efficiency of employees and make them more productive, and it will eliminate time spent on non-value-added work and create a robust foundation for future work in the quality arena. 5 S creates the basis for LEAN thinking. It is important to remember, that 5 S should not be implemented if the objectives are unclear.

➢ **Continuous improvement in a Service Organisation**

Tayade et.al (2023) specifies that the process of continuous improvement involves adjusting every existing operation to minimize waste, improve quality, and optimize individual growth. Operational excellence and continuous improvement are not synonymous; they are entirely distinct. Consequently, for success, businesses must employ a blend of both approaches. Continuous improvement involves refining the current operation to reduce waste, enhance quality, and unleash human potential. It is an ongoing effort to guarantee that all processes operate at peak efficiency.

The study conducted by Tayade et.al (2023) highlights the practical implications by illustrating how fundamental LEAN Six Sigma technologies can be applied to tackle intricate

challenges in the service industry. Team leaders showcased that initiating initiatives and building momentum with basic tools proves to be an effective approach to ensure the sustainability of projects. Effective communication at all levels emerges as a crucial factor for the success of a LEAN Six Sigma program, irrespective of the context.

The study conducted by Tayade et.al (2023) emphasizes the importance of discussing and integrating the ideas/theories presented. It highlights the practical implications of applying LEAN Six Sigma technologies in the service industry and demonstrates how team leaders initiate initiatives and build momentum with basic tools to ensure project sustainability. Moreover, effective communication at all levels emerges as a crucial factor for the success of LEAN Six Sigma programs, regardless of the context. By discussing and integrating these ideas/theories, businesses can gain valuable insights into best practices for implementing continuous improvement and operational excellence in their operations.

> **The Current Process for Executing Projects**

The process for a project starts by coming up with an idea to a project, then applying for external funding, waiting for the decision regarding the funding, how to distribute/divide the personnel resources between the projects. There are several uncertainty factors before getting the approval of project funding. There are also synchronization challenges in joint project between different organisations, as there are usually several organisations part in one project.

Project idea → Allocating personnel resources → Applying for external funding → Waiting for decision regarding funding → Funding approval

## 2.2 What is LEAN?

What is LEAN? According to (Koenigsaecker) there are several of ways to answer that question. Many of them are correct. This probably helps explain some of the confusion

around the whole subject of LEAN. Tools and principles that are the foundation of LEAN were originally taught in a production setting. The idea to use these same tools and principles enterprise-wide has been experimental and evolved.

LEAN management practices, as emphasized by Plenert (2007), underscore the significance of implementing LEAN methodologies. The overarching goals of LEAN management encompass waste elimination, cycle and flow time reduction, increased capacity, inventory reduction, enhanced customer satisfaction, bottleneck elimination, and improved communications.

If you ask someone inside Toyota to describe the Toyota Production System— known as LEAN —you typically get several simple explanations. For instance, one description is that LEAN is about two pillars. The pillars are "The concept and practice of continuous improvement" and "The power of respect for people" (Koenigsaecker, 2013).

The outcome of reviewing the work process is to categorize each step as either value-adding work or non-value-adding work, often referred to as waste. One approach to this distinction is to consider that value-adding steps bring about a transformation, whether it involves materials in a production process or data in an administrative process. On the other hand, non-value-adding steps typically revolve around activities that move things around, entail rework, and similar actions (Koenigsaecker, 2013).

> **Day-to-day Implementation of a LEAN Transformation**

Organisations that stay on the path can demonstrate that their gains grow as their human development progresses through more and more experience with LEAN tools, practices, principles, and leadership behaviours (Koenigsaecker, 2013).

The definition of the best and brightest is in the LEAN world somewhat different from everyday practice. The fundamental criteria for selection closely align with those employed by Toyota, which employs a specific set of criteria in their hiring process, focusing on individuals who demonstrate the ability to learn new things, identify and solve problems, work effectively in teams, and communicate well. (Koenigsaecker, 2013)

> **Strategic Organisational Practices**

Individual LEAN concepts and tools are easy to understand. To be truly successful in the application of the concepts and tools, most organisations must change the way they look

at work. This is a hard thing to do because we have spent our careers building an image of how work should be both organized and done. That is the fundamental change in the way you see work, and how you think it should be organized, that is the most basic change needed to be successful in LEAN (Koenigsaecker, 2013).

According to Cross (2019) we have all experienced being pulled in several different directions at the same time, which is part of life. When it happens, we deal with it. Not all ideas can be developed in any company as there are not enough resources to launch everything, even in a LEAN world. It is also good to remember, that not all ideas are good ideas.

> **Communication**

You cannot over-communicate when undertaking any large change in your organisation. (Koenigsaecker) States that if you think your message is important, then think about repeating it about ten times. As people, we tend to think, "I told them that already!" when we probably should be thinking, "They remembered only 11 per cent of what I told them, so how will I get the other 89 per cent across?" Make full use of the company's way of communicating such as newsletters, and company video messages. The basics are:

- Why do we need to change (what are the key competitive or customer drivers)?
- Why have we chosen this path?
- How will this path work?
- What will each person's role be in this transformation?

> **LEAN Year by Year**

Effective monitoring of the LEAN process involves the establishment of checkpoints and measurement criteria. To ensure the team's concerns are adequately addressed and that each activity is acted upon, checklists and action plans are essential. The successful implementation of LEAN requires unwavering commitment and ownership from top management down to the workers on the shop floor. Teams should take ownership of the change process and approach it with enthusiasm, ensuring its continuity even after the facilitator's involvement has concluded. It is vital that all relevant personnel are properly trained in LEAN methodologies to prevent any ambiguity or uncertainty about the process. The goal is to foster a lasting cultural shift within the organisation, making all employees stakeholders in the change process. Under the LEAN management approach, individuals at

all levels are encouraged to think critically and contribute to the creative process (Plenert, 2007).

Lots of people have a natural tendency to help others grow. We continue to develop these characteristics and these interpersonal competencies by practising:

- Empathy
- Acceptance
- Authenticity
- Active listening
- Artful intervention

(Plenert, 2007)

A carefully structured LEAN transformation should adhere to a consistent cultural transformation timeline, typically spanning at least the initial four years. As an organisation embarks on its LEAN journey, the concept is novel and necessitates time for it to become ingrained. By the end of the first year, there may be encouraging individual achievements, though the financial metrics might not exhibit the desired level of improvement. Generally, the pace of progress is expected to be somewhat slower than initially anticipated. (Koenigsaecker, 2013).

The initial year often witnesses a pattern of "two steps forward and one step back." This phenomenon is a natural consequence of hands-on learning. Improvement teams are novices in the realm of LEAN principles and tools, leading to occasional misinterpretations when applying concepts like one-piece flow (Koenigsaecker, 2013).

The second year typically encounters the highest resistance from employees. Change agents are still relatively inexperienced, and every mistake they make while applying the new principles gets amplified by the remaining antibodies (Koenigsaecker, 2013).

The third year is a period of consolidation. Managers and full-time LEAN resources become more experienced with the process. During this year, there is more evidence of "two steps forward without significant setbacks." As the third year draws to a close, the cumulative improvements in quality, lead times, and productivity/cost will be substantial enough to prove the process successful. Towards the end of the third year, you may hear statements

like "We are making great progress, but I wonder when we will be done," indicating the increasing confidence in the process's effectiveness (Koenigsaecker, 2013).

Year four is characterized by "change" when this gradually has become the new norm. The processes of continuous improvement and continuous change are becoming institutionalized. We can both feel and see tremendous positive momentum building in the organisation (Koenigsaecker, 2013).

When all of this comes together as a new way of running the company, then we have established a new management system, like the Toyota Production System.

The summary of the comparison between LEAN principles and their application in service organisations is as follows:

LEAN, originally rooted in manufacturing, has evolved into a comprehensive set of principles applicable to various industries, including services. The core objectives of LEAN, such as waste elimination, continuous improvement, and respect for people, remain universal. These principles, outlined by experts like Koenigsaecker and Plenert, emphasize the importance of adapting LEAN tools and practices for enterprise-wide application.

In the context of service organisations, the goals of reducing waste, improving efficiency, satisfying customers, and optimizing communication align with LEAN objectives. The two pillars of LEAN—continuous improvement and respect for people—prove relevant in service settings, underscoring the ongoing commitment to enhancement and valuing employees.

The distinction between value-adding and non-value-adding work, a fundamental concept in LEAN, is applicable in service processes. The aim is to streamline activities, minimize wasteful actions, and achieve optimal efficiency.

In essence, LEAN principles offer a flexible and valuable framework for both manufacturing and service organisations, promoting a culture of improvement, efficiency, and people-centric practices.

## 2.3 LEAN Project Management

Projects don't occur neatly, one after another. More commonly, project managers are tasked with supervising multiple projects, each of which can derive advantages from adopting a LEAN approach.

The fundamental principle of LEAN is to identify the waste (muda) and separate it from value-added (VA) activities and necessary non-VA (NNVA) activities. VA from the point of view of the end customer. The fundamental concepts of LEAN thinking are similar whether you follow them in your home or in projects. These principles involve improving all processes in each phase of the project to gain incremental improvement, thereby resulting in a significant overall improvement for the entire project. Advanced project leaders are LEAN thinkers, and they believe in applying the Science of Simplicity to every project they undertake. They are not limited by the eight wastes. They look at all wastes that prevent them from creating value for their customer, within the legal and moral boundaries. Advanced project leaders understand that if they do not eliminate the waste from their projects, they face a far greater waste (Dalal, 2012).

The eight wastes are:

1. Over/under production
2. Waiting
3. Unnecessary transportation
4. Over/under processing
5. Excess inventory
6. Unnecessary motion
7. Defects
8. Unused creativity of team members

According to Leach (2014) you can use the five LEAN principles when managing a project. By looking at all your projects through the lens of LEAN project management, you find areas where there is waste among the projects. Subsequently, you can identify the value and allocate resources to enhance the synergy among all the projects. The five LEAN principles are defining value, mapping the value stream, creating flow, using a pull system and pursuing perfection.

Identifying value and eliminating waste necessitates a comprehensive view of the entire project in one location. View all the tasks and determine which the keepers are and which are unnecessary. For instance a Project Manager's online Gantt chart lets you map the project and identify task dependencies that can cause bottlenecks. Additionally, there is a filter to map the critical path, enabling you to visualize the most efficient way to execute the project and avoid non-value-adding steps (Leach, 2014).

Maintaining a balanced workload is fundamental to LEAN project management. Resource management features let you see the team's assignments in a color-coded chart that shows who has either too many or too few assignments. Then, you can re-allocate right from the workload chart to keep your team working at a good capacity (Leach, 2014).
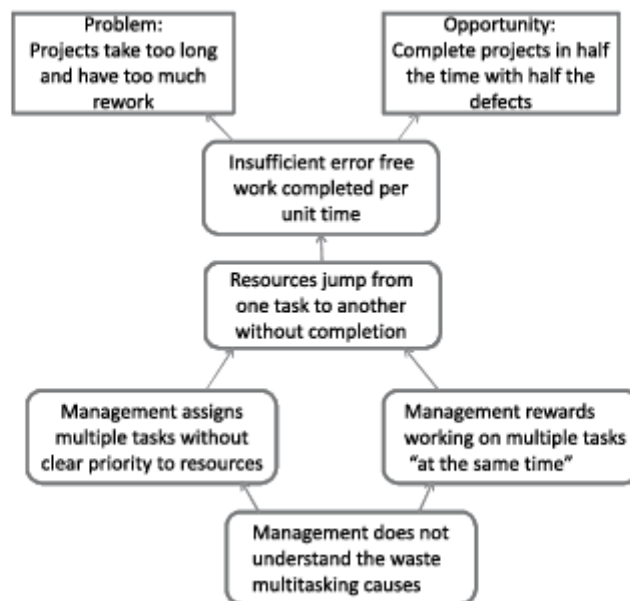


**Figure 1: A solution to problems and opportunities** (Leach, 2014)

Many organisations have no milestones at all, just a project due date. Balancing the workload is a core principle in LEAN project management. Some confuse a budget with a schedule. Others apply project schedule tools, such as Microsoft Project, but use them incorrectly or ineffectively (Leach, 2014).

One of the largest project execution problems is that most organisations allow or even encourage people to multitask on a daily or weekly basis, in this case meaning switching among multiple tasks before completing the first task they started. Many people believe that multitasking is a positive thing and it makes them feel efficient. Some job postings even suggest that it is a requirement for the job (Leach, 2014).

According to Leach (2014), all current research demonstrates the error in believing multitasking is positive. Multitasking significantly increases the time that it takes to get all tasks done, causes a huge amount of waste reduces the total amount of work that gets done, and causes mistakes that then have to be corrected. The research also shows that those who think that they are best at multitasking usually are the least efficient at getting things done. They get the least done and make the most errors. You are already aware that the most effective way to complete a task with the highest quality is to focus solely on that specific task without interruptions.
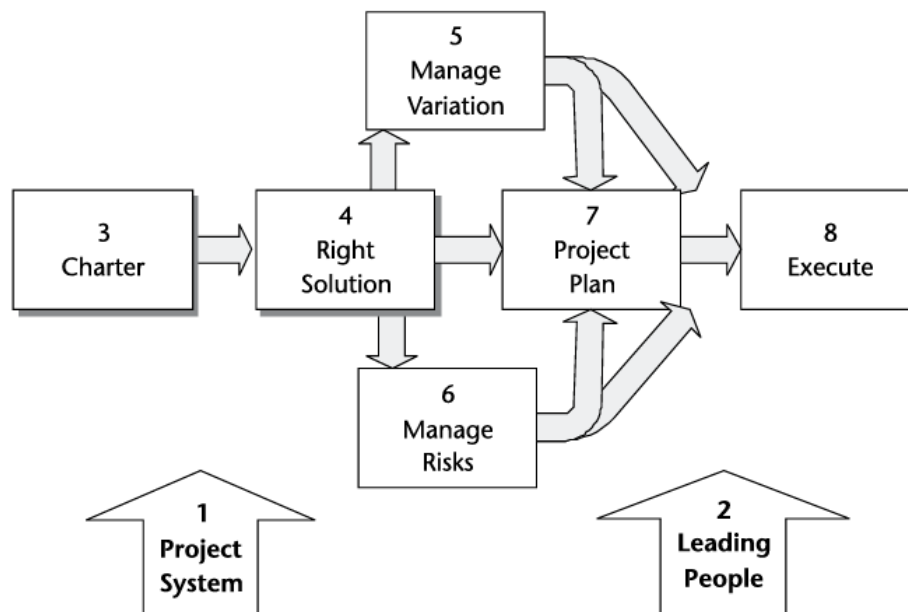


**Figure 2: Example of the project delivery process value stream** (Leach, 2014)

The three major measures of succeeding with a project are full scope, on time, and within budget. Creating an effective project plan for small projects demands relatively minimal effort. A large, complex, and high-value project demands a very thorough project planning effort. Both small and large projects have in common that they require that the primary focus be on effective execution of the plan. To succeed in a project, the initial step is to

define the desired outcome and formulate a plan for achieving it. Failure to do so increases the likelihood of dissatisfaction with the project result. This applies to some degree for all projects small or large and simple to complex (Leach, 2014).

