

4-22-2026

IT Strategies Used to Implement Enterprise Resource Planning Systems

Michele Doverspike
Walden University

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Management and Human Potential

This is to certify that the doctoral study by

Michele Doverspike

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee

Dr. Alan Dawson, Committee Chairperson, Information Technology Faculty

Dr. Bob Duhainy, Committee Member, Information Technology Faculty

Chief Academic Officer and Provost

Sue Subocz, Ph.D.

Walden University

2026

Abstract

IT Strategies Used to Implement Enterprise Resource Planning Systems

by

Michele Doverspike

MS, Strayer University, 2014

BS, Strayer University, 2010

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Information Technology

Walden University

May 2026

Abstract

Enterprise resource planning (ERP) system implementation represents a significant challenge for small businesses, with failure rates that can lead to substantial financial losses and operational disruption. Information Technology (IT) managers in small businesses face a gap in evidence-based strategies tailored to their organizational context, increasing the risk of implementation failure and its associated financial and operational consequences. Grounded in general systems theory, the purpose of this qualitative multicase study was to explore the strategies IT managers use to implement ERP systems in small businesses in central Pennsylvania. The participants were six IT managers from small businesses in Pennsylvania who had led ERP implementations within the past 5 years. Data were collected through semistructured interviews and a review of organizational documents, including ERP project reports, implementation plans, and postimplementation reviews. Through thematic analysis, three themes were identified: (a) implementation preparation, (b) implementation approaches, and (c) scope control. A key recommendation is for IT managers to establish formal scope baselines and tailored, role-based training programs at project outset, and to calibrate change management intensity to the organization's readiness for change rather than applying a uniform approach regardless of context. The implications for positive social change include the potential for IT managers and business leaders to improve organizational efficiency, enhance employee job satisfaction, and support workforce development within small business environments.

IT Strategies Used to Implement Enterprise Resource Planning Systems

by

Michele Doverspike

MS, Strayer University, 2014

BS, Strayer University, 2010

Doctoral Study Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Information Technology

Walden University

May 2026

Table of Contents

List of Tables..... iv

Section 1: Foundation of the Study..... 1

Background of the Problem 1

 Problem Statement 2

 Purpose Statement..... 3

 Nature of the Study 3

 Research Question 6

 Interview/Survey Questions..... 6

 Conceptual Framework..... 6

 Assumptions, Limitations, and Delimitations..... 7

 Assumptions..... 7

 Limitations 8

 Delimitations..... 9

 Significance of the Study 10

 Contribution to Information Technology Practice 11

 Implications for Social Change..... 13

 A Review of Professional and Academic Literature 14

 General Systems Theory 17

 Organizational Design 24

 Managing Implementation Projects 37

 Rapidly Changing Technology..... 41

 Education 45

 Leadership..... 48

 Communication..... 52

Transition and Summary.....	56
Section 2: The Project.....	58
Purpose Statement.....	58
Role of the Researcher	60
Participants.....	61
Research Method and Design	62
Research Method	62
Research Design.....	64
Justification for the Case Study Approach.....	65
Ensuring Data Saturation	66
Population and Sampling	67
Ethical Research.....	69
Data Collection	70
Instruments.....	70
Data Collection Technique.....	71
Data Organization Techniques	73
Data Analysis	73
Reliability and Validity	75
Reliability.....	75
Validity.....	76
Ensuring Credibility, Transferability, Confirmability, and Data Saturation	76
Transition and Summary.....	78
Section 3: Application to Professional Practice and Implications for Change	79
Introduction.....	79

Presentation of the Findings.....	80
Theme One: Implementation Preparation.....	81
Theme Two: Implementation Approaches	88
Theme Three: Scope Control	95
Notable Absence: Perceived Impact of External Factors.....	101
Summary of Findings.....	103
Application to Professional Practice.....	106
Implications for Social Change.....	109
Recommendations for Action	111
Recommendations for Further Research.....	114
Expanding Sample Size and Geographic Reach.....	114
Industry-Specific Implementation Research.....	115
Missing External Influences	116
Long-Term Outcomes and Sustainability	118
Beyond IT Management	119
Emerging Technologies and Implementation Approaches.....	120
Resource Constraints in Small Businesses	122
Testing the Theoretical Framework	123
Moving Forward	125
Reflections	126
Conclusion	129
References.....	131
Appendix A: Interview Question	151
Appendix B: Protecting Human Research Participants Certification	152

List of Tables

Table 1. Participant Codes and Documents Reviewed: Theme One: Implementation
Preparation75

Table 2. Participant Codes and Documents Reviewed: Theme Two: Implementation
Approaches80

Table 3. Participant Codes and Documents Reviewed: Theme Three: Scope Control.....84

Section 1: Foundation of the Study

Background of the Problem

Historical data indicate that information system failures are rarely due to technical problems. Hornstein (2015), based on a review of the literature, argued that managers frequently overlook business process change management, resulting in misalignment between the new system and existing workflows. This oversight can result in significant challenges during the implementation process, emphasizing the need to integrate business process change management into the project scope (Hornstein, 2015). Recent studies have highlighted the significant financial implications of failed enterprise resource planning (ERP) implementations. Organizations such as Nike and Waste Management have reported losses of over \$100 million and more than \$500 million, respectively, due to ERP failures (Baumann, 2021; Dolfing, 2022). These failures highlight the crucial need for effective management and alignment with business objectives to minimize the financial losses associated with ERP implementation failures (Rajapakse & Thushara, 2023). Proper management can help mitigate the financial losses associated with ERP implementation failures (Rajapakse & Thushara, 2023).

Aljaeri and Jaharadak (2021) identified several key factors that contribute to system implementation failures in the ERP development process. Inadequate top management support can lead to a lack of resources and commitment. Poor user training and education can result in users being unprepared to use the new system effectively. Additionally, ineffective change management strategies cause resistance to

the new system and hinder its successful implementation. Lastly, insufficient vendor support and relationships can lead to technical issues and delays in the implementation process (Aljaeri & Jaharadak, 2021).

Restructuring business processes is among the top three critical success factors in information system implementation (Altamony et al., 2016). IT managers who overlook overall organizational strategies may struggle to lead projects to success. Recent research highlights the significance of business process management in driving digital transformation. It advocates for a more explorative approach to fully leverage emerging technologies (Ahmad & Van Looy, 2020).

