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**A Critical Success Factors Analysis of Emerging
Technologies in IT Project Management**

Master Thesis

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1 Introduction

In the ever-evolving world of Information Technology (IT), integrating emerging technologies has become integral to project management. As companies seek to remain competitive, increase productivity, and offer creative solutions, adopting cutting-edge technologies has gone from a luxury to a necessity (Tominc et al., 2023). However, the successful adoption and exploitation of these new technologies in IT project management hinge upon identifying and rigorously controlling the Critical Success Factors (CSFs). These CSFs serve as a compass that steers enterprises through the complicated landscape of technological transformation, ensuring that projects achieve their intended goals and deliver value (Tominc et al., 2023).

Over the next five to ten years, investments in information and communications technology (ICT) will increase by 25%. The significant growth in organizational digital transformation initiatives is driven by the strong IT industry trend, which presents an opportunity for IT professionals to tactically and strategically align with this need (Pang et al., 2022). The potential advantages of emerging technologies like cloud computing (CC), the Internet of Things (IoT), artificial intelligence (AI), and big data are becoming increasingly clear to businesses around the world (Tominc et al., 2023). These technologies allow companies to modify their conventional enterprises, strategies, and operations (Josyula et al., 2021). If businesses want to succeed in the future, they must start with a digital transformation (Enholm et al., 2022). Firms that use emerging technology, like AI tools, are more creative and competitive. Organizations must enhance their commitment, foster an improved culture, and implement new approaches to effectively manage and modernize their organizational structures and processes in light of advancements in artificial intelligence and changing environmental dynamics (Borges et al., 2021). Furthermore, the incorporation of cutting-edge digital technologies enables the modification of existing business models, the development of new ones, and the introduction of new goods and services, ultimately improving the economy's efficiency and competitiveness and advancing socio-economic development more broadly (Dhamija and Bag, 2020).

Piccotto (2020) points out that the effective implementation of organizational strategies and initiatives depends on project management (Picciotto, 2020), and organizations are realizing the need for data-driven techniques to improve their project management practices as projects become more complex and dynamic (Carvalho et al., 2015; Obaid, 2023). Because of the current need for CSF for emerging technologies, this thesis discusses the significance of understanding and managing the essential success factors of emerging technologies in IT project management. This is done by highlighting their pivotal role in attaining project (management) success, optimizing resource allocation, and mitigating risks.

The research question which is going to be answered in this thesis is:

“What are the critical success factors of emerging technologies in IT project management?”

To answer this question, theoretical foundations are explained in chapter 2. A working definition of project success is established (Chapter 2.1), and criteria for a technology to be called emerging are designed (Chapter 2.2). Furthermore, the most relevant emerging technologies from the literature analysis and the conducted interviews are explained (Chapter 2.2.1/2/3/4). This allows the reader to apply the success factors discussed later to a specific technology, leading to a better understanding. Chapter 3 contains the research design (Chapter 3.1) and methods (Chapter 3.3/4/5) used in this thesis. The overall approach of each method is explained, and detailed steps for this specific case are shown. The primary sources of information are literature and the knowledge of experts, which is collected through a series of interviews. Chapter 4 contains all the findings from the literature analysis (Chapter 4.1) and the interviews (Chapter 4.2). The findings are grouped by success factors in both cases. At the end of this chapter, the results are combined (Chapter 4.3) and evaluated (Chapter 4.4). Afterward, the findings are discussed (Chapter 5), and the conclusion (Chapter 6) completes the work. Chapter 7 contains all references, and chapter 8 (the appendix) contains all additional information, such as the interview transcripts and tables.

determined CSFs could be tested, and their influence measured. Additionally, critical failure factors could give more insights into success factors. Due to the high volume of literature on success factors, failure factors were not explicitly searched. The comparison of the CSF in small and medium enterprises against big or public ones would also be interesting.

6 Conclusion

Companies must solve several issues and obstacles to fully grasp the potential advantages of emerging technologies in project management. Aligning their goals and structure correctly with the new technologies, as well as building a communicative and collaborative environment, are a few of them. As a result of the insights gleaned from the literature analysis and the interviews, organizations should continually improve their project management procedures, build a data-driven culture, promote cooperation and communication among project teams, establish a clear vision, promote good leaders, work agile, and stay flexible. Organizations must also stay abreast of the quickly changing technology landscape, new trends and best practices in IT project management. By doing so and continuously embracing learning and knowledge management, companies can maintain their competitiveness, seize new possibilities, and promote innovation in their industries.