To summarize, Project Management in LEAN management, stands for a crucial aspect of ensuring efficiency and effectiveness in achieving organisational goals. LEAN Project Management involves applying LEAN principles and methodologies to streamline project processes, eliminate waste, and maximize value delivery. Here's how to LEAN the project and increase efficiency:

Identify Value: The first step is to identify what constitutes value for the project stakeholders. This involves understanding their needs, preferences, and priorities. By focusing on value-added activities, resources can be allocated more efficiently.

Map the Value Stream: Map out the entire project value stream, from initiation to completion, including all the activities and processes involved. This helps identify areas of waste and inefficiency that can be targeted for improvement.

Eliminate Waste: Use LEAN tools and techniques such as Value Stream Mapping, 5S, and Kaizen to identify and eliminate waste from the project processes. Common types of waste in project management include overproduction, unnecessary waiting, excessive inventory, and defects.

Optimize Flow: Streamline the flow of work by removing bottlenecks and interruptions in the project processes. This can be achieved by balancing workloads, reducing handoffs between team members, and implementing visual management techniques such as Kanban boards.

Empower Teams: Empower project teams to take ownership of their work and make continuous improvements. Encourage open communication, collaboration, and problem-solving to identify and address issues in real-time.

Continuous Improvement: Foster a culture of continuous improvement where teams are encouraged to experiment, learn from their mistakes, and implement changes based on feedback. Regularly review and reflect on project performance to identify areas for further optimization.

Standardize Processes: Standardize project management processes and workflows to ensure consistency and repeatability. This helps reduce variability and improve predictability, leading to greater efficiency and quality outcomes.

Utilize Technology: Leverage technology and digital tools to automate repetitive tasks, streamline communication, and enhance project visibility. Project management software, collaboration platforms, and data analytics tools can help streamline project workflows and decision-making processes.

By applying LEAN principles to project management, organisations can LEAN their projects and increase efficiency by focusing on value, eliminating waste, optimizing flow, empowering teams, fostering continuous improvement, standardizing processes, and leveraging technology. This holistic approach helps organisations deliver projects more effectively, meet stakeholder expectations, and drive sustainable growth.

## 2.4  LEAN Management

Implementing LEAN management practices, akin to various facets of LEAN, is straightforward in concept but challenging to consistently execute. LEAN management builds upon the successes of LEAN production by embodying a fundamental LEAN principle: the primary focus of LEAN is the identification and elimination of waste. In these ways, LEAN cultures grow from robust LEAN management systems (Mann, 2015).

According to Mann (2015), the LEAN management system consists of the discipline, daily practices, and tools that need to be established to maintain a persistent, intensive focus on the process. The emphasis on process is what sustains and prolongs LEAN implementations. And the practices of LEAN management create process focus. Below are listed the three steps of how this happens:

1.  The visual controls required in a LEAN management implementation embody LEAN's focus on processes. Consistently maintaining these visual cues serves as tangible proof of leaders' commitment and discipline. These visual controls are specifically designed to detect instances of abnormal process performance, such as issues, defects, interruptions, system failures, and irregularities, making them equally valuable (Mann, 2015).

2. The visual aids containing process data are regularly presented at a standard accountability meeting, often held daily. During these accountability sessions, any issues or misses are thoroughly examined and, as needed, transformed into specific task assignments. These assignments might involve conducting a root cause analysis, implementing interim countermeasures to safeguard the process from failure, or establishing a permanent solution to address the root cause (Mann, 2015).

3. Leaders integrate the follow-ups on actions arising from accountability assignments into their routine tasks. This involves evaluating the effectiveness of implemented countermeasures and ensuring that the root cause solution remains in effect. The inclusion of these items in leaders' standard work helps maintain the integrity of the changes made in response to the issues or failures initially identified on the visual process control (Mann, 2015).

## 2.5   Elimination of Waste – the Cornerstone of LEAN

LEAN success is a long-term endeavour, so viewing it as a quick fix for urgent management issues would be a misjudgment. It falls upon leaders to establish a lasting commitment to enhancing work quality and service outcomes across all organisational levels, forming the foundation for a culture of ongoing improvement. Leaders must actively participate and lead by example, akin to being on the "shop floor" in manufacturing. In LEAN, leader engagement goes beyond casual check-ins; it entails ongoing, meaningful engagement and empowerment of the workforce. The structures implemented and the support furnished to maintain worker-driven change are pivotal to achieving success (Zarbo, 2012).

According to (Harry, Mann, Hodgins, Lacke, & Hulbert) the process of eliminating waste sources across product, transaction, development, and service deliveries focuses on minimizing unnecessary documentation and prototypes, including the reuse of outdated process steps, concepts, or designs. This approach also leads to reductions in costs and time associated with waiting for input from other process steps, outcomes, and data. LEAN identifies the "seven plus one deadly wastes" or defects as the root causes of waste. Within the production process, there are three categories of "work": value-added, non-value-added, and wasteful activities. The seven wastes that are the root of all non-profitable activities within any organisation are:

| D | Waste from product defects |
|---|---|
| O | Waste from overproduction |
| T | Transportation waste |
| W | Waste in waiting time |
| I | Inventory waste |
| M | Waste of motion |
| P | Processing waste |

Taiichi Ohno outlined a system that identified seven key wastes in manufacturing processes: overproduction (making more than what is needed or before it is needed), producing defects, movement or transportation (actions that do not bring the material or data closer to what a customer values), inventory (the storage of overproduction), overprocessing (classic inefficiency), waiting time, and unnecessary motion. These seven wastes serve as critical areas of focus for organisations aiming to implement LEAN principles and eliminate inefficiencies in their processes.

The most serious of the seven wastes is the overproduction, as it contributes to each of the remaining six. In LEAN, a strategic approach to addressing overproduction is to target the waste contributions of the remaining six factors. Overproduction is producing more than what is needed. The way to fix this is to produce just the needed service. Anything produced beyond this tie up valuable labour and material resources (Harry, Mann, Hodgins, Lacke, & Hulbert, 2009)

The principles outlined by Taiichi Ohno regarding the seven key wastes align closely with the core tenets of LEAN thinking. When comparing these principles to a LEAN service organisation, several parallels and implications can be drawn:

**Overproduction** in a service organisation, could manifest as unnecessary reports, documentation, or services that do not add value for the customer. This could lead to increased workloads, longer processing times, and potential errors.

**Producing defects** in a service organisation could be errors in in reports, inaccuracies in data, or mistakes in service delivery. Rectifying defects may require additional resources and time.

**Moving or transportation** in a service context unnecessary transportation could be the movement of documents, files, or information between departments without adding value. This can lead to delays and increased processing times.

**Inventory** in a service organisation could represent excessive documentation, unfinished reports, or pending tasks. This ties up resources and may lead to delays in service delivery.

**Overprocessing** in a service organisation can occur when tasks are delayed due to dependencies on other departments or processes. Minimizing waiting time enhances overall process efficiency.

**Unnecessary motion** in a service organisation may involve employees searching for information, moving between locations, or engaging in non-value-added activities. Streamlining workflows reduces unnecessary motion and improves productivity.

In summary, the principles of minimizing waste, as outlined by Taiichi Ohno, can be effectively applied in both manufacturing and service organisations within a LEAN framework. The emphasis is on delivering value, eliminating non-value-added activities, and continuously improving processes to enhance efficiency and customer satisfaction.

The text discusses the application of LEAN principles, emphasizing their relevance in both manufacturing and service organisations. It underscores the need for a long-term commitment to LEAN success, requiring active leadership engagement and meaningful empowerment of the workforce. The outlined seven key wastes in manufacturing processes by Taiichi Ohno, including overproduction, defects, transportation, inventory, overprocessing, waiting time, and unnecessary motion, serve as foundational principles in LEAN thinking.

Particularly, the text highlights overproduction as the most serious waste, contributing to other inefficiencies. It advocates a strategic approach to address overproduction by

minimizing its contributions to other waste factors. This strategic focus aligns with LEAN principles and aims to streamline processes, reduce costs, and enhance overall efficiency.

Moreover, the application of LEAN principles in service organisations is explored, drawing parallels with manufacturing. The discussion covers how wastes manifest in service contexts, such as overproduction leading to unnecessary reports, defects causing errors in service delivery, and transportation involving the movement of documents without adding value. The text also addresses inventory, overprocessing, waiting time, and unnecessary motion in the context of service organisations.

The text asserts that adopting LEAN principles can help in waste elimination and contribute to a better flow between project execution and external funding. It highlights the importance of delivering value, eliminating non-value-added activities, and continuous improvement. The emphasis on leadership commitment, strategic addressing of overproduction, and the application of LEAN principles in service organisations collectively supports the company's ability to enhance efficiency and achieve better outcomes in the context of project execution and external funding.

## 2.6  Continuous Improvement

Leader standard work serves as the systematic mechanism for consistently sustaining the implemented change. This prevents the process change from fading and disappearing, which happens often when follow-through is lacking. Follow-up on these process changes—the improvements—is incorporated into leader standard work. Together, these three elements, visuals, accountability task assignments, and leader standard work, make a closed-loop system that creates process focus and results in process improvement (Mann, 2015).

As LEAN management, with its continuous and process-centered approach, becomes ingrained, a LEAN culture gradually takes root. This new culture surfaces as leaders shift from the habit of temporarily bypassing issues, neglecting their underlying causes, and leaving them for future resolution—a mindset that has often been cultivated in traditional work environments and practices (Mann, 2015).

LEAN systems deliver valuable results, but their approach to obtaining those results significantly distinguishes them from conventional management techniques. A key distinction in a LEAN management system is the dual emphasis on both process and outcomes. LEAN methodologies necessitate that team leaders not only achieve results but also actively manage and monitor the underlying processes. They must be vigilant in identifying issues within various stages of the process, upstream or downstream, and take prompt action to prevent or minimize disruptions that could affect the final output. Regular Gemba walks, where top-level executives engage with their teams on the shop floor, provide firsthand insight into how well their teams are attuned to the realities of LEAN operations. This direct engagement helps in ensuring the effectiveness of LEAN practice (Mann, 2015).

Gemba is roughly translated from the Japanese as "the real place." In this sense, refers to where the action is happening. Gemba walks typically take place regularly. An optimal schedule is at one-week intervals.

 The idea of Gemba is simple:

1. Go to the place.
2. Observe the process.
3. Talk with the people.

(Mann, 2015)

People in hierarchical organisations respond to the requests, suggestions, and directives of their superiors. As the superior learns to ask for and teach how to apply the principles of LEAN production and LEAN management, the subordinate is likely to listen carefully, learn the new expectations, and learn how to comply (Mann, 2015).

Gemba walking is a practice closely connected to the theme of expected versus actual outcomes in the LEAN management system.As a result, organisations aim to initiate the practice of Gemba walks at the highest levels of their operational hierarchy. When senior leadership and those in authoritative positions actively participate in Gemba walks and identify forms of waste or inefficiencies on the shop floor that might have been overlooked by lower-level managers, it serves as a compelling incentive for all personnel to align with the management's expectations and LEAN principles (Mann, 2015).

## 2.7 The Definition of a LEAN Project

LEAN originated in the realm of manufacturing, but its fundamental principles have found applicability in diverse sectors, including project management and construction. A LEAN project is essentially characterized by a commitment to ongoing improvement, aligning it with the broader ethos of agile project management, known for its adaptability and responsiveness to changing circumstances. Irrespective of the domain, be it manufacturing automobiles or developing applications, the central focus remains consistent – delivering value to customers and stakeholders (Leach, 2014).

According to Leach (2014) one of the aspects of LEAN that makes it unique from traditional project management methodologies is that it applies the five principles of LEAN project management. That is the first step in a LEAN project; identifying the five LEAN principles, then applying them to your project. The five LEAN principles involve defining value, mapping the value stream, creating flow, using a pull system, and pursuing perfection.

## 2.8 Developing a Project Management Plan

The "process improvement" project plan captures what the project team has been asked to do and how the project manager or as process improvement team leader, intends to deliver. It records essential aspects of a "process improvement" project, encompassing objectives, deliverables, key milestones, and resource needs. A well-crafted project plan serves as a cornerstone for any "process improvement" initiative, instilling confidence in all stakeholders. It cannot be discarded by the project team (Aatsengel & Kurtoglu, 2013).

According to (Kuster, et al.) Many organisations are currently experiencing a boom in projects, which stretches their resources to the max. This in turn makes it impossible to prioritise individual projects, and stops the organisation from being able to effectively allocate the available resources. This is where a project portfolio comes in useful and helps provide an overview and for use as a decision-making tool.

Creating a reliable and resilient "process improvement" project plan offers three primary advantages. These three are; reducing uncertainty, increasing understanding and learning and improve efficiency. These will be explained more below.

1. *Reducing uncertainty* — although it may not be feasible to predict every detail of how a "process improvement" project will unfold, crafting the improvement intervention plan allows the project team to consider potential outcomes and promptly implement necessary corrective actions.

2. *Increasing understanding and learning* — the mere act of planning gives the project team a better understanding of the goals and objectives of the "process improvement" project. It increases the learning capability through the series of data collected to understand the extent of the improvement intervention, to diagnose problems and begin addressing them.

3. *Improve efficiency* — once the project team has defined the "process improvement" project plan and the necessary resources to carry out the plan, it can schedule the work to take advantage of resource availability. It also can schedule work in parallel; that is, team members can perform tasks concurrently, rather than in series. By performing tasks concurrently, the project team can shorten the total duration of the project. It can optimize resource utilization and accomplish the project work more efficiently than alternative approaches.

According to (Aatsengel & Kurtoglu), the "process improvement" project plan serves as the central repository of details governing the project's planning, execution, monitoring, control, and closure. Typically, a project plan is structured around three core dimensions: scope, cost, and time. Scope answers the fundamental question of what needs to be accomplished. Cost delineates the financial allocation and budgeting over time. Time outlines the duration required for project execution. The initial step in crafting a project plan involves validating the project scope statement.

The project scope is mostly associated with the mission, goals and objectives of the "process improvement". Scope of work refers to all of the individual elements of the improvement work that must be performed to accomplish the project objectives.