Problem Statement

The cost of failed ERP implementations can be substantial, with organizations potentially wasting millions of dollars due to these failures. Nike's failed ERP implementation resulted in a \$100 million loss (Dolfing, 2022). Additionally, Waste Management reported losses of over \$500 million due to its ERP failure (Baumann, 2021). Critical failure factors, such as a lack of top management support, inadequate education and training, and mismatches between the system and business strategies, contribute to these high costs. These issues emphasize the importance of thorough planning and effective execution in ERP projects. Effective management and alignment with business objectives are crucial to minimizing financial losses associated with ERP implementation failures (Rajapakse & Thushara, 2023). The general IT problem is that the failure rate for ERP implementations costs companies millions of dollars. The specific

IT problem is that some IT managers lack the strategies needed to implement ERP systems.

Purpose Statement

The purpose of this qualitative multicase study was to explore strategies that IT managers use to implement ERP systems. The population of the study consisted of IT managers in small businesses across central Pennsylvania, where companies have implemented new ERP systems over the past 5 years. The participants included IT managers who have successfully implemented ERP systems. The intent of this study was to provide ERP implementation strategies from a shared perspective for IT managers. This study has implications for positive social change because the findings could lead to more opportunities for volunteerism if the implementation improves organizational strategic alignment with ERP implementation strategies, resulting in more structured work environments.

Nature of the Study

There are three categories of research approaches: qualitative, quantitative, and mixed methods (Timans et al., 2019). The qualitative method, which emphasizes a humanistic perspective, usually entails gathering and exploring data that is not numerical in nature, such as written text, video footage, or audio recordings (Timans et al., 2019). This approach is particularly effective for exploring individual perspectives, beliefs, and experiences in depth. Timans et al. (2019) provide a comprehensive discussion of this research approach.

Quantitative research, on the other hand, is a methodology that centers on collecting and analyzing numerical data (Wilson, 2019). In circumstances where the details of the subject matter can be quantified, this method proves to be especially beneficial. The main goals of this approach often encompass pattern recognition, prediction formulation, causality testing, and generalizing outcomes to larger populations (Wilson, 2019). These goals are achieved through rigorous statistical analysis, which can expose trends and correlations that might not be immediately apparent. This method is beneficial when the researcher has a clear comprehension of the variables they aim to measure. It is especially powerful when used in conjunction with well-established theories or hypotheses, as it can provide empirical evidence to support or refute these ideas. Essentially, it offers a systematic way to quantify data and derive conclusions (Wilson, 2019). By doing so, quantitative research contributes to the objectivity and replicability of scientific inquiry, making it a cornerstone of many academic disciplines.

In the context of this study, the perspectives or viewpoints of the participants were not predetermined and cannot be numerically measured. This lack of quantifiable data made the application of quantitative or mixed-methods research approaches unsuitable. Additionally, these methods may not fully capture the depth and richness of the participants' subjective experiences and perceptions. Therefore, considering these factors, the qualitative methodology emerged as the most suitable approach for this research study. This methodology, emphasizing the exploration of subjective experiences and

perceptions, enabled a more nuanced and comprehensive understanding of the research problem.

Four research designs were considered for this study: case study, phenomenological, ethnographical, and narrative. Each of these designs offered unique advantages and were suited to different types of inquiries. The choice of research design is not a decision to be taken lightly. It serves as the blueprint for the entire study, guiding the alignment among the research questions, data collection, and data analysis (Tomaszewski et al., 2020). The phenomenological design, for instance, is deeply rooted in the lived experiences of individuals and is, therefore, less suited to this particular study. Similarly, the ethnographical design, which focuses on the customs and cultures of individuals, and the narrative design, which relies heavily on personal experiences and historical data, may not provide the most relevant insights for the research objectives.

The case study methodology stood out among the four designs, especially when a comprehensive, in-depth analysis is required, and the conditions of behavior significantly influence the results. This method enabled a detailed exploration of an individual unit with the objective of extrapolating the findings to a broader group of units (Li & Zhang, 2022). Considering the intricate nature of the issues being addressed and the necessity for an all-encompassing comprehension, this study utilized a case study design. This strategy enabled an exhaustive investigation into the

experiences and evaluations of managers regarding ERP implementations, with special attention to the elements contributing to success.

Research Question

What strategies do IT managers use to implement ERP systems?

Interview/Survey Questions

1. How many ERP implementations have you managed both at your current organization and at other companies?
2. What technical strategies have you used to implement ERP systems?
3. Thinking of your most recent implementation, how long, from planning through completion, did it take?
4. What business processes have changed as part of the implementation in order to align IT strategic goals?
5. How did strategic alignment or lack thereof, contribute to the success or failure of the implementation?
6. What external factors existed outside of the organization's ability to use technical strategies to implement an ERP system?

Conceptual Framework

Von Bertalanffy's (1972) general systems theory offers a broad framework for comprehending systems. Recent studies have applied this theory, suggesting that a system is an assembly of interrelated elements. Each element within the system has a specific structure and a defined purpose, and it interacts with its environment to

achieve its goals. This approach significantly enhances our understanding of systems and is highly beneficial for practitioners in various fields.

General systems theory applies to this study because IT managers are implementing ERP systems, and they must understand the strategies needed to incorporate all aspects of the business into the implementation. IT departments can be seen as systems that include inputs, outputs, and feedback loops, influencing their operations. The implementation project is a system with (a) the need for interrelationships between departments, (b) the purpose of implementing the ERP system, and (c) the interaction of stakeholders to meet the goal of a sustainable implementation. Information technology managers responsible for implementing new ERP systems need to know strategies as an interdependent part of the whole implementation to ensure that the delivered system does not break down any other part of the business.

Assumptions, Limitations, and Delimitations

Assumptions

Yadav (2021) made a crucial emphasis that assumptions underpin research data. I made two key assumptions. The first assumption places trust in the respondents, as I assumed they provided truthful answers and drew upon their knowledge and expertise. The second assumption validates the methodological approach of the study. I assumed the validity and reliability of the interview questions used in this qualitative multicase study,

as Noble and Smith (2021) highlighted. These assumptions lay the foundation for the research, highlighting the importance of their careful consideration.

