Evaluating the Impact of Generative AI Technologies (ChatGPT and its Analogues) on Enhancing Project Management Efficiency within Corporate Strategies in Global IT Companies

Research dissertation presented
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MBA in International Business Management

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6 September 2024

Candidate Declaration

Candidate Name: Marina Sonnikova

I certify that the dissertation entitled “Evaluating the Impact of Generative AI Technologies (ChatGPT and its Analogues) on Enhancing Project Management Efficiency within Corporate Strategies in Global IT Companies” submitted for the degree of MBA in International Business Management is the result of my work and that where reference is made to the work of others, due acknowledgment is given.

Candidate signature:
Marina Sonnikova
Date: 6 September 2024

Supervisor Name: Dr. Garrett Ryan
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Date:

Dedication

I'd like to dedicate this work to my family, friends, and colleagues for their constant support, as well as my mentors for their guidance and maintenance.

Acknowledgements

I would like to express my deep appreciation to my mentors for their excellent guidance, ongoing support, and patience throughout my research, as well as lecturers, classmates, college library, colleagues, friends, and family.

Abstract

This research investigates how Generative AI technologies, such as ChatGPT and similar tools, may enhance project management efficiency within the corporate strategies of global IT firms. The study focuses on how these technologies impact decision-making, risk management, and project overall optimization, among other areas of project management.

Experts with experience using Generative AI to project management are consulted through semi-

structured interviews and direct observation, as part of a qualitative data collection approach. Grounded Theory methodology is employed for data analysis, facilitating the development of new theoretical insights based on empirical evidence. This approach enables a deep understanding of the impact of Generative AI on project management practices in the quickly evolving IT sector.

Incorporating Generative AI into project management leads to significant improvements in decision-making efficiency and the optimization of routine tasks, which in turn strengthens strategic planning. However, cautious risk management, data security, and human monitoring are required for successful adoption. Although the Cynefin Framework and GenAI together can enhance analytical capabilities, many firms continue to rely on on intuitive decision-making.

Finally, incorporating Generative AI into project management may greatly enhance effectiveness, the quality of decisions made, and strategic flexibility. Nevertheless, realizing these advantages necessitates careful risk management, reliable data practices, and a strategic approach to Generative AI integration. Companies that implement Generative AI effectively might achieve a competitive advantage by improving their adaptability, innovation, and response to changing market conditions.

Table of Content

List of Figures

Chapter One
Introduction and Objectives

1.1 Introduction

The introduction establishes a foundation for the research topic, emphasizing Generative AI's value to organizational efficiency (Fui-Hoon Nah et al., 2023). This section establishes the basis for the study by outlining the research aim, objectives, and research questions. Furthermore, this chapter highlights the significance of the research issue and reinforces the rationale for carrying out a study on the relationship between Generative AI and Project Management. As a result, in addition to

providing a brief description of the research context, this section will emphasize the relevance and significance of this study in today's environment.

1.2 Background

Generative AI (GenAI) technologies, including transformer models like ChatGPT and its analogues, have evolved rapidly, providing transformative opportunities in global IT sectors. These technologies can transform project management by automating tasks, giving predictive analytics, and improving decision-making (Shrestha et al., 2019). Integrating GenAI into corporate strategies offers significant benefits, including increased efficiency and decision-making, but it also raises concerns about data protection and ethical issues. (Kanbach et al., 2024). The Cynefin Framework, which categorizes challenges to help manage complexity and ambiguity, has the potential to improve GenAI's performance in project management (Snowden and Boone, 2007).

The purpose of this study is to look into how GenAI may be integrated into corporate strategy, how it affects project management efficiency and decision-making quality, and how it can provide a competitive edge. By addressing these topics, the study will provide useful information for IT organizations aiming to adopt GenAI. In the following text, the terms “model”, “ChatGPT” and “GenAI” will refer to Generative AI (such as ChatGPT and its analogues).

1.3 Rationale and Problem Statement

The rapid progress of GenAI technology, such as ChatGPT and its analogues, presents both transformational opportunities and complex challenges for global IT firms (Cano-Marin, 2024). These technologies can greatly improve project management by automating regular tasks, offering sophisticated predictive analytics, and enhancing decision-making quality. Integrating GenAI into corporate plans, however, is not without challenges, as it presents crucial problems about data safety, ethical considerations, and the need for strategic alignment to properly realize its opportunities (Kanbach et al., 2024).

The Cynefin Framework, which categorizes difficulties to help manage complexity and ambiguity, is an effective way for using the benefits of GenAI in project management. By implementing this approach, companies can better leverage GenAI to make more informed decisions, improve project outcomes, and maintain competitive advantage (Snowden and Boone, 2007).

Despite the potential of GenAI technologies, there is a significant gap in empirical research regarding their integration into corporate strategies and their influence on project management efficiency in global IT firms. While theoretical debates abound, there are few practical researches that focus on GenAI's real-world applicability in project management. This gap is especially evident when it comes to understanding how GenAI can be matched with company aims in order

to improve decision-making speed and quality, manage risks, and achieve a competitive advantage. This study aims to close these gaps by investigating the incorporation of GenAI into business strategies and its impact on project management efficiency.

1.4 Research aim and objectives

Aim:

The aim of this research is to evaluate the impact of Generative AI Technologies (ChatGPT and its analogues) on enhancing project management efficiency within corporate strategies in global IT companies

Objectives:

- A critical examination of the principal business opportunities, challenges, and threats associated with integrating Generative AI into corporate strategy.
- A critical analysis of how the integration of the Cynefin Framework with Generative AI contributes to strategic business benefits in Project Management.
- A critical assessment of the impact of Generative AI on project management in IT companies: how the use of Generative AI can enhance decision-making speed and quality in project management.
- A critical investigation of Generative AI strategy development and execution in Project Management for achieving competitive advantage.

1.5 Research questions

1. How does integrating Generative AI (ChatGPT and its analogues) into corporate strategy impact project management, including business opportunities, challenges, and threats?

2. How does the use of Generative AI (ChatGPT and its analogues) and integrating with the Cynefin Framework improve decision-making speed and quality in project management and facilitate achieving competitive advantages?

1.6 Significance of and justification for the research

Significance: The incorporation of Generative AI into project management has the potential to significantly improve efficiency and alogn with corporate strategies in global IT firms. This study is significant because it fills a gap in understanding how Generative AI might improve project outcomes and deliver strategic benefits. It seeks to provide significant insights into the practical

uses and benefits of AI, bridging the gap between theoretical understanding and industry practices (Wang, 2019).

Justification: Industry Relevance. This paper addresses the underexplored impact of Generative AI's on project management, emphasizing the need for practical AI integration solutions (Schwalbe, 2017).

Strategic importance: By investigating how Generative AI and frameworks loke Cynefin can enchance decision-making and manage complexity, this study provides actionable insights for improving project management and achieving a competitive advantage (Kaggwa et al., 2024).

Practical Implications: The findings will provide actionable recommendations for global IT firms on how to effectively integrate Generative AI , improve project management efficiency, and match strategic goals (Enholm et al., 2021).

Academic Contribution: This study bridges a gap in the existing literature by merging theories with practical GenAI applications, enhancing theoretical understanding and setting the framework for future research (Henderson and Venkatraman, 1999).

1.7 Research Structure

The research unfolds over five chapters.

Chapter 1: Introduction sets out the background, aim, objectives, research questions and justification for the study.

Chapter 2: Literature review presents the secondary data that serves as the foundation for the study. This chapter presents a comprehensive analysis of empirical, conceptual and theoretical literature

Chapter 3: Research Methodology explores the theory of research and related research paradigms. It presents a rationale for the research method choices and closes with a discussion on research ethics and sets out how ethics are operationalised in this study.

Chapter 4: Findings and Discussion presents a comprehensive analysis of the primary data from the semi-structured interviews

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Chapter 5: Conclusion and Recommendations summarizes the findings, presents practitioner recommendations and reflects on the limitations of the study.Conclusion and Recommendations summarizes the findings, presents practitioner recommendations and reflects on the limitations of the study.

1.8 Summary

This study explores how ChatGPT and its analogues, as a type of Generative AI, might improve project management efficiency in the corporate strategy of international IT organizations. The study emphasizes the rapidly generative artificial intelligence (AI) technologies are developing along with how they have the potential to change project management through predictive analytics, automation, and better decision-making. It discusses issues with data security and ethics as well as the positive and negative aspects of technology integration. This study aims to evaluate the successful integration of Generative AI into business strategy for the purpose of optimizing project management and enhancing its efficiency (Enholm et al., 2021). The goal of the research is to identify the ways that artificial intelligence (AI) technology might enhance decision-making procedures and allow businesses to acquire a competitive edge.

The importance of this work resides in offering IT firms practical recommendations on how to incorporate Generative AI into project management, enhancing strategic planning and workflows. Furthermore, by linking theoretical models with real-world applications, the research advances the current understanding of this rapidly evolving area.

Chapter Two
Critical Literature Review

2.1 Introduction

The literature review covers essential studies related to the research topic. Specifically, it focuses on the relationship between the integration of generative AI and the Cynefin Framework, as well as strategic project management approaches and their impact on business capabilities, project management effectiveness, and decision-making approachs. Reviewing relevant sources helps understand key asprcts of using GenAI in project management for global IT companies. This chapter objectively evaluates perspectives on the opportunities and challenges of integrating GenAI GenAI in project management.

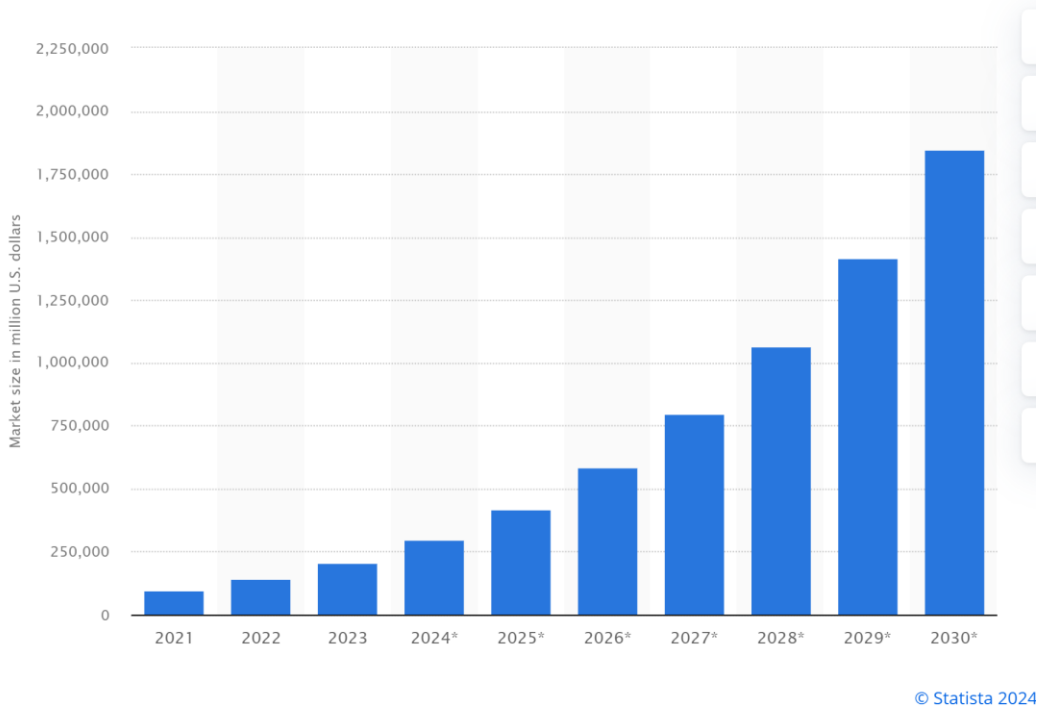
In my literature review, I primarily rely on data from Statista, which provides reliable, up-to date quantitative information on AI, supported by large surveys, to supplement my qualitative research with quantitative evidence. Statista data is consistent with those of Forrester, IDC, Gartner, McKinsey, European Commission, World Economic Forum supporting Statista's credibility. While Forrester and Gartner provide analytical insights, Statista's concentration on exact data is critical to clearly presenting trends in the dissertation.

2.2 Introduction to Artificial Intelligence (AI)

Artificial intellect (AI) is an arena of computer science that simulates human intelligence for tasks like learning and decision-making, integrating insights from multiple fields (Zhang and Lu, 2021). Through altering stakeholder and citizen connections and experiences, artificial intelligence (AI) is revolutionizing business, the economy, and society (Loureiro et al., 2021). The development of artificial intelligence is facilitated by large amounts of data and the growing powerful capabilities of modern computers. (European Commission. Directorate General for Communications Networks, Content and Technology. et al., 2020).

Evidence for AI growth and integration: AI is a decisive factor in a company's success (Statista, 2024).

Global AI market growth forecast

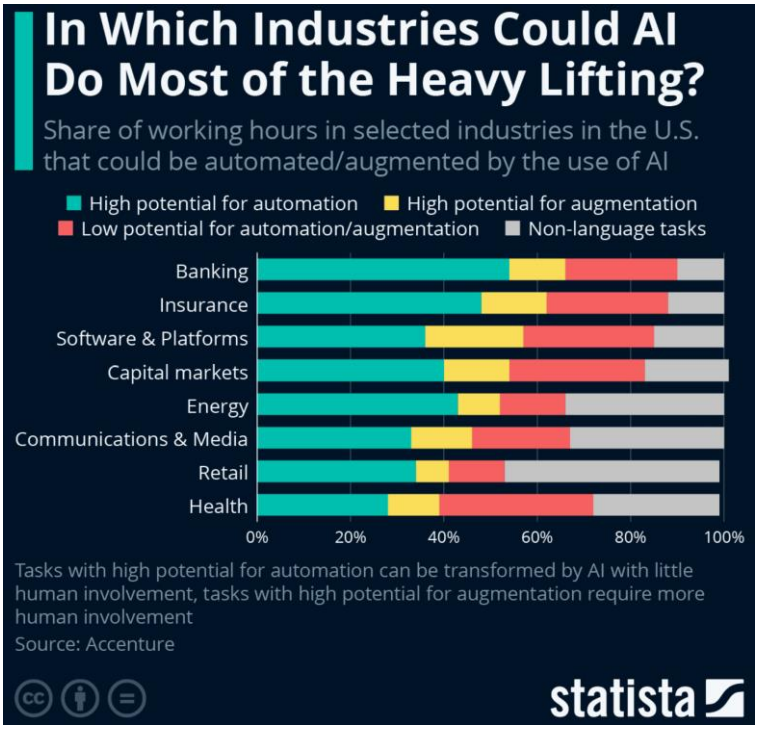


(Source: Statista, 2024) Figure 2.1

Global AI market size growth forecast by AI type through 2030

(Source: Statista, 2024) Figure 2.2

Industries where AI can do most of the heavy lifting



(Source: Statista, 2023) Figure 2.3

Approximately one in five CEOs are sure that the A.I. revolution will have a greater impact on the globe than the Internet revolution. As of 2023, over 33% of IT leaders worldwide claim to explore

artificial intelligence (AI) use cases in their business operation area of automation of IT processes (Statista, 2023).

Building on the foundations of AI, the next chapter introduces GenAI.

2.2.1 Introduction to Generative AI (GenAI)

According to the Partners Universal International Innovation Journal, the adoption of AI-based solutions such as Chat GPT in diverse business areas has revolutionized the process modern companies operate (A. Shaji and A.S. Hovan, 2023). ChatGPT is a chatbot platform driven by AI; ChatGPT was created by OpenAI, an American research organization engaged in developments in the field of artificial intelligence.

Generative AI is currently widely available. According to a recent study by Gartner, Inc., GenAI is the leading AI solution that enterprises are deploying (Gartner, 2024). Despite some competitors catching up, OpenAI's ChatGPT remains the most well-known GenAI. This technology uses algorithms to create new content, including text, images, audio, simulations, and code, with the potential to completely transform content creation (McKinsey, 2024). To navigate the evolving GenAI landscape, leaders should focus on team training, experimenting with AI through proof of concepts, and collaborating with partners (Statista, 2024).

Given the increasing range of applications for this technology, it's difficult to forecast its trajectory. However, according to Statista the forecast of GenAI market size is shown in Figure 2.4.

(Source: Statista, 2024) Figure 2.4

Fiona Fui-Hung Na states that generative AI, which includes models such as ChatGPT, DeepBrain, and Midjourney, is fast evolving and will have a greater impact on fields such as business,

healthcare, and education. Although these innovations have tremendous potential, they also raise ethical, technological, policy, and economic concerns. In order to succeed, generative AI has to be focused on people, with emphasis on ethical norms, transparency, and promoting AI literacy and informed discussion (Fui-Hoon Nah et al., 2023).

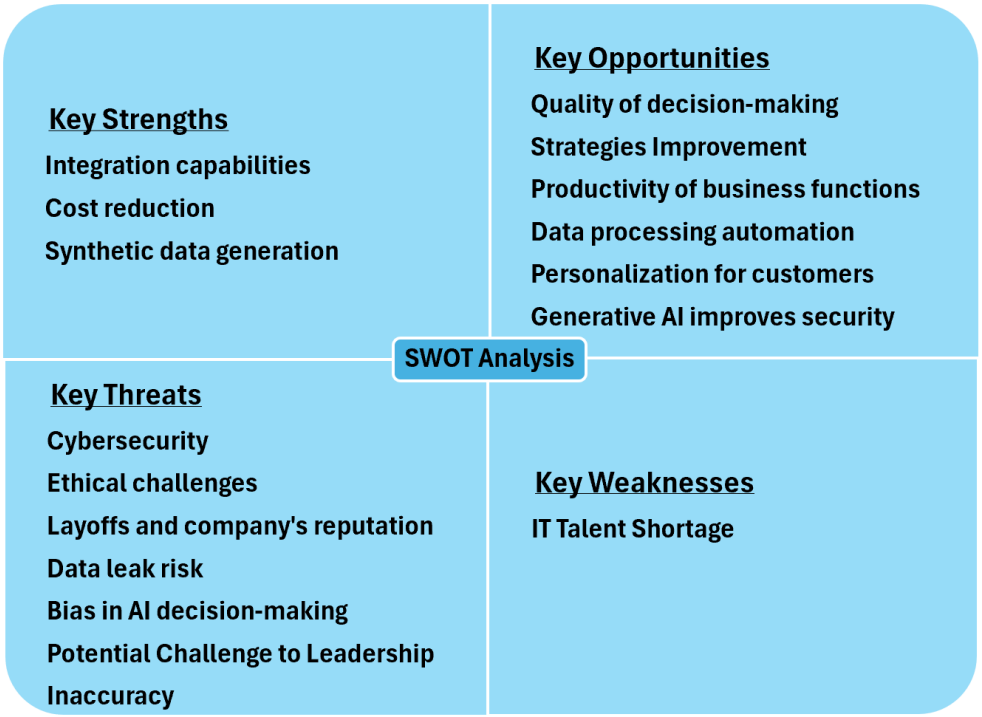
Most companies have not adopted AI to a significant extent in 2023, with only a small percentage of people in the firm expected to use AI. This is most likely due to the fact that the technology is still developing and that a select number of employees may be running test or pilot programs on the use of AI in business. In 2023, more than 25% of companies did not use AI at all (Statista, 2024). Additionally, many companies are waiting for a legal position. For example, the EU were formulating a legal position on the utilisation of AI (AI Act enters into force - European Commission, 2024). The EU AI Act, which regulates the responsible use of AI, went into effect on August 1, 2024.