## 2.9 Harmonizing Project Success: Integrating LEAN Principles and the 12 Pillars of Excellence

Successful projects address the requirements of all involved parties, commonly referred to as stakeholders. Every project is guided by a specific objective, with the project scope establishing a baseline for the minimum acceptable outcomes. Meanwhile, cost and

schedule constraints typically define upper limits. These three fundamental parameters are interconnected: projects with extended durations tend to incur higher costs, and those with higher costs tend to entail longer timelines. Furthermore, extended project durations offer greater windows for scope modifications. Frequent alterations to the scope inevitably lead to increased costs and project timeline extensions (Leach, 2014).

The functional organisation has a traditional hierarchal structure. Project managers report to respective functional managers. Functional organisational structure is not conductive for project success due to its less authority to project managers and more barriers to project success such as resource limitations, project budget and other factors (Dalal, 2012).

Lewis (2007) States that the tools and techniques of project management are a necessary but not a sufficient condition for project success. If you struggle with managing people, handling projects, particularly when dealing with individuals who are not under your direct authority, can be challenging.

According to Leach (2014) the following list consists of things that make the project **unsuccessful:**

1. Ineffective Project Manager:

     a. Not assigned;

     b. Untrained;

     c. Two or more assigned Project Managers on one project;

     d. Role as reporter (i.e., no authority).


2. Ineffective (or no) Project Plan:

    a. Inadequate scope statement;

    b. No execution guidelines:
        i. Schedule use;
        ii. Change control.

    c. Schedule weaknesses:
        i. No task relationships;

  ii. No critical path/chain;

  iii. No resources;

  iv. Too detailed;

  v. Level of effort (LOE) tasks, recurring tasks, and so forth included in schedule.

3. No status to schedule;

4. No control actions;

5. Ineffective change control;

6. Decisions:

 a. Decisions not made;

 b. Not assigned to one person;

 c. No empowerment to decide and execute.

7. Multitasking execution:

 a. Assigned to perform percent on different projects;

 b. Interruptions with non-project work;

 c. Shifting project priority;

 d. No task priority.

**Success** factors that have impact on the projects include:

1. Selection of the right problem;
2. Selection of the right solution;
3. Creation of a satisfactory plan;
4. An effective project control system;
5. Effective project execution;
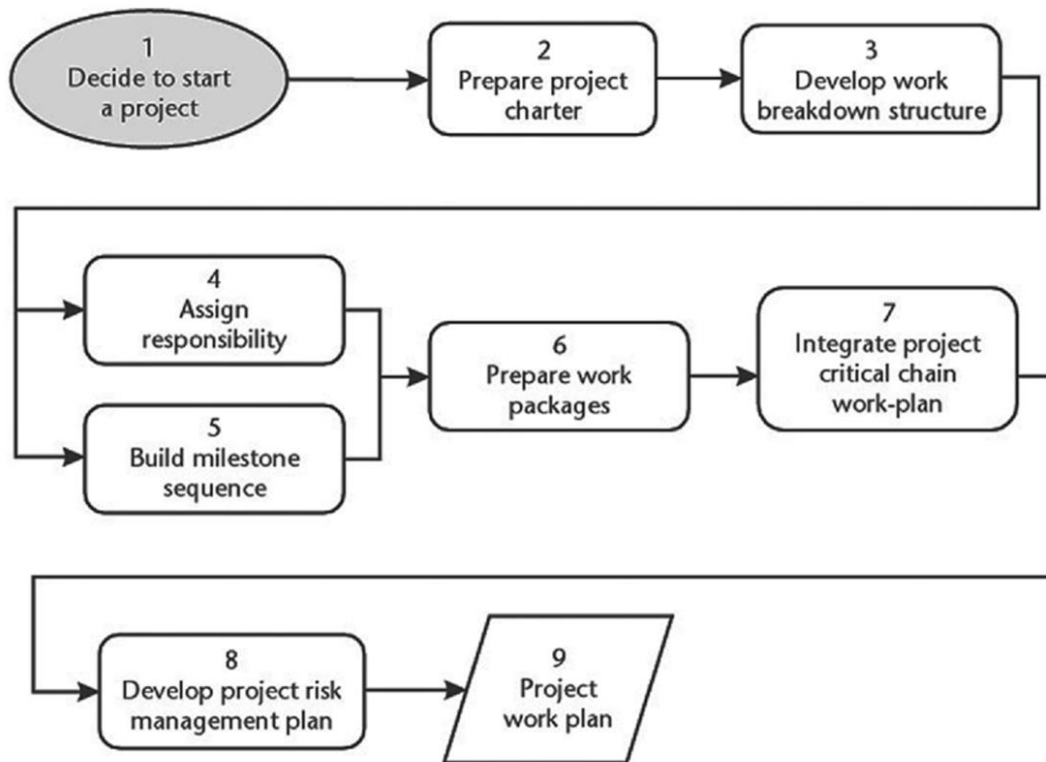6. An effective method to manage uncertainty.

**Figure 3: The project-initiation process** (Dalal, 2012)

According to (Dalal) project excellence is built upon 12 pillars. These pillars encompass various aspects essential for effective project management. They include being a project leader, establishing a balanced project structure, captivating customers with a project vision statement, signing the charter, infusing passion, adopting LEAN thinking to simplify projects, minimizing meetings, embracing risk, managing data effectively, learning from failures, creating a less stressful project environment, and investing in appreciating assets. Each pillar contributes to the overall framework for achieving excellence in project execution.

➢ **Pillar 1 – Be a Project Leader**

A distinction exists between a project leader and a project manager. A project leader is expected to possess a diverse skill set to deliver exceptional project outcomes. Notably, the skill level required of a project leader is notably more advanced in comparison to that of a project manager. It is crucial to recognize that the labels "project manager" or "manager" and "project leader" or "leader" do not merely refer to titles but, more importantly, underscore the individual's skill set and mindset. While project managers are equipped to

handle complex, mission-critical projects, the evolving landscape emphasizes the importance of project managers also having a comprehensive set of leadership skills to make a substantial contribution to a project's success. Project leaders, in this context, are essentially seasoned project managers who possess what could be termed as the "five magic powers."

The five powers of the project leader are listed below and will be more explained later in the text:

1. Power of delegation
2. Power of dynamic leadership
3. Power of visualization
4. Power of LEAN thinking
5. Power of humility

The **power of delegation** involves entrusting decision-making authority within a project team while upholding the ultimate responsibility for the project's success or failure as the leader. A project leader must possess a flexible and individually tailored leadership and motivational style. This customized approach is essential to inspire each member of their diverse team to deliver their utmost for the project's triumph. Effective leaders discern when, how, and to whom to delegate tasks, viewing delegation not as a means to shirk their responsibilities but primarily as a method to nurture and empower emerging leaders. These leaders exhibit self-assurance in their abilities, exemplifying the art of "firing" themselves from their current roles. They perceive this as a growth strategy, one that allows them to challenge their capabilities on larger and more intricate projects with a more profound impact on their organisation's success than their previous undertakings. In a project context, it's imperative to maintain a balance between leadership and delegation. Over-delegation can result in project failures due to a lack of control, while excessive leadership tends to lead to micromanagement (Dalal, 2012).

A project leader must possess a **dynamic and customized leadership** and motivational style. Their approach should be individually customized to suit the diverse members of their team, encouraging them to exert their utmost efforts for the project's success. Dynamic

leadership entails the ability to adjust leadership styles according to the specific situations, contexts, and individuals involved. Project leaders must be proficient in guiding resources across all levels within the organisation and external entities, such as consultants and contractors. Dynamic leadership also involves aligning leadership efforts with the distinct phases of a project. A significant challenge in project management is the inclination toward reactive or perpetual firefighting throughout the project's life cycle. This pattern of exertion by a project manager is referred to as the "project manager effort curve." It typically takes on a saw-toothed pattern when the project manager attempts to micromanage every aspect of the project. Exceptional project leaders strategically combine delegation with dynamic leadership. This synergy is key to maintaining a smoother activity flow while enabling them to serve as effective project stewards, proactively guiding the project toward a successful conclusion (Dalal, 2012).

**The power of visualization** involves the deliberate process of previewing, comprehending, and analyzing data, images, and scenarios. A remarkable example of this ability is seen in visionaries like Walt Disney, who had an innate talent for visualization. While not everyone possesses this innate skill, it serves as a clandestine strength for many great leaders, even if they are not consciously aware of it. Project managers can cultivate and harness this power by training their minds to visualize, ultimately becoming masters of this concealed strength. Visualization plays a pivotal role in enabling project managers to concentrate on value-added tasks while eliminating non-value-added inefficiencies, aligning with the core tenets of LEAN methodology. Aspiring project leaders should prioritize the development of visualization skills to enhance their professional growth and leadership capabilities, with a view to accomplishing their career objectives. Furthermore, we should impart this technique to future generations, as the power of visualization significantly influences project outcomes. It is through visualization that organisational leadership teams proactively respond to and strategize for changes in an organisation's goals and objectives. Project leaders can identify potential failure parameters for the project and visualize evolving patterns for each of these factors (Dalal, 2012).

The **power of LEAN thinking** revolves around the capacity to recognize value-added activities and eradicate non-value-added elements. The concept of value is invariably determined from the customer's perspective. To wield the power of "LEAN thinking," a

project leader must adopt the customer's vantage point, meticulously assess each project task, and embrace a mindset that prioritizes achieving tasks with optimal quality while utilizing the minimum time, finances, and resources necessary. LEAN thinking seeks to comprehend how to improve a product's quality while pinpointing tasks and resources that genuinely contribute value to the end product. Any tasks or resources that fail to add value are systematically removed. The power of LEAN thinking is indispensable during the execution of a project. By sharpening their proficiency in LEAN thinking, project managers can evolve into adept project leaders (Dalal, 2012).

The **power of humility** is about addressing the unknown aspects within a project. A leader who can openly acknowledge their limitations and genuinely values the knowledge and experience of others is said to possess the "power of humility." However, an inherent challenge arises as one ascends the project leadership hierarchy, where ego can often develop and undermine this power. Another paradox is that the "power of humility" remains an ongoing pursuit rather than a state to be fully attained. As soon as one proclaims to have achieved humility, it can paradoxically prove otherwise. Conflicts are an inevitable part of organisational and project environments, stemming from differing work styles, communication gaps, and ambiguous role definitions. It becomes the project manager's responsibility to effectively resolve conflicts and steer the team. Conflict resolution not only enhances productivity but also fosters improved team relationships. Project leaders should not shy away from conflicts, as the power of humility plays a pivotal role in influencing the team and management alike. A project leader must actively listen to the team and gather pertinent information, while guarding against their ego hindering the acquisition of new insights or approaches that can enhance team dynamics. During team meetings, project leaders should assume responsibility for any incorrect decisions made during project execution, demonstrating an unwavering commitment to rectify the repercussions of their choices (Dalal, 2012).

> ➢ **Pillar 2 – Create a Balanced Project Organisation Structure**

On complex project assignments, the absence of pillar number two can lead to the failure of an entire project. The significance of this pillar cannot be overlooked in any intricate project. Communication plays a critical role in the successful execution of a project. During

a project communication can be verbal, nonverbal, written, formal, or informal. It is essential for a project manager to analyse effective communication strategies during a project (Dalal, 2012).

A project's organisational structure plays a crucial role in facilitating, coordinating, sharing, and executing project activities. The absence of a well-defined and balanced project organisation structure often leads to poor communication and ambiguities in project requirements. In this context, the project manager assumes complete responsibility for the project's success or failure. The project manager operates without a safety net and is fully accountable from the top-down. While this may not pose a problem in many instances, it becomes a significant issue if the project encounters difficulties, as the project manager shoulders the entire blame for any failure (Dalal, 2012).

However, in complex projects, this organisational structure presents several drawbacks. Projects can be categorized into four distinct groups: simple, medium, complex, and highly complex, based on criteria like objectives, scope, budget and time estimates, resources, and associated risks. In the general project landscape, a customer is an indispensable component. The voice of the customer holds utmost significance as the primary guiding force for any project. Customers can be internal or external, individuals or entire departments, and may be readily accessible or challenging to reach for the project manager (Dalal, 2012).

Typically, project managers do not directly engage with the actual customer's voice. Instead, they often receive project specifications through multiple layers of corporate filters, such as sales managers, sales team members, customer service representatives, and various stakeholders (Dalal, 2012).

Establishing a steering committee for complex projects can be a strategic decision. The purpose of the steering committee is threefold:

1. Creating a formal two-way communication channel between project leader and key stakeholders
2. Providing "air cover" or "executive guidance" throughout the course of the project.
3. Facilitating swift decision making and resolution of key issues

➢ **Pillar 3 – Delight the Customers with Project Vision Statement**

Project vision statement for a project provides a high-level purpose, defines a crystal clear objective, and sets the tone for the execution of the project. It lays the foundation for the ultimate success of the project. A complex project is bound by scope, budget, and schedule constraints. A project leader and their team must recognize customer needs and navigate competing demands related to scope, schedule, quality, and budget. Altering requirements during project execution can introduce extra risks and cause confusion among team members. A project vision statement must be created by the team with guidance from the project leader. It is created using a few brainstorming sessions where the charter requirements are distilled with carefully selected words and combined with words that determine the mind-set of the team toward carrying out plans to completion and include any constraints defined by the stakeholders (Dalal, 2012).

The fundamental concept behind the project vision statement is to provide a clear direction for the project team. This statement serves as a source of motivation and encouragement for team members throughout the project's execution. Additionally, the project vision statement supports project activities and embodies the organisation's objectives. Crafting an initial project vision statement involves considering all these elements, and a project leader should have a well-defined understanding of the goal behind creating it. The project vision statement sets the boundaries for the project life cycle, encompassing various elements. Once established, it remains effective for the entire project life cycle, acting as a catalyst and forming a crucial pillar for project excellence. (Dalal, 2012).

➢ **Pillar 4 – Sign the Charter**

A charter is a document defined at the initial stages of a project that "charts" the course of the project and provides direction to the team members. Project requirements are detailed in a project charter. In inadequately planned projects, the project sponsor and leader commence the project without clearly defined requirements. Like any other new project, initially there is a great deal of enthusiasm, and the team is fired up about the unlimited potential of success in the project. After a while, usually reality sets in when mostly everyone is trying to figure out "what are we trying to achieve" (Dalal, 2012).

The commencement of a project involves the creation of a project charter, which serves as the foundational document for the project. The project charter encompasses the names of team members essential for initiating the project's phases. This charter can be formulated by drawing from various sources both within and outside the organisation. The significance of developing a project charter lies in its capacity to document the high-level customer requirements, establish critical success factors, and identify the necessary resources for project completion. The charter also outlines the business objectives the project aims to achieve and the substantial benefits that a successful project execution will bring to the organisation. In many cases, a project manager is chosen before or during the preparation of the project charter and collaborates closely with the project sponsor and key stakeholders to craft an effective project charter (Dalal, 2012).