I assumed that respondents provided truthful answers and drew upon their knowledge and expertise. This assumption was crucial as it laid the foundation for the research, highlighting the importance of their careful consideration. I also assumed that the interview questions used in this qualitative multicase study are valid and reliable. These assumptions were essential for ensuring the integrity and credibility of the research findings.

Limitations

Understanding the factors that researchers cannot control is crucial when evaluating a study's reliability. These limitations, which can affect outcomes and interpretations, are an inherent part of the research process (Ross & Bibler, 2019). To ensure clarity for potential participants, it was essential to provide thorough instructions via email, emphasizing the importance of thoughtful responses. Additionally, participants were informed that withdrawing from the study is an option if they experienced discomfort at any point during the survey. Researchers must clarify withdrawal procedures and provide appropriate notifications before the survey is completed (Timans et al., 2019).

Weaknesses within a research design can significantly impact the results and conclusions of a study, potentially leading to misleading or incomplete findings (Creswell & Poth, 2021). It is essential for researchers to fully and honestly disclose these

limitations to the academic community to maintain the integrity and credibility of their work. Unfortunately, authors frequently rely on generic descriptions when discussing limitations, which can obscure the true scope and impact of these issues. Including unnecessary or redundant limitations is not an efficient use of the limited word count available and can detract from the study's overall contribution (Ross & Bibler, 2019). Therefore, a clear and precise articulation of the limitations is crucial for the proper interpretation and application of the research findings.

Qualitative research has several weaknesses, including the subjective nature of data collection and analysis, which can lead to biases (Mwita, 2020). Additionally, the findings from qualitative studies are often difficult to generalize due to the small, non-representative samples typically used (Mwita, 2020). The time-consuming nature of data collection and analysis in qualitative research can also be a significant drawback (Mwita, 2020). Lastly, the results are often presented in a narrative form, making them less accessible and more challenging to compare across studies (Mwita, 2020).

Delimitations

In the field of academic research, delimitations are important in shaping the scope and direction of the study. As Yadav (2021) pointed out, delimitations refer to attributes that confine the breadth and establish the constraints of the study, as determined by the researcher. These are not arbitrary limitations, but rather strategic decisions made by the researcher. They shape and adjust the parameters of the survey or interview, ensuring that the research remains focused, manageable, and within the realms of the researcher's

expertise and resources. These delimitations, therefore, serve as a roadmap guiding the research process.

In this study, the delimitations included focusing on IT managers in small businesses in central Pennsylvania who have completed ERP implementations within the past 5 years. The study does not cover IT managers from larger businesses, other regions, or those who have not completed ERP implementations within the specified timeframe. These choices help to narrow down the scope and make the research more targeted and relevant (Noble & Smith, 2021). By clearly defining these boundaries, I ensured that the findings are specific to the chosen demographic, providing more accurate and applicable insights for similar contexts.

Significance of the Study

I intended to provide a comprehensive analysis of ERP system implementation, offering valuable insights to organizations contemplating its adoption. Managerial strategies are explored to determine how they can be optimized to enhance the success rate of ERP implementation, thereby directly influencing organizational efficiency. The successful implementation of these strategies can catalyze positive social change, leading to improved job fulfillment, better employee engagement, and a more collaborative and inclusive work culture. Thus, this study serves as a pivotal resource for organizations aiming to leverage ERP systems to drive growth and community development.

Contribution to Information Technology Practice

ERP systems are comprehensive software solutions that are constructed to manage and integrate all the processes necessary to run a business (Katuu, 2020). These systems encompass areas such as finance, human resources, manufacturing, supply chain management, services, procurement, and others. The goal of implementing an ERP system is to streamline information flow across all business functions within the organization while effectively managing interactions with external stakeholders. The objective is to optimize processes, boost effectiveness, and ultimately elevate the company's overall performance (Stone & Zhang, 2021).

Implementing ERP systems is a complicated process that often leads to failure. According to Zerbino et al. (2021), these failures can cost companies millions of dollars annually. The reasons for these failures are complex and can include poor project management, lack of top management commitment, inadequate training, and resistance from end-users. Huang et al. (2021) also list properly managed projects, clearly defined goals, change management, and training and education as key elements that affect ERP systems. Therefore, it is crucial for organizations to carefully plan and manage their ERP implementation projects to avoid these drawbacks and ensure a successful outcome.

Despite the high failure rates, the global ERP market continues to grow. Many companies are planning to acquire or upgrade their ERP systems (Stone & Zhang, 2021). This growth can be credited to the significant benefits that successful ERP implementation can bring to an organization. These benefits include improved business performance,

increased productivity, lessened operational costs, better customer service, and enhanced decision-making capabilities. Thus, despite the challenges, the potential rewards of ERP implementation make it an attractive investment for many businesses.

Understanding the elements that lead to a successful ERP deployment is crucial for any organization aiming for efficient operations. These elements can include a clear understanding of strategic goals, top management support, effective project management, user involvement, comprehensive training, and careful selection of the ERP system (Shkurti & Manoku, 2021; Stone & Zhang, 2021). By focusing on these main areas, organizations can strengthen their chances of a successful ERP implementation. This leads to improved business processes and outcomes, ensuring that the organization can achieve its operational and strategic objectives effectively (Zerbino et al., 2021).

While ERP systems offer significant potential benefits, their implementation is loaded with challenges. Organizations must carefully consider these challenges and take preemptive steps to mitigate them to ensure a successful ERP deployment (Stone & Zhang, 2021). This includes thorough planning, stakeholder engagement, adequate resource allocation, and ongoing monitoring and evaluation of the implementation process. By doing so, they can navigate the complexities of ERP implementation and realize its full potential (Zerbino et al., 2021).

Research has shown that successful ERP implementation requires a comprehensive understanding of the system and the development of effective strategies to streamline processes (Zerbino et al., 2021). This involves acquiring relevant information

and data and understanding the need for proactive business process re-engineering during the implementation of information systems. The findings from such studies can serve as a valuable tool for IT managers, helping them administer and drive sustainable ERP implementations. These insights can guide organizations in making informed decisions about their ERP strategies, contributing to more successful implementations and better business outcomes (Stone & Zhang, 2021).