As generative AI takes front stage in 2024, companies should build on past AI and digital transitions to achieve a competitive edge by developing the skills needed for large-scale innovation. While the excitement surrounding generative AI caused extensive testing, not all attempts are going to provide an advantage in competition. Businesses could differentiate between adopting current tools ("takers"), integrating models with private data ("shapers"), and developing their own models ("makers"). For the most part, the optimum strategy is to merge taker and shaper approaches for competitive advantage (McKinsey, 2024).

2.2.2 GenAI SWOT Analysis

A SWOT analysis of GenAI helps clarify its potential by assessing Strengths, Weaknesses, Opportunities, and Threats. Researchers in strategic management (Ansoff, Andrews, Porter, Mintzberg, etc.) recognize SWOT as a key tool for aligning organizational factors.Swot also aids in developing strategies to overcome challenges (Helms and Nixon, 2010).

SWOT Analysis



(Source: Self-Created) Figure 2.5

SWOT Analysis clarification

Category	Description
GenAI Key Strengths	
Integration capabilities	GenAI can be easily integrated into existing systems of all sizes, allowing full utilization of its features. The success may depend on system complexity and compatibility.
Cost reduction	Approximately 25% of the American business leaders surveyed in February 2023 reported that they had saved between $50,000 and $70,000 utilizing ChatGPT. Furthermore, 11% of respondents claimed to have saved over $100,000 since integrating ChatGPT into their operations (Statista, 2023).
Synthetic data generation	Professionals can employ GenAI to create synthetic data using a range of sources (Manteghi, 2024)
GenAI Key Opportunities	
Quality of decision-making	Generative AI has the potential to significantly improve almost every type of decision-making process. Management has the most potential for automation, with the level of automation increasing more than threefold (Statista, 2023). The effect of GenAI on CEOs in business goes deeper than image generators and chatbots. Technology leaders are eager on using Gen AI to improve efficiency and decision-making (Workday, 2023)
Strategies Improvement	GenAI has the potential to enhance both deliberate and emergent strategies
Productivity of business functions	Speed up and automation of repetitive tasks (IDC report, 2024); A 2023 study of 63 use cases suggests generative AI could greatly boost productivity, especially in marketing and sales, with an added range of value $760 to $1,200 billion dollars, with significant gains also possible in software engineering (Statista, 2023)
Data processing and data collection automation	With the development of generative AI, there was potential for increasing automation in 2023 for data collecting and processing; however, in the case of data processing, generative AI helps to achieve an automation capability of over 90 percent (Statista, 2024)
Personalization for customers	Customers may receive a more tailored interaction and experience (IDC report, 2024)
Generative AI improves security	Generative AI helps security experts with phishing detection and penetration testing, and it is intended to find IT system weaknesses and provide repairs

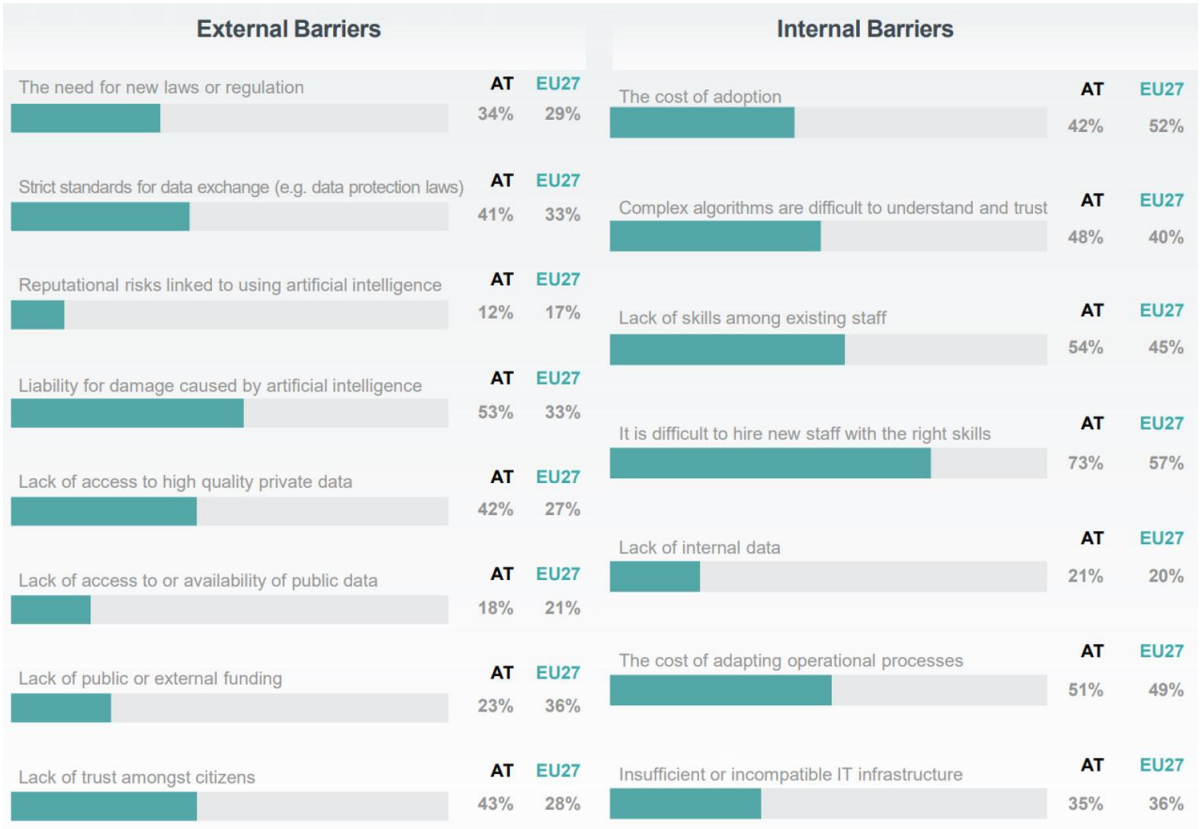
SWOT Analysis clarification

Category	Description
GenAI Key Threats	
Cybersecurity	is a key concern for companies implementing artificial intelligence (AI) into their business in 2022 (Statista, 2023a). The majority of CEOs globally expressed concern in 2023 about GenAI potentially giving adversaries new ways to attack (Statista, 2024)
Ethical challenges and regulatory compliance	When it comes to integrating generative AI, nearly 60% of the CEOs surveyed said that ethical challenges rank as their top concern (Statista, 2024b). GenAI may accidentally violate copyright by producing content that is similar to protected materials (Forrester, 2024)
Layoffs and company's reputation	A February 2023 survey found that 33% of United States business leaders expected ChatGPT use will definitely result in more layoffs by the end of the year, with 26% saying it was probably. Additionally, 32% believed it would definitely cause more layoffs in the next five years (Statista, 2023). Depending on the specific sector and geographic region, results could differ
Data leak risk	In 2023, about 63% of surveyed companies use data limitations to manage risks associated with GenAI, while 61% implement tool restrictions for the same purpose (Statista, 2024)
Bias in AI decision-making	There is currently a huge amount of evidence showing that human biases in the available data are amplified in decisions made by AI (Shrestha et al., 2019)
Potential Challenge to Leadership	The implications of replacing junior staff with GenAI technology in IT companies, if it occurs
Inaccuracy	Some organizations have already seen negative outcomes from the usage of generation AI. Respondents most commonly mention inaccuracy as a risk to their organizations, followed by cybersecurity and explainability (McKinsey, 2024)
GenAI Key Weaknesses	
IT Talent Shortage	In 2022, 66% of Asia-Pacific and 62% of global firms identified IT talent shortages as a high risk (Statista, 2022); the shortage of qualified IT security employees increased from 84.1% in 2022 to 86.6% in 2023, with 2021 having the highest reported shortage at 87% (Statista, 2023);

(Source: Self-Created) Figure 2.6

In addition to the SWOT analysis, it is crucial to emphasize the European Commission has identified four primary barriers to the implementation of GenAI, along with external and internal barriers to AI adoption.

Barriers to AI adoption



(Source: European Commission. Directorate General for Communications Networks, Content and Technology. et al., 2020) Figure 2.7

The huge potential of GenAI necessitates quick action. Businesses must choose whether to be pioneers in the use of genAI or risk lagging behind rivals that have made the transition.
Introduction to GenAI sets the foundation, leading seamlessly into the development of a comprehensive AI strategy.

2.3 AI Strategy

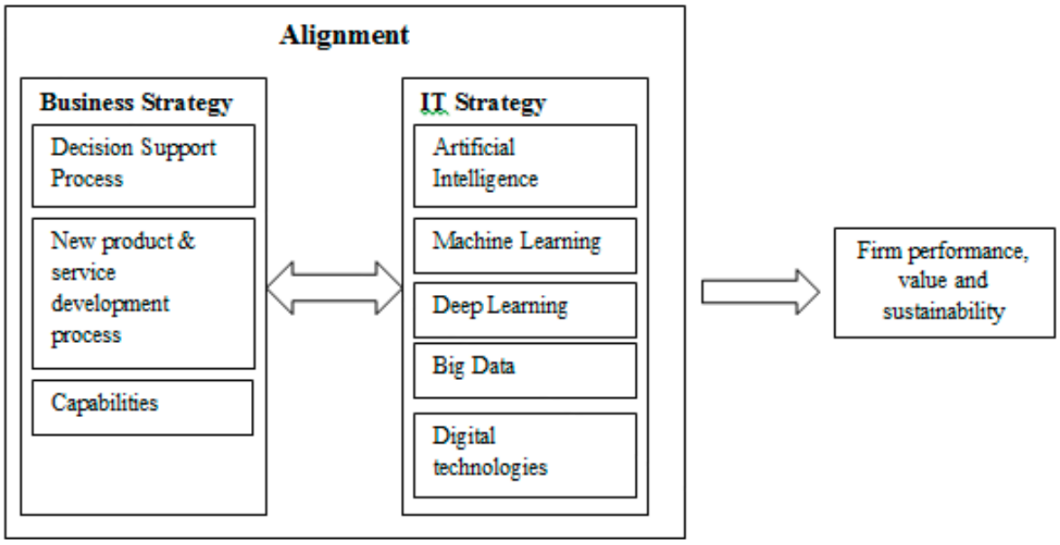
. GenAI and machine learning must be integrated into business, culture, and HR strategies (Workday, 2023). Unlocking the potential of GenAI necessitates a fundamental reworking of business strategy within enterprises (World Economic Forum, 2024)
How an organization can most effectively incorporate AI into its overall strategy: An AI strategy is a plan for incorporating AI into a company in a way that supports and coincides with the larger

objectives of the enterprise. An effective AI strategy ought to serve as a roadmap for this plan. The methods to effectively use AI to extract deeper insights from data, improve productivity, create a better supply chain or ecosystem, and/or enhance talent and customer experiences may be outlined in the AI strategy, depending on the organization's aims. The goal is to identify a set of strategies that companies in any industry can use to benefit from advances in AI technologies.Business executives need also develop an AI roadmap for their companies. This map should essentially be a plan of business growth, with AI serving as a key facilitator (Deloitte, 2023).

Organizations worldwide, or roughly 41% of the respondents, mostly view their strategy as moderately prepared for the implementation of generative AI (GenAI). Just 5% of the companies say they are not prepared at all, but nearly all of the respondents say they are at least slightly prepared (Statista, 2024). The Workday report provides similar information. Data silos and bureaucracy limit the progress of AI and ML in EMEA companies. The main problems are high regulation and internal delays, but cloud integration is providing some relief (Workday, 2023).

AI is crucial to corporate strategy because it opens up novel opportunities for efficiency and innovation. Alignment with the objectives and values of the organization is necessary for successful integration. AI is a strategic asset that modifies decision-making and improves business performance; as such, it is more than just a tool, which emphasizes the importance of having an AI-ready culture (Kaggwa et al., 2024).

Alignment of business strategy and IT strategy

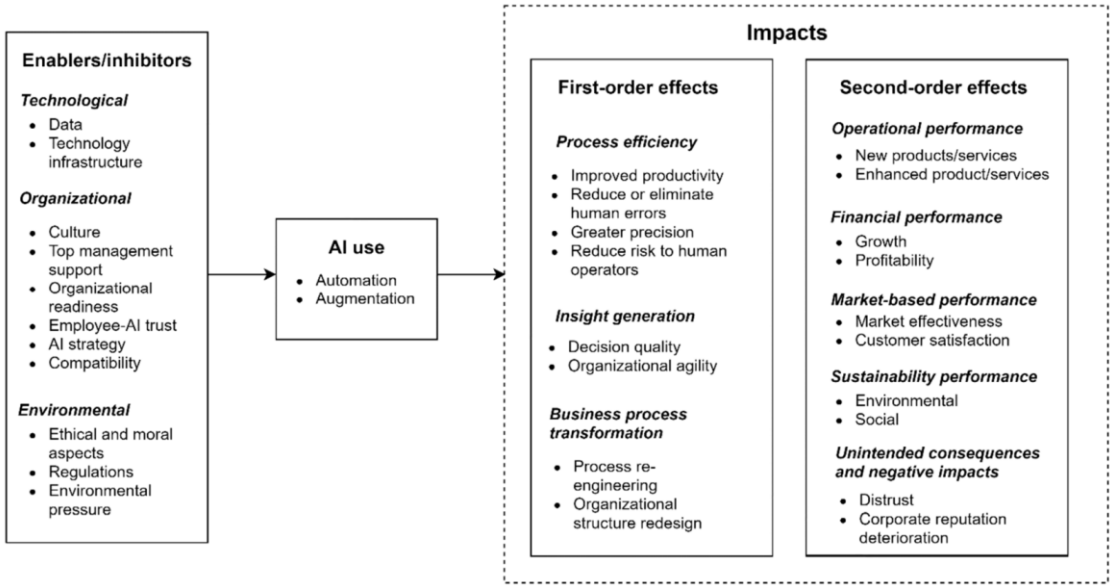


(Source: Kitsios and Kamariotou, 2021) Figure 2.8

Strategic alignment can be defined as the degree to which the IT mission, objectives, and plans maintain and are maintained by the business mission, objectives, and plans (Henderson and Venkatraman, 1999).

The integration of AI in organizational operations exposes a set of challenges and obstacles. Organizations need to comprehend both the value-adding potential of these technologies as well as how to overcome obstacles in order to fully realize the potential value from AI (Enholm et al., 2021).

The impact of AI on company outcomes



(Source: Enholm et al., 2021) Figure 2.9

The image shows how the use of AI in decision-making impacts corporate value. Also, the Statista website states that that. the business value created by decision automation is expected to grow significantly in the upcoming years, from zero in 2017 to around 810 billion U.S. dollars by 2025 (Statista, 2022).

Effectively managing GenAI demands a strategy that incorporates deep technological knowledge, reliable data management, ethical rules, strong cooperation among IT and business professionals, and a broad perspective on applications.

With the AI strategy considered, the focus shifts to project management and using AI to manage projects.

2.4 Project management

Project management applies knowledge, skills, techniques and tools to meet project requirements. To accomplish strategic objectives, organizational project management combines organizational

enablers with project, program, and portfolio management, which are compared in Figure 2.10, along with success metrics (Schwalbe, 2017).

Overview of projects, programs and portfolios

	Projects	Programs	Portfolios
Definition	A project is a temporary endeavor undertaken to create a unique product, service, or result.	A program is a group of related projects, subsidiary programs and program activities that are managed in a coordinated way to obtain benefits not available from managing them individually.	A portfolio is a collection of projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives.
Management	Project managers manage the project team to meet the project objectives.	Programs are managed by program managers who ensure that program benefits are delivered as expected, by coordinating the activities of a program's components.	Portfolio managers may manage or coordinate portfolio management staff, or program and project staff that may have reporting responsibilities into the aggregate portfolio.
Monitoring	Project managers monitor and control the work of producing the products, services, or results that the project was undertaken to produce	Program managers monitor the progress of program components to ensure the overall goals, schedules, budget, and benefits of the program will be met.	Portfolio managers monitor strategic changes and aggregate resource allocation, performance results, and risk of the portfolio.
Success	Success is measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction.	A program's success is measured by the program's ability to deliver its intended benefits to an organization, and by the program' efficiency and effectiveness in delivering those benefits.	Success is measured in terms of the aggregate investment performance and benefit realization of the portfolio.

(Source: Schwalbe, 2017) Figure 2.10

Project management techniques and tools enable project managers and their teams in carrying out tasks throughout all ten knowledge areas. Figure 2.11 shows a collection of regularly used tools and techniques organized by knowledge area (Schwalbe, 2017).

Tools and techniques by knowledge area

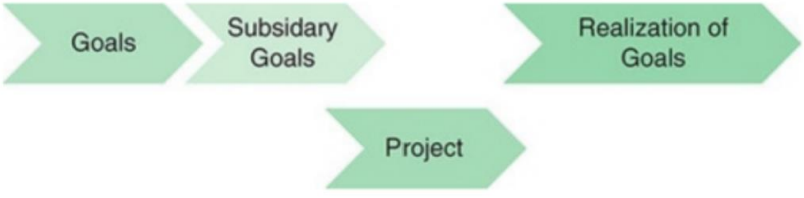
Knowledge Area/Category	Tools and Techniques
Integration management	Project selection methods, project management methodologies, project charters, project management plans, **project management software, change requests**, change control boards, project review meetings, **lessons-learned reports**
Scope management	**Scope statements, work breakdown structures**, mind maps, statements of work, **requirements analyses**, scope management plans, scope verification techniques, and scope change controls
Schedule management	**Gantt charts**, project network diagrams, critical-path analyses, crashing, fast tracking, schedule performance measurements
Cost management	Net present value, return on investment, payback analyses, earned value management, project portfolio management, cost estimates, cost management plans, cost baselines
Quality management	Quality metrics, checklists, quality control charts, Pareto diagrams, fishbone diagrams, maturity models, statistical methods
Resource management	Motivation techniques, empathic listening, responsibility assignment matrices, project organizational charts, resource histograms, team building exercises
Communications management	Communications management plans, **kickoff meetings**, conflict management, communications media selection, **status and progress reports**, virtual communications, templates, project websites
Risk management	Risk management plans, risk registers, probability/impact matrices, risk rankings
Procurement management	Make-or-buy analyses, contracts, requests for proposals or quotes, source selections, supplier evaluation matrices
Stakeholder management	Stakeholder registers, stakeholder analyses, issue logs, interpersonal skills, reporting systems

(Source: Schwalbe, 2017) Figure 2.11

Many projects arise from a company's strategy, functioning as tools for implementation. While the link between projects and strategy isn't always evident, most projects are driven by strategic goals. This connection becomes harder to identify when a company has multiple, unrelated objectives. Therefore, project management both guides future direction and executes strategies to drive progress (Clegg et al., 2020).

Strategies can be initiated by various factors as part of an organization's planned strategic development, as illustrated in Figure 2.12.

Projects as a part of company's strategy



(Source: Clegg et al., 2020) Figure 2.12

Organizations use program and portfolio management in order to meet business requirements. Project portfolio management aligns projects and programs with strategic goals, optimizing the use of resources and value (Schwalbe, 2017).

Large IT projects frequently exceed budgets and some even threaten company stability. Successful companies understand key elements linking IT and business value. Surveys of IT executives reveal that mastering the four aspects, shown in Figure 2.13, forms a "value assurance" methodology for large IT projects (McKinsey, 2012).