Given that the project charter serves as the cornerstone, defining both the scope and direction of the entire project, its content should be meticulously crafted after comprehensive discussions with stakeholders, sponsors, and the ultimate customer. Project goals and objectives are intrinsic components of the project's vision statement, delineating the intended project target, while the scope clearly demarcates the boundaries of this target. Project success criteria encompass the essential factors or attributes critical to the project's success, and their absence could jeopardize the project's outcome. Regrettably, many project managers view the charter as a mere checklist item, a box to be ticked within their responsibilities. Once completed, it is often shelved and revisited only when conflicts or disputes arise. Nevertheless, a well-defined and effectively utilized charter, when paired with a compelling vision statement, lays the solid groundwork for a prosperous project (Dalal, 2012).

> ➢ **Pillar 5 – Diffuse Your Passion**

Each team member must have an unwavering belief in their own capabilities and in the collective strengths of the entire team to achieve victory. Even in the face of individual setbacks, the coach continues to inspire them to overcome failures and embrace their true champion potential. Even when an individual fails, the coach keeps inspiring them to overcome the failures and be the champion they truly are. Without that unwavering belief in their abilities, an undying passion to win, and a sense of higher purpose, it is difficult for individuals or teams to be champions no matter how skilled they are (Dalal, 2012).

A great project leader must communicate with his/her team members just like a coach communicates with the athletes on his/her team. What distinguishes a great project leader from a project manager is how they react and communicate with project team members when a project is going over budget and beyond the schedule. Successful project leaders are passionate about their views, ideas, and goals, and will go the extra mile to sell their project to stakeholders. They consistently convey their enthusiasm in every interaction and communication with their project teams. Project leaders must cultivate the resilience to persist when faced with requests for additional information, relying on their energy and passion for the project's success to overcome any obstacles hindering approval for undertaking challenging projects for the organisation (Dalal, 2012).

> **Pillar 6 – Simplify Projects, Eliminate All Non-value Added Items from the Project**

LEAN principles place a paramount emphasis on the customer, defining value through the lens of the customer's perspective. In contrast, many project managers often undertake projects with a primary focus on completion, sometimes without a comprehensive understanding of the customer's needs. Nevertheless, LEAN thinking introduces a transformative approach to customer considerations within a project (Dalal, 2012).

Project leaders imbued with LEAN thinking cultivate methodologies to prioritize value from the customer's standpoint, taking into account not only the end product but also every facet of the project (Dalal, 2012).

Moreover, Value-Added (VA) activities can be discerned by scrutinizing the product and its attributes. The project leader, in collaboration with the project team, should meticulously identify all activities integral to preserving the product's value. Among these activities is the reduction of product or service-related defects, recognized as a VA activity. Through the creation of a value stream map, project leaders can pinpoint VA activities from the perspective of the product or service (Dalal, 2012).

> **Pillar 7 – Minimize "Meeticide"**

"Meeticide" can be defined as the death of resource efficiency by meetings. It is the leading cause of fatality for most global projects and countless aspiring project careers. The death of resource efficiency by meetings is one of the cardinal offenses that actually goes unpunished in most organisations. The million dollar question for the project leaders is: how to make communication effective and yet keep meetings to a minimum (Dalal, 2012).

Project leaders need to make meetings more productive using a LEAN approach. They should discover effective ways to communicate crucial project information without consuming the valuable time of project stakeholders. It is crucial to recognize that not all meetings carry the same level of importance. Some meetings are inherently critical and cannot be omitted. Meetings can be categorized into two groups: value-added meetings and non-value-added meetings.

A meeting is a structured process for producing results. Yet, the effectiveness of a meeting hinges on the careful selection of inputs. The meeting's requirements are determined by its agenda. Therefore, a project leader should meticulously craft the agenda and distribute it in advance to all attendees. Therefore, a project leader should carefully design the agenda and send it ahead of time to all people attending the meeting. Consider, for instance, that the information requirements for a requirement-gathering meeting vastly differ from those of a phase gate meeting. In specific meetings, certain information may be crucial and obligatory. Hence, it is imperative for project leaders to ensure that the information presented during these meetings is not only valid but also accurate and devoid of ambiguity (Dalal, 2012).

The approach to eliminate waste in the meetings is a two-step process. Step 1 involves identifying and eliminating all non-value-added meetings, and step 2 involves identifying and eliminating the non-value-added time in the other meetings. This does not mean that all meetings with no results can be eliminated. There are some instances when a meeting may not deliver results because of a lack of consensus between people. However, project leaders should certainly consider eliminating such meetings, if consensus is always very difficult to achieve in that particular meeting format (Dalal, 2012).

> ➢ **Pillar 8 – Take Risks, but do the Math Beforehand**

Project managers are the ones that react to problems. Project leaders are trying to prevent them with a dynamic risk leadership. Dynamic risk leadership is the proactive assessment of risks and the development of methods to resolve those risks. Successful project leaders learn to have an ongoing approach to categorize, strategize, and neutralize various types of risks encountered in projects. They understand that a risk management document for a particular project is always a dynamic tool and has to be used and updated constantly

throughout the course of the project and even beyond the project. Dynamic risk leadership is a critical trait to be learned and applied by all project leaders (Dalal, 2012).

Dynamic risk leadership involves recognizing risks, prioritizing them based on probability and impact, creating a risk assessment matrix, and developing a risk response plan. Due to the pivotal role of risk assessment in projects, it's crucial to follow a systematic methodology for these tasks. Conducting risk assessment early in the project lifecycle saves costs, avoids redundant efforts, and prevents schedule overruns. Establishing a risk assessment team in the project's initial stages is essential. Depending on the impact and difficulty of risk resolution, an assessment matrix can be devised. The team can then determine risk response planning methods based on the risk theme's position on the matrix, such as risk absorption, risk acceptance, and risk mitigation (Dalal, 2012).

> ➢ **Pillar 9 – Decode and Shield Data**

From the Stone Ages through the agricultural era, humanity had access to exceedingly limited data. Robust data storage and distribution systems were non-existent during these periods. Data transmission was reliant on memory, occasionally supplemented by the use of signs or symbols when passing knowledge from one generation to another (Dalal, 2012).

The foundational development in data storage and distribution commenced when humans began to document and record information. The Industrial Age marked the initiation of widespread data dissemination with the introduction of technologies like television and motion pictures. The Information Age ushered in an era of data abundance, primarily due to the emergence of computers, the Internet, and the World Wide Web. Today, we find ourselves amidst the Information Overload Age, where the sheer volume of information is overwhelming (Dalal, 2012).

Data can be seen as any information in raw or unorganized form (such as alphabets, numbers, or symbols) that refers to, or represents, conditions, ideas, or objects. Data is limitless and it is present everywhere in the universe. To make the correct decisions it is critical to have the accurate information and data (Dalal, 2012).

Determining the appropriate quantity of data is a complex task, and there exists no exact science or formula for its calculation. Seasoned project leaders draw upon their extensive

project experience to make these estimations. The initial step in the process of data requirement analysis involves comprehending the nature of the data in question. Key factors include the project's duration, complexity, and its level of criticality (Dalal, 2012).

For instance, in the case of a short-term, uncomplicated, and noncritical project, the data requirements may not be excessive. Conversely, long-term, intricate, and highly critical projects demand a more significant volume of data. In such cases, the emphasis should be on prioritizing critical aspects of value-added data, while minimizing the inclusion of non-value-added, often referred to as "junk" data (Dalal, 2012).

Non-value-added data comprises superfluous information that is unnecessary for the project and lacks the capacity to positively influence any behaviour, decision, or intended outcome within the project. At times, non-value-added data may even have an adverse impact on project behaviour, decisions, or outcomes (Dalal, 2012).

> **Pillar 10 – Learn from Failures**

Past lessons learned can affect future successes earned. Failure is typically defined as the inability to attain or fulfil the originally intended objective established at the project's outset. It is generally viewed as the opposite of success. Within a project context, a task refers to a specific assignment designated to an individual resource or team member. When a task does not yield the desired outcome, it is termed a "task failure" (Dalal, 2012).

In any project, the project manager is entrusted with the responsibility of harmonizing multiple factors, including scope, time, cost, quality, resources, and risks. At the project's initiation, a baseline is established for each of these elements, and objectives are established to achieve the project's desired results while operating within the defined constraints. Failure in the project context arises when any of the aforementioned objectives are not realized (Dalal, 2012).

For project managers, "failure" and "success" embody two opposing aspects of their endeavours, with "failure" seen as the opposite of "success". Within this context, they categorize a failure as a "task failure" if any team member falls short of achieving success in their assigned tasks. Furthermore, they label a project as a "project failure" when it fails to fulfil all of the predetermined objectives. Additionally, project managers identify the

team's inability to effectively plan or execute the project as a form of project failure. The pivotal focus of a project leader lies in the identification of failures, a thorough analysis of their underlying causes, and the assimilation of lessons from each and every failure (Dalal, 2012).

A "system-level failure" in a project can be characterized as a failure stemming from deficiencies in the project's overall structure, strategy, organisational culture, expertise, corporate readiness, or gaps in organisational and project leadership. This type of failure is the most severe, as it has the potential to impact all projects and initiatives across an organisation (Dalal, 2012).

A "process-level failure" within a project can be defined as a failure resulting from gaps in resources, inadequate documentation, insufficient capability, or the absence of foolproof methods for implementing processes. The seriousness of this failure mode depends on its impact on the project (Dalal, 2012).

A "human-level failure" mode can be described as a project failure directly or indirectly caused by human errors, lack of supervision, negligence, incapacity, or any unnecessary human intervention. The severity of this failure mode also varies, contingent on its repercussions for both personnel and the project (Dalal, 2012).

> ➢ **Pillar 11 – Make Projects Less Stressful**

Stress can be triggered by various factors, both internal and external to the human body. In project settings, eliminating stress is not feasible unless the underlying causes are thoroughly comprehended and recognized, and appropriate corrective measures are implemented. In many instances of stress-related issues, identifying the root cause may not be straightforward. To ensure a stress-free project planning, execution, and closure, it is imperative to have clear and unambiguous requirements, as well as well-defined directions. Ambiguous requirements or an unclear project charter often serve as significant sources of anxiety, fear, and stress for both project managers and team members. Poor planning, aside from contributing to project failure, can also induce stress among project team members. Planning stands as the most crucial phase of any project, and one often overlooked consequence of inadequate planning, by project managers, is the emergence of stress among individuals on the team (Dalal, 2012).

Another significant contributor to heightened project stress is the project managers' tendency to overlook the importance of comprehending each team member's unique attributes and assigning the right individuals to specific roles and responsibilities. Project managers often assume a uniform stress level for all team members, pressuring them to deliver consistent levels of performance and output. In the initial project stages, team members typically operate within the realm of boredom or safe work. However, as the project advances into the execution phase, project managers, often inadvertently, adopt a "one-size-fits-all" approach, intensifying the pressure on team members through the imposition of tight schedules, excessive workloads, and stringent deadlines. In many cases, project managers who struggle with effective delegation tend to shoulder an excessive workload themselves, putting them at risk of succumbing to stress, burnout, and potential injury (Dalal, 2012).

> ➢ **Pillar 12 – Invest in Your Appreciating Assets**

People generally perform their work at a level equivalent to how much they are valued. Elevating people's motivation through positive reinforcement is often more effective than using negative approaches. Successful project leaders recognize the value of investing in their most valuable assets, which are their team members. Identifying exceptional talents within the team and providing them with opportunities to showcase their abilities is a key strategy. It is also essential for team members to strike a balance between their professional and personal lives (Dalal, 2012).

Today, employees are under pressures unknown to the previous generations. They are competing for jobs not only locally but globally, and the pressure is intense, to say the least. During downtimes, the employees not only have the pressure of job security but are worried about their finances, mortgage, taxes, insurance, and other basic necessities (Dalal, 2012).

**Figure 4: The pinnacle house of project excellence – in normal times** (Dalal, 2012)

In normal times, the foundation needs to be reinforced strongly to build a strong organisation (figure 4). A robust organisation cannot exist without sturdy pillars. The 12 pillars support the organisation and create a bond between the foundation and the structure, and the roof is the focus of the organisation.

The discussion revolves around project management excellence and the 12 pillars proposed by Dalal (2012). Projects are influenced by stakeholders, and their success is interconnected with objectives, scope, cost, and schedule constraints. The functional organisational structure can limit project success due to barriers and resource limitations. According to Lewis, project management tools are necessary but not sufficient for success, especially when managing people. Leach outlines factors that can lead to project failure, including ineffective project managers, inadequate project plans, and poor decision-making.

## 2.10 Risk Assessment and Risk Management

In this chapter, we will delve into Research Question 3, which focuses on exploring the company's ability to eliminate waste and achieve a better flow between project execution and external funding. Drawing upon insights from the literature and practical experiences, we will examine the principles of risk management and their application in project

execution. By analyzing existing frameworks and methodologies, we aim to identify strategies for mitigating risks and optimizing project flow. Additionally, we will explore the role of leadership, collaboration, and effective communication in enhancing risk management practices within the organization.

According to Dalal (2012), risk management is a misleading term. It suggests attempting to gain control over risks, a task we all acknowledge as impossible to achieve. The more effective approach to dealing with risks is not through managing them but by proactively preparing for potential events. This involves assessing, addressing, and mitigating significant risks before they materialize. Establishing a risk assessment team without a clearly defined scope is akin to convening a meeting without a specified agenda. The scope of risk assessment serves to delineate the specific areas of focus for the team's efforts. These areas of focus may encompass aspects such as cost, resources, contracted products, schedule, and quality. Clearly defining the scope is of paramount importance for the accurate assessment of potential risks.

After establishing the scope, the risk assessment team should engage in a collaborative brainstorming session to generate insights regarding potential threats and opportunities. This step is integral to the risk assessment process. A threat represents a negative risk that poses a hazard to the project's objectives. Conversely, an opportunity signifies a positive risk that contributes value to the project. Project leaders are encouraged to harness the power of visualization, allowing them to mentally navigate through the project's landscape and envision the various risks and the corresponding actions required to mitigate them (Dalal, 2012).

According to (Leach) project risk management aims to effectively oversee and mitigate risks that could impact the successful completion of a project to a level that is deemed acceptable. These risks specifically pertain to various aspects of project success, encompassing factors like scope, cost, and schedule, while also considering customer satisfaction. It's important to note that other processes are responsible for addressing different categories of risk, such as health and safety concerns or environmental risks. Project risk management is concerned with managing and minimizing risks that extend

beyond the boundaries set by the Project Plan and that are situated outside the immediate sphere of control.

Project-risk management is part of the Project Planning process because you must decide what course of action to include in your Project Plan based on the relative risk. Whenever we make a project assumption, we make a project risk decision because we are assuming that reality in the future will follow the assumption (Leach, 2014).

Risk has two components: the probability of a risk event and its impact on the project. Risk types can include the ones listed below in *italic font*:

*Program risk:*  These may cause client dissatisfaction and include the risk that the client need is not known, that the full scope to fill the need is not known, or that project assumptions may not come true.