Implications for Social Change

A successful ERP implementation can have profound implications for social change within an organization and beyond. ERP systems require changes in organizational processes to align with the best practices introduced by the system (Raja et al., 2020). These changes can significantly impact the efficiency and effectiveness of the organization, as well as the work environment and the roles and responsibilities of employees. For instance, ERP implementation can automate mundane manual tasks, improve quality by avoiding human errors, reduce cycle time, and increase customer satisfaction levels (Raja et al., 2020).

The process of ERP implementation often involves significant organizational change management. This includes managing and driving changes in the organization's processes, technologies, and culture. It is widely observed in ERP consulting that managing and driving organizational change as part of ERP implementation is often a reactive measure rather than proactively planning and managing the change (Raja et al., 2020). However, a proactive and structured approach to change management can lead to a

successful digital transformation, which can have positive social implications. For example, it can lead to improved job satisfaction, increased employee engagement, and a more collaborative and inclusive work culture.

Additionally, the successful implementation of ERP systems can also have broader social implications. For instance, in the context of nongovernmental organizations (NGOs), ERP systems can enable these organizations to operate more efficiently, ensuring that their dedication to social change translates into tangible and lasting outcomes (Raja et al., 2020). This can initiate more efficient delivery of services, greater impact on the communities they serve, and, ultimately, more significant social change. Therefore, the successful implementation of ERP systems can play a crucial role in driving social change, both within organizations and in the wider society.

A Review of Professional and Academic Literature

In the review of academic literature, I analyzed and synthesized a variety of sources, including journals, reports, and foundational scholarly books. The review comprises 123 articles, journals, and seminal books on information systems, erp implementations, and general systems theory. All literature was obtained from the scholarly research libraries or directly obtained from journal websites. Of the 123 articles, 105 (85%) were peer-reviewed as confirmed by Ulrich's Global Serials database, and 96 (78%) were published within 5 years of my anticipated graduation date.

In the review, I explore the strategies IT managers employ to implement ERP systems, emphasizing the importance of strategic alignment, effective project management, and

proactive change management. By incorporating insights from several studies, such as Hornstein's (2015) work on business process change management and Ahmad and Van Looy's (2020) research on digital transformation, the review highlights the multifaceted nature of ERP implementations and the key success factors that contribute to their effectiveness. This comprehensive synthesis of diverse sources demonstrates a deep inquiry and provides a solid foundation for understanding the complexities of ERP system implementations (Ahmad & Van Looy, 2020; Hornstein, 2015).

The literature review is organized into several key sections to ensure a logical flow and coherence. I start with an introduction that outlines the review's scope and objectives. This is followed by an in-depth exploration of the theoretical framework, specifically general systems theory, which provides a comprehensive understanding of the interrelationships and interdependencies among system components (see von Bertalanffy, 1972). In the following sections, I explore specific themes such as managing implementation projects, the impact of rapidly changing technology, and the role of education and leadership in ERP implementations (see Markus & Tanis, 2000). Each section is designed to present a critical analysis of the literature, highlighting key findings and their implications for practice. I conclude with a summary that synthesizes the main insights and identifies areas for future research.

The strategy for searching the literature involved a systematic approach to guarantee thorough coverage of relevant sources. I used multiple databases, including academic journals, conference proceedings, and industry reports, to gather diverse

perspectives on ERP implementations. Keywords such as *ERP implementation*, *strategic alignment*, *project management*, and *change management* were used to identify pertinent studies (see Barki & Pinsonneault, 2005; Somers & Nelson, 2001). Additionally, I used a snowballing technique, reviewing the references of key articles to uncover additional relevant sources. This iterative process ensured that the literature review was thorough and included the most current and significant contributions to the field.

ERP implementations can fail when the information system implementation strategy does not align with the overall organizational strategy (Gupta, 2025). General systems theory provides specific propositions that enhance and clarify practitioners' comprehension of systems. This theoretical framework serves as a beneficial tool for those in the field, as noted by Carr-Chellman and Carr-Chellman (2020). These propositions elucidate (a) the influence of organizational design on the formulation and execution of strategies, (b) the role of codeveloped implementation projects in steering strategic direction, (c) the integral part project management plays in driving the execution of strategies, (d) the influence of rapid technological advancements on the evolution of strategies, (e) critical role of education in the adoption and execution of appropriate strategies, (f) the significance of organizational leadership in ensuring strategic alignment and (g) the fundamental importance of effective communication in the development and implementation of strategies.

General Systems Theory

General systems theory, as described in 1972 by von Bertalanffy, consists of a group of specific propositions that help understand systems in a way that improves and clarifies the understanding with significant outcomes for systems practitioners. It proves to be highly relevant within the scope of this study due to the intricate nature of ERP implementations. The successful integration of ERP systems necessitates a cohesive and strategic approach from all levels of the organization, particularly the business owners. These implementations demand a synchronized effort across various departments and functions, aiming to consolidate separate components into a unified and seamless operational framework. By adopting the principles of general systems theory, organizations can effectively align their disparate elements and processes, ultimately fostering a synergistic environment where each facet harmonizes with the larger system.

General systems theory is a broad and holistic field of study that probes into the intricacies of systems, whether they are artificial or inherent (von Bertalanffy, 1968). These systems are defined as cohesive collections of interrelated and interdependent components (Katrakazas et al., 2020). Within the framework of this theory, all systems possess distinct causal boundaries that delineate their operational scope. Furthermore, the dynamics of every system are significantly influenced by external factors, thereby highlighting the pivotal role of the surrounding environment in shaping system behavior and outcomes. Key attributes such as structure, function, and role are fundamental to characterizing a system, encapsulating its organizational framework and operational

essence. Additionally, the interconnectedness of systems is a central tenet of general systems theory, emphasizing the importance of exploring how systems interact with and impact one another within an interconnected web of relationships (Katrakazas et al., 2020).