A 'value assurance' assessment demonstrates how an IT project performs against four categories of success elements

(Source: McKinsey, 2012) Figure 2.13

AI contributes significantly to the company's competitiveness and profitability. When used to project management, it has the potential to significantly improve team effectiveness. People apply AI in project management in the forms:

- CA (Chatbot Assistant)
- IA (Integration & Automation)
- MLPM (Machine learning-based project management)
- APM (Autonomous Project Management)

Considering PI (Performance Improvement), RD (the Requirement of Data), TM (Technical Maturity), TC (Technical Cost), and IHR (Impact on Human Resources), the most efficient way

for people to work with AI is MLPM (Machine learning-based project management). The study suggests that firms should focus on MLPM. It is important to consider MLPM or third-party services to enhance standard project management methods (Wang, 2019). To stay relevant, project managers need to understand and implement AI project management methods. AI can help manage projects effectively.

Having covered project management and GenAI application, the emphasis shifts to the theoretical framework justification. To better understand new technology adoption, recommended combining multiple theortical models (Oliveira and Martins, 2011).

2.5 Theoretical Framework Justification

2.5.1 Risk Management

Mitigating GenAI risks demands careful choice of risk management models, essential for a company to adapt and restructure internal and external competencies amid rapid changes (Teece et al., 1997).

This study suggests the COSO ERM (Enterprise Risk Management) Framework (Hutchins, 2018). The COSO ERM Framework provides a standardized technique to optimize risk management that helps firms attain strategic goals while controlling uncertainty. It features crucial elements including the integration with strategic planning, internal environment, risk management methods, focusing on ongoing risk detection, assessment, and control (Hutchins, 2018).

The Cynefin framework, which can be used to apply GenAI, will be discussed next.

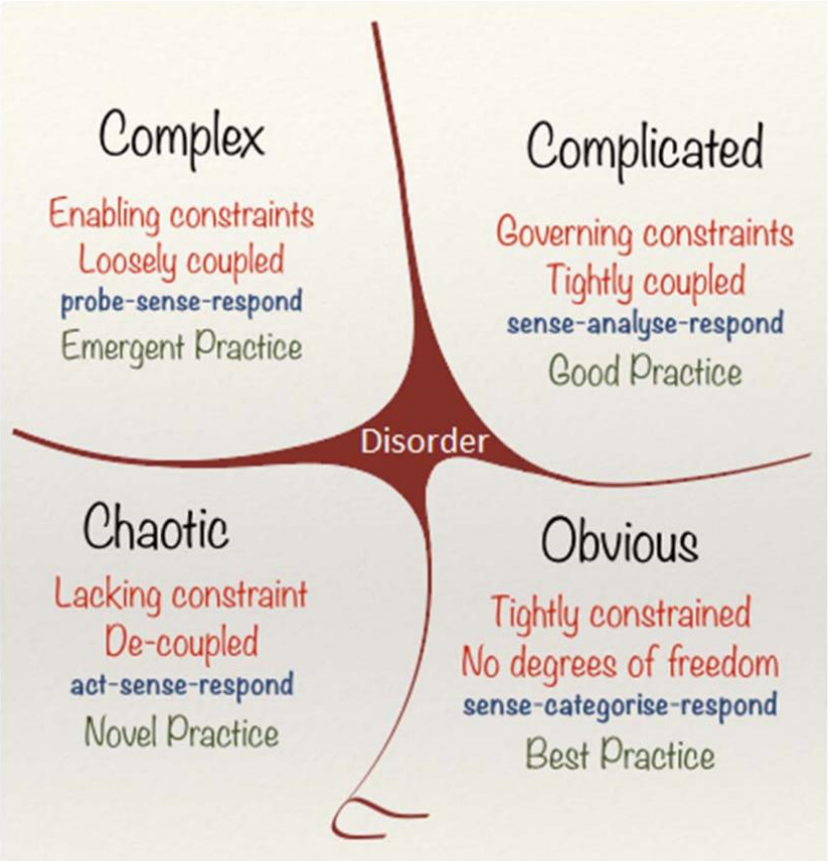
2.5.2 Cynefin Framework for Decision-making

Dave Snowden created the Cynefin framework at IBM in 1999–2000 to overcome the limitations of traditional frames like Porter's Five Forces, SWOT, and PESTEL, which frequently fail in dynamic, unpredictable markets because they concentrate on static, linear forecasts (Breckoff, 2024).

The Cynefin Framework is an innovative method for formulating policies and operational decision-making, combining traditional methods with new insights (Figure 2.14). By classifying situations into simple, complicated, complex, and chaotic domains, the framework enables leaders to efficiently allocate resources and modify their decision-making processes in response to the dynamic corporate environment (Kurtz and Snowden, 2003). It distinguishes between best practices and experimentation, addressing both ordered and unordered situations in a unique way that helps manage innovation and generative AI.

In simple contexts, decisions are obvious, while complicated ones need analysis. Complex domains involve "unknown unknowns" requiring experimentation, and chaotic contexts demand quick action to restore order. Leaders today need adapt their strategies to navigate these varying circumstances. The Cynefin framework supports AI strategy by emphasizing that management approaches depend on context, highlighting the significance of diverse perspectives to address complexity and obtain opportunities (Snowden and Boone, 2007).

Cynefin Framework domains



(Source: B. S. Dykstra and Orr, 2016) Figure 2.14

Cynefin Framework domains description

	THE CONTEXT'S CHARACTERISTICS	THE LEADER'S JOB	DANGER SIGNALS	RESPONSE TO DANGER SIGNALS
SIMPLE	Repeating patterns and consistent events Clear cause-and-effect relationships evident to everyone; right answer exists Known knowns Fact-based management	Sense, categorize, respond Ensure that proper processes are in place Delegate Use best practices Communicate in clear, direct ways Understand that extensive interactive communication may not be necessary	Complacency and comfort Desire to make complex problems simple Entrained thinking No challenge of received wisdom Overreliance on best practice if context shifts	Create communication channels to challenge orthodoxy Stay connected without micromanaging Don't assume things are simple Recognize both the value and the limitations of best practice
COMPLICATED	Expert diagnosis required Cause-and-effect relationships discoverable but not immediately apparent to everyone; more than one right answer possible Known unknowns Fact-based management	Sense, analyze, respond Create panels of experts Listen to conflicting advice	Experts overconfident in their own solutions or in the efficacy of past solutions Analysis paralysis Expert panels Viewpoints of nonexperts excluded	Encourage external and internal stakeholders to challenge expert opinions to combat entrained thinking Use experiments and games to force people to think outside the familiar
COMPLEX	Flux and unpredictability No right answers; emergent instructive patterns Unknown unknowns Many competing ideas A need for creative and innovative approaches Pattern-based leadership	Probe, sense, respond Create environments and experiments that allow patterns to emerge Increase levels of interaction and communication Use methods that can help generate ideas: Open up discussion (as through large group methods); set barriers; stimulate attractors; encourage dissent and diversity; and manage starting conditions and monitor for emergence	Temptation to fall back into habitual, command-and-control mode Temptation to look for facts rather than allowing patterns to emerge Desire for accelerated resolution of problems or exploitation of opportunities	Be patient and allow time for reflection Use approaches that encourage interaction so patterns can emerge
CHAOTIC	High turbulence No clear cause-and-effect relationships, so no point in looking for right answers Unknowables Many decisions to make and no time to think High tension Pattern-based leadership	Act, sense, respond Look for what works instead of seeking right answers Take immediate action to reestablish order (command and control) Provide clear, direct communication	Applying a command-and-control approach longer than needed "Cult of the leader" Missed opportunity for innovation Chaos unabated	Set up mechanisms (such as parallel teams) to take advantage of opportunities afforded by a chaotic environment Encourage advisers to challenge your point of view once the crisis has abated Work to shift the context from chaotic to complex

(Source: Snowden and Boone, 2007) Figure 2.15

Following the Cynefin framework, the discussion moves on to decisions-making approaches.

2.5.3 Decision-making

2.5.3.1 Decision making description

A decision entails selecting amongst equally plausible choices and begins with hypotheses instead of facts. Identifying relevant criteria and metrics is critical for making effective decisions. (Drucker, 1967). After deciding on a plan of action, an executive waits a few days for any internal doubts to arise. He's waiting for his inner voice to emerge. While concerns usually turn out to be minor, sometimes they uncover serious oversights or mistakes. If no significant issues appear within a couple of weeks, the executive moves forward decisively. Managers are rewarded not for personal preference but for making effective decisions (Drucker, 1967). However, the McKinsey research shows a strong link between the quality and speed of decision-making and overall company performance. Winning organizations often make both high-quality and fast decisions. Contrary to the belief that thorough deliberation leads to better decisions, the analysis reveals that speed and quality are closely connected. Fast decision-makers are twice as likely to produce high-quality results as slower ones. The logistic regressions were used to pinpoint the decision-making practices that distinguish winning organizations from the rest (McKinsey, 2019).

In "Thinking, Fast and Slow," Daniel Kahneman notes that intuition is unreliable in the absence of consistent patterns. Although intuition can aid quick decisions in familiar areas, it can lead to mistakes in complex or new situations. Making decisions that combine critical thought, in-depth analysis, and intuition leads to greater accuracy (Kahneman, 2011).

The executive understands that decisions are only made well if they are founded on a clash of opposing viewpoints, one important rule in decision-making is to not make a decision unless there is dispute (Drucker, 1967).

The thesis examines at and evaluates a range of decision-making sources. However, a large amount of McKinsey's review is used in this study because to the company's vast research, which is consistent with, for example, Kahneman's findings on cognitive biases.

2.5.3.2 Decision-making approach

Decision making refers to the action of making a choice. However, decision-making is not always easy and can be especially complicated in an organizational context. According to McKinsey successful approaches to decision-making revolve around identifying decision categories and designing several processes that promote each one. McKinsey suggests there are three decision types (Figure 2.16) that are most important to senior leaders, and the most significant practice that makes the greatest difference in each sort of decision (McKinsey, 2023).

Three decision types that are most important to make efficient decisions

Decision Category	Description	Decision Makers	Improvement Approach	Example
Big-bet decisions	Infrequent but significant risk; possibility to impact the company's future.	Top leaders and the board	Assign someone to argue for and against the decision to spur productive debate	Acquisitions
Cross-cutting decisions	Frequent and high risk; Developed in cross-functional forums as component of a cooperative process	Business unit heads	The ideal process is one that helps clarifies objectives, metrics, and targets.	Pricing
Delegated decisions	Frequent but low risk; managed by an individual or team, with some involvement from others.	Individual or working team	Ensure responsibility is in the hands of those closest to the work; this method also increases engagement and accountability.	Routine tasks

(Source: McKinsey, 2023) Figure 2.16

Businesses that took part in the McKinsey analysis have implemented some foundational practices that assist good decision-making through all three decision types (chart below is based on the results of research of the companies).

Foundational practices that assist good decision-making

Action	Description	Impact
Decide at the Right Level	Decisions should be made at the proper organizational levels, generally delegating to lower levels	Companies that follow this are 6.8 times more likely to be successful; less reporting layers lead to high-quality and quick decisions
Focus on Enterprise-Level Value	Align decisions with business strategy, focus both financial and human capital on high-value projects	Companies that adopt this are 2.9 times more likely to be successful
Obtain commitment among all required stakeholders	Provide commitment from accountable stakeholders and involve them meaningfully in the decision making process	Organizations that follow this are 6.8 times more likely to be successful

(Source: McKinsey, 2023) Figure 2.17

Beyond the foundational practices, the winners also indicate best practices that are specific to each decision type. According to the statistics, these practices are considerably more essential to successful decision-making than defining clear roles or processes or providing guidelines for when to elevate the decision for validation (McKinsey, 2019).

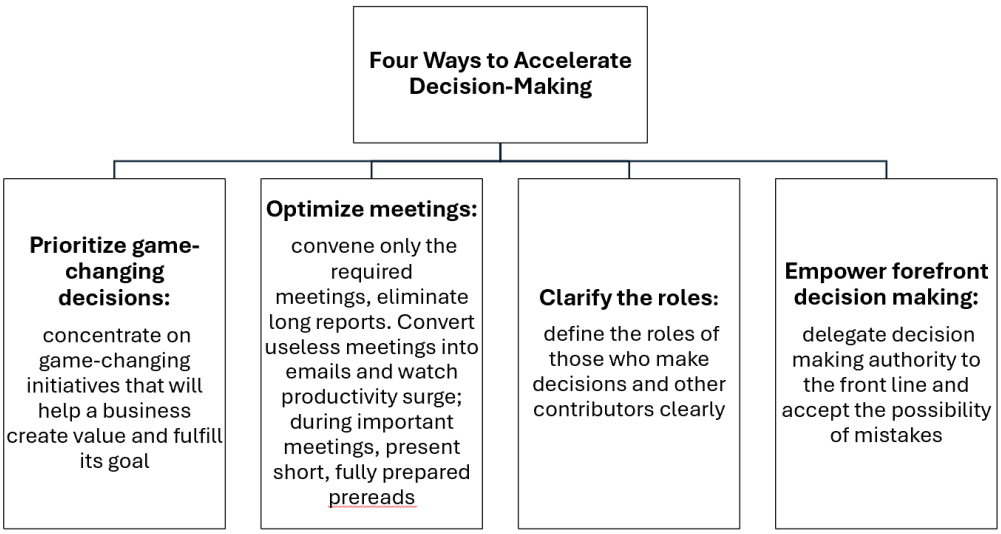
Best practices that are specific to each decision-making type

Type of Decision	Key Practices	Impact
Big-Bets Decisions	Ensure high-quality disputes by exploring assumptions, seeking disconfirming information, and appointing a devil's advocate	2.3 times more likely to be successful; quickly committing to big-bet initiatives without achieving a consensus among leaders does not result in success
Cross-Cutting Decisions	Prioritize process and how to manage decision meetings efficiently; engage relevant stakeholders and establish effective coordination. Efficient discussions are critical to success	4.5 times more likely to be successful; prioritization is crucial
Delegated Decisions	Empower employees by providing coaching, through strong ownership and responsibility, and allowing safe failures; fostering a bias for action (primarily for time-sensitive decisions)	3.9 times more likely to be successful;

(Source: McKinsey, 2019) Figure 2.18

Furthermore, company leaders can adopt one of these four activities to support speedy decision-making as illustrated in the Figure 2.19.

Four ways to accelerate decision-making



(Source: McKinsey, 2019) Figure 2.19

In addition, practices described above have a cumulative impact on success. Companies that employ both foundational and decision-specific practices stand a much better chance of success. Organizations that use both types of best practices, for example, are 1.7 times more likely to be successful than those that solely utilize foundational practices (McKinsey, 2019).

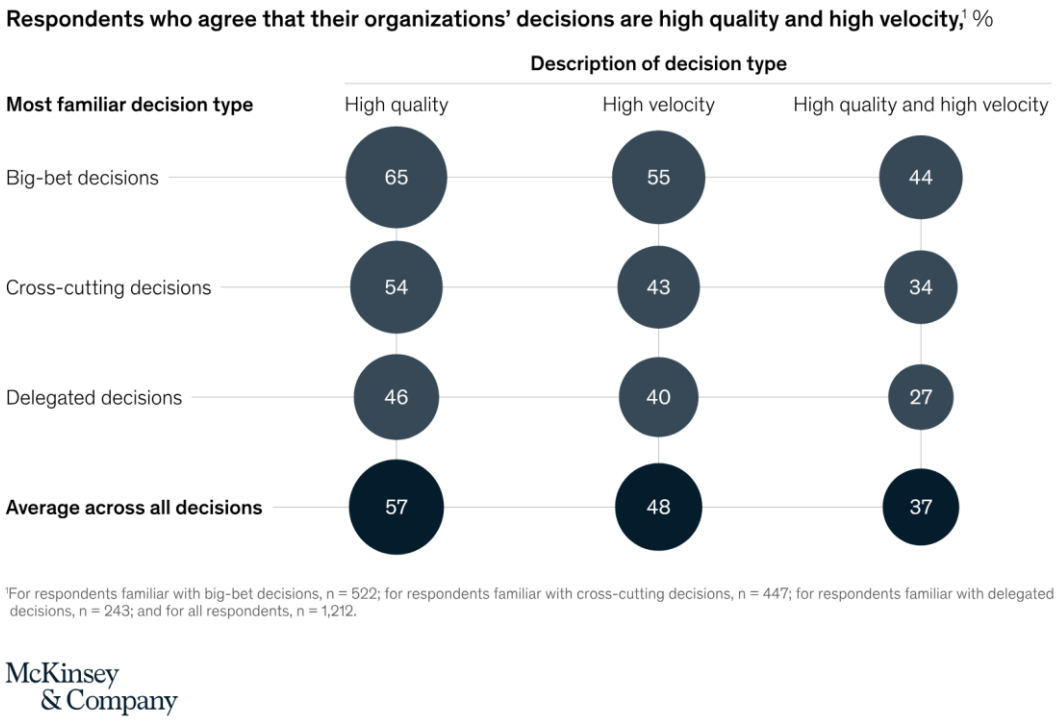
From the other side, David J. Snowden book states that the best practice inherently reflects past practice (Snowden and Boone, 2007).

Best practices are suitable for simple contexts but can cause difficulties if employees are not allowed to adjust when circumstances change. In complex situations, where hindsight doesn't predict future outcomes, it's better to use good practices and adapt management styles Instead than adhering strictly to best practices (Snowden and Boone, 2007).

The importance of context is also emphasized by Cezar Vasilescu, who highlighted that the idea that a strategy that works well in one setting may fail in another emphasizes the world's unpredictability and instability. Failure can often be the result of a "one-size-fits-all" leading style (Vasilescu, n.d.).

In addition to this, there is one more McKinsey research: speed poses a greater decision-making issue than quality as Figure 2.20 shows (McKinsey, 2019).

Quality and velocity of decision-making research



(Source: McKinsey, 2019) Figure 2.20

2.5.3.3 Hybrid human-AI decision-making

Currently, research is being conducted on the joint decision-making of humans and AI. The authors of the paper "Organizational Decision-Making Structures in the Age of Artificial Intelligence" explore how artificial intelligence (AI) is transforming the structure of decision-making in companies. They compare AI-based decisions to those made by humans, highlighting the significance of context.(Shrestha et al., 2019).

Comparison of AI-Based and Human Decision-Making

Decision-Making Conditions	AI-Based Decision Making	Human Decision Making
Specificity of the decision search space	Requires a well-specified decision search space with specific objective functions.	Accommodates a loosely defined decision search space.
Interpretability of the decision-making process and outcome	Complexity of the functional forms can make it difficult to interpret the decision process and outcomes.	Decisions are explainable and interpretable, though vulnerable to retrospective sense-making.
Size of the alternative set	Accommodates large alternative sets.	Limited capacity to uniformly evaluate a large alternative set.
Decision-making speed	Comparatively fast. Limited trade-off between speed and accuracy.	Comparatively slow. High trade-off between speed and accuracy.
Replicability of outcomes	Decision-making process and outcomes are highly replicable due to standard computational procedure.	Replicability is vulnerable to inter- and intra-individual factors such as differences in experience, attention, context, and emotional state of the decision maker.

(Shrestha et al., 2019) Figure 2.21

Human decisions excel in complex, dynamic environments because of experience and a thorough awareness of context, whereas AI provides scalability and speed but is constrained by algorithms and data. Context is critical, and the greatest results are obtained using a hybrid strategy that integrates human expertise to create more informed and contextually aware decisions (Shrestha et al., 2019).

2.5.3.4 Cognitive biases in decision-making

Cognitive bias exists. We all become victims, regardless of how hard we attempt defend ourselves. In addition, cognitive and organizational bias hinders good decision making. Below are some of the most widespread cognitive biases and how to prevent them (McKinsey, 2023).