*Business risks:*  These may affect the impact the project will have on the rest of the business; they include financial risks and risks to the company's reputation.

*Technical risk:*  These are risks of developing or applying new technologies that are not in common use. This includes, for example, a new drug development discovering an unanticipated side effect.

*Cost risks:*  These may impact the project beyond one-third of the project's cost buffer.

*Schedule risks:*  These may impact the project beyond one-third of the project's schedule buffer or beyond a feeding buffer.

*Health and safety risks:*  These have the potential to injure the project team or public beyond the risks routinely accepted by the public.

*Environmental risks*:  These may impact necessary project conditions (scope, schedule, and cost) as a consequence of some environmental variable.

*Regulatory risks:* These may impact necessary project conditions (scope, schedule, cost) as a consequence of some regulatory impact, such as a new design requirement or constraint or delay.

According to (Aatsengel & Kurtoglu) the eight steps towards creating a project plan, are to list the risks frequently strike projects:

- Late subcontractor deliveries

- Bad weather (depending on what type of project to be executed)

- Unreasonable deadlines

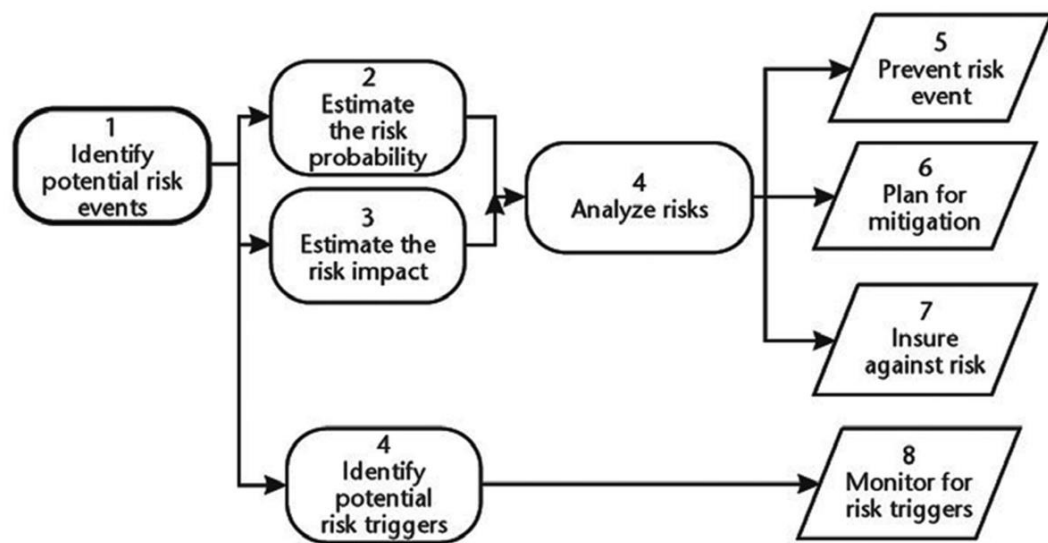- Equipment failure

- Complex coordination problems



**Figure 5: Project-risk management process** (Leach, 2014)

The risk assessment is only as valuable as what one does with it. Listing risks might give the ammunition to say, "I told you so." It also opens the question, "Why didn't you do anything about it?" Action must be implemented based on the identified risks for the risk analysis to yield any results, see figure2 (Leach, 2014).

## 2.11 Develop a Resources Management Plan

According to Aatsengel & Kurtoglu (2013), resource management is the efficient and effective deployment of an enterprise business' resources when they are needed. Such resources may include financial resources, inventory, labour skills, production resources, or information technology. The following are steps to be undertaken to create a resource management plan:

1. List the general types of resources to be utilized on the project.

2. Assign the resources to project activities, by completing a resource usage table.

3. Acquire, develop and manage project team

For small projects, it is sufficient to take each activity listed in the project management plan and assign resources to it. This can be easily done using for instance a planning tool such as Microsoft Project. For larger more complex projects, a full resource management plan, the process steps of which are as described below, should be completed to ensure that the amount and type of allocated resources are both accurate and timely (Aatsengel & Kurtoglu, 2013).

To achieve successful project completion and maintain satisfactory results, project managers and team leaders must have access to essential resources. To ensure the project team's ability to successfully accomplish their goals and meet the required standards, it is crucial for them to conduct a thorough assessment of their resource needs (Aatsengel & Kurtoglu, 2013).

In the context of a LEAN service organisation, the principles of resource management outlined by Aatsengel & Kurtoglu can be adapted to optimize service delivery and efficiency. Unlike traditional project management, where resources are typically assigned to specific project activities, LEAN service organisations focus on the holistic allocation of resources to enhance the entire service process.

Similar to traditional project management, the identification of resources is crucial. However, in a LEAN service setting, this involves recognizing service-specific resources such as skilled personnel, digital tools, customer support systems, and relevant information. These resources are essential for delivering efficient and effective services to customers.

Resource allocation in a LEAN service organisation goes beyond individual tasks. It encompasses the optimization of the entire service workflow, including customer interactions, response times, and overall service efficiency. LEAN tools and methodologies are often employed to visualize and streamline these service processes, ensuring a more dynamic and responsive approach to resource utilization.

Team development and management remain critical, but in a LEAN service context, the focus shifts towards cultivating a service-oriented team capable of adapting to changing

service requirements and continuously improving service processes. This aligns with the LEAN principle of continuous improvement, emphasizing the importance of refining operations over time.

While traditional project management recommends a comprehensive resource management plan for larger, complex projects, LEAN service organisations recognize the variability in resource needs based on the scale and complexity of service operations. Adaptable resource allocation strategies are crucial for maintaining service quality and efficiency.

The thorough assessment of resource needs, as advocated by Aatsengel & Kurtoglu, is equally applicable in the LEAN service domain. This involves considering factors such as customer demand, service volume, and technology requirements to ensure that the service team can effectively meet customer needs.

In summary, the adaptation of resource management principles to a LEAN service organisation involves a shift in focus towards optimizing the entire service process, developing a service-oriented team, and leveraging LEAN tools for continuous improvement in customer service delivery. This approach aligns with the core principles of LEAN thinking, emphasizing efficiency, adaptability, and customer-centricity in service operations.

## 2.12 Dimensions of LEAN Leadership

Achieving success as a leader is contingent on specific behaviours rather than inherent traits. Success is derived from one's actions, emphasizing the significance of what you do rather than innate qualities. This is advantageous as, for the majority, the opportunity to be a natural-born leader has passed. Behaviours can be learned and unlearned. Included here are how you respond to interruptions in production, the way you arrive at conclusions, and what you ask people to pay attention to (Mann, 2015).

The success of any transformation project, such as a LEAN conversion, heavily relies on resolute leaders and effective leadership. Below, we outline nine essential dimensions of

leadership that are vital for effectively guiding a LEAN conversion project and, albeit with nuanced differences, for steering an established LEAN operation (Mann, 2015).

According to Mann (2015), there are 9 attributes in LEAN leadership, that will be explained more in the text below.

> **Passion for LEAN**

Passion for LEAN is more than just learned behaviours you replicate. It can manifest in various ways, and it doesn't necessarily require charisma or a forceful personality. Consider those individuals some might describe as "geeks." Geeks are deeply committed to their pursuits, often discussing them in terms of how they can improve the future and drawing connections between their interests and external circumstances. Passion is easier to ignite and share when you have a solid case for change based on real external factors that affect or could affect your organisation. There's something about fighting for survival or securing your place in the market that tends to stir up passion more than a drive for increased shareholder value or larger executive bonuses. Enthusiasm, intensity, a willingness to engage others on their own terms regarding threats and opportunities, deep subject knowledge, and personal experiences—these are all hallmarks of passion. These qualities can be studied, learned, and developed over time. They stem from the belief that there must be a better way for your organisation to thrive and succeed in a competitive world (Mann, 2015).

> **Attribute 2: Disciplined Adherence to Process—Accountability**

Establishing clear expectations and implementing a regular process for tracking progress is vital for leaders spearheading LEAN production projects. Ensuring accountability for task assignments and timelines is a fundamental aspect of effective project management. The equivalent skill in overseeing an ongoing LEAN operation also revolves around accountability but in a more dynamic, real-time production environment. Planning and task definition remain critical but must occur at an accelerated pace. These actions are guided by a central principle: upholding the integrity of processes. In a project team, the tasks are finite and well-defined, often allowing time for investigation and analysis. In an ongoing LEAN operation, the focus of the LEAN leader on their processes plays a substantial role in maintaining accountability. In LEAN management, nearly all processes come with initial definitions and documentation. Additionally, there are secondary processes for each that

verify the execution of the initial process, frequently followed by further follow-up or verification processes. (Mann, 2015).

> **Attribute 3: Project Management Orientation**

Emphasizing the importance of effective project management skills when leading an implementation project is evident. In both project environments and ongoing operations, the regular utilization of a well-defined process for ensuring accountability on task assignments remains crucial. The ability to think in terms of work breakdown structures is another project management practice that seamlessly transitions into daily operating environments. A work breakdown structure essentially outlines the sequential subtasks that, when assigned and completed in the correct order, lead to the accomplishment of a larger task. Work breakdown analysis essentially refers to the detailed step-by-step planning. However, what sets apart an ongoing operation is that this analysis and planning often occur during a stand-up meeting on the production floor, where the leader examines performance tracking charts from the previous day and other metrics related to process effectiveness or disruptions. (Mann, 2015).

> **Attribute 4: LEAN Thinking**

LEAN thinking in an implementation project is akin to being a pragmatic visionary. The project leader must strike a balance between envisioning what could transpire in an ideal future state and what can realistically be achieved within the project's scope, timeline, and budget constraints (Mann, 2015).

In contrast, LEAN thinking in the context of an ongoing operation assumes a distinct perspective, rooted in the understanding that LEAN primarily serves as an improvement system. In this context, the leader of an ongoing LEAN operation aspires towards achieving perfection within the operating system. This leader's role is to identify areas for potential enhancement, even if they may not precisely discern the specific improvement measures required. Typically, this entails seeking the input of those individuals possessing the deepest understanding of the relevant processes, those who are actively engaged with them on a daily basis (Mann, 2015).

> **Attribute 5: Ownership**

Ownership, as a characteristic of a LEAN leader, revolves around empowering and acknowledging the contributions of others towards progress in a particular domain. A LEAN

"owner" does bear the responsibility of establishing and reinforcing the direction within the domain, akin to the role of a leader guiding a LEAN conversion project (Mann, 2015).

For the LEAN leader in an ongoing operation, setting the direction is a high-level task. Subsequently, they create an environment and implement specific structures and processes that enable individuals within the domain to actively participate in effecting changes that align with the overarching vision and direction. The particular changes to be implemented are heavily influenced by the input and ideas put forward by the staff and workers on the floor. In essence, the "owner" doesn't impose a predetermined set of changes; rather, they engage in the role of teaching and encouraging others to develop their own suggestions on how to best advance in alignment with the established direction (Mann, 2015).

> **Attribute 6: Tension between Application and Technical Details**

A value stream leader coming from a traditional production background might be inclined to delegate the technical intricacies to the "experts," such as engineers or local LEAN resources. They might not invest the effort to gain a comprehensive understanding of concepts like machine balance charts or the significance of minimizing machine changeover times to curtail inventory levels in a supermarket (Mann, 2015).

However, LEAN leaders firmly embrace a willingness to take risks. This disposition is at the core of their commitment to continuous improvement. LEAN initiatives typically entail the reduction of non-value-adding activities or the optimization of resource allocation. This could involve actions like reducing setup and changeover times, minimizing floor space requirements, inventory, or wait times, rebalancing production lines to match takt time precisely, relocating personnel out of a process, integrating formerly separate processes, or other similar measures. When implementing these changes, LEAN leaders actively challenge the LEAN system and lay bare its vulnerabilities (Mann, 2015).

> **Attribute 7: Balance between Production and Management Systems**

Leaders involved in a LEAN conversion project typically dedicate much of their attention to the intricate design aspects of the physical production system, and rightfully so. However, it's the responsibility of the leader overseeing an ongoing LEAN operation to establish and sustain the LEAN management system that preserves and builds upon the improvements achieved through the technical LEAN implementation. (Mann, 2015).

In cases where the LEAN project leader is also slated to manage the area after implementation, it's beneficial to consider elements of the management system during the project phase. Importantly, the job is not considered complete when the technical design implementation concludes. An effective LEAN operations leader maintains a vigilant eye for waste and opportunities in both existing and newly implemented processes (Mann, 2015).

By engaging in constructive self-assessment and emphasizing areas for improvement, the leader sets a precedent for a culture of continuous enhancement to flourish. The utilization of visual controls and a focus on the process, coupled with a commitment to understanding the causes of abnormal operations, generates a wealth of data on the performance and instances of failure within a LEAN area. The ongoing maintenance of these visual controls and tracking tools involves many individuals. When they witness their efforts being taken seriously, used as the foundation for analysis and problem-solving, and observe problems being addressed and disruptions eliminated, it validates the significance of the new routine (Mann, 2015).

> **Attribute 8: Effective Relations with Support Groups**

A LEAN operation functions as a delicately balanced system, where each of its components must operate effectively to ensure overall success. While manufacturing plays a pivotal role in this equation, it's not the sole contributor. Support groups encompassing production control, engineering, maintenance, human resources, quality, safety, and accounting also play a crucial part in a well-functioning LEAN operation (Mann, 2015).

A LEAN leader must recognize the intrinsic value of these support groups and refrain from using them as convenient targets for any system shortcomings. Instead, these groups should be smoothly incorporated into the day-to-day operations of the area, actively participating in endeavours related to problem-solving and continuous improvement. This perspective acknowledges the essential role that diverse perspectives and resources play in maintaining the optimal functionality of a finely tuned LEAN system, ensuring its resilience in the face of disruptions. Indeed, support groups can make a substantial contribution to the overall success of a LEAN operation (Mann, 2015).

> **Attribute 9: Don't Confuse Measures of Process with Measures of Results**

Leading a LEAN conversion project involves a substantial element of ensuring that team members are held responsible for delivering the results outlined and anticipated in the project plan. Employing sound project management principles entails the regular verification of the completion of intermediate step-by-step tasks. By keeping a close watch on these small steps, the project manager gains the ability to step in at the early stages of any emerging issue. The objective is to tackle problems while they are still in their nascent stages, preventing them from escalating to a point where they could jeopardize the overall project timeline and budget adherence (Mann, 2015).

In the realm of project management, this vigilant tracking of day-to-day, step-by-step progress aligns with LEAN's strong emphasis on continuous process focus. Individuals new to LEAN often find it surprising how much emphasis is placed on bringing problems to light, in stark contrast to the conventional practice of concealing issues and avoiding open discussion (Mann, 2015).