When a system exhibits emergent behavior or interaction, it becomes more than just the sum of its individual parts. Altering one component within a system can affect that component, as well as the other elements and the entire system (Katrakazas et al., 2020). Barr (2013) emphasized that the entirety of a system holds greater significance than just the sum of its parts, with intricate connections between these parts serving a specific purpose. Conventional boundaries between the individual components become permeable (Barr, 2013). I deliberately adopted general systems theory due to its relevance in understanding complex systems like ERP implementations, where the conventional boundaries or departmental silos within an organization must merge to synchronize implementation strategies with the broader organizational objectives.

Understanding systems as intricate networks of interacting elements is essential. They are defined by three fundamental components: a structured framework delineated by interrelation rules, a defined purpose, and the imperative interaction with their surrounding environment to fulfill predetermined objectives (Katrakazas et al., 2020). These aspects offer a comprehensive view of system dynamics and their inherent complexities. By leveraging the precepts of general systems theory, the scholars underscored the importance of comprehending the composition and essence of a system.

This theoretical framework is particularly pertinent to the exploration of organizations, which, like systems, comprise various constituent parts, such as departments and operational processes. Thus, it becomes apparent that the intrinsic functioning of organizations can be comprehensively analyzed through a systemic lens, emphasizing the interconnectedness and interdependence of the distinct elements in achieving overarching goals and objectives.

Understanding a system is crucial for grasping its true meaning. When one first looks at individual pieces of a puzzle, the complete picture might not be immediately clear (Tadros, 2020). The pieces seem to be disconnected, with no obvious relationship. However, the real meaning of the image is not just the total of its parts. Instead, it is the comprehensive system that establishes the roles, deciding how and where each piece fits into the bigger picture. This perspective gives emphasis to the importance of understanding the system as one unit rather than just its individual components (Tadros, 2020).

General systems theory is also a comprehensive framework aimed at capturing the fundamental properties and interconnections that are inherent across all systems, irrespective of their unique structures or the fields in which they are analyzed (Jason & Bobak, 2022). By shedding light on the universal characteristics of systems, the theory provides a versatile platform for understanding and investigating a wide range of phenomena. The foundational principles serve as a cornerstone for exploring the intricate dynamics of systems, offering insights into their behavior and organization. Furthermore,

through the elucidation of key concepts and prominent laws and principles, the theory equips researchers and practitioners with a robust toolkit for exploring complex systems from a holistic perspective, transcending disciplinary boundaries, and fostering a deeper comprehension of the interconnected nature of systems in various contexts (Jason & Bobak, 2022).

The integration of IT strategies with overall business strategies is crucial for successful ERP implementations. Kane et al. (2015), in a survey of more than 4,800 respondents conducted by MIT Sloan Management Review and Deloitte, found that digitally maturing organizations distinguish themselves by integrating digital technologies broadly across the business, not just in isolated functions, and by fostering cross-functional collaboration to drive transformation. This alignment of digital and organizational strategy aligns with the principles of general systems theory, particularly in facilitating the permeation of ideas and strategies among diverse departments or business units. The integration of business strategies and fostering collaboration are basic aspects that contribute significantly to the effectiveness and success of ERP implementations within an organization (Kane et al., 2015).

Understanding ERP systems as sophisticated, cross-functional applications is essential for organizations. In pivotal research conducted in 2017, ERP systems were comprehensively defined as integrated applications where changes in any module reverberate throughout the system, affecting the entire organizational structure (Shao et al., 2017). Their findings highlight the need for organizations to adopt the general

systems theory framework in selecting and implementing ERP systems. This theory explains that the complex cause-and-effect relationships in ERP systems require high collaboration and interconnectivity across organizational boundaries. By embracing the general systems theory, organizations can navigate ERP system complexities, ensuring harmonious synchronization and optimal performance across different modules and departments.

The development of general systems theory has significantly influenced the study of complex systems. In their scholarly work, the genesis of general systems theory was extensively discussed, tracing its roots back to the 1950s when the von Bertalanffy embarked on developing this interdisciplinary framework (Cody et al., 2020). Citing a multitude of researchers across various disciplines, such as philosophy, engineering, mathematics, and science, von Bertalanffy laid the foundation for what would later become a significant theoretical construct in the study of complex systems. The scholars elucidated that the essence of von Bertalanffy's theory lies in the integration of universal principles into the understanding of a system, thereby emphasizing a holistic approach to analyzing and interpreting organizational structures. This insightful research highlights the efficacy of employing general systems theory as a robust conceptual tool for delineating the intricate dynamics inherent within the organizational entities under scrutiny.

In a more recent study, active systems are described as structures or components that actively participate in behaviors and processes or interact with each other within

formal contextual boundary constraints (Elgazzar et al., 2022). These active systems play a dynamic role in performing functions within a given context. Conversely, passive systems are structures and components that are processed within a system. For example, a computer program shows its active nature when it operates within the memory, executing tasks and commands immediately. However, the same program becomes passive when it is saved as a file on the hard drive, waiting for activation or processing. This distinction highlights the different states and functionalities that systems and components can display depending on their operational context and engagement with processes.

The interdisciplinary nature of systems theory is essential for understanding complex systems. In their study, Tramonti et al. (2019) emphasized that systems theory is intricately intertwined with various disciplines, encompassing machine logic, systems thinking, and systems engineering. Beyond these foundational elements, the scope of systems theory extends to include diverse fields such as geography, sociology, political science, economics, and psychology, with a specific emphasis on family systems therapy. Additionally, it amalgamates a wide array of ideas and concepts derived from ontology, physics, computer science, biology, and engineering. By drawing upon this vast range of disciplines, systems theory constructs a comprehensive framework that not only analyzes complex systems but also provides insights into the interconnectedness and interdependencies prevalent within them.

Complex adaptive systems is another conceptual framework that explores how systems of multiple interconnected components adapt and evolve in response to

environmental changes. (Holland, 1995). These systems self-organize, learn, and adapt without centralized control. Complex adaptive systems theory reinforces the relevance of interactions among components, which can lead to emergent behavior that is not predictable from the properties of individual components alone. This framework is beneficial for understanding dynamic and complex phenomena, such as ecosystems, economies, and social systems, where adaptability and evolution are vital factors (Holland, 1995). The study of complex adaptive systems involves analyzing patterns, feedback loops, and the role of adaptation in shaping system behavior (Holland, 1995).