Cognitive biases in decision-making

Bias	Description	Example	How to Counteract
Confirmation Bias	The tendency to look for information that validates previously held opinions while disregarding or downplaying contrary facts	Blockbuster declined the opportunity to buy Netflix for $50 million, claiming the offer was desperate instead of indicative of Netflix's potential	Conduct independent studies, continually seek counterarguments, and evaluate all viewpoints
Herd Mentality	The propensity to rely judgments on the majority's opinions while ignoring personal opinions and critical analysis	Investing in a stock just because everyone else is doing it	Conduct independent examination of data, consult with varied groups, and use "teardown" exercises to uncover potential repercussions
Sunk-Cost Fallacy	Continuing making investments in ineffective projects out of fear of losing earlier invested resources; business leaders detest to close projects.	Continuing financing a failing initiative despite its minimal likelihood of success	Reevaluate the justifications for continuing the project, indicate why the project should be preserved rather than closed
Ignoring Unpleasant Information	The desire to avoid facts that may cause discomfort or necessitate rapid action	During a market downturn, investors are less likely to monitor their portfolios	Regularly review and discuss all facets of the situation, and develop an approac to guarantee that no critical data is overlooked.
Halo Effect	The tendency to make precise opinions based on general perceptions, which can lead to incorrect conclusions	Hiring someone simply because they created a positive initial impression.	Organize structured interviews, focusing on objective assessment criteria, and avoiding subjective opinions

(Source: McKinsey, 2023) Figure 2.22

In addition, David J. Snowden mentions that people make decisions that reflect previous patterns of achievement and failure, instead of logical, specified rules (Snowden and Boone, 2007).

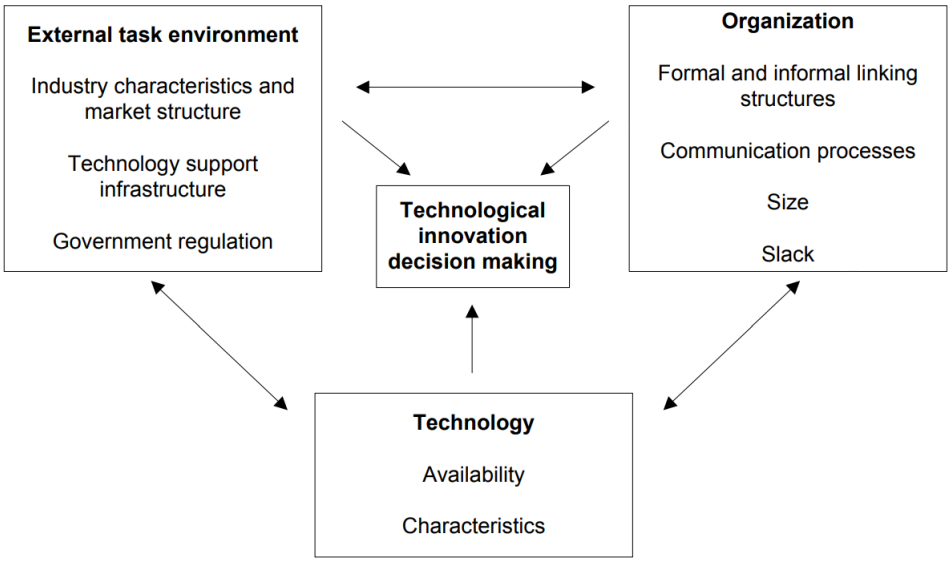
In “Thinking, Fast and Slow”, Daniel Kahneman describes how cognitive biases frequently skew our perceptions by forcing us to replace complex situations with easier ones. He emphasizes the significance of becoming aware of these biases, improving critical thinking skills, and balancing logical reasoning with intuition. Kahneman also presents a case where judges generate more favorable parole rulings after eating, demonstrating that even physical factors like hunger can influence decisions, highlighting the necessity for cognitive control to guarantee justice and impartiality (Daniel Kahneman, 2011).

2.5.4 Technology-Organization-Environment Framework (TOE)

Justification of Implementing the Technology-Organization-Environment Framework (TOE): the framework helps to understand how GenAI can be implemented into IT businesses through analyzing three essential elements (environmental, organizational, technological).

The TOE framework offers a complete vision for examining the external environment, organizational context, influence of technology on adoption of innovations (Oliveira and Martins, 2011).

Technology, organization, and environment framework



(Source: Oliveira and Martins, 2011) Figure 2.23

2.5.5 Dynamic capabilities

Dynamic capabilities are an organization's capacity to integrate, develop and rearrange internal and external competencies in response to quick changes in the environment, resulting in innovative competitive advantages. The achievement in the global market is dependent on rapid and flexible innovation, effective control of resources, and timely responses. Building a dynamic

capabilities framework involves laying the basis for distinctive, difficult-to-replicate advantages (Teece et al., 1997).

In the context of the current research, this technique may assist to identify how businesses can dynamically adjust their strategies and processes to apply and employ Generative AI, such as ChatGPT.

2.5.6 Resource Based View

Resource Based View emphasizes that businesses cannot replicate a company's strategy if its assets are imperfectly mobile, unique, and non-substitutable (Peteraf, 1993).

The Resource-Based View (RBV) examines a company's internal resources and capabilities that can be exploited to gain a competitive edge (Jay Barney, 1991). In this study, RBV will assist in determining how a company's unique resources, such as technological infrastructure and staff competencies, may be utilized to efficiently adopt and use Generative AI.

2.5.7 Strategic Alignment Model (SAM)

The extent to which new technologies are considered to be compatible with existing company practices and priorities is frequently the determining factor in their effective adoption (Greenhalgh et al., 2004).

Key elements of Strategic alignment Model (Figure 2.24).

Strategic alignment Model

SAM Element	Description
Connections of SAM with Project Management	Aligning IT strategy with company strategy is crucial for gaining a competitive advantage through IT. This ensures IT initiatives support company objectives and business strategies leverage IT capabilities
Assessing Prospects and Challenges	Effective strategic alignment helps firms seize opportunities and mitigate risks by ensuring that IT and company strategies are mutually supportive and adaptable to changing contexts
Achieving Competitive Advantage	High strategic alignment enables businesses to respond to market changes, innovate, and maintain a competitive advantage by leveraging IT capabilities to meet business goals
Effective Risk Management	Aligning IT and business strategy is essential for recognizing and mitigating potential risks, thereby protecting the transformation process

(Source: Henderson and Venkatraman, 1999) Figure 2.24

2.5.8 Data-driven strategy

Utilizing analytics gives businesses a competitive edge through process optimization, consumer insight, and trend prediction. Successful data mining and analytical techniques help businesses perform better by identifying patterns, predicting trends, and facilitating better decision-making (Provost and Fawcett, 2013).

According to the article "Data Driven: Creating a Data Culture," developing a data-driven culture demands a strategic approach involving training, data accessibility, collaboration, and ethical standards.. With this approach, an organization may completely leverage data to enhance processes and make informed decisions (Patil and Mason, 2015).

2.5.9 Diffusion of Innovations (DOI) Model

Efficient diffusion of innovations frequently necessitates a proactive approach toward controlling expectations among stakeholders and tackling issues that develop throughout the implementation process (Sahin, 2006).

Implementation of Diffusion of Innovations (DOI) Model in Dissertation (Rogers et al., 2008).

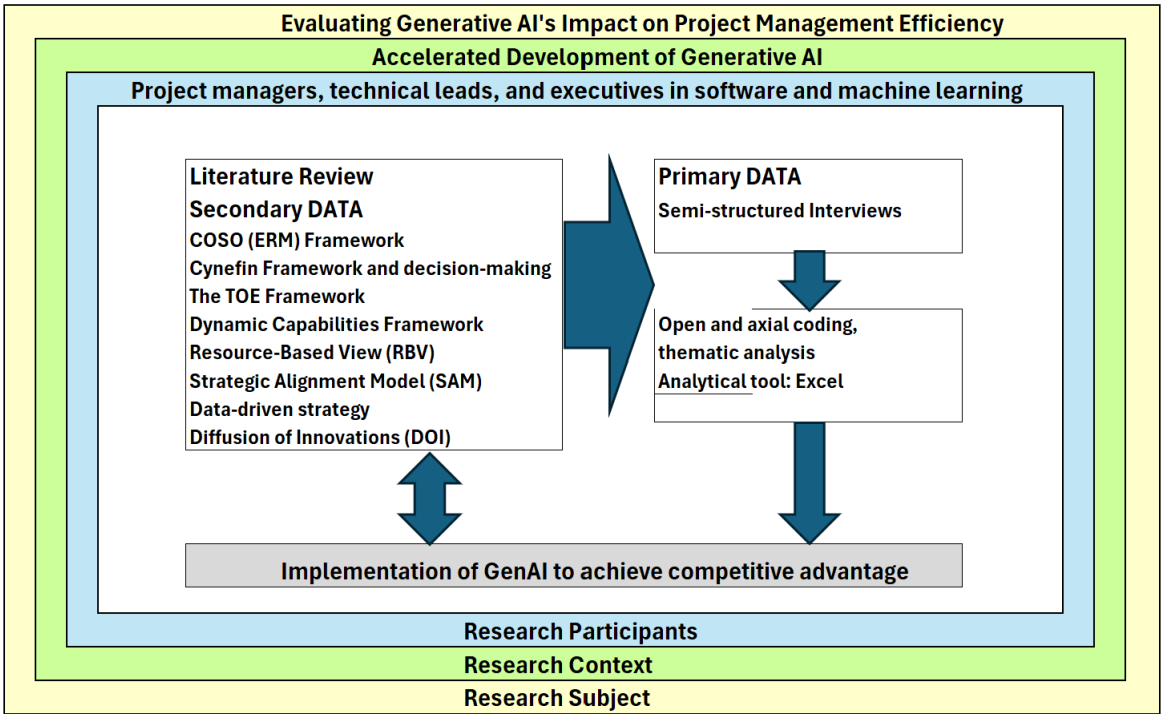
Diffusion of Innovations Model (DOI)

Aspect	Implementation	Rephrase links	Author	Literature
Adjustment	Evaluate how GenAI fits with current processes and its long-term viability inside the company.	The diffusion process involves recognizing how innovations get adopted and the obstacles to their integration	Everett M. Rogers	"Diffusion of innovations"
Adoption Groups	Identify the various adoption categories (innovators, early adopters, majority, and laggards) and the variables driving their adoption	Rogers' theory highlights the contribution of communication channels and the social context in the diffusion process	Ismail Sahin	"Detailed Review of Rogers' Diffusion of Innovations
Analysis of innovation	Assess GenAI as an innovation in IT organizations, examining its ability to enhance project management.	Diffusion is the process through which an innovation becomes known through specific channels throughout time among the participants in a social system	Everett M. Rogers	"Diffusion of innovations"
Innovation Features	Examine GenAI's attributes (relative advantage, compatibility, simplicity) and their influence on adoption.	Understanding how innovations diffuse involves analyzing the interplay between innovation characteristics, communication channels, and the adoption environment	Trisha Greenhalgh	"Diffusion of Innovations in Service Organizations"
Channels of communication	Analyze how data regarding GenAI is distributed inside the firm, which includes internal reports and presentations.	The speed of acceptance of an innovation is determined by its perceived features, including relative advantage, trialability, compatibility, complexity, and observability	Everett M. Rogers	"Diffusion of innovations"

(Source: Rogers et al., 2008) Figure 2.25

2.5.10 Conclusion

Theoretical Framework elements enable a thorough evaluation of GenAI impact on project management. Each of the models will be used to examine specific features of GenAI implementation, such as adaptability and strategic alignment:



(Source: Self-developed) Figure 2.26

With the theoretical framework established, the next focus is the conceptual framework to apply these theories in practice.

2.6 Conceptual Framework

2.6.1 Conceptual Framework Justification

Summarizing the data above, a Conceptual Framework was developed and modified to meet the goals of this study in order to assess the current state of artificial intelligence in the ICT industry, taking into account the findings of the literature review.

Conceptual Framework elements

Framework/Model	Rationale for using
SAM	Evaluates and aligns Generative AI (ChatGPT) adoption strategies with business strategy and project management
Dynamic Capabilities with RBV	Dynamic Capabilities help businesses adapt and evolve with AI, while RBV examines how unique resources contribute to AI success
Cynefin Framework	Manages complexity and uncertainty, encourages strategic alignment and adjustment to integrate AI and enhance competitiveness
Risk Management (COSO ERM Framework)	Provides a structured approach to managing risks associated with AI integration
Diffusion of Innovations (DOI) Model	Assesses Generative AI adoption by analyzing adoption drivers and their impact on project management effectiveness
TOE Framework	Facilitates evaluation and improvement of GenAI deployment to strengthen project management and business strategy
Data-Driven Strategy	Essential for optimizing processes and making informed decisions with GenAI

(Source: Self-developed) Figure 2.27

2.6.2 Framework variables and scheme

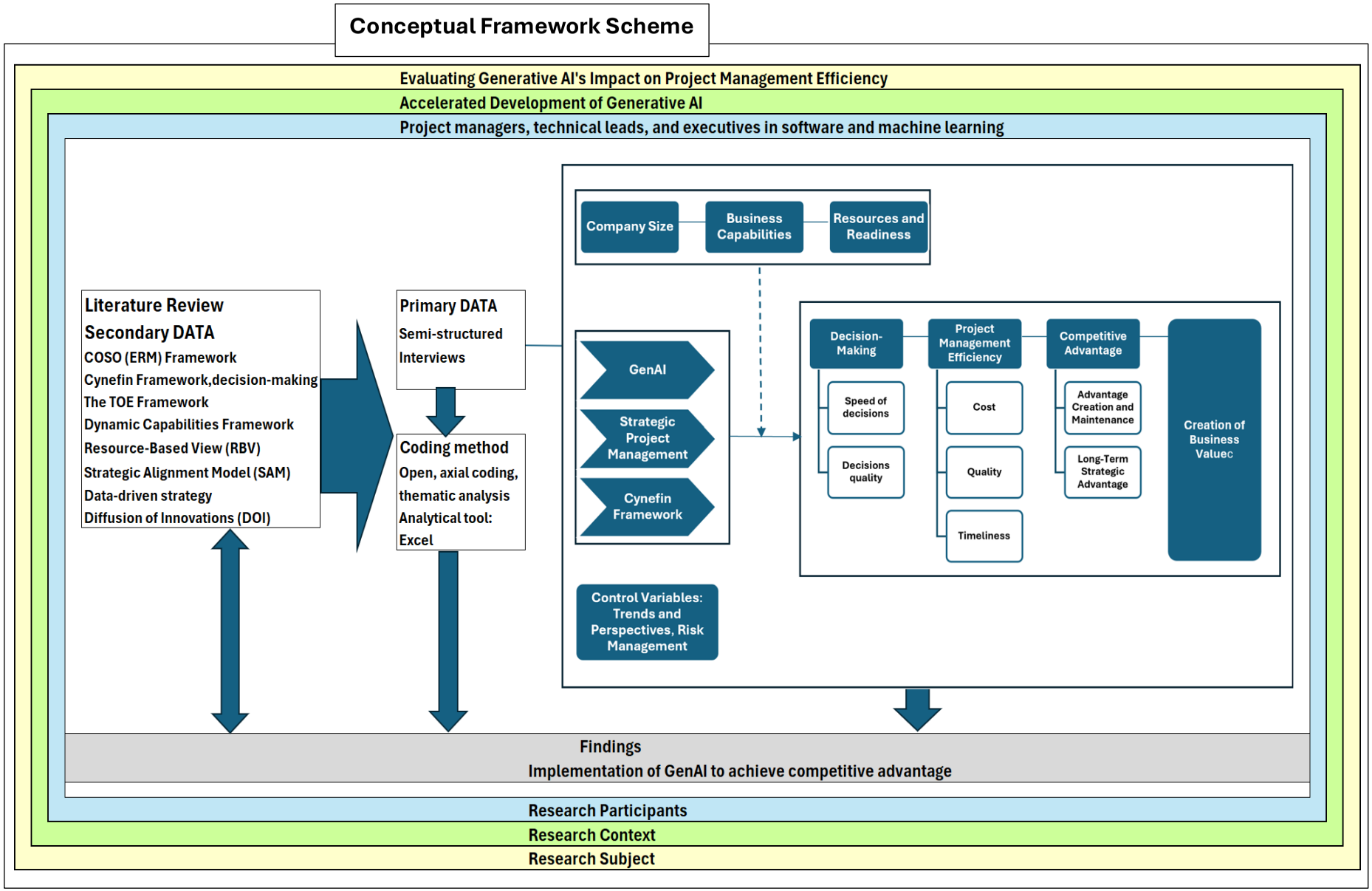
The conceptual framework indicates key variables and their correlations. Due to respondent and time limits, not all of the mentioned key variables will be addressed.

Independent variables: Strategic Project Management, Generative AI integration, Cynefin Framework.

Dependent Variables: decision-making speed and quality, project management efficiency (cost, quality, timeliness), competitive advantage, and business value.

Control variables: trends and perspectives, risk management.

Moderating variables: company size, business capabilities, resources and readiness.



(Source: Self-developed)

Figure 2.28

2.7 Summary

This literature provides a comprehensive review of the integration of Generative AI (GenAI), such as ChatGPT, in project management, particularly in global IT companies. It explores various theoretical frameworks, strategies, and methodologies to understand the impact of GenAI on decision-making, project management efficiency, and overall business capabilities.

Key Areas of Agreement:

1. Importance of AI in Business Strategy: The document consistently agrees that integrating AI, particularly GenAI, is crucial for enhancing business efficiency, innovation, and competitive advantage. This view is supported by multiple sources, including McKinsey, Statista, and various academic frameworks like the Strategic Alignment Model (SAM) and the Resource-Based View (RBV).

2. Adoption and Integration Challenges: There is a consensus on the challenges of adopting AI, such as data silos, bureaucracy, ethical concerns, and regulatory barriers (e.g., EU AI Act). The Technology-Organization-Environment (TOE) framework and SWOT analysis of GenAI highlight these barriers, aligning with views from various researchers and organizations.

3. Hybrid Decision-Making Models: The document agrees on the benefits of a hybrid decision-making model that combines human expertise with AI capabilities. This approach is seen as optimal in navigating complex and dynamic environments, as it leverages both human intuition and AI's data processing strengths.

Key Areas of Disagreement or Alternative Views:

1. Speed vs. Quality in Decision-Making: While there is a general agreement on the importance of both speed and quality in decision-making, there is a nuanced difference in views. McKinsey emphasizes the strong link between decision speed and quality, suggesting faster decisions often lead to better outcomes. However, other perspectives, such as those from Daniel Kahneman, caution against relying on speed without considering the context and potential biases.

2. Best Practices vs. Contextual Adaptation: There is a divergence in views on the application of "best practices." McKinsey supports the use of structured best practices to enhance decision-making effectiveness. In contrast, the Cynefin Framework and insights from Snowden and Boone argue that best practices may not always be suitable, especially in complex, unpredictable scenarios, suggesting a more flexible, context-driven approach.

Alternative Views:

1. Generative AI's Ethical Implications: The document highlights varying perspectives on the ethical implications of GenAI. While many sources emphasize the technology's potential benefits, there is a notable cautionary stance regarding ethical concerns, transparency, and the need for responsible AI use, particularly in sensitive areas like healthcare and education.

2. Strategic AI Integration Approaches: Different approaches to integrating AI into business strategy are discussed. Some sources advocate for immediate adoption and integration ("pioneers"), while others recommend a more cautious approach, waiting for further regulatory clarity and technological maturity.

Conclusion: This literature review outlines the transformative potential of GenAI in project management and decision-making while acknowledging significant challenges and divergent views on best practices and ethical considerations. The integration of AI requires careful strategic planning, risk management, and a hybrid approach to decision-making to maximize benefits and mitigate risks.