In a LEAN service organisation, the application of LEAN management practices aligns with the fundamental goal of optimizing processes and eliminating waste. Visual controls in a service environment may involve clear process documentation, visual aids, and digital tools to track progress, ensuring that service teams are aligned with objectives. Accountability meetings revolve around metrics related to service delivery, response times, and customer satisfaction, fostering a culture of responsibility and continuous improvement.

Leader standard work and Gemba walks take on a service-oriented perspective. Leader standard work includes regular reviews of service quality, adherence to procedures, and addressing customer feedback. Gemba walks in a service setting involve on-site interactions with frontline staff to understand customer needs, challenges, and the actual service delivery environment.

The dimensions of LEAN leadership find relevance in the service industry as well. Attributes such as a passion for LEAN translate into a commitment to improving service delivery and enhancing customer experiences. Disciplined adherence to processes is crucial for ensuring consistency in service operations, and effective relations with support groups involve collaboration across various service functions.

Continuous improvement in a service organisation may focus on streamlining customer interactions, reducing response times, and enhancing overall service efficiency. The tension

between application and technical details could involve optimizing digital systems or software used in service delivery. The balance between production and management systems emphasizes operational efficiency and effective management of customer relationships in the service context.

In terms of measures, a LEAN service approach involves tracking service delivery times, resolution rates, and customer feedback. Leaders in a service organisation focus on early detection of issues and continuous improvement, aligning with the LEAN principle of bringing problems to light. This adaptation and application of LEAN principles in a service organisation underscore a commitment to customer-centricity, efficiency, and ongoing improvement.

> ➢ **The research questions synchronized with the theories**

The first question directly relates to the principles of LEAN thinking outlined in the theoretical framework. It seeks to understand how applying LEAN processes can enhance general project management practices, which aligns with the core concepts of LEAN principles, such as waste reduction and continuous improvement.

The second question specifically addresses the application of LEAN methodologies within the company's processes, which corresponds to the practical implications of the LEAN theories discussed in the theoretical framework. It aims to explore how the company can apply LEAN principles to streamline its operations and improve efficiency, consistent with the focus of the theoretical framework on LEAN practices.

The third question directly reflects the key objectives of LEAN thinking, particularly in terms of waste elimination and process improvement. It aligns with the theoretical framework by focusing on the core principles of LEAN, such as identifying and eliminating waste to optimize the flow of processes, albeit in the context of project execution and external funding.

# 3   Research Methodology

The research methodology in this thesis is based on a qualitative research method. Qualitative research consists of a collection of approaches and methods used in several science disciplines (Saldana, 2011).

To answer the research questions, the study will adopt a qualitative approach, employing a semi-structured interview format with 20 personnel participants. The primary research questions are guiding this investigation. These questions serve as the foundation for understanding the existing state of project management processes, identifying areas for LEAN implementation, and providing actionable insights for process improvement within the company.

For the study, I have decided to use a literature review to gather information and background. As the empiric part of the study, there will be conducted semi-structured interviews among the personnel at the target company. The study will be conducted during the fall of 2023.

By systematically identifying and eliminating waste in project management processes, the company can optimize resource utilization, reduce lead times, and improve overall project efficiency and effectiveness. This approach aligns with Lean principles and fosters a culture of continuous improvement, driving positive outcomes for the organisation.

This approach has been validated in previous studies such as "Lean Thinking" by Womack & Jones (1997), and "The Toyota Way" by Liker (2009). These studies emphasize the importance of waste elimination and continuous improvement in Lean management practices, highlighting the significant impact it can have on organisational efficiency and effectiveness.

The objectives of qualitative research vary based on the specific project's purpose. Results often encompass vital depictions and presentations of significant findings derived from the analytical synthesis of data. These outcomes may involve documenting cultural observations, gaining new insights into individual and social complexity, evaluating the effectiveness of programs or policies, creating artistic representations of human meanings, and/or critiquing existing social orders while promoting the initiation of social justice. A

case may be chosen deliberately because of its unique character, thus presenting itself as a rich opportunity and exemplar for focused study. Most qualitative research studies rely on interviews with participants. As this is a case study the informants are given.   (Saldana, 2011).

Qualitative research delves into the realm of social science, prioritizing the comprehension of people's realities, interpretation of their experiences, and the synthesis of meaning from these encounters. It revolves around the subjective dimensions of our existence, rooted in a holistic worldview that acknowledges the presence of multiple constructed realities. Behaviour is contextualized within specific situations, shaped by individuals' interpretations of their surroundings. At its core, qualitative research illuminates the intricacies of inner life. Qualitative research explores the processes through which social experiences are shaped and imbued with meaning, offering insights that render the intricacies of the world visible. Qualitative research is often developed concurrently with its execution, characterized by the necessity for nuanced individual judgments. Additionally, it remains receptive to unforeseen occurrences and provides comprehensive portrayals of realities that defy simplification into a handful of variables. (Gupta & Awasthy, 2015).

The strength of qualitative research is its ability to provide complex theoretical descriptions of how the participants experience a given research context. It provides details about the lived-in experiences of human beings—that is, the often contradictory behaviours, beliefs, opinions, emotions and relationships of individuals. The goal of qualitative research is not theory testing, rather theory development is one of the results of the study. The findings are effective in identifying intangible factors, such as social norms, socioeconomic status, gender roles, ethnicity and religion, whose role in the research issue may not be readily apparent (Gupta & Awasthy, 2015).

## 3.1  Research Process

To delve into the intricacies of LEAN integration within the project management domain of a service organisation, a comprehensive research process unfolds, aligning with three fundamental research questions.

Every qualitative research methodology is distinct in its own right, but all of them are grounded in certain prime characteristics inherent to qualitative research. Qualitative research is a situated activity, positioning the observer within the world of participants. It relies on a set of interpretable materials, such as interactions, artifacts, and practices, to render the world visible. The researcher converts a series of events and representations, including field notes, interview conversations, photographs, and more, into meaningful insights. Emphasizing the process rather than the outcome, qualitative research prioritizes the journey of exploration and understanding (Gupta & Awasthy, 2015).

➤ **Emic Approach**

According to (Gupta & Awasthy) the Emic Approach of qualitative research is distinct in its focus on understanding the perspective of the participants rather than fitting data into existing theories or concepts. The emphasis is on obtaining an insider's view, delving into the participants' interpretations of their context. In anthropological studies, this is termed the emic perspective, which highlights cultural distinctions meaningful to the members of a given context. The emic perspective is crucial for intuitively and empathetically grasping a context and for conducting effective ethnographic fieldwork. Emic accounts describe thoughts and actions primarily in terms of the participants' self-understanding, often within culturally and historically bound terms. Emic researchers typically view culture as an interconnected whole or system and employ methods involving sustained, wide-ranging observation of a single cultural group, such as immersive fieldwork where the ethnographer develops relationships with informants and adopts social roles.

➤ **Inductive Approach**

Inductive reasoning, a theory-building process, begins with specific observations and aims to establish generalizations about the phenomenon under investigation. The purposes of employing an inductive approach include condensing raw textual data into a concise summary, establishing clear links between research objectives and summary findings, and developing a framework of the underlying structure of experiences or processes evident in the data. The general inductive approach offers a systematic set of procedures for analyzing qualitative data, yielding reliable and valid findings. While it may not be as robust as other analytic strategies for theory or model development, the general inductive approach

provides a simple, straightforward method for deriving findings within the context of focused evaluation questions. Many evaluators may find it less complex compared to other approaches for qualitative data analysis (Gupta & Awasthy, 2015).

> **Eclectic-Flexible Approach**

Gupta & Awasthy (2015) states that the processes and flexibility are crucial at various stages of qualitative research. Similar to other research approaches, the researcher begins by formulating study questions and objectives. However, as they become more acquainted with the context, they refine or develop more focused research questions for exploration. Flexibility is essential during the data collection stage concerning the methods and techniques employed. An eclectic-flexible approach entails remaining open to adapting the inquiry as understanding deepens or circumstances change. This approach prevents the researcher from becoming confined to rigid designs that hinder responsiveness, allowing for new avenues of discovery to emerge. For example, a researcher may initially conduct interviews but later decide to explore an issue through focused group interviews. Design flexibility arises from the open-ended nature of naturalistic inquiry and pragmatic considerations. Another stage requiring flexibility is during data analysis, where an inductive approach is utilized. Here, the data should guide the analysis, rather than being constrained by pre-existing theories or frameworks. This thesis uses the Eclectic-Flexible approach.

A well-conducted qualitative research study begins with a clearly defined purpose that aligns coherently with the proposed research questions and methods. It aims to generate meaningful and rich data, recognizing that qualitative research inherently involves exploring the unknown rather than duplicating established knowledge. One of the key strengths of qualitative research lies in its ability to delve into unanticipated issues as they arise. The steps in qualitative research form a continuous process, requiring ongoing review of decisions and approaches. However, adequate planning of the essential aspects in advance is still necessary for effective execution (Gupta & Awasthy, 2015).

The research question should strike a balance between being broad enough to encompass the scope of inquiry, yet focused on a specific aspect, such as exploring the change process

within a public sector organisation. Clarity, comprehensibility, and lack of ambiguity are essential qualities of a well-formulated research question. Moreover, the question should possess social relevance and utility, aiming to address significant issues and contribute to meaningful knowledge in the field (Gupta & Awasthy, 2015).

According to (Gupta & Awasthy) the researcher's approach should prioritize description without filtering any observations or conversations during this stage. Eliciting human experiences places various demands on the researcher's mental and intellectual capacities. Firstly, the researcher's ability to listen attentively is paramount; they must hear, absorb, and comprehend the participant's responses to determine how to proceed with further inquiry. Secondly, a clear and logical mindset is necessary. The researcher must swiftly distill the key points of the participant's statements, exercise judgment regarding what to explore further, and formulate relevant questions simultaneously. Thirdly, curiosity—a naturally inquisitive disposition—is a valuable asset for researchers. Having an innate desire to delve deeper into the information provided greatly enhances the research process.

A crucial aspect of qualitative reporting involves crafting the narrative of the research in a clear and coherent manner. This entails showcasing the richness and nuances of the original material while striking the right balance between description and interpretation. It is essential to transparently demonstrate the rationale behind interpretations and conclusions by presenting the supporting evidence. Descriptive and classificatory accounts will often be necessary to illustrate the collected evidence, covering various phenomena such as attitudes, beliefs, behaviours, and events. Additionally, researchers should incorporate ideas or concepts from other studies to elucidate their findings, providing background on the development of these theories or concepts and demonstrating alignment between their evidence and the chosen theoretical framework (Gupta & Awasthy, 2015).

In this thesis, the initial phase involves extracting insights from scholarly works, articles, and publications dedicated to LEAN principles' application in service organisations. This literature review seeks to unveil key concepts, challenges, and best practices, shaping a foundational understanding of LEAN in the service context. Complementing this theoretical

exploration, a case study analysis is instituted. A representative service organisation is scrutinized, and pertinent data on existing project execution processes before formal funding approval is meticulously examined. The goal is to discern prevailing strengths, weaknesses, and potential areas for LEAN integration specific to the service-oriented project management landscape.

Interviews are designed as key instruments to capture qualitative insights from project managers, team members, and relevant stakeholders. These instruments aim to unravel perceptions and expectations regarding the incorporation of LEAN principles. The qualitative data collected from interviews forms a rich tapestry of insights into the feasibility and acceptance of LEAN methodologies in a collaborative service setting.

This analysis serves as the bedrock for constructing a bespoke theoretical framework. Tailored to the service context, this framework emerges as a structured guide for the integration of LEAN principles into future service projects before formal funding approval.

Concluding this research endeavour, the study synthesizes actionable recommendations and insights derived from the data analysis. Practical guidance takes shape, offering a roadmap for the service organisation aspiring to optimize project management practices through the strategic application of LEAN principles.

This study aligns with the fundamental principles of qualitative research as outlined by Gupta & Awasthy (2015). The study employs an eclectic-flexible approach, emphasizing the importance of remaining open to adapting the inquiry as understanding deepens or circumstances change. The research questions are designed to strike a balance between being broad enough to encompass the scope of inquiry and focused enough to address specific aspects relevant to your study. The approach prioritizes description without filtering observations or conversations, aiming to elicit rich qualitative insights from participants. The study methodologically aligns with established qualitative research principles to ensure rigor and validity in the research process.

## 3.2  Data Collection

The data collection method for this qualitative research unfolds as a multi-faceted approach designed to provide a nuanced understanding of LEAN integration within the

project management realm of service organisations. The journey commences with an extensive literature review, delving into scholarly works and publications dedicated to LEAN principles in service contexts. This theoretical exploration lays the groundwork, offering a comprehensive backdrop of concepts, challenges, and best practices.

This real-world examination serves as a crucial baseline, unravelling the intricacies of current practices, strengths, and potential areas for LEAN integration. Interviews are crafted as dynamic tools to capture qualitative insights from project managers, team members, and relevant stakeholders. These instruments aim to unearth perceptions and expectations regarding the assimilation of LEAN principles in the service-oriented project management domain.

Throughout this data collection journey, the qualitative nature of the research remains a guiding principle, emphasizing depth of insights and a nuanced understanding of the interplay between LEAN principles and service-oriented project management. The culmination of data collection propels the study toward a comprehensive thematic analysis, laying the groundwork for actionable recommendations and insights that can guide service organisations in optimizing project management practices through the strategic infusion of LEAN principles.

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## 3.3 Validity and reliability

To fortify the validity of this qualitative exploration, methodological triangulation emerges as a cornerstone. The integration of diverse data collection methods — encompassing literature review, case studies, stakeholder perspectives through interviews. This triangulation not only validates the findings but also ensures that insights are enriched through multiple lenses.

The qualitative journey is further fortified through prolonged engagement and persistent observation. By immersing in the context of service-oriented project management, the research team cultivates an intimate familiarity with the intricacies, challenges, and idiosyncrasies inherent in LEAN integration. Prolonged engagement allows for the emergence of patterns and subtleties that might elude fleeting observations, contributing to the depth and authenticity of the study.

Peer debriefing, involving discussions and scrutiny of the research process and findings with peers or colleagues, becomes a pillar of reliability. This external examination offers diverse perspectives and serves as a crucible for refining interpretations. Reflexivity, the researcher's conscious reflection on their own biases and preconceptions, further enhances reliability by acknowledging and mitigating potential sources of subjectivity.

The study endeavours to transcend the inherent challenges of qualitative research, emerging as a beacon of validity and reliability. The triangulated approach, coupled with stakeholder engagement and rigorous analysis, serves as a testament to the conscientious

pursuit of credible insights into the labyrinthine realm of LEAN integration in service-oriented project management.