General systems theory offers a more holistic and structured approach to understanding systems. Unlike complex adaptive systems, which focuses on adaptability and emergent behavior, general systems theory emphasizes the interrelationships and interdependencies among system components, providing a comprehensive framework for analyzing complex systems. General systems theory is particularly suited for studies like ERP implementations, where a clear understanding of the interactions between various organizational elements is crucial for success (von Bertalanffy, 1972). By applying general systems theory, researchers can better understand how different parts of the organization must work together to achieve a common goal, ensuring that the implementation process is cohesive and aligned with the overall organizational strategy (von Bertalanffy, 1972). This makes general systems theory a more appropriate framework for my study, as it provides a structured

approach to analyzing the complexities of ERP implementations and their impact on organizational efficiency.

General systems theory research emphasizes the fundamental principles that constitute the core of the theory (von Bertalanffy, 1972). First and foremost, it posits that a system is an integrated whole comprised of interconnected elements that work in harmony to achieve common goals. In the context of organizations, this theory asserts the idea that organizations themselves are complex systems composed of various components, such as departments, teams, and business processes, that function together as a unified entity. The theory also emphasizes the critical importance of these individual parts within the system collaborating and cooperating effectively to establish and maintain a sustainable ERP system. This collaborative interaction among the components of an organization is vital for the successful implementation and operation of an ERP system, ensuring that the organization functions as a cohesive and efficient entity.

Organizational Design

Change has a profound influence on the deployment of new systems. In a comprehensive study, Hornstein (2015) reviewed existing research to highlight this significant impact. His analysis underscored the importance of change management strategies in ensuring the successful implementation of new technologies within organizations (Hornstein, 2015). Hornstein articulated the notion that change is an inescapable consequence of system implementation. He highlighted the critical

importance of change management, asserting that the adept handling of these changes is a decisive factor in the ultimate triumph or failure of the project at hand. This comprehensive study serves as a testament to the complex dynamics of system integration and the necessity of strategic change management in navigating these waters. He also concluded that when organizational change is effectively implemented alongside the successful integration of an ERP system, a myriad of benefits can be realized. These benefits include but are not limited to an enhancement in the quality of deliverables, reduced costs, mitigated risks, heightened customer satisfaction levels, clearer and more defined solutions, as well as an improved comprehension of project scopes and schedules (Hornstein, 2015). This seminal study serves as a crucial reference point for gaining insights into the intricate relationship between change dynamics and organizational design.

The success ratio of ERP projects has been a topic of significant research. Mahraz et al. (2019), in a systematic literature review, found enlightening findings about ERP project outcomes. The study discovered that nearly three-quarters (75%) of these ERP initiatives were deemed unsuccessful by the companies implementing them (Mahraz et al., 2019). This surprising statistic emphasizes the challenges organizations face in achieving successful ERP deployments. The significant frequency of unsuccessful outcomes underscores the pressing need for a deeper understanding of the factors that are vital to the success of ERP implementations. The complexity of these systems and their implementation processes often contribute to this high failure rate (Mahraz et al., 2019).

By pinpointing and giving due attention to these critical success factors, which often include managing this complexity, organizations can drastically diminish the probability of failure and considerably augment their chances of successfully implementing ERP systems (Mahraz et al., 2019). This emphasizes the significance of understanding and managing the complexity inherent in ERP system implementation.

ERP implementations involve a complex interplay of technological and organizational interactions. In their 2020 study, Kraljić and Kraljić highlighted this intricate process. Their findings emphasized the multifaceted nature of ERP deployments, which require careful coordination between technological advancements and organizational change (Kraljić & Kraljić, 2020). Using data from other researchers, they determined that using agile engineering practices is essential for ERP implementations (Kraljić & Kraljić, 2020). They also found that identifying success factors in advance will result in a higher probability of an implementation going live. This research holds significant importance in elucidating the necessary strategies for the successful implementation of ERP systems within organizations. Gaining a comprehensive understanding of these strategies stands as a pivotal component of the overall study. By exploring the complexities of implementing ERP strategies, researchers strive to provide information that can guide businesses in effectively navigating the complexities associated with adopting and integrating ERP systems.

The complexity of information projects extends beyond technical challenges to include sociopolitical factors. Eftekhari et al. (2022), found that sociopolitical complexity

becomes more pronounced when project teams are composed of people with diverse backgrounds and varying levels of education. Their study revealed that this complexity can take many forms, encompassing complex political dynamics within the team (Eftekhari et al., 2022). Such complexities can stem from a noticeable lack of stakeholder commitment, which can create potential obstacles in the progress of the project. Additionally, user resistance to project implementation can exacerbate these challenges. A common problem often encountered is the lack of a shared understanding among project team members about the ultimate goals and objectives of the project.

When a project fails to align with an organization's broader strategic objectives, it may encounter numerous obstacles. Additionally, the project's success can be significantly undermined by conflicting priorities among stakeholders. It is crucial for project managers to strategically navigate these complex challenges and employ effective communication strategies to ensure the project's successful completion (Maylor & Turner, 2017). This research enhances our comprehension of the multitude of factors that impact the alignment of organizational strategy.

Successful ERP implementations depend heavily on effective project management. Wynn et al., (2024) emphasize the necessity of establishing detailed implementation procedures and operational support processes at the project's commencement to prevent the pitfalls of failed implementations, including pre-implementation, implementation, and post-implementation phases. In parallel, Aubry and Lavoie-Tremblay (2018) scrutinize the longstanding approach of modifying business

operations to suit project demands, advocating for a reversal of this trend. They argue that in an era where organizations are increasingly complex and perpetually evolving, it is imperative to adapt projects to fit the established business framework. Their findings also reveal a critical shortfall in IT management: a lack of comprehensive strategic insight and business awareness among those deploying ERP systems. The synthesis of these studies provides a deeper understanding of the profound impact that organizational structure has on strategic initiatives.