Chapter Three
Research Methodology

3.1 Introduction

The primary objective of this chapter is to discuss different types of research from the perspectives of ontology and epistemology. The chapter begins with an analysis of the main research paradigms and their philosophical viewpoints, after which the most relevant ones for this study will be determined. The chapter concludes with an explanation of the methodological limitations, as well as an examination of the ethical implications.

Research is as a systematic investigation that collects, analyzes, and interprets data to better understand, anticipate, or manage educational or psychological phenomena or empower persons in these circumstances (Mackenzie and Knipe, n.d.).

The theoretical framework, also known as a paradigm, guides how knowledge is investigated and interpreted. Choosing a paradigm determines the research's motivation, intent and expectations, influencing decisions on methodology, methods, design, and literature. Paradigms are given varying amounts of emphasis in research books, which can be confusing for new researchers. They can be described as sets of connected assumptions and ideas or as philosophical intentions for a study. The literature discusses a variety of paradigms, including positivist (and postpositivist), constructivist, and interpretivist, emancipatory, critical, transformative, pragmatism and deconstructivist (Mackenzie and Knipe, n.d.).

Ontology, epistemology, axiology, and methodology are examples of philosophical assumptions used in qualitative research. Ontology is concerned with the nature of reality and implies the existence of various realities, which scholars attempt to identify. Epistemology regards knowledge

as the subjective experience of individuals, which necessitates proximity to the objects under study and operating in their natural setting. Axiology encourages researchers to openly share their values and prejudices. Qualitative research methodology is distinguished by an inductive approach, flexibility, and changes throughout the research process, allowing for a more in-depth understanding of the subject under study (Creswell and Creswell, 2013).

Philosophical assumptions with implications for practice

Table 2.2 Philosophical Assumptions With Implications for Practice

Assumption	*Questions*	*Characteristics*	*Implications for Practice (Examples)*
Ontological	What is the nature of reality?	Reality is multiple as seen through many views	Researcher reports different perspectives as themes develop in the findings
Epistemological	What counts as knowledge? How are knowledge claims justified? What is the relationship between the researcher and that being researched?	Subjective evidence from participants; researcher attempts to lessen distance between himself or herself and that being researched	Researcher relies on quotes as evidence from the participant; collaborates, spends time in field with participants, and becomes an "insider"
Axiological	What is the role of values?	Researcher acknowledges that research is value-laden and that biases are present	Researcher openly discusses values that shape the narrative and includes his or her own interpretation in conjunction with the interpretations of participants
Methodological	What is the process of research? What is the language of research?	Researcher uses inductive logic, studies the topic within its context, and uses an emerging design	Researcher works with particulars (details) before generalizations, describes in detail the context of the study, and continually revises questions from experiences in the field

(Source: Creswell and Creswell, 2013) Figure 3.1

To fulfill the study's objectives, an interpretivist philosophy is used, with the aim of understanding participants' perceptions and interpretations of Generative AI deployment in project management. Interpretivism enables a more in-depth analysis of participants' subjective experiences and perspectives, which is especially crucial when investigating new and complicated technology like Generative AI (Mackenzie and Knipe, n.d.). The interpretivist paradigm is a component of qualitative research, aims to thoroughly grasp a topic by studying it in-depth (Hiller, n.d.). An interpretivist researcher seeks to fully understand the meanings respondents attach to their experiences, taking into account their life and cultural contexts. These insights also include the researcher's own opinions and experiences, as they offer their unique perspective to the interpretive process. As a result, knowledge is co-created through interactions among study participants and researchers (Hiller, n.d.).

Qualitative research is required to investigate the incorporation of GenAI in IT project management because it allows for a better understanding of participants' experiences

and perceptions, the detection of novel theoretical ideas, and adjustments of the research process based on the data gathered (Libarkin and Kurdziel, 2002).

Comparison of some aspects of qualitative and quantitative research

Characteristic	Qualitative		Quantitative	
	Pros	Cons	Pros	Cons
Methodology	Issues can be studied in great detail. Analytical approach is unconstrained.	Results may be applicable to only a narrow range of individuals or settings. Often no connection to causes.	Results from a variety of individuals or settings can be used to develop a single explanatory model.	Analytical approach is constrained by established standardized methods. Individuals may be artificially forced into categories.
Interpretation	Interpretation is often based on manipulation of raw data and is therefore tied directly to the data source.	Individual beliefs of the researcher may shape the data interpretation.	Statistical analysis, although not perfectly free of subjectivity, is typically independent of the researcher's personal belief system.	By the time a quantitative study reaches the interpretation stage, the context in which the data was collected may be lost.
Validity/Reliability	Validity and reliability are established through logical reasoning and consensus; statistics not required.	Researcher acts as the instrument; training and skill of practitioner can bias results.	Validity and reliability are highly controlled variables established statistically; limited training required.	Establishing validity and reliability is time consuming.

(Source: Libarkin and Kurdziel, 2002) Figure 3.2

Generative AI is a relatively new technology that is developing rapidly and unpredictably, it is impossible to make predictions even for the coming year, so it is important to leave the possibility for the researcher to deviate from the study's initial methodology. This opportunity is provided by interpretivist paradigm.

3.2 Research strategy

This study includes gathering qualitative data through semi-structured interviews and direct observation (Mackenzie and Knipe, n.d.). A qualitative data approach is used to explore deeply into what respondents thought and experienced with the implementation of Generative AI in project management. It is essential to understand contextually dependent factors in order to collect precise information which reflects participants' real-life experiences. This approach smoothly allows to use of Grounded Theory, which enables the development of innovative theoretical conceptions based on the acquired data. Grounded Theory is appropriate for researching new phenomena including Generative AI (Libarkin and Kurdziel, 2002).

The Grounded Theory methodology is beneficial for this study because it enables a thorough understanding of Generative AI's impact on project management, revealing novel theoretical

concepts and relationships that would not be evident using other methods. This method offers adaptability and flexibility, which is particularly crucial in the rapidly developing IT business and when deploying new technologies like Generative AI (Smith et al., n.d.).

The Grounded Theory methodology proposed by Julianne S. Oktay is optimal for current research since it provides an in- depth understanding of the complex processes and linkages involved in incorporating Generative AI into project management in IT organizations. This strategy allows to construct a theory based on empirical evidence, guaranteeing that the findings are reliable and applicable (Oktay, 2012).

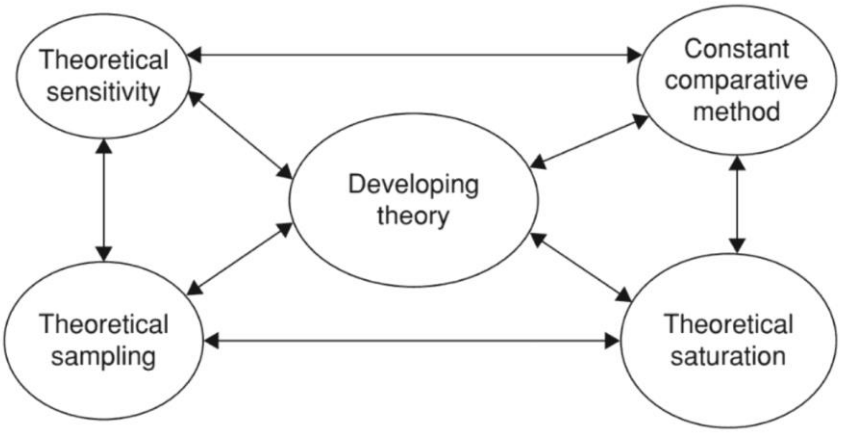
Characteristics of Grounded Theory

Box 1.3 Characteristics of Grounded Theory

- Goal of theory development
- Based on symbolic interaction concepts
- Multistage process with cycles of data gathering and data analysis, using abductive logic
- Includes key components of:
  - Theoretical sensitivity
  - Constant comparison
  - Theoretical sampling
  - Theoretical saturation

(Source: Oktay, 2012) Figure 3.3

Key components of Grounded Theory



(Source: Oktay, 2012) Figure 3.4

In this study, Grounded Theory may be applied to investigate how Generative AI affects project management in global IT organizations. The main aspects to consider are: Theoretical sensitivity: Be open and attentive to data nuances to discover hidden and latent features

of Gen AI's influence. Continuous Comparison: Employ a continuous comparison approach to discover common themes and distinguishing characteristics between organizations and individuals. This will aid in determining crucial factors for success and obstacles to AI integration. Theoretical Sampling: the process which involves collecting and analyzing data based on developing theory. The investigator chooses novel cases to research based on the need to have better understanding of evolving categories and themes. Theoretical Saturation: occurs when recent data provides no significant information to previously defined categories. This indicates that data collecting can be ended (Oktay, 2012).

Data saturation has significant ramifications for research intended to generate a theory based on the data since it is crucial to determining when sufficient data have been gathered. As evidenced by data redundancy, data saturation implies adding new participants to the study continuously until the data set is full. (Bowen, 2008).

While Glaser and Strauss' worries in 1967 valid, the recommendation to avoid reviewing the literature on a topic prior gathering data is excessive and may lower the quality of the research. Interestingly, it may undercut one of the primary objectives of adopting Grounded Theory: to enhance the quality and competence of qualitative investigators (Dunne, 2011).

3.3 Research approach

This study follows an inductive approach, allowing theoretical conceptions to be established through the collected data analysis. The inductive approach has revealed novel theories and hypotheses, which are especially useful for researching innovative technologies and their effect on business processes. This approach will be utilized to create new theories and models based on the initial experience developing Generative AI in IT firms (Melnikovas, 2018).

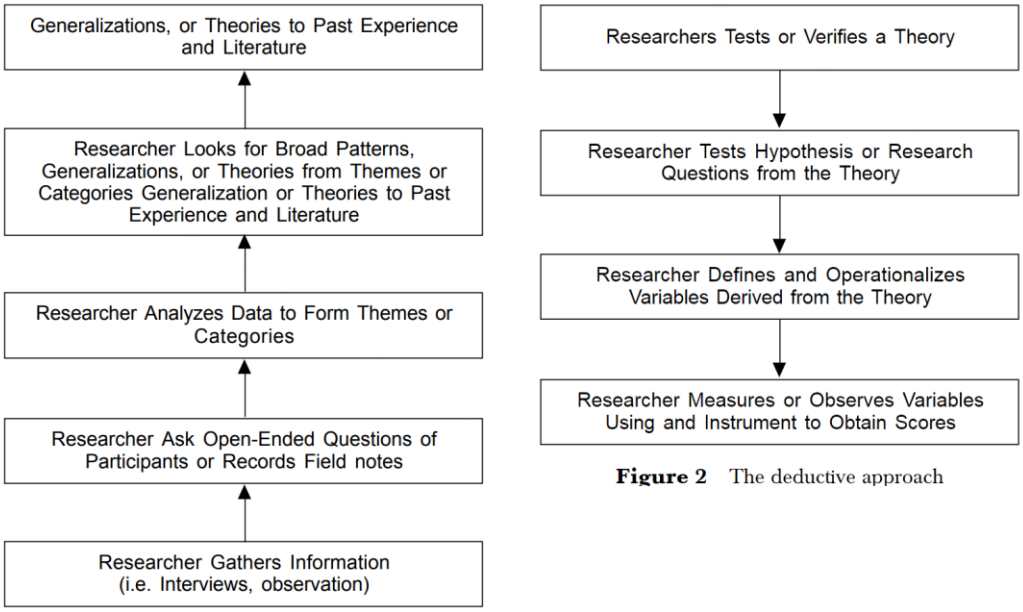
The underlying philosophy determines the appropriate research approach. Deductive approaches include forecasting by drawing logical implications and testing theories with data. Data gathering is the first step in both inductive and abductive approaches, followed by theory development. Deductive and inductive approaches rely on the past probabilities, whereas the abductive approach detects "weak signals," which are early signs of change and can be used to draw conclusions from limited evidence (Melnikovas, 2018).

The inductive method is a reflection of commonly documented patterns found in the examination of qualitative data. By creating summary themes or categories from the raw data, inductive techniques aim to facilitate the interpretation of meaning in complex data.

The three main goals of employing an inductive approach are to: 1.reduce large amounts of heterogeneous raw text data into a manageable, summary form; 2. create a clear connection between the research objectives of the study and the conclusions drawn from the raw data; 3.

create a model or theory regarding the fundamental structure of experiences or processes that are visible in the raw data. (Thomas, 2014). Characteristics of the deductive and inductive approach are presented in Figure 3.5.

The main characteristics of the deductive and inductive approach



(Source: Bahari, 2010) Figure 3.5

3.4 Data-collection method

Data collecting features: 1/ Semi-structured interviews with specialists who have experience applying Generative AI in project management. This enables for open-ended and in-depth responses; 2/continuous data analysis and comparison are used during data gathering to uncover major themes and categories. Sources of data will be Zoom interviews and direct observation.

Semi-structured interviews are the primary data gathering method used in this study. This method collects in-depth and extensive data from GenAI project management seniors, as well as project participants, while also allowing respondents to openly express their ideas and share their experiences

Interviews will be conducted with 5-7 experts who have experience in using Generative AI in project management or are participants in the implementation, as well as users. The interview questions will cover the following aspects: integration of Generative AI, project management, decision-making, risk management, and other.

Criteria for selection of respondents: 1/Sector of industry - Global IT companies; 2/Positions occupied by staff: Vice president, managers, employees, who are related to decision-making on the implementation and development of generative AI in the company, or those involved in implementation in practice.

Real-time communication between the researcher and the respondent to ascertain the respondent's opinions is the core of an interview. They range from open-ended, unstructured talks to planned interviews with predetermined questions (Gichuru, 2017). Interviews will be conducted with current users about their experiences with the product, problems that currently exist, and potential solutions.

Advantages and disadvantages of interviewing

Advantages	Disadvantages
high return rate	time-consuming
ewer incomplete answers	small scale study
can involve reality	never 100% anonymous
controlled answering order	potential for subconscious bias
relatively flexible	potential inconsistencies

(Alshenqeeti, 2014) Figure 3.6

The interview will be semi-structured, meaning that open-ended questions will be asked instead than strictly adhering to a predetermined list of questions to determine how deeply generative AI technology is used in IT companies today and plans for the future; whether companies include this technology in the company's strategy; whether the companies use the Cynefin framework; what opportunities, threats and challenges for business they see from this technology.

Time horizon: the study will be provided according to a cross-sectional time frame. This allows for a focus on present state of things and participant perceptions, as well as data collection reflecting the reality of employing generative AI in project management. Despite the short period, the study will aim to collect the most detailed and relevant data possible (Bryman, 2016).

3.5 Data Analysis Technique

Data becomes more focused in Grounded Theory research since the researcher collects and analyzes it at the same time. This analysis directs further data collecting. To build theoretical categories, the researcher changes interview questions by adding new themes and deleting unsuccessful ones. Unlike other methodologies, Grounded Theory pursues theoretical

generalizations through asking theoretical questions about the resulting descriptions rather than simply detailed descriptions of behavior (Smith et al., n.d.).

Data analysis will be carried out using a coding method to extract important phrases and concepts out of the transcribed interviews. These codes will then be divided into major categories and themes in order to uncover patterns and trends that can be used to test hypotheses and develop conclusions. Grounded Theory offers a systematic approach to analyzing data and developing theories from the identified concepts (Smith et al., n.d.). The emphasis will be on determining how GenAI affects project management, what changes in strategic approaches are seen.

When analyzing qualitative research, a coding process is used. This approach will be aided by the following three steps: 1. going over the information and crafting a narrative; 2. assigning codes to the data; and; 3. Interpreting and providing clarification through memos (Stuckey, 2015).

The qualitative researcher can stay focused on pertinent codes by keeping in mind the research question or narrative while coding. Codes definitions and process transparency can be achieved with a data dictionary. Either predetermined (a priori) or emergent codes are used for coding, while a combination of the two is most frequently used (Stuckey, 2015).

If the visual data is clear and succinct, using it in a visual format offers an alternate way to portray research findings. Visual data should be used to complement the report (Hancock et al., 2016).

3.6 Research design

This study, which investigates the impact of Generative AI on project management in global IT organizations, is classified as exploratory research. This categorization represents the goal of explaining the causal relationship between Generative AI deployment and advances in project management.

Explanatory study is appropriate for understanding how and why particular phenomena occur, with an emphasis on causal relationships and the impacts of specific variables. Specifically, this study investigates how combining Generative AI with frameworks such as the Cynefin Framework increases decision-making speed and quality, as well as strategic risk management and overall project optimization (Babbie, 2020).

3.7 Methodological limitation

This study recognizes several methodological limitations, particularly a limited scope concerning globsl IT organizations. The study's limitations include the small number of participants, which may impact the applicability of the findings. To mitigate this limitation, individuals holding various positions within IT firms will be selected. The short length of the study may limit the

amount of data collected, so the emphasis will be on in-depth examination of the available data (Mackenzie and Knipe, n.d.). Methods will be used to enhance the reliability and validity of the data gathered. Data collecting through interviews may bring subjectivity and prejudice. The integration of numerous theoretical frameworks may result in different interpretations. Furthermore, the quick pace of AI breakthroughs and variable contextual elements emphasize the importance of continuous upgrades to remain relevant. Ethical considerations of participant confidentiality and consent highlight the importance of cautious interpretation of findings.

3.8 Ethical Consideration

Ethical issues exist at all stages of research, and researchers must consider them throughout the process. During the study's planning and preparation phase, approval from the institutional ethical committee, as well as authorization from all stakeholders and participants, is required. Respecting participants' beliefs and traditions requires taking into account their cultural, religious, and gender background.

During data collecting, intrusion into participants' life should be kept to a minimum, and misinformation about the study's objective avoided. The researcher should aim to build a trustworthy relationship, avoid asking leading questions, and be honest and transparent about their actions.

During the data analysis process, diverse perspectives should be represented while avoiding bias. The researcher must guarantee that the data is not skewed or produces an inaccurate picture of reality. It is critical to preserve the participants' anonymity by employing pseudonyms and generic profiles.

When preparing the report and publishing the results, it is essential to avoid plagiarism, data distortion, and present the material honestly and objectively. The researcher must communicate the findings with participants and stakeholders, publish them in understandable language, and avoid dividing the study into many papers for personal advantage.

All of these processes necessitate careful consideration of ethical considerations, with the primary goal of protecting study participants' rights and interests. It is crucial to incorporate a mechanism for acknowledging respondents' contributions to the research process' success within the design of the study (DiCicco-Bloom and Crabtree, 2006).

3.9 Summary

The dissertation's third chapter examines research methodologies and selecting the most appropriate approach for the study. It examines a number of research paradigms, including positivism and interpretivism, and it provides evidence for the decision to choose an interpretivist

philosophy in order to fully understand the use of generative artificial intelligence in project management.

Grounded Theory methodology is employed to identify new theoretical concepts and links based on collected data, which is essential given the rapidly evolving nature of the technology. Semi-structured interviews and observations are used to collect data, which is then analyzed using methods of coding to determine important themes and categories.

It is accepted that there are methodological limitations, such as restricted range and number of participants, and solutions are suggested. There is also discussion of ethical issues, like as participant confidentiality and truthful findings presentation.

The goal of the explanatory study design is to look into how global IT companies' project management practices are affected by generative artificial intelligence.

Chapter Four
Findings and Discussion

4.1 Introduction

This chapter examines the findings of the study on GenAI and how it might improve project management in companies. It offers a thorough examination of the information gathered, emphasizing important trends and insights. The goal is to provide an in-depth understanding of how GenAI affects project management effectiveness and to investigate its possible advantages and practical applications.