In conducting this qualitative exploration, ethical considerations are paramount to fortify the validity and reliability of the research findings. Methodological triangulation serves as a cornerstone, integrating diverse data collection methods such as literature review, case studies, and stakeholder interviews. This approach not only validates the findings but also ensures that insights are enriched through multiple lenses, promoting a comprehensive understanding of $\mathrm{LEAN}$ integration in service-oriented project management.

Furthermore, ethical principles are upheld through prolonged engagement and persistent observation in the research process. By immersing in the context of service-oriented project management, the research team cultivates an intimate familiarity with the intricacies, challenges, and idiosyncrasies inherent in LEAN integration. This prolonged engagement allows for the emergence of patterns and subtleties that might elude fleeting observations, contributing to the depth and authenticity of the study.

Peer debriefing also plays a crucial role in ensuring the reliability of the research findings. This involves discussions and scrutiny of the research process and findings with peers or colleagues, offering diverse perspectives and serving as a crucible for refining interpretations. Additionally, reflexivity—the researcher's conscious reflection on their own biases and preconceptions—further enhances reliability by acknowledging and mitigating potential sources of subjectivity.

Overall, the study endeavors to transcend the inherent challenges of qualitative research and emerge as a beacon of validity and reliability. The triangulated approach, coupled with stakeholder engagement and rigorous analysis, serves as a testament to the conscientious pursuit of credible insights into the labyrinthine realm of LEAN integration in service-oriented project management while upholding ethical standards throughout the research process.

## 3.4   Ethical consideration

Prior to engaging with participants, transparent and comprehensible information was disseminated regarding the nature, purpose, and potential outcomes of the study (Smith;Jones;& Johnson, 2018). Participants were accorded the autonomy to willingly

participate, armed with adequate knowledge to make informed decisions (Jones & Johnson, 2019). The research design incorporates measures to ensure that participants' experiences, perspectives, and vulnerabilities are treated with sensitivity and respect (Brown & Williams, 2020).

The principle of voluntary participation is vigilantly championed throughout the research process (Garcia & Martinez, 2017). Transparent and honest communication forms the bedrock of ethical practice (Lee & Smith, 2021). Reflexivity ensures that the researcher's personal values do not unduly influence the research process or interpretation of findings (WIlson & Garcia, 2017). This commitment to self-awareness and transparency reinforces the ethical integrity of the study (Roberts & Johnson, 2019).

In weaving together these ethical threads, the research endeavours not only to meet regulatory standards but to transcend them, creating a research environment characterized by respect, integrity, and a genuine commitment to the well-being and agency of participants (Taylor & Brown, 2020).

Prior to engaging with participants, transparent and comprehensible information was disseminated regarding the nature, purpose, and potential outcomes of the study. Participants were accorded the autonomy to willingly participate, armed with adequate knowledge to make informed decisions. The research design incorporates measures to ensure that participants' experiences, perspectives, and vulnerabilities are treated with sensitivity and respect.

The principle of voluntary participation is vigilantly championed throughout the research process. Participants are assured that their involvement is entirely voluntary, and they retain the prerogative to withdraw at any stage without facing repercussions. Transparent and honest communication forms the bedrock of ethical practice. Participants are kept informed about the progress of the study, and any modifications to the research design are communicated with clarity and openness.

Ethical considerations are intrinsically tied to the reflexivity of the researcher. Continuous self-reflection on biases, preconceptions, and potential conflicts of interest is pivotal. Reflexivity ensures that the researcher's personal values do not unduly influence the research process or interpretation of findings. This commitment to self-awareness and transparency reinforces the ethical integrity of the study.

In weaving together these ethical threads, the research endeavours not only to meet regulatory standards but to transcend them, creating a research environment characterized by respect, integrity, and a genuine commitment to the well-being and agency of participants. The continuum of ethical responsibility extends beyond procedural checkboxes, manifesting as a foundational ethos that permeates every facet of the research journey.

# 4   Empirical Framework

The primary focus of this study is to investigate the integration of LEAN principles into the project management processes of the target company. The study aims to explore how LEAN methodologies can be applied to enhance efficiency, eliminate waste, and optimize various stages of project execution, from idea generation to funding approval.

To address the research questions, a qualitative approach is adopted, utilizing semi-structured interviews with 20 personnel participants within the company. This method facilitates in-depth insights into the challenges and possibilities associated with project idea generation, resource allocation, funding application, and the waiting period for funding approval.

The study draws on LEAN principles as its theoretical foundation, emphasizing the identification and elimination of waste in processes. LEAN thinking promotes a continuous improvement mindset, efficient resource utilization, and a customer-centric approach. The goal is to understand how LEAN principles can be adapted and applied to project management, focusing on creating value, optimizing flow, and fostering a culture of continuous improvement.

Data is collected through semi-structured interviews, posing ten key questions designed to uncover specific issues related to idea generation, resource allocation, funding application, and the waiting period for funding approval. The qualitative nature of the study allows for a nuanced exploration of participants' perspectives and experiences.

Ensuring the validity and reliability of the study is crucial. To enhance validity, the research employs a rigorous interview process and triangulation of data from multiple sources.

Reliability is ensured through consistent data collection methods and the use of well-defined interview protocols.

Ethical considerations are prioritized, with informed consent obtained from participants, confidentiality maintained, and privacy respected. Transparency in data collection and reporting is upheld to maintain the integrity of the study.

The results are analyzed in relation to the research questions, exploring challenges and potential LEAN solutions in project management processes. The focus is on identifying patterns, themes, and insights that emerge from participants' responses.

The empirical framework concludes with a comprehensive synthesis of the findings, highlighting areas of success, challenges, and potential avenues for LEAN integration in the company's project management processes. The implications of the study are discussed, offering actionable insights for process improvement and future research directions.

## 4.1   Research Questions

This qualitative study is driven by a trilogy of interconnected research questions, each meticulously crafted to unravel the complexities of LEAN integration within the context of service-oriented project management.

The first research question is the initial arc of inquiry casts a spotlight on the existing landscape, delving into the intricate web of processes governing project execution before the imprimatur of funding approval is secured. This research vein seeks to unearth the nuances of how projects, particularly in a service-oriented milieu, navigate the pre-approval terrain. By scrutinizing the current modus operandi, the study aims to extract insights into the challenges, bottlenecks, and inherent strengths that define this prelude to project fruition.

The second research question serves as a compass, guiding the exploration into the realm of possibilities. It prompts an investigation into the strategies and methodologies available for infusing LEAN principles into the fabric of future projects before the aegis of funding materializes. The inquiry is rooted in the anticipation of a LEAN metamorphosis, exploring how organisations can proactively embed LEAN thinking into their project gestation, fostering a paradigm of efficiency, waste reduction, and strategic alignment.

The third question contemplates the transformative potential of waste reduction in sculpting a seamless flow between project execution and the influx of external funding. It probes the symbiotic relationship between LEAN principles and the financial lifeblood of projects. Can the meticulous paring down of inefficiencies pave the way for a more harmonious and agile dance between project progression and the financial sustenance necessary for its realization?

## 4.2   Result and Analysis

The results of the study reveal a multifaceted understanding of LEAN principles within organisational processes, emphasizing the importance of waste elimination and flow enhancement. Rooted in a qualitative research framework, the findings explore the intricate relationship between leadership commitment, waste reduction strategies, and operational efficiencies.

The study emphasizes the indispensable role of leadership in fostering a culture of continuous improvement, drawing insights from Zarbo (2012). Leaders are depicted as active participants in LEAN implementation, engaging with employees to instill a shared commitment to LEAN principles. This involvement extends beyond mere oversight to active participation on the "shop floor," where leaders empower and inspire employees through meaningful engagement.

Building upon the foundational work of Ohno and Harry (2009), the study identifies the seven deadly wastes as significant barriers to operational excellence. Of these, overproduction emerges as a linchpin for inefficiencies, necessitating targeted strategies for waste reduction. By targeting overproduction and its associated waste contributors, organizations can unlock significant opportunities for cost savings, resource optimization, and enhanced productivity. Other wastes, such as defects, transportation, inventory, overprocessing, waiting time, and unnecessary motion, are also explored, providing a comprehensive framework for waste identification and mitigation.

**Tailoring LEAN Principles to Service Organizations**

The findings underscore the relevance of LEAN principles to service organizations, elucidating how each waste manifests in non-manufacturing environments. From unnecessary documentation to idle waiting times, the study illustrates how LEAN principles

can be tailored to address the unique challenges faced by service-oriented enterprises. Through introspection and adaptation, organizations can tailor LEAN practices to address unique challenges and deliver greater value to customers. This customization of LEAN principles to suit service-oriented environments highlights the adaptability and versatility of LEAN thinking.

Integral to the study's findings is the emphasis on qualitative research methodologies, providing nuanced insights into human experiences and organizational dynamics. Embracing the emic perspective, the study delves into subjective interpretations to uncover deeper insights.

The study advocates for the use of inductive reasoning and flexibility in qualitative research, enabling researchers to navigate dynamic landscapes and respond fluidly to evolving contexts. By embracing an eclectic-flexible approach, researchers can uncover novel findings and refine their understanding of the research domain. This iterative approach to research allows for the exploration of unanticipated issues and the emergence of novel insights, contributing to the richness and depth of the study's findings.

➢ **LEAN Principles in Project Execution and External Funding**

The analysis begins by examining LEAN principles outlined in the literature, emphasizing leader engagement, waste reduction, and the application of Ohno's seven wastes framework. These principles are then applied to the company's operations, identifying potential areas of waste and inefficiency. By aligning leadership commitment with waste reduction strategies, organizations can cultivate a culture of continuous improvement, driving tangible outcomes in terms of operational efficiency, resource optimization, and customer satisfaction.

The analysis highlights the role of qualitative research in understanding organizational dynamics and stakeholder perspectives. By immersing themselves in the research process, researchers gain valuable insights into challenges and opportunities, informing evidence-based decision-making. Qualitative research methodologies allow for a holistic exploration of human experiences and organizational dynamics, providing nuanced insights that inform process improvement initiatives and decision-making.

A summarized quote from the informants: *"Abstract project ideas and the importance of understanding the perspective of funders. Overall, it highlights various obstacles encountered in the project ideation process, including financing constraints and time limitations."*

➢ **Addressing Challenges in Project Funding and Management**

The empirical study uncovers challenges in project ideation, resource allocation, external funding application, and waiting processes. Suggestions for improvement include inclusive idea generation, effective communication, and continuous monitoring, aligning with LEAN principles. By addressing these challenges and eliminating waste, organizations can achieve a more streamlined flow between project execution and external funding, ensuring better alignment with actual needs, improved resource allocation, and a smoother transition from ideation to securing external funding.

In conclusion, the study offers insights into the application of LEAN thinking and qualitative research methodologies within the company. By leveraging LEAN principles and qualitative research, the company can identify and eliminate waste, optimize processes, and improve project execution and external funding. Embracing a culture of continuous improvement, the company can achieve sustainable growth and competitive advantage. This comprehensive approach to process improvement and decision-making positions the organization for success in today's dynamic business environment.

Summarized quote from the informants: *"The responses indicate that project funding and management involve various challenges and complexities. Common themes include the importance of clear leadership, communication, and understanding of funders' expectations. While some respondents suggest specific strategies for making these processes more efficient, uncertainty and context-specific factors are also prominent."*

➢ **Findings in Research Question 1**

Integrating LEAN processes into general project management practices before obtaining funding approval can yield several benefits:

**Improved Efficiency**: LEAN principles focus on identifying and eliminating waste, such as overproduction, unnecessary motion, and waiting times. By applying LEAN methodologies

to project execution, organizations can streamline processes, reduce lead times, and optimize resource utilization, ultimately enhancing overall efficiency.

**Enhanced Quality**: LEAN practices emphasize the importance of delivering value to customers and stakeholders by minimizing defects and errors. By implementing LEAN processes, project teams can identify root causes of quality issues, implement corrective actions, and establish quality control measures, leading to improved project outcomes and customer satisfaction.

**Cost Reduction**: LEAN methodologies help organizations identify and eliminate non-value-added activities, thereby reducing costs associated with wasted resources, rework, and inefficiencies. By optimizing processes and resource allocation, organizations can achieve cost savings and maximize the return on investment in project execution.

**Faster Time to Market**: By reducing lead times and eliminating bottlenecks in project execution, LEAN practices enable organizations to deliver projects more quickly and respond more effectively to changing market demands. This can help organizations gain a competitive edge and capitalize on emerging opportunities in a timely manner.

**Increased Stakeholder Satisfaction**: LEAN principles emphasize the importance of stakeholder engagement and continuous improvement. By involving stakeholders early in the project lifecycle, soliciting their feedback, and incorporating their input into decision-making processes, organizations can enhance stakeholder satisfaction and build stronger relationships with customers, suppliers, and other key stakeholders.

**Sustainable Performance Improvement**: LEAN is not just a set of tools and techniques but a philosophy of continuous improvement. By embedding LEAN principles into general project management practices, organizations can foster a culture of continuous learning, innovation, and excellence, leading to sustained performance improvement over time.

Overall, integrating LEAN processes into general project management practices before obtaining funding approval can result in more efficient, effective, and successful project outcomes, ultimately driving organizational success and competitive advantage.

➢ **Findings in Research Question 2**

Based on the analysis conducted, several strategies can be proposed to help the company streamline its processes in future projects prior to funding approval:

**Continuous Activity and Documentation**: Encourage continuous engagement and documentation throughout the project ideation phase to ensure clarity, accountability, and alignment with project objectives. This can help in maintaining momentum and avoiding delays in decision-making.

**Early Involvement of the Target Audience**: Involve key stakeholders, including project team members, funders, and relevant stakeholders, early in the project ideation process. Their input and feedback can provide valuable insights into project requirements, priorities, and potential challenges, enabling more informed decision-making and resource allocation.

**Effective Communication**: Foster open and transparent communication channels among project stakeholders to facilitate the exchange of ideas, feedback, and information. Clear communication can help in clarifying project objectives, expectations, and timelines, thereby minimizing misunderstandings and delays.

**Utilization of Tools or Methodologies**: Implement LEAN tools or methodologies, such as value stream mapping, Kaizen events, or visual management techniques, to identify and eliminate waste, streamline processes, and improve overall efficiency. These tools can help in identifying bottlenecks, inefficiencies, and areas for improvement, enabling the company to optimize its operations and resource allocation.

**Leadership Clarity and Empowerment**: Provide clear leadership direction and empower project teams to make decisions and take ownership of their work. Strong leadership commitment and support are essential for driving cultural change and sustaining LEAN initiatives over the long term.

By adopting these strategies, the company can LEAN its processes in future projects prior to funding approval, resulting in improved efficiency, effectiveness, and alignment with project objectives and stakeholder expectations.

➢ **Findings in Research Question 3**

Based on the analysis of the provided material, it appears that the company has the potential to eliminate waste and improve the flow between project execution and external funding by implementing LEAN principles and process improvements. The study identified various challenges and inefficiencies within the project execution phase before obtaining funding approval, including issues with project ideation, resource allocation, external funding application, and waiting processes. By addressing these challenges and leveraging LEAN practices such as continuous monitoring, leadership clarity, well-defined mandates, and effective communication, the company can streamline its operations, optimize resource allocation, and enhance the overall flow between project execution and external funding. Additionally, qualitative research methodologies provide valuable insights into organisational dynamics and stakeholder perspectives, informing evidence-based decision-making and process improvement initiatives. Overall, by embracing LEAN principles and fostering a culture of continuous improvement, the company can achieve better alignment with actual needs, improved efficiency, and a smoother transition from ideation to securing external funding.

# 5 Discussion

In this chapter, we dig into the critical examination of the gap between LEAN service industry principles and the current operational state of the company. The discussion revolves around various facets including project flow and workload management, decision-making and funding approval processes, cash flow management, and the overall LEAN implementation within the organisation. By analyzing these aspects, we aim to uncover insights that can inform strategies for bridging this gap and implementing LEAN methodologies effectively.

The company faces significant challenges related to project flow, workload management, and the efficiency of the external funding approval process. To address these issues, there is a growing desire to adopt LEAN methodologies and create a more streamlined workflow. Through a comprehensive analysis, we identified several gaps between LEAN principles and the company's current state.

The fluctuating project workload and uneven distribution of tasks among project managers highlight the need for a more consistent and balanced workflow. LEAN principles advocate for continuous flow and waste elimination, offering solutions to create smoother project flows and balance workloads effectively. Prolonged decision-making processes for external funding approval contribute to delays and hinder project flow. By streamlining approval processes and employing visual management tools, such as Kanban boards, LEAN principles offer a systematic approach to reducing delays and improving decision-making efficiency.

Extended lead times in receiving funds after submitting payment applications pose financial constraints between projects. LEAN focuses on reducing lead times and standardizing financial workflows to expedite cash flow and ensure predictability. While recognizing the potential benefits of LEAN, there remains a gap between the current state and the desired LEAN future state. The study aims to develop a tailored LEAN process to address these gaps and guide effective LEAN implementation within the company.

An analysis of existing initiatives and future recommendations provides valuable insights into enhancing LEAN implementation in the service industry. Companies have introduced LEAN concepts and tools, such as value stream mapping and visual management, to improve operational efficiency. However, future efforts should focus on developing comprehensive LEAN training programs, conducting detailed value stream analyses, and leveraging employee collaboration for process improvement.

Insights gathered from the empirical study offer valuable directions for implementing LEAN principles in project management processes. Strategies such as inclusive idea generation, realistic planning, efficient resource allocation, and proactive engagement with funders can foster a culture of continuous improvement and optimize project management workflows. By incorporating these LEAN principles, the company can create a more efficient and effective project management system aligned with broader business goals. The emphasis on continuous improvement and strategic resource allocation can contribute to a smoother flow between project execution and external funding, ultimately driving organisational success.

## 5.1 The Gap Between LEAN Service Industry and the Company

The company, is facing challenges related to project flow, workload management, and the efficiency of the external funding approval process. The desire is to implement LEAN methodologies to address these issues and create a more streamlined and efficient workflow. Here is an analysis of the gap between LEAN service industry principles and the current state of the company.

> **Project Flow and Workload Management**

**Gap:** The company experiences fluctuations in project workload, with project managers working at varying intensities. There is a need for a more consistent and balanced workload.

**LEAN Solution:** LEAN principles emphasize continuous flow and the elimination of waste. Applying LEAN methods can help create a smoother project flow, ensuring a more even distribution of workload for project managers. Implementing LEAN methodologies involves creating a continuous flow of work. This can be achieved by identifying and eliminating bottlenecks and interruptions in the project processes. Workload balancing is a key aspect of LEAN. By smoothing out variations in project demands and ensuring a consistent pace, project managers can avoid periods of excessive workload followed by slower periods.

> **Decision-Making and Funding Approval Process**

**Gap:** The decision-making process for external funding is prolonged, causing delays and impacting the overall project flow. The lengthy funding approval process is identified as a bottleneck.

**LEAN Solution:** LEAN principles emphasize identifying and eliminating non-value-added activities. In the context of decision-making, this involves streamlining the approval process, removing unnecessary steps, and reducing delays. Visual management tools, such

as Kanban boards, can be employed to provide real-time visibility into the status of funding approvals, facilitating quicker decision-making.

> **Cash Flow Management**

**Gap:** The time taken to receive funds after submitting payment applications is extended, causing potential financial constraints between projects.

**LEAN Solution:** LEAN focuses on reducing lead times. Implementing LEAN practices in the financial processes can help expedite the cash flow, ensuring a more steady and predictable financial environment. By identifying and eliminating delays in the approval and disbursement of funds, the company can achieve a more predictable and timely cash flow. Also by standardizing and automating financial workflows, where possible, can contribute to faster processing times.

> **Overall LEAN Implementation**

**Gap:** While the company identifies the potential benefits of LEAN, there is a need to bridge the gap between the current state and the desired LEAN future state.

**LEAN Solution:** The study aims to investigate and develop a LEAN process specifically tailored to the company's needs. This process can serve as a guide to implementing LEAN principles effectively, addressing the identified gaps.

In summary, the gap lies in the current challenges related to project flow, decision-making processes, and cash flow management. LEAN principles offer a systematic approach to eliminate waste, enhance efficiency, and create a more agile and responsive organisational structure, aligning with the company's goals for improvement. The study's focus on developing a LEAN process tailored to the company's context is a crucial step in closing this gap.

> **What has been done?**

When analyzing this thesis we can find that companies in the service industry have introduced LEAN concepts to improve operational efficiency. Initial awareness and training programs on LEAN principles may have been conducted. Some service organisations may have implemented value stream mapping to identify and analyze processes, aiming to

eliminate non-value-added activities. There might be ongoing efforts to foster a culture of continuous improvement within service teams.

Regular reviews and discussions on process performance and opportunities for enhancement may already be in place. Visual management tools, such as Kanban boards or visual workflows, could be in use to enhance transparency and communication within service teams.

> **What should be done in the future?**

Below is a list of what can be done in the future to enhance LEAN in a service industry. What is important is that we develop a more comprehensive and tailored LEAN training program for employees at all levels. Training should emphasize the principles of waste reduction, continuous improvement, and the importance of employee involvement. There could be conducted a more detailed value stream analysis to identify and eliminate specific sources of waste in service processes. Collaborate with employees to gather insights into daily operations and challenges. Specific LEAN tools and techniques, such as 5S (Sort, Set in order, Shine, Standardize, Sustain) for workplace organisation are good to introduce. Explore the use of Kaizen events for rapid improvement in targeted areas. For instance, customer feedback can be used as a driver for process improvements.

The company could implement technology solutions that support LEAN principles, such as automated workflows and digital Kanban boards. Encourage collaboration between different teams to break down silos and optimize end-to-end processes. Foster a sense of ownership and accountability among employees for the entire service delivery process.

Establish and regularly review relevant metrics and KPIs to measure the success of LEAN initiatives. Use data-driven insights to identify areas for further improvement. Integrate LEAN principles into the overall strategic planning of the organisation. Not to forget, ensure that LEAN initiatives align with broader business goals and objectives.

## 5.2   How Can LEAN be Implicated in the Company?

The insights gathered from the empirical study offer valuable directions for implementing LEAN principles in the company's project management processes.

To foster inclusive idea generation, involve input from employees at all levels. Encourage collaborative workshops and continuous activity to ensure a steady flow of innovative ideas. LEAN practices can be introduced by emphasizing realistic planning and providing clear leadership mandates. Utilize tools or methodologies that support efficient communication and well-structured project timelines.

In resource allocation, apply LEAN principles by maintaining a dedicated funding expert. Ensure some free capacity and use experienced application writers for efficient resource allocation. Improve communication materials to enhance clarity and understanding. Implement LEAN strategies by building partnerships and proactively engaging with potential funders.

LEAN the application process by having a dedicated expert and employing effective communication strategies. Utilize tools such as a database of potential resources to optimize the application process. Address challenges in waiting for funding approval by implementing LEAN practices. Emphasize meticulous application preparation and a clear understanding of funders' processes.

Mitigate risks associated with hiring personnel and managing cash flow using LEAN principles. Introduce strategies for timely application submission and proactive engagement with funders. Foster a culture of continuous improvement by regularly reviewing and refining the project management processes. Encourage a mindset that actively seeks ways to eliminate waste and optimize workflows.

By incorporating these LEAN principles, the company can create a more efficient and effective project management system. The emphasis on continuous improvement, clear communication, and strategic resource allocation aligns with LEAN methodologies and can contribute to a smoother flow between project execution and external funding.

To LEAN project management in reality, the company should take several practical steps such as:

**Leadership Commitment:** Top management must commit to implementing LEAN principles in project management. They should champion the initiative, allocate resources, and provide necessary support to ensure its success.

**Employee Training:** Provide comprehensive training on LEAN principles and methodologies to all project team members. Ensure they understand the concepts and know how to apply them effectively in their day-to-day work.

**Cultural Transformation:** Foster a culture of continuous improvement and innovation where employees are encouraged to identify and eliminate waste, streamline processes, and drive efficiency improvements.

**Process Mapping and Analysis:** Conduct a thorough analysis of existing project management processes to identify areas of waste, inefficiency, and opportunity for improvement. Use tools like Value Stream Mapping to visualize the current state and design future state processes.

**Standardization:** Standardize project management processes, workflows, and procedures to ensure consistency, repeatability, and predictability. Establish clear guidelines, templates, and best practices that streamline project execution.

**Empowerment and Collaboration:** Empower project teams to make decisions, solve problems, and implement changes autonomously. Encourage open communication, collaboration, and knowledge sharing across teams to drive collective improvement efforts.

**Continuous Improvement:** Implement a systematic approach to continuous improvement, where teams regularly review performance metrics, identify areas for optimization, and implement corrective actions. Encourage experimentation, learning, and adaptation to drive ongoing efficiency gains.

**Feedback and Learning:** Create mechanisms for gathering feedback from project stakeholders, including customers, team members, and sponsors. Use this feedback to inform process improvements, address issues, and enhance overall project performance.

**Technology Adoption:** Invest in technology solutions that support LEAN project management practices, such as project management software, collaboration tools, and data analytics platforms. Leverage technology to automate routine tasks, streamline communication, and provide real-time visibility into project status and performance.

**Metrics and Measurement:** Define key performance indicators (KPIs) and metrics to measure the success of LEAN project management initiatives. Track progress against these metrics regularly and use the insights gained to drive further improvements.

By taking these practical steps, companies can effectively LEAN their project management processes, drive efficiency improvements, and achieve better outcomes for their projects, teams, and stakeholders.

# 6 Conclusion

The primary objective of this thesis was to investigate the implementation of LEAN principles within a company's project management processes, focusing on inclusive idea generation, resource allocation, external funding application, and the waiting period for funding approval. The study aimed to uncover challenges and potential solutions in these processes, providing valuable insights for the integration of LEAN methodologies.

The analysis revealed several important findings. Firstly, LEAN principles, when implemented effectively, can significantly reduce waste and improve the flow between project execution and external funding. Leadership commitment and active engagement were identified as critical factors in fostering a culture of continuous improvement. Furthermore, the identification and elimination of the seven key wastes outlined by Taiichi Ohno were found to be instrumental in streamlining processes and enhancing efficiency. Additionally, qualitative research methodologies provided rich insights into participants' perspectives and experiences, contributing to a comprehensive understanding of the research context.

> **Future Studies**

Despite the valuable insights gained, this study has certain limitations. Firstly, the research focused on a specific company or industry, limiting the generalizability of the findings to other contexts. Secondly, the study relied primarily on qualitative research methods, which may have introduced subjective biases in data interpretation. Moreover, the research timeframe and resource constraints may have impacted the depth and breadth of the analysis.

Future research in this area could explore several avenues. Empirical studies could investigate the long-term impact of LEAN implementation on organisational performance metrics such as cost reduction, cycle time improvement, and customer satisfaction. Comparative studies across different industries or sectors could provide insights into the

transferability of LEAN principles across diverse contexts. Additionally, theoretical research could delve into emerging concepts and frameworks in LEAN thinking, addressing gaps in existing literature and informing practical applications.

➢ **Managerial Implications**

For practitioners and managers, the findings of this study offer valuable insights into the potential benefits of adopting LEAN principles in project execution and funding processes. Leadership commitment and active engagement are crucial for successful LEAN implementation, emphasizing the importance of fostering a culture of continuous improvement. By identifying and addressing the seven key wastes, organisations can streamline operations, reduce costs, and enhance overall efficiency. Moreover, qualitative research methodologies can provide valuable perspectives from stakeholders, facilitating informed decision-making and strategy development.

➢ **Limitations of the Study**

In conclusion, the extensive analysis of the provided material offers valuable insights into the application of LEAN thinking and qualitative research methodologies within the company. By leveraging LEAN principles and qualitative research techniques, the company can identify and eliminate waste, optimize processes, and improve the flow between project execution and external funding. Moreover, qualitative research provides a robust framework for understanding organisational dynamics and stakeholder perspectives, informing evidence-based decision-making and process improvement initiatives. By embracing a culture of continuous improvement and innovation, the company can achieve sustainable growth and competitive advantage in today's dynamic business environment.

The empirical study delved into key aspects of the company's project management processes, seeking to address the research questions and identify areas for LEAN implementation. The results provide valuable insights into challenges and potential solutions, contributing to a comprehensive understanding of the current state and possibilities for improvement.

In essence, the analysis suggests that by embracing LEAN practices, the company can navigate the complexities of project execution before funding approval more efficiently,

ensuring better alignment with actual needs, improved resource allocation, and a smoother transition from ideation to securing external funding.

The implementation of LEAN principles in the company's project management processes holds significant potential for enhancing efficiency and effectiveness. By fostering a culture of continuous improvement, optimizing resource allocation, and embracing LEAN strategies in idea generation and funding processes, the company can create a more streamlined and responsive project management system. The study sets the foundation for ongoing exploration and refinement of LEAN practices tailored to the company's unique challenges and goals.

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# 8  Appendix

**INTERVIEW GUIDE**

1. Problems/challenges with project ideas?
2. Can the process of coming up with project idea be LEANed?
3. Problems/challenges with allocating personnel resources?
4. Can the process of allocating personnel be LEANed?
5. Problems/challenges with applying for external funding?
6. Can the process of applying for external funding be LEANed?
7. Problems/challenges with waiting for decision regarding external funding?
8. Can the process of waiting for external funding be LEANed?
9. Problems/challenges with waiting for funding approval?
10. Can the process of waiting for external funding be LEANed?