The integration of technology into educational institutions relies heavily on the contributions of IT staff. This was highlighted in a comprehensive case study by Carpenter and Agrawal (2018), which explored the pivotal role of IT staff in incorporating technology into a university's core operations. In their findings, they underscored the critical importance of IT professionals in facilitating successful technology integration within academic environments. Their research revealed that IT staff serve as critical facilitators in reshaping organizational design by exerting influence on various aspects, including company strategy, production processes, coordination mechanisms, and control systems. By actively participating in these areas, IT professionals contribute significantly to the overall effectiveness and adaptability of the organization. The study emphasized that as organizations embark on transformational journeys, initiatives aimed at fostering change within the organizational structure become imperative. In this context, IT emerges as a key component in the transformative process. Understanding the dynamics of change initiatives and their impact on organizational

design is paramount for achieving strategic alignment and ensuring the successful evolution of the organization, particularly in an increasingly digital landscape.

The integration of IT within academic institutions is crucial for enhancing operational efficiency and furthering innovation. Recent research highlights the importance of strategically aligning IT functions with overall organizational goals. By effectively leveraging technology, universities can improve teaching, research, and administrative processes, leading to better student experiences and institutional effectiveness (Ahriz et al., 2021). The findings of Carpenter and Agrawal (2018) and Ahriz et al. (2021) underscore the multifaceted interactions between technology implementation, organizational restructuring, and strategic objectives.

The successful implementation of IT-intensive programs significantly impacts organizational change by increasing the complexity of interconnected technological systems. This heightened complexity requires organizations to modify their management strategies to effectively integrate IT across various departments (Jiang et al., 2018). The study emphasizes the importance of change initiatives in achieving strategic alignment, highlighting the relationship between technological advancements, business transformation, and managerial policies. Understanding this relationship enables businesses to navigate the challenges of implementing change initiatives for long-term success and competitive advantage (Jiang et al., 2018).

Leveraging the strategic capabilities of employees is crucial for facilitating cultural change within social enterprises. In a comprehensive study, Eti-Tofinga et al.

(2018) found that encouraging employees to utilize their inherent knowledge and skills can create a conducive environment for cultural change. This approach enables employees to contribute more effectively to organizational goals, promoting a sense of ownership and engagement. Their study revealed that shifts in organizational culture often align with changes in business processes, even occurring without explicit managerial direction. This suggests that employees are capable of independently adopting new beliefs, values, and business practices. These findings provide valuable insights into the undercurrents of cultural change and its implications for organizational design, emphasizing the importance of empowering employees in the change process. This research deepens our understanding of how to effectively manage change processes within social enterprises (Eti-Tofinga et al., 2018).

The need for cultural change within organizations is crucial for effectively transforming organizational design. Ilmudeen et al., (2019) found that collaboration between IT and non-IT staff is essential during implementation projects for this transformation. Barna and Igna (2021) found that contemporary organizations must implement more effective information systems to support business functions and enhance operational efficiency. These findings provide substantial evidence that changes within an organization's structure have a significant impact on its design, drawing attention to the intricate relationship between organizational change and design. This highlights the need for strategic planning and the implementation of change to maintain effective and efficient organizational design. These studies contribute to the scholarly discourse on

organizational change and design, enriching our understanding of these complex dynamics in the field of organizational studies (Ilmudeen et al., 2019).

Achieving success and maintaining competitiveness in an organization requires a well-defined business strategy. Al-Surmi et al. (2020) emphasized that this business strategy must be supported by other organizational strategies that align with overarching business goals. Their empirical findings revealed a positive correlation between strategic alignment and organizational performance, indicating that strategic alignment enhances operational efficiency. This research adds valuable knowledge to discussions about strategic alignment, providing useful insights on how businesses can effectively coordinate their goals with information technology systems. By understanding this complex dynamic, organizations can improve their overall performance and maintain competitiveness (Al-Surmi et al., 2020).

Scholars investigating various facets of organizational design have confirmed the significant role that design factors play in influencing organizational strategies. These factors encompass the identification of necessary changes in organizational design to ensure the sustainable implementation of ERP systems. Additionally, the development of implementation procedures and the establishment of operational support processes are integral components of these design factors. This research emphasizes the importance of a strategic approach to organizational design in achieving successful ERP implementation and effective operational processes.

Codeveloped Implementation Projects

Collaboration is a crucial yet challenging aspect of implementation projects such as ERP initiatives. Researchers have found that these projects can be codeveloped as business projects with IT integrated for added value, highlighting the importance of collaboration between business and IT teams (Zare & Persaud, 2024). However, managing this collaboration can be difficult, as IT project managers must work closely with business process owners to implement changes effectively (Kane et al., 2015). The challenge of codeveloping projects with staff from different areas of expertise is significant because team members may have differing ideas and goals, complicating the process (Kane et al., 2015). These studies emphasize the difficulty in supporting codeveloped projects, which is critical for understanding how such projects can guide strategic initiatives. Recognizing these complexities can help organizations develop better strategies for managing collaboration in implementation projects.

Understanding the differential impact of aligned plans and shared understanding is crucial for IT project success. Using survey data, researchers explored how these factors influence IT-enabled business projects. Gemino et al., (2015) found that IT project managers face challenges in assimilating knowledge across the entire corporation, including business and leadership teams. This assimilation is crucial as IT projects require a comprehensive understanding of both IT and business needs. The alignment of this knowledge across the organization is essential for improving project performance and incorporating tactical knowledge through socialization and documentation. The study demonstrates how codeveloped implementation projects can effectively guide business

strategies, highlighting the need for strategic knowledge alignment within project teams (Gemino et al., 2015).

Horizontal integration between business process management and IT management is essential for achieving strategic alignment within an organization. Utilizing data from business processes and IT governance frameworks, supplemented by a case study, Rahimi, Møller, and Hvam (2016) highlighted this necessity. Their research demonstrated that business process designs, which articulate specific business requirements, generate technical specifications that facilitate system selection, configuration, and integration. This alignment of IT and business objectives is a critical outcome of the integration process. Their findings offer valuable insights into how co-developed implementation projects can effectively steer business strategies, emphasizing the importance of aligning technical and business goals (Rahimi, Møller, & Hvam, 2016).

Understanding the barriers to effective IT project management is crucial for improving organizational processes. A case study on a large financial institution revealed several factors that hinder the proper use of project management methodologies (Terlizzi et al., 2016). It was also highlighted that management practices driving IT-enabled business value must integrate both IT and business practices. Similarly, a study by Ko and Kirsch (2017) found that project managers often use a hybrid management approach due to the pervasive nature of technology within organizations. This hybrid approach is essential as IT project managers frequently oversee projects with business objectives.