4.2 Thematic Analysis

To begin data analysis, we use open coding to identify concepts and patterns, then apply axial coding to connect them. The process can be guided by the theoretical framework and research questions, depending on the chosen thematic analysis approach (Richards and Hemphill, 2017). Based on the comprehensive analysis of the extensive data gathered from all interviews, four themes were identified aligning with the research objectives.

Thematic analysis chart

№	Analysis Theme	Frequency	Research Objective №
Opportunities and Challenges of Integrating GenAI			**1**
1	GenAI application in project management	**8**	
2	Obstacles, Challenges and Limitations for GenAI Integration	**8**	
3	Resources Needed for GenAI Integration	**7**	
4	Company's Readiness for Adopting GenAI	**8**	
5	Staffing Issues in the Era of GenAI: IT Talent Shortage and Replacement	**4**	
Strategy and Tools for Effective Use of GenAI			**2**
6	Project Management Strategy with GenAI	**6**	
7	GenAI Applications in Automation and Semi-Automation	**8**	
8	Decision Making Context, Approaches and Tools	**8**	
9	Metrics for Decision Making	**6**	
Impact of GenAI on Project Management			**3**
10	Impact and Advantages of GenAI on Project Management Efficiency	**8**	
11	Changes in the Quality of Decisions due to GenAI Implementation	**6**	
12	Changes in the Speed of Decisions due to GenAI Implementation	**6**	
13	Data-driven Decision Making with GenAI	**8**	
14	Evidence-Based and Rational Decision Making	**8**	
Risk Management and Future Prospects			**4**
15	Risks, Trust Issues, and Challenges with GenAI Integration	**7**	
16	Changes in Risk Management due to GenAI Implementation	**8**	
17	Methods and Instruments for Managing GenAI Risks	**8**	
18	Recommendations, Future Insights and Forecasts on GenAI	**7**	
19	Competitive Advantages and Perspectives of Using GenAI	**1**	

(Source: Self-Created) Figure 4.1

Interview Participant List

No.	Last Position	Participant Code	Company's area of expertise	Number of employees
1	Director of Machine Learning	DE	We aim to integrate GenAI this into our platform to enable vendors to leverage AI capabilities	about 200 employees
2	Chief of Staff, Chief Software Architect, Project Manager	DM	The company that makes products for project management	more than 1000 employees
3	Technical Lead of Programmers Team	DK	The company specializing in computer game development	about 1000 employees
4	Senior Project Manager	NZ	The company offers a wide range of internet-related products and services	about 200000 employees
5	Vice President, Country Head in Ireland	AE	The U.S.-based multinational company with 30+ years in tech engineering and consulting, specializing in software, platforms, and mobile apps	about 50000 employees
6	Middle Project Manager, Volunteer in PMI Ireland	NA	The company specializes in software development	about 100-150 employees
7	Project Manager (Sales and Customer Success Leader)	ME	The startup with 5 employees, operating on their own budget and specializing in data and code protection	5 employees
8	Project Specialist, Modern Work Specialist, Expert Consultant	LT	The company specializing in technology solutions, including cloud services, software, AI, etc	about 250000 employees

(Source: Self-Created) Figure 4.2

4.2.1 Theme 1: Opportunities and Challenges of Integrating GenAI

4.2.1.1 GenAI application in project management

Even skilled professionals face challenges in basic project tasks like planning and resource allocation. Unexpected problems are nearly inevitable (Heagney and Lewis, 2012). As projects grow more complex and dynamic, the need for improved management is critical, and Generative AI (GenAI) presents new solutions to these issues:

> *Even when the project manager is an experienced and highly competent specialist in his area, I have seen cases where they struggle with basic project management tasks like scheduling and allocating resources.*
>
> LT

According to PMI (Project Management Institute), a project is a temporary effort with the goal of producing a distinct product, service, or outcom (Heagney and Lewis, 2012). Project management problems were identified in this study:

- High amount of routine tasks

- High Turnover Rate
- Lack of or Low Qualification of PMO (Project Management Office)
- Implementation Challenges
- Lack of Systematic Approach to Projects
- Lack Project Management Practices in Non-core Departments
- Need for Training
- Lack of flexibility

GenAI provides new opportunities to deal with these problems. Integrating AI tools like ChatGPT-4 creates opportunities to enhance project management processes and results (Weng, 2023). In the context of complex and dynamic projects, the need for improved management practices is increasingly urgent. GenAI presents new possibilities for addressing these challenges. Project managers use GenAI in controlled environments to test projects and speed up research, aiming to reduce the workload. However, even though almost all respondents indicated that they promptly began using the model and reported positive experiences with GenAI, there are also those who have not yet utilized the model to its full potential:

> *We have ourselves generated and provided for our organization project management and included high end version of the various sources of Gen AI so people can use them and we make them available in a safe area.*
>
> AE
>
> *Officially, let's say, we don't have any policy on integrating GPT into the process. Basically, ChatGPT is now used as a knowledge base. But it's been a while, we don't have enough trust and a sense of security yet to implement other model options (functionality) offered by OpenAI.*
>
> DK

An organization that implemented GenAI some time ago is one example of how it can be used for a wide range of purposes. GenAI has a broad range of applications, used both for internal optimization and product development:

> *So, we've been working with GenAI. But the last number of years to make sure that we can enhance all aspects of our business with generative AI. So, whether it comes to, for example, using GenAI to help generate code or to develop test cases, so during the software development lifecycle, GenAI has become very, very valuable as a tool. All of the tools that people use now have been adapted with to have gen AI as*

part of them to help predict, scheduling, to produce reports to produce, to summarize meeting notes, et cetera.

AE

Despite GenAI's benefits, a range of obstacles limits its integration and application. The following section examines these challenges in detail.

4.2.1.2 Obstacles and Limitations for GenAI Integration

The main obstacles to GenAI integration mentioned by respondents: compliance, data access, response accuracy, and skill shortages.

A common issue across all companies is compliance challenges regarding the use of the GenAI:

One of the main obstacles associated with the application of GenAI is access to data and its processing. To overcome data restrictions, synthetic data production is employed:

Business cases for projects can also be difficult to justify since clients are reluctant to divulge sensitive information for fear of data breaches or abuses.

LT

All respondents emphasized the need to verify AI responses due to potential errors and hallucinations. GenAI lacks the ability to assess the quality of its own answers:

So, the biggest challenge is to verify the credibility of the of the answers.

DM

There has always been a lack of skilled professionals. In IT, it is easy to find juniors, but finding experienced professionals has always been challenging:

You know, you could easily find like a junior an intern who doesn't have lots of experience, lots of knowledge, but finding, you know, really like skilled and experienced people. It has always been challenging with the emergence of GenAI.

DE

Besides existing obstacles, the availability of sufficient resources are essential for effective GenAI implementation.

4.2.1.3 Resources Needed for GenAI Integration

The RBV (Resource Based View) highlights that a firm's competitive advantage stems from its unique collection of attributes (Lockett et al., 2009). In the chart, the key resources required for GenAI integration are presented:

Resources required for GenAI integration

Resource Type	Citation	Participant Code
1. Data: data is necessary to increase model efficiency	*It is crucial that the company's data also serve as a source for ChatGPT, not just the global network. No relevant decisions or documents should rely solely on external data; internal data is key to improving GenAI outcomes.*	LT
2. Human resources: human resources are essential for model implementation and training	*Automating specific tasks requires development efforts tailored to each problem. While financial resources are not explicitly required, significant man-hours and development resources are necessary.*	DM
3. Disciplines: integrating GenAI into project management requires a comprehensive approach	*Successfully integrating GenAI into project management involves using and coordinating various disciplines to optimize effectiveness.*	AE

(Source: Self-Created) Figure 4.3

Dynamic capabilities refer to the company's capacity to integrate, establish and restructure internal and external competencies in response to quickly changes in the environment, leading to creating competitive advantage(Teece et al., 1997). For some companies GenAI implementation can be relatively simple and inexpensive, not require significant resources, especially when there is a high level of employee competence. A major benefit of large companies is their access to available human resources. But unlike large companies, a startup consisting of 5 people, where each member is essentially a project manager, lacks the personnel necessary to train the model:

> *We had a high enough level of competence, which allowed us to start using what we had. There were no serious obstacles, such as time, finance. Everything was quite simple. You just give people access to the chat, and they start using it, and that's it. We did not train the model on data. The only difficulty was the security issue, which was a small development solved by the security department. I can't say that it was an expensive implementation of the technology. No, it was cheap.*
>
> DM

With resources identified, it's important to assess the company's readiness for GenAI, aligning with DOI's focus on internal and external factors.

4.2.1.4 Company's Readiness for Adopting GenAI

The TOE framework expands DOI by adding the environment context, which includes both constraints and opportunities for technological innovation (Oliveira and Martins, 2011). Successful technology adoption may depend on the internal readiness and the ability of employees to adapt to new tools. Despite some companies suspending model training, others continue to develop their models:

> *The reason for early or late implementation was the level of competence and enthusiasm in the company. Firstly, when we launched the chat, there were no people who understood it, so we didn't hire them. Secondly, in terms of usage, it's a very simple technology. And the guys grasp it in a couple of days.*
>
> DM

In terms of external factors, organizations must ensure GenAI use complies with applicable data protection legislation, such as the CCPA or GDPR (Nokhbeh Zaeem and Barber, 2020).

According to the theoretical framework of the study (Dynamic capabilities, RBV, Data-driven strategy) the staffing issues need to be considered.

4.2.1.5 Staffing Issues in the Era of GenAI: IT Talent Shortage and Replacement

Some people believe GenAI could replace juniors by automating simple tasks, potentially leading to job reductions. In addition, there is an idea only certain roles and activities can be automated, not all junior positions. It's not about reducing hiring but rather about the market changing:

> *It seems to me that with GenAI, it will be just about that some professions will not have a place to be because they can be replaced, but some professions will appear because something else will have to be done that we did not do before. It's about such a natural evolution of the labor market.*
>
> NZ

Several respondents remarked that their companies do not plan to replace junior specialists with GenAI. After examining the opportunities and challenges of incorporating GenAI, we now strategies and tools for its effective application.

4.2.2 Theme 2: Strategy and Tools for Effective Use of GenAI

4.2.2.1 Project Management Strategy with GenAI

Projecting involves both striving for future direction and executing strategies to accelerate progress (Clegg et al., 2020).

Data serves as the foundation for developing strategy. This is consistent with the SAM aspect that focuses on integrating IT into strategic planning (Henderson and Venkatraman, 1999). The strategy is executed through a series of projects and prepare both these projects, and their leaders cannot

be done quickly. Here, GenAI has the potential to significantly enhance the effectiveness of strategy implementation. However, this potential is often overlooked, and companies may resort to expensive external consultants instead. GenAI can improve both the speed and quality of project execution. GenAI can be used in project strategy to build portfolios aimed at strategic objectives like market expansion. It helps leaders identify gaps, decompose goals, propose projects, and draft detailed plans based on budgets, timelines, and tasks, including PMO functions for creating templates:

> *Strategy is implemented through a set of projects.And here, Gene AI can seriously increase the effectiveness of the implementation of such a strategy, but it is often not addressed, or it is not guessed that it can be addressed. GenAI, can it boost the speed and quality for the project. So they can connect the knowledge base of the company and take the whole context of the company. Absolutely. And this is the most correct approach.*
>
> LT

Rather than being integrated into project management strategy, AI is often used as a convenient tool. In many companies, the initiative for implementation comes from a bottom-up approach. However, there are cases where the initiative comes from the top down: project managers and GenAI developers frequently work together to identify issues and decide how GenAI may assist in resolving them. GenAI saves time by handling routine tasks, enabling employees to focus on strategic and creative work:

> *That is, everywhere where GenAI is supposed to be useful, it's being integrated. It's hard to say that it's a strategy, in the sense that you should use it, but it's more like everyone understands that it's very convenient and everyone starts using it.*
>
> NZ

After analyzing how GenAI enhances project management strategy, we'll explore how its applications in automation and semi-automation support and accelerate strategic goal achievement.

4.2.2.2 GenAI Applications in Automation and Semi-Automation

Automation and semi-automation are also considered within the context of the Dynamic Capabilities, RBV, SAM, TOE. The participants noted that with the help of AI at the moment there is convenience of work and semi-automation, but there is no full automation. Not everything is automated, only the parts validated by the project office or experts. Many people consider AI to be a helpful tool rather than a complete automated solution:

And so, this gives them this tool gives them, I guess, a lot of power in the sense of being able to automate some of that workload that they have to do. The project management is still semi- automatic.

AE

After analyzing project management strategy and GenAI applications in automation, we will investigate decision-making context and tools that support these processes.

4.2.2.3 Decision Making Context, Approaches and Tools

Unlike internal projects, decision-making in project management involving clients and partners is more complex. It involves data from multiple stakeholders and requires consideration of business, technological, commercial, and legal aspects during the planning phase:

Projects, which have some of our data, some of clients, maybe some partners, it gets a little bit more complicated. You have a number of people. So, you then have obviously, business, technology, commercial legal aspects to take to take into account when we're planning.

AE

Half of the respondents mentioned being familiar with Cynefin Framework, and two believe its approach is suitable for decision-making in IT companies and followed it intuitively. Cezar Vasilescu believed that by using the Cynefin Framework managers may perceive which environment they are in, prevent issues, make better judgments, and modify (or refuse) their management style that is inappropriate for the situation (Vasilescu, n.d.). On the contrary, some respondents opinions suggest that decision-making frameworks are not applicable, especially when the level of uncertainty is high:

We don't work with this particular model, although it fits perfectly with what we do, and how we make decisions. And in this framework, and the systems of decision making that I have encountered, everywhere there is a concept of practice that must be applied immediately and better practices. That is, everywhere there is this classification of what we rely on in order to make decisions. Frameworks can be used.

LT

There isn't a single universal framework for decision-making. Decisions depend on context, including the scale of the business, understanding the problem, the specific situation, and the people involved, and their knowledge, interests, and influence on the decision. Understanding of the context helps account for all relevant factors and avoid errors in decision-making. It's crucial to use data and conduct testing, such as MVPs testing, to make informed decisions. Without relying on established decision-making frameworks, people develop and follow their own methods,

drawing on their personal experience and that of their colleagues. It was also noted that data visualization is used in decision-making:

> *That is, many things are so innovative, and no one has ever tried it before. Therefore, some standard frameworks may simply not work.*

> *That is, in any case, what is used in making decisions about ideally any testing and understanding of what is actually happening. If you do this, if you have the opportunity to conduct what is called MVP, I don't know, any kind of, any opportunity to check a small number of users or employees that this is what will work, what we need. and make some decisions.*

NZ

> *So, four components, understanding the problem, understanding the context, understanding who the target audience is, you know, like stakeholders and users, as well as, analyzing the data to make the decision*

DE

The respondent mentioned that large corporations have strict internal procedures that cannot be altered, even at the cost of losing clients. In contrast, small companies are more flexible and does not require extensive approvals to implement changes or new technologies. Data should drive reports, leading to deeper analysis. These analyses must reach the decision-maker, who integrates them into the decision-making process (Anderson, 2015). All participants emphasized the critical role of data in their organizations for analysis and decision-making, data aids in planning, analysis, and optimizing business processes:

> *We're a data driven organization, right. DDO. So, I guess that's how I would classify our decision-making strategy is that we're always do so on the basis of data and we have an excellent organization in terms of producing and refining and, and now we use a lot of gen AI in doing so. That are the basis of our, our decision making.*

AE

Gary Klein believed that the experience of pattern recognition that enable us to make intuitive decisions is a natural extension of our expertise (Klein, 2017). Unlike Gary Klein, Daniel Kahneman emphasizes that intuition should be combined with analytical thinking for increased accuracy. He sees intuition as a crucial but possibly unreliable part of decision-making. Several respondents mentioned that when data is insufficient, people must rely on intuition. In different organizations and situations, the final decision may be made collectively or by a single individual:

> *Not all situations are possible with evidence-based decision-making. And there are not provable in this form. There are cases when there is no data, and you have to make*

decisions intuitively. Well, that's normal. If all business issues were resolved by looking at the instructions and taking the next step, it would be much easier. But unfortunately, it is not always possible to plan further steps based on some solid foundations.

DM

Metrics are necessary to assess and improve decision quality in an objective manner.

Metrics for Decision-Making

The participants believe that establishing metrics to assess decision quality is challenging, as GenAI is a relatively new technology, and there is only a general sense that quality has improved:

That the quality may have increased - there is such a feeling, but it is not confirmed. I don't have any metrics specifically for assessing the quality of decisions.

DM

I think companies that create products, their main goals, their goal is the result.

NZ

After discussing how strategic tools facilitate effective GenAI application, the focus will now shift to its impact on project management.

4.2.3 Theme 3: Impact of GenAI on Project Management

4.2.3.1 Impact and Advantages of GenAI on Project Management Efficiency

GenAI for optimizing company operations: not all respondents observed substantial changes due to the implementation of GenAI; employees of large companies clarified that they already had quite advanced tools for managing projects. However, some participants noticed changes, chart (Figure 2.38) presents the advantages of using GenAI in project management.

GenAI for optimizing company operations

Application	Description	Citation	Source
Research Speed	GenAI boosts time efficiency by reducing client meetings and associated costs, accelerating access to commercial offers	*I encourage it using like ChatGPT and like LLMs in my team, you know, like, because it gives a huge boost of speed (DE)* *Project managers and their employees use GenAI to speed up the research. I guess they're also trying to use it to lighten the load that they carry in terms of a lot of tasks that comes with project management (AE)*	DE, AE
Note-Taking for Time Saving	Several companies have implemented GenAI as a note-taker, finding it useful for saving time and improving efficiency	*I'm using a note taker for Zoom. I really like the quality. I tried to calculate it, it saves me about probably 3, and now probably even 4 hours a week (NA)*	NA
Employees Efficiency	Respondents noted a perceived increase in work efficiency, but this was not backed by measurements, as no specific goals had been set	*GenAI can check more precisely. I think that due to the attention and human error, some tasks like this, routine GenAI can be performed more accurately, more efficiently (NZ)*	NZ
PMO Functions	GenAI prepares high-quality project contracts, tracks contractor performance, sends reminders, monitors document relevance, suggests updates, and generates reports from the company's database	*AI generates relevant and practical project plans. What is interesting here is that AI replaced almost all PMO functions for creating templates. They were engaged in a lot of things for a long time, it was more than a third of the functionality. GenAI offered us new projects that are worth discussing with the customer and promoting them (LT)*	LT

GenAI for optimizing company operations

(continuation of the table)

Consulting Services	GenAI can potentially replace a consultant or mentor	*The task that you could solve before with the help of a competent person, and it would probably take at least an hour, now you can solve it during 15 minutes (NA)* *So basically, you know, it's like you have another consultant, who really was extremely knowledgeable (DE)*	NA, DE
Scenario and Hypothesis Creation	GenAI creates scenarios and hypotheses using historical data	*GenAI also helps to verify the potential outcome against like the historical data. Not lots of, but at least some of our people in our company, when they, think of some, you know, like hypothesis, like what, to do next, and what are the possible scenarios, they try to like run it through the GenAI, to see like, what is the, basically like the probability of failure. So, it kind of helps them to understand what are the potential weak points of the hypothesis and how to adjust it (DE)*	DE
Routine Tasks Optimization	GenAI has advanced to optimize routine tasks and now serves as an assistant, secretary, and project administrator	*And these functions are for reminding, tracking, that is, this is a good, so to speak, project assistant or project administrator, that is, AI becomes in this case, if in previous examples. He was a consultant, but here he acts as an assistant, as a secretary (LT)*	LT
Brainstorming	Fosters innovation	*We use AI solutions for auxiliary purposes, mainly to check some information and brainstorming (ME)*	ME
Knowledge Base	Base for project templates	*"For example, for preparation of presentations (product, for example), preparation of texts. Also, it was used a lot for preparation of marketing texts. It was used as a knowledge base, since many project templates were taken from it (maybe not for their actual use, but as an example (DM)*	DM

(Source: Self-Created) Figure 4.4

Furthermore, applying GenAI to optimize company operations results in changes in the quality and speed of decision-making.

4.2.3.2 Changes in the Quality of Decisions due to GenAI Implementation

Respondents feel decisions are higher quality but find it difficult to measure this improvement. GenAI may improve decision quality by enhancing erudition, identifying risks, and making decisions more informed. In addition, GenAI frees up time for thoughtful discussion and collaboration, leading to better decision-making by reducing fatigue:

> *In general, it seems to me that it allowed people to expand their erudition a little. That the decisions quality may have increased - there is such a feeling, but it is not confirmed*

DM

If we can see more risks associated with the project, take into account the risk context. And it should be more qualitative.

NA

4.2.3.3 Changes in the Speed of Decisions due to GenAI Implementation

Most respondents noted that GenAI speeds up decision-making, but some differentiated between business and micro-decisions. The reason for faster decision-making was mentioned: GenAI accelerates information deeper analysis, which, in turn, speeds up decision-making. Faster access to information can speed up decision-making, but there is still a reliance on people to make the final decisions:

I think that the optimization leads to making decisions faster. Yes, because you can analyze and understand things faster with the help of the Gen.AI tools. I think that decision making speed is always important.

NZ

Having explored GenAI's impact on operations and decision-making, the emphasis moves to how it contributes to data-driven decision-making.

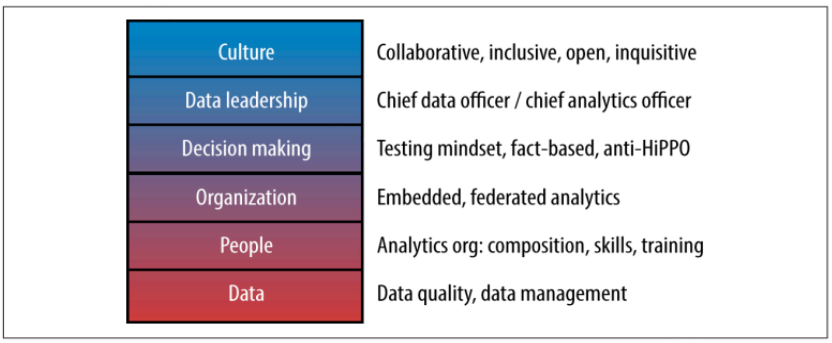
4.2.3.4 Data-driven Decision Making with GenAI

All participants noted that decisions are based on data whenever it is available. Product data is used for making specific decisions, while GenAI provides broader expertise. Data-driven decisions remain unchanged. Particularly in ambiguous circumstances, there is always a final decision-maker. In addition, Carl Anderson insists that technology is not as vital as organizational culture (Figure 2.39); without a strong culture, even the best tools may be useless (Anderson, 2015):

So, we have access to data. We have all of that to be able to make decisions. And we were very clear about what decisions we need to make on a daily or weekly or monthly basis.

AE

Key components of data-driven organization



(Source: Self-Created) Figure 4.5

Next, examine the ways in which evidence-based approach is consistent with data-driven decision-making.

4.2.3.5 Evidence-Based and Rational Decision-Making

Most participants observed that decisions were often made without solid evidence, both within their own organizations and externally. Additionally, in some countries, decisions are influenced by clannishness, while in certain companies, capabilities may be overestimated, and decisions may be made intuitively or without considering the full context. Inertia and narrowness of thinking also contribute to these issues. The evidence on rational decision making is largely negative evidence, evidence of what people do not do (Simon, 1979):

> *Although I have seen like in my experience, examples where the decisions weren't made based on data, there are examples where the decisions are driven either by You know, past experience, which is not directly applicable to the current circumstances or, you know, just some kind of gut feeling. Another example is just following, uh, like following examples of other people. You know, like you have an idol who might be, a genious, try to follow and again, the problem is that you have a different context.*
>
> DE
>
> *Do people have inertia of thinking, which I have noticed, then yes, it happens. And when you workday after day, week after week, discussing topics ten times a day, it is impossible to ignore it. Another thing is that there may be some narrowness of thinking, a box.*
>
> DM
>
> *Well, of course, you can't throw it away. We all have this bias and cognitive distortions.*
>
> NA

There are instances where the context necessitated thorough checks, leading to evidence-based decisions. In addition to context discussion, the article "Not Just for Consumers: Context Effects Are Fundamental to Decision-Making" explores how context affects decision-making, demonstrating that the context in which data is presented greatly impacts choice and judgment. This effect extends beyond consumer decisions to include managerial and strategic contexts (Trueblood et al., 2013):

> *If we talk about projects that were implemented under my control, there was almost everywhere evidence-based, because I needed very serious justification in order to get budget for the project*

LT

Building on how GenAI has affected project management, the discussion now shifts to risk management and potential future prospects.

4.2.4 Theme 4: Risk Management and Future Prospects

4.2.4.1 Risks, Trust Issues, and Challenges with GenAI Integration

The integration of GenAI into organizational processes introduces a spectrum of risks and challenges. Companies discuss potential GenAI risks with clients and obtain consent for its use. While some risks are seen as minor, others are more significant. In-house product makes it easier to implement privacy and security measures:

> *It's important to say that we have our own product within the company, which is the responsibility of the company. Therefore, many things are easier to implement from the point of view of privacy and security.*

NZ

Risks of GenAI implementation identified in this study.

GenAI implementation risks

Risk Category	Citation	Source
Risk Assessment	*I saw several organizations that introduce GenAI, and financial estimation of risks began to be used. They trust the assessment of artificial intelligence in this financial assessment of any risk. And I see a risk in this*	LT
Trust and Reliability	*I think that risk is always that GenAI is still an instrument, and it's not a way to make decisions. I think it's always about that GenAI should be an instrument in this role, and people to take responsibility and make decisions. It's a possible risk that people can rely on GenAI*	NZ
Data Privacy and Security	*That's what I mean by we need to be careful of what you what inputs you give it. How much information you share with it. Because we don't know where it goes. Now, the more you share, the more accurate it can go back. So, we're trying to create environments whereby we can share more because it can then return more. So, you're trying to strike a balance*	AE
Intellectual Property	*So, the big question we had, and we do this all the time, is, the danger, I guess, that Gen AI provides you with something that is intellectual property*	AE
User Expertise	*Well, here is just this risk of wrong decisions that arise because of wrong questions. I would not use artificial intelligence to make strategic decisions. My concern is that people should learn how to use GenAI. And all new tools need to be learned. Unfortunately, people do not know how to ask correctly*	LT
Bias and Limitations	*It will give you information, not because it is objectively some kind of perfect tool, but because they have a lot of paid advertising, a lot of articles written, and he goes to the top and to the Chat GPT*	NA

(Source: Self-Created) Figure 4.6

GenAI risks elimination and mitigation

Risk Category	Risk Mitigation	Citation	Source
Trust and Reliability	**Human Validation**	*The quality of the information gotten from GenAI, we rely on the expert who validates and decides how true the information is.*	NA
Data Security	**Configuring models to avoid data retention**	*In general, the data itself does not need to be saved for the model, it is only needed during processing. And so that the data you enter is not saved, this requires additional effort*	DM
		We have ourselves, generated and provided for our organization project management and included, high end version of, the various sources of, Gen AI so people can use them and, we make them available in a safe area.	AE
	Companies control GenAI's information access	*The client told us that we can use any AI tools, and he is very welcome to this. We have brought him risks of privacy, related to the leak of information, with the code. He said that he still thinks that benefits exceed these risks, but plus the products we work with are non-profit*	NA

(Source: Self-Created) Figure 4.7

However, some respondents do not perceive any threat or risk of data leakage:

> *The developer if it gets stuck somewhere, even in some small story where will be a data leak will immediately lose their reputation, trust and value of shares.*
>
> LT

Next, examining how GenAI affect risk management and methods for managing these risks.

4.2.4.2 Methods and Instruments for Managing GenAI Risks

The matrix of risk management was indicated as one of method for managing GenAI risks. The matrix approach allows organizations to assess risks systematically by their probability and potential impact (Wijnia, 2012).

Clients of respondent companies demand risk minimization when using GenAI. Risk assessment is like that for other AI models and involves accuracy checks and confidence thresholds. Some companies reject GenAI due to inadequate risk management adaptation, while others are eager to adopt it:

> *Different clients, they might have like different risk tolerance, one of our clients, which is a huge bank in the US, they specifically said that they will not use a product that has*

any GenAI, generally AI capabilities at all. We see gold values. You calculate the metrics.

DE

4.2.4.3 Changes in Risk Management due to GenAI Implementation

There are two perspectives on changes in risk management due to AI usage. One view is that risk management practices have evolved. Another view is that risk management remains unchanged, regardless of whether the company developed its own product or implemented a third-party solution for its needs:

We must notify about the use of AI tools if there are any risks, data leakage, privacy breach, something else, and confirm their use. Expanding the list of risks, and they are all relevant.

NA

Well, again, because we have this internal tool, no additional risks, it probably does not cause such things. something that you highlight in your daily work.

NZ

The security team got involved in implementation team for ChatGPT, they responded quickly to the work, which allowed for rapid integration of the ChatGPT. It's unlikely that anything has changed, and it shouldn't have changed. From a security perspective, it was just another project like the last one.

DM

Respondents shared their ideas, which will be discussed next.

4.2.4.4 Recommendations, Future Insights and Forecasts on GenAI

For the model to perform optimally, it is important to have access to the company's data, allowing it to understand the context. The more data it has, the more effective its results. When the model lacks context, its performance is poor:

If AI understands the context, it will enhance decision-making efficiency and overall performance

LT

A tool will now be available in Teams that assists entire teams rather than individuals, acting as a team member to help solve group tasks.

Depending on the request, using different GenAI models can increase effectiveness, with a focus on selecting the most cost-effective options:

And now, depending on the question I have, I can ask it either to the GPT chat or to PMI Infinity. Because, according to some questions, I think that PMI Infinity is better than the GPT chat due to the volume of information uploaded there. Sometimes we understand that training AI models is a risk, and we take this risk. We have an idea to train the model and achieve 98% of the correctness. In this case, we will not have to attract an expensive content manager.

NA

Successful model training can achieve target accuracy and potentially reduce certain staffing costs:

The serious advantage of this technology is its ability to continuously learn and evolve.

AE

In a rapidly changing world, staying competitive requires swift adaptation to new developments:

The world is changing much faster. Companies that are not able to manage changes are very weak. There are studies that live long those companies that can quickly make changes, and in order to make changes, you need to make a decision, and in order to make a decision, you need to understand how you will achieve this and how this change will be carried out in the company.

LT

4.2.4.5 Competitive Advantages and Perspectives of Using GenAI

GenAI isn't yet fully automating decisions; AI decisions still need verification. High-quality information ensures better decision-making. Proper use of GenAI can provide a competitive advantage in speed and quality, while misuse may have the opposite effect:

We haven't got fully automated to let gen AI to make the decisions for us. But that will come I'm sure in terms of it. It may well make a decision, but have it verified by somebody responsible.

AE

So, like for whatever you do, if you know how to use it, uh, properly, if you don't, it might. have an opposite effect, but if you master that, then it gives a big competitive advantage in terms of, you know, speed and quality of results.

4.3 Discussion

Integrating Generative AI (GenAI) into project management and business processes offers new opportunities for optimizing planning, resource allocation, and automating routine tasks. GenAI has a broad range of applications, used both for internal optimization and product development. However, the implementation of GenAI faces challenges, such as data protection, compliance

requirements, accuracy verification, and potential errors from either the model or human interactions.

GenAI has been adopted by both small startups and multinational corporations. While small companies benefit from higher flexibility, they face constraints in human resources. In contrast, large corporations have departments focused on advancing and integrating GenAI. Some companies have been working with GenAI for the past few years, while others either have not adopted the model or use it minimally due to security concerns.

Given the technology's simplicity and the instant results it provides, such as accelerated research, employees generally embrace the change rather than resist it. They often take the initiative to implement the technology themselves. GenAI benefits for optimizing company operations: speed of research; note-taker for time optimization; employees' efficiency; consulting service; scenarios, hypothesis creation and scheduling; routine tasks optimization; brainstorming; knowledge base.

Key issues include ensuring data confidentiality and security due to risks of leaks and misuse, as well as concerns related to intellectual property. The use of synthetic data helps overcome access limitations. Additionally, there is a shortage of qualified IT professionals, complicating the effective use and training of AI models.

Effective integration of GenAI requires a comprehensive approach, including employee training, interdepartmental coordination, and the application of various disciplines. In addition, the effective implementation of the model is supported by the availability of human resources, data, and implementation disciplines. To enhance the performance of the model and improve outcomes, it is crucial to train it, which involves both human and time resources. Successful model training can lead to a decrease in labor costs. The implementation process can be relatively straightforward and cost-effective with a high level of company maturity and readiness for new technologies. Nevertheless, automation with GenAI may alter the labor market, reducing some roles while creating new ones.

Integrating GenAI into strategic project management and decision-making opens up new possibilities for organizations but requires adaptation of existing methods and strategies. GenAI can significantly enhance strategy development with portfolio creation, providing PMO functions and alignment with strategic goals. However, many companies have not fully leveraged its potential and often turn to external consultants. Implementation of GenAI often begins at the initiative of individual employees, reflecting a company's readiness for the technology but not necessarily a strategic integration at the company level. Companies lack formal policies for integrating GPT into their process or project management strategies.

GenAI can free up employee time for more complex and creative work, such as strategy development and brainstorming, thus fostering innovation. However, the automation process with

GenAI remains in a semi-automated stage, requiring validation by experts and project offices. Full automation has not yet been achieved, and AI is viewed more as an auxiliary tool.

Decision-making in project management is complex, requiring consideration of business, technology, commercial and legal factors. While frameworks like Cynefin or OKR can help, their usefulness varies, especially in uncertain situations. Many organizations balance data with personal experience and context. While data plays a critical role in planning and optimizing business processes, decisions sometimes rely on intuition due to insufficient data. Metrics (KPIs) for assessing the quality of decisions based on GenAI have not yet been developed, as the technology is relatively new and companies lack clear performance indicators.

Large organizations face bureaucratic barriers in project management, that limit flexibility and speed in adopting to changing context, whereas smaller companies can adapt more quickly due to less structural complexity. Effective use of GenAI requires the development of integration strategies, consideration of company specifics, KPI development and enhancement of employee trust and skills.

Implementing Generative AI (GenAI) in project management significantly improves work efficiency by optimizing time, decision quality, and information access. GenAI automates routine tasks, leading to time savings and the creation of higher-quality project plans. It accelerates decision-making by providing in-depth data analysis and risk identification, allowing for more informed decisions and reducing employee fatigue by offering more time for discussion and collaboration.

The importance of data in decision-making remains critical. GenAI provides access to extensive expertise, although in some cases, decisions are made intuitively or based on limited data, context, potentially leading to errors.

Integrating Generative AI (GenAI) into project management is associated with risks such as data security, intellectual property, reliability, and algorithmic bias. Companies must carefully manage data usage and avoid over-reliance on AI results.

To mitigate risks, it is important to:

- Validate information with experts.
- Configure AI models to avoid data retention after processing.

Proper use of GenAI can provide a competitive advantage in speed and quality of work, although complete automation of decision-making and project processes has not yet been achieved. In the future, AI could enhance efficiency and productivity if trained on a company’s internal documentation. It is vital for companies to maintain their competitiveness by being able to adapt quickly to changes.

Chapter Five

Conclusions, Recommendations, and Limitations

5.1 Introduction

This chapter synthesizes the findings from the study on the impact of Generative AI (GenAI) on project management within global IT companies. The objectives of the study included evaluating how GenAI (such as ChatGPT) influences business strategy, examining the benefits of integrating the Cynefin Framework with GenAI in project management, and assessing how GenAI enhances decision-making and provides a competitive advantage. The chapter concludes with a discussion on the limitations of the study and recommendations for future research.

5.2 Implications of Findings on Research Questions

Research Question 1: How does integrating Generative AI (ChatGPT and its analogues) into corporate strategy impact project management, including business opportunities, challenges, and threats?

The findings indicate that integrating GenAI into project management processes can significantly enhance effectiveness by improving the speed and quality of decision-making, optimizing routine tasks, and supporting strategic planning. This aligns with previous research by Qiankun Wang (2019), which suggested that AI enhances competitiveness and efficiency in project management, particularly through machine learning-based methods.

However, the integration of GenAI also presents several challenges. Key concerns include data security risks, potential intellectual property issues, and an over-reliance on GenAI without adequate human oversight. These challenges necessitate robust risk management practices, comprehensive employee training, and diligent verification of AI-generated results. Some companies have adopted a cautious approach, implementing GenAI in controlled environments to mitigate risks. This practice supports the notion that effective risk management is critical for leveraging AI technologies while minimizing potential drawbacks, as suggested by Teece et al. (1997) regarding dynamic capabilities.

Moreover, while some organizations have successfully integrated GenAI into their project management strategies, its use often remains at the tool level rather than being fully embedded within corporate strategy. This gap suggests a need for further alignment of IT strategy with overall business objectives to maximize the competitive advantages of GenAI, as emphasized by the Strategic Alignment Model (SAM) (Henderson and Venkatraman, 1999).

Research Question 2: How does using Generative AI (ChatGPT and its analogues) and integrating with the Cynefin Framework help improve the speed and quality of decision-making in project management and achieve competitive advantages?

The study finds that combining GenAI with the Cynefin Framework significantly enhances decision-making in project management by leveraging AI's ability to process and analyze data rapidly. This is particularly valuable in complex and uncertain environments, where reliance on intuition alone can lead to errors (Kahneman, 2011). GenAI supports decision-making by providing real-time information, historical data analysis, routine task automation, risk assessment, and scenario generation.

For GenAI to be most effective, several conditions must be met: it requires access to a secure and comprehensive company database, including regulatory and procedural documents, and the organization must foster a data-driven culture. Data-driven organizations benefit from faster and more informed decision-making processes, leading to accelerated innovation (Anderson, 2015). The Cynefin Framework further guides organizations in selecting the most appropriate decision-making approach for each situation (Snowden and Boone, 2007). By combining the insights from GenAI with the strategic guidance of the Cynefin Framework, organizations can enhance their agility, improve problem-solving capabilities, and strengthen their strategic position.

Despite these benefits, the study also reveals that many decisions are still made intuitively or based on established practices rather than being fully data-driven. This highlights the ongoing challenge of integrating AI technologies with human decision-making processes. As noted by Shrestha et al. (2019), a hybrid approach that combines human judgment with AI capabilities is necessary for optimal decision-making.

5.3 Limitations of the Study

This study faced several limitations that may affect the generalizability and depth of its findings. Firstly, the research was conducted by a novice researcher, which might have influenced the study's scope and the depth of analysis. Access to participants was another significant challenge, limiting the breadth and diversity of the data collected. The reliance on semi-structured interviews and qualitative methods, while providing in-depth insights, may also introduce biases or fail to capture the full range of perspectives. Additionally, the study was constrained by a limited timeframe, which restricted the opportunity for a more extensive longitudinal analysis.