These investigations are critical because they help us understand how implementations evolve together (Ko & Kirsch, 2017).

Strong teamwork is essential for successfully carrying out information system strategies. A comprehensive inspection at a banking institution revealed that a lack of collaboration can create divisions within an organization, counteracting each other and undermining overall objectives (Almalki et al., 2017). Similarly, research on critical success factors in IT projects identified the necessity for various segments of the organization to execute distinct tasks during project implementation. IT project managers who co-manage business and development projects frequently encounter numerous methodological issues (Fayaz et al., 2017). These findings highlight the potential challenges that can arise during the co-development and management of projects. Both studies emphasize the importance of strategic collaboration and effective management practices to navigate these challenges successfully (Fayaz et al., 2017).

The successful implementation of information systems is critical for every organization. Varajão (2018) conducted a study on the success factors of these projects, emphasizing the necessity of collaboration. This group effort includes a range of activities, such as compiling project requirements, business modeling, gap analysis, software selection, configuration, customization, deployment, and training. The study elucidates the indispensable role of collaboration in these projects, highlighting how strategic task distribution is crucial for success. The findings provide a comprehensive understanding of the complexities and nuances involved in the co-development of

implementations. These insights underscore the importance of a collaborative approach to effectively manage and execute information system projects (Varajão, 2018).

Business projects are primarily designed to achieve specific business objectives, while IT projects aim to meet distinct IT goals. According to Ford (2022), this distinction is evident in projects like ERP implementations, which focus on business objectives. He emphasizes that business projects differ from other types of projects due to this focus. Additionally, Ford (2022) highlights the importance of a harmonious integration of technical, organizational, and business expertise in codeveloped business projects.

Project management methods often prioritize time, cost, and quality above all other metrics, highlighting these factors' critical importance. Frefer et al., (2018) scrutinized these critical success factors and found that this prioritization often outranks the need for amalgamating expertise necessary for IT-enabled businesses. Their study emphasizes the significance of managing these three elements effectively to ensure successful project execution. The findings suggest that balancing these factors is crucial for achieving project goals and maintaining organizational efficiency. This research contributes valuable insights into the best practices for managing projects in various sectors, particularly IT-enabled businesses (Frefer et al., 2018).

Organizations are in a constant state of evolution, continually adapting to internal and external factors. In a study focusing on the application of institutional theories to the management of megaprojects, Biesenthal et al., (2018) noted that this perpetual state of flux has significant implications for the role of IT managers, as well as other

organizational managers and leaders. No longer confined to specific phases or aspects of project development, these key personnel are now deeply involved in every stage of the project lifecycle. Their influence and involvement span from the nascent stages of project planning, shaping the vision and direction of the project, through to the final stages of project execution, where they ensure that the project deliverables align with the initial objectives and meet the requisite standards of quality and performance. This comprehensive involvement highlights the pivotal role that these managers and leaders play in the successful realization of megaprojects (Biesenthal et al., 2018).

Efficient communication techniques are crucial for project teams aiming to learn from past experiences. Ramírez and Quarry (2019) identified a fusion technique that enables project teams to use data from previous projects to reflect and complete current tasks. This hybrid approach, which incorporates past data and diverse team members, evolves as the team becomes more experienced. Over time, additional steps, including more defined communication and evaluation processes, can be integrated. Similarly, leveraging collective knowledge allows for the creation of adaptable systems in cocreated projects (Shelley, 2020). These studies underscore the importance of hybrid methodologies and strategic communication in project management, highlighting the benefits of integrating past experiences and diverse expertise (Ramírez & Quarry, 2019; Shelley, 2020).

Researchers who have studied codeveloped implementation projects acknowledge the pivotal role of these projects in shaping strategic approaches. A critical aspect of this

process involves the assimilation of knowledge throughout the organization, which fosters a deep understanding of the precise requirements of both the information technology and business sectors. This understanding subsequently informs a hybrid decision-making approach, effectively bridging the gap between these two integral components of the organization. However, the process is not without its challenges. The potential for diversion due to a lack of collaboration when various groups collaborate is a significant concern. Additionally, the rapid and relentless evolution of technology introduces a level of complication that can be difficult to navigate. These gaps highlight the need for continuous improvement and adaptation in the implementation of co-developed projects.

Managing Implementation Projects

Project management plays a crucial role in counteracting resistance to technological shifts during information systems implementation. Hornstein (2015) explored this by detailing a systematic approach that blends information, expertise, tools, and methodologies to achieve project objectives. Complementing this view, Smits and Bowden (2015) argued that using a project management knowledge framework significantly benefits projects introducing new technologies, especially when focusing on transformational outcomes. They criticized traditional frameworks for being overly delivery-centric, leading to suboptimal success from the supplier's perspective. These traditional methods often fail to address the need for transformation adequately. Together, these studies underscore the importance of a comprehensive understanding of project

management and its impact on implementing effective strategies (Hornstein, 2015; Smits & Bowden, 2015).

The dynamic nature of Project Management Offices (PMOs) involves inherent instability and perpetual evolution. Bredillet et al., (2018) explored this phenomenon, finding a surprising lack of empirical evidence supporting the effectiveness of PMOs despite their widespread use in guiding technology projects. They suggest that organizations might achieve greater success by mapping their processes and fostering collaboration with PMOs rather than assigning leadership roles to PMOs. This approach can potentially enhance project outcomes and organizational efficiency. Their research is crucial in evaluating the true value of PMOs within the broader context of implementation strategies. These insights highlight the need for a more integrated and collaborative approach to utilizing PMOs in project management (Bredillet et al., 2018).

The application of project management knowledge frameworks to transformation projects reveals significant gaps. Cha et al., (2018) conducted a detailed investigation and found that the frameworks often fail to include transformational phases. This omission has far-reaching implications, affecting not only IT managers but also the broader management spectrum within organizations. Their rigorous analysis highlights the need for more comprehensive frameworks that address all phases of transformation. By identifying these gaps, the study highlights the importance of incorporating transformational phases to ensure effective project management and organizational success (Cha, Newman, & Winch, 2018).

Business process management is experiencing a significant paradigm shift. Klun and