Recommendations for Future Research:

To address these limitations, future studies could benefit from employing a mixed-methods approach, combining qualitative and quantitative data to provide a more comprehensive understanding of GenAI's impact on project management. Expanding the participant pool to

include a more diverse range of companies and industries could enhance the generalizability of the findings. Additionally, conducting longitudinal studies could provide deeper insights into the long-term effects of GenAI integration on project management practices.

5.4 Recommendations

Based on the findings, several recommendations are proposed for organizations considering the integration of GenAI into their project management processes:

Develop a Data-Driven Culture: Organizations should cultivate a culture that prioritizes data-driven decision-making. This involves training employees on data literacy and ensuring that AI tools are integrated seamlessly into existing workflows.

Enhance Risk Management Frameworks: Robust risk management practices should be developed to address data security, compliance, and accuracy verification when implementing GenAI. This includes establishing clear guidelines for data use, retention, and privacy.

Adopt a Hybrid Decision-Making Approach: While GenAI can provide valuable support in decision-making, it should be viewed as a complementary tool rather than a replacement for human judgment. Organizations should foster a hybrid approach that combines AI insights with human expertise.

Leverage the Cynefin Framework for Contextual Decision-Making: The Cynefin Framework should be used to determine the most suitable decision-making approach based on the complexity and uncertainty of the situation. This framework, combined with GenAI, can enhance the organization’s ability to adapt to changing environments and make informed decisions.

Invest in Employee Training and Development: To maximize the benefits of GenAI, organizations should invest in training programs that enhance employees' understanding of AI tools and their applications. This includes developing competencies in data management, AI ethics, and risk assessment.

Optimize AI Integration Strategies: Organizations should consider creating tailored strategies for integrating GenAI into their business processes, aligning AI capabilities with specific departmental needs and strategic goals. This may involve developing frameworks to select the most cost-effective AI models for various tasks.

5.5 Personal Reflections

This study has underscored the importance of integrating theoretical frameworks with empirical research and adapting research methods as insights evolve. A key takeaway is the distinction between data (raw inputs) and information (interpreted data), which is crucial for effective

decision-making. Reflecting on the research process, future studies could benefit from a larger sample size and the use of a mixed-methods approach to provide more comprehensive insights.

5.6 Conclusion

In conclusion, the integration of Generative AI (GenAI) into project management offers significant potential for enhancing efficiency, decision quality, and strategic agility. However, realizing these benefits requires careful consideration of the associated risks, robust data management practices, and a strategic approach to AI integration. Organizations that effectively leverage GenAI can gain a competitive edge by improving flexibility, innovation, and responsiveness to market changes. As AI technologies continue to evolve, future research should explore their long-term impacts on project management and organizational strategy, ensuring that businesses remain adaptive and resilient in a rapidly changing environment

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Appendices

Appendix A- Informed Consent Form

INFORMED CONSENT FORM

I. Research Study Title: Evaluating the Impact of Generative AI Technologies on Enhancing Project Management Efficiency within Corporate Strategy in Global IT Companies

University: Griffith College, Graduate Business School.

Principal Investigator: Dr Garrett Ryan.

Researcher Name: Marina Sonnikova

Email: marina.sonnikova@student.griffith.ie

II. Clarification of the purpose of the research

The aim of this research is to explore the opportunities for firms to increase competitive advantage through the integration of GenAI technologies in business operations. Furthermore, through a combination your participation and the latest research into Generative AI Technologies, this research will add to body of academic understanding of Evaluating the Impact of Generative AI Technologies on Enhancing Project Management Efficiency within Corporate Strategy in Global IT Companies.

III. Confirmation of particular requirements as highlighted in the Plain Language Statement

This project involves taking part in semi-structured interviews. Interview responses will be recorded and aimed at collecting information about the experience of using GenAI in Project Management of Global IT companies. Questions regarding how GenAI might improve project management efficiency. I estimate the interviews will take no longer than 60 minutes to complete.

Participant – please complete the following (Circle Yes or No for each question)

Have you read or had read to you the Plain Language Statement	Yes/No
Do you understand the information provided?	Yes/No
Have you had an opportunity to ask questions and discuss this study?	Yes/No
Have you received satisfactory answers to all your questions?	Yes/No

Are you aware that interviews will be audiotaped? Yes/No

IV. Confirmation that involvement in the Research Study is voluntary

Involvement in this Research Study is voluntary. Participants who decide to take part may withdraw from the Research Study at any point. There will be no penalty for withdrawing before all stages of the Research Study are complete..

V. Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations

Every effort is made to ensure the confidentiality of the participant. Participant names will not be recorded, as all participants will be assigned a code. Where used, recorded interviews/survey data will be downloaded to a password-controlled computer, typed transcripts/survey results are held within password-controlled documents. Participant biographical details and or mention of other persons will be omitted in the final report. Confidentiality of information provided is subject to legal limitations.

VI. <u>Participant Signature:</u>

I have read and understood the information in this form. My questions and concerns have been answered by the researcher, and I have a copy of this consent form. Therefore, I consent to take part in this research project

Participants Signature: _____

Name in Block Capitals: _____

Witness: _____

Date: _____

Appendix B – Plain Language Statement

PLAIN LANGUAGE STATEMENT

I. Introduction to the Research Study

Research Study Title: Evaluating the Impact of Generative AI Technologies on Enhancing Project Management Efficiency within Corporate Strategy in Global IT Companies

University: Griffith College, Graduate Business School.

Principal Investigator: Dr Garrett Ryan.

Researcher Name: Marina Sonnikova

Email: marina.sonnikova@student.griffith.ie

II. Details of what involvement in the Research Study will require

This project involves taking part in semi-structured interviews. Interview responses will be recorded and aimed at collecting information about the experience of using GenAI in Project Management of Global IT companies. Questions are directed towards your thoughts on Generative AI Technologies impact on Enhancing Project Management. I estimate the interviews will take no longer than 60 minutes to complete.

III. Potential risks to participants from involvement in the Research Study (if greater than that encountered in everyday life) I do not anticipate any risk to participants as a result of participation in this Research Study.

IV. Benefits (direct or indirect) to participants from involvement in the Research Study

The objective of this Research Study is to gain new knowledge that will help increase the company's competitive advantage through the integration of GenAI technologies in business operations.This study may, therefore, be of benefit to you by providing you with the opportunity to contribute to body of knowledge on integrating GenAI into company strategy, so that you and or society may benefit.

V. Advice as to arrangements to be made to protect the confidentiality of data, including that confidentiality of information provided is subject to legal limitations

Every effort is made to ensure the confidentiality of the participant. Participant names will not be recorded, as all participants will be assigned a code. Where used, recorded interviews/survey data will be downloaded to a password-controlled computer, typed transcripts/survey results are held within password-controlled documents. Participant biographical details and or mention of other

persons will be omitted in the final report. Confidentiality of information provided is subject to legal limitations.

VI. Advice as to whether or not data is to be destroyed after a minimum period

Audio tapes data will be destroyed on the successful completion of this master's degree in full compliance with GDPR regulations.

VII. Statement that involvement in the Research Study is voluntary

Involvement in this Research Study is voluntary. Participants who decide to take part may withdraw from the Research Study at any point. There will be no penalty for withdrawing before all stages of the Research Study are complete.

If participants have concerns about this study and wish to contact an independent

person, please contact:

Dr Garrett Ryan

Graduate Business School

Research Committee

Griffith College

South Circular Road, Dublin 8, Ireland

Phone: + 353 1 416 3324

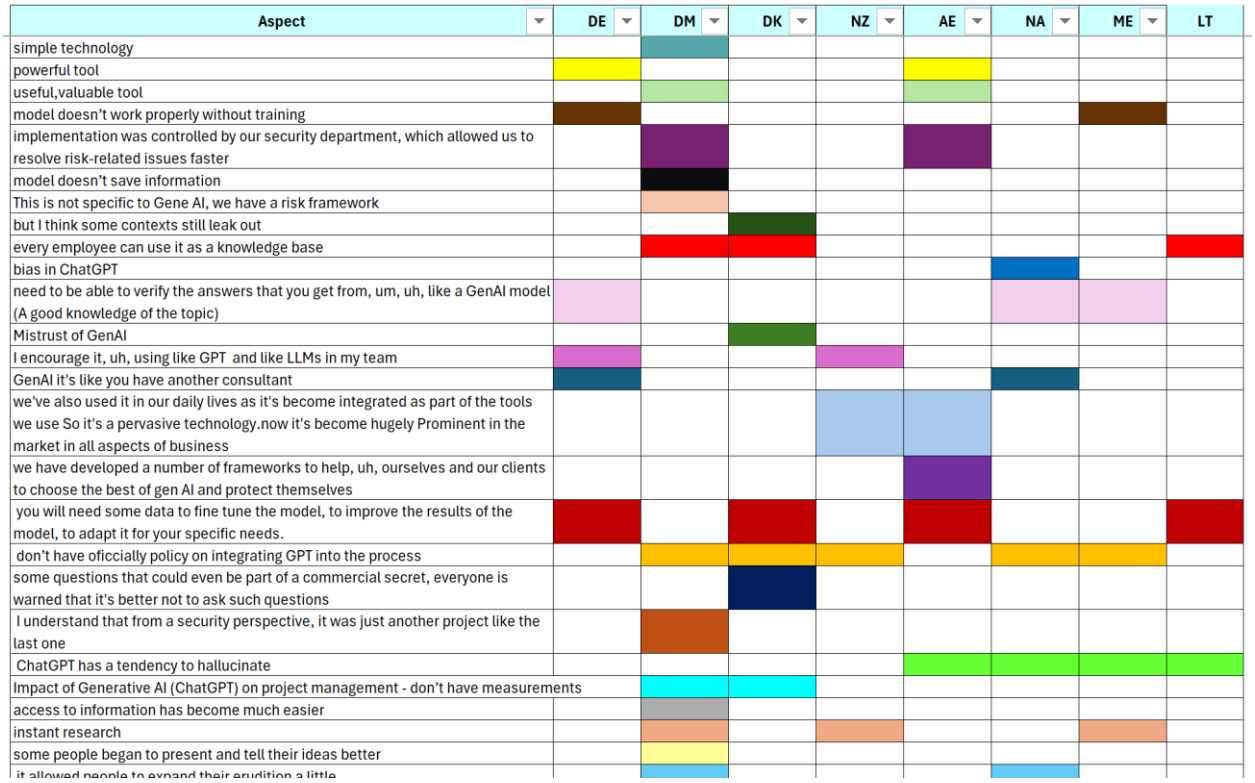
Email: garrett.ryan@griffith.ie

Appenfix C - Questionnaire

№	Question
1	Could you please briefly describe what the main activity of the company you work for is, what position you hold. And also, how you are involved in the topic of project management and ChatGPT integration?
2	How has your organization included Generative AI (ChatGPT) into its project management processes? Into project management strategy?
3	What challenges or questions have arisen when implementing generative AI (ChatGPT) in a project management strategy? If you are not involved in the strategy, please direct the question to the project management processes.
4	What types of strategic resources (data, technology and others) do you employ to incorporate effectively Generative AI (ChatGPT) into project management?
5	What changes in project management have you seen since integrating Generative AI (ChatGPT)? What effects has it had on quality of project management decisions?
6	Before or after GenAI (ChatGPT) implementation, did you use data analytics methods for decision making and risk assessment? If so, how does data analytics influence decision making?

7	What decision-making approach do you use in your company? Do you use particular frameworks, techniques or technologies?Are you familiar with the Cynefin decision making context model?
8	How do you consider decision making environment while making project management decisions? Can you give any examples of how decision making environment (context) influenced your decision-making process?
9	To what extent do you feel decisions are evidence based. Can you give some examples?
10	What methods and instruments do you use to identify, evaluate and manage the risks associated with the application of generative AI (we are talking about the consequences associated with the use of GenAI (ChatGPT))?
11	What specific changes have you observed in risk management since deploying Generative AI (ChatGPT)?
12	Is there anything I didn't mention in connection with the discussion that you believe is important to include?

Appendix D – Data Analysis Example in Excel/Interviews



Aspect	DE	DM	DK	NZ	AE	NA	ME	LT
simple technology								
powerful tool								
useful,valuable tool								
model doesn't work properly without training								
implementation was controlled by our security department, which allowed us to resolve risk-related issues faster								
model doesn't save information								
This is not specific to Gene AI, we have a risk framework								
but I think some contexts still leak out								
every employee can use it as a knowledge base								
bias in ChatGPT								
need to be able to verify the answers that you get from, um, uh, like a GenAI model (A good knowledge of the topic)								
Mistrust of GenAI								
I encourage it, uh, using like GPT and like LLMs in my team								
GenAI it's like you have another consultant								
we've also used it in our daily lives as it's become integrated as part of the tools we use So it's a pervasive technology.now it's become hugely Prominent in the market in all aspects of business								
we have developed a number of frameworks to help, uh, ourselves and our clients to choose the best of gen AI and protect themselves								
you will need some data to fine tune the model, to improve the results of the model, to adapt it for your specific needs.								
don't have oficcially policy on integrating GPT into the process								
some questions that could even be part of a commercial secret, everyone is warned that it's better not to ask such questions								
I understand that from a security perspective, it was just another project like the last one								
ChatGPT has a tendency to hallucinate								
Impact of Generative AI (ChatGPT) on project management - don't have measurements								
access to information has become much easier								
instant research								
some people began to present and tell their ideas better								
it allowed people to expand their erudition a little								

Code	Examples of GenAI Application	Obstacles for GenAI Integration	Impact of GenAI on Project Management Efficiency
DE	**1/ we try to build it like as a part of our, uh, Platform to help other companies, you know, like as vendors to use AI capabilities. 2/** So, uh, in order to improve the quality of our machine learning or AI models, we need data, uh, manual labeling, uh, is a very, like time consuming process. So that's **why we use Genii to, uh, Generate the state that we can start to use for, uh, model tuning again. 3/**Uh, **it also helps to, you know, Verify the potential outcome against like the historical data,** right? So like, uh, I know that's, uh, lots of people like, well, not. Not lots of, but at least some of our people, some of **the people in our company, when they, uh, think of some, you know, like hypothesis, like what, what to do next, uh, and what are the possible scenarios, uh, they try to, you know, like run it through the, uh, GenAI, I to see, you know, like, what is the, basically like the probability of failure, uh, based on the historical data**, you know, like maybe similar scenarios that appeared in the past.And, uh, you know, **Why could it fail?** So **it kind of helps them to, uh, understand what are the potential weak points of the hypothesis and how to adjust it**. So basically, you know, **it's, it's like you have another consultant,** right? Who really was extremely knowledgeable. It just needs to, uh, find, find the common language with them.So like you can use it out of the box for, um, of the tasks that, uh, uh, Yeah, for some of the tasks again, you know, like they might be applicable to project management. They might not be applicable to project management. There might be some constraints, uh, uh, due to reach, you will need some data to fine tune the model, to improve the results of the model, to adapt it for your specific needs.	Like, because normally **like we operate in the highly like regulated industry** and, um, Like our **clients, they are not willing to share their data without a very specific and urgent technique to do that**. Uh, so that's why, you know, like we are looking for the workarounds and one of the workarounds is to basically **like use GNI to generate this data.** Basically, you know, like, again, **like for our needs, we can't directly use, uh, Client's data**, right? So like we, like there is no way client's data can leave the, uh, they are their perimeter, their premises.So, uh, in order to improve the quality of our machine learning or AI models, we need data, uh, manual labeling, uh, is a very, like time consuming process. So that's why we use Genii to, uh, Generate the state that we can start to use for, uh, model tuning again. 1/ The main challenges for using GenAI , maybe like not just for project management, but like in general, is to, uh, well, is to ask the right questions and to verify the answers.It's a very powerful tool, uh, in general, but you need to have. A good knowledge of the topic.So if you know, at least. Like what kind of answer you expect, right? So like, it might help you to, uh, formulate it, to put it in the right form. Uh, and yeah, and then like, you need to be able to, uh, verify it and make sure that, uh, it doesn't like hallucinate, you know? So the biggest challenge is to verify the credibility of the, uh, of the answers. you will need some data to fine tune the model, to improve the results of the model, to adapt it for your specific needs.And this is where you might need data. Uh, You know, for, for our tasks, it's, it's, it's funny because, you know, like we actually use, uh, gen AI in order to generate this data that that can be, uh, fed to another like gen AI to, uh, solve like a particular needs. So, you know, uh, We, we do need data. We do use data, but we mostly rely, you know, like on, uh, human knowledge and subject matter expertise, uh, to generate like the synthetic data again.	if you work with GenAI, I, you know, like **a good thing is that** you can start depending on the model, of course, but **you can start like even without like lots of data**. 1/ It's a very powerful tool (Genia is a powerful assistant.), uh, in general, but you need to have. A good knowledge of the topic, like whether it's like projec management or whatever, and you need to be able to verify the, uh, answers that you get from, um, uh, like a GenAI model 2/ it's, it's like you have another consultant, right? Who really was extremely knowledgeable. It just needs to, uh, find, find the common language with them.3/I encourage it, uh, using like GPT and like LLMs in my team, you know, like, because it's, **it's, it helps to, it gives a huge boost of speed.**
DM	Preparation of materials, which is extremely popular now. For example, for preparation of presentations (product, for example), preparation of texts. Also, it was used a lot for preparation of marketing texts. It was used as a knowledge base, since many project templates were taken from it (maybe not for their actual use, but as an example).	In general, the data itself does not need to be saved for the model, it is only needed during processing. But almost all companies, such as open AI and Anthropic, they strive to collect data in order to train new models in the future, in the next generation. They have an option that the text that comes to them for the purpose of further training. And so that the data you enter is not saved, this requires additional effort.The implementation of the model is very easy. You just give people access to the chat, and they start using it, and that's it. We did not train the model on data. The only difficulty was the security issue, which was a small development solved by the security department. I can't say that it was an expensive implementation of the technology. No, it was cheap. The reason for early or late implementation was the level of competence and enthusiasm in the company. We had a high enough level of competence, which allowed us to start using what we had. There were no serious obstacles, such as time, finance. Everything was quite simple. Human resources:Firstly, when we launched the chat, there were no people who understood it, so we didn't hire them. Secondly, in terms of usage, it's a very simple technology. And the guys grasp it in a couple of days. What's nice is that in terms of the first technical level of using this technology, there are no difficulties.	**Unfortunately, I can't speak about such measurable results. We didn't do such measurements.** I mean, to say that before we did 100 projects a month, now we have 110 projects a month, I can't say that. I don't have any numbers to evaluate. What can be said **from an expert point of view is that access to informatio has become much easier. In particular, there are many things that otherwise would have to be researched for a long time.** It became possible to get almost instantly in the first approach. And it **became noticeable, for example, that some people began to present and tell their ideas better.** Therefore, it became noticeable that they use the chat.The data obtained during the research certainly cannot be fully trusted. Perhaps some people rely more on the ChatGPT than it would be worth. Everyone understands that this is a kind of average answer that can be obtained, not necessarily reliable. One that can be pushed off ir order to move on. The results given by the chat were not necessarily verified only by expert opinion, everything depends on the question. The chat was useful as a starting point for obtaining information. For example, I looked at what practical directions there are in management. I have some erudition on this account, the chat suggested something to me on this topic, and then, pushing off from this, I studied the question, referring to primary sources.**In general, it seems to me that it allowed people to expand their erudition a little. I think that the speed of decision-making has not changed.** I think that in general it should not have. **I worked in a fairly mature and fairly large company that had established processes. There was annual planning, there was quarterly planning. And we coped with these tasks both before and after the chat. In this sense, we did not make decisions faster.** We continued to build a plan for the quarter, and before it did not become so with the advent of the chat. **Another thing is that, perhaps, in the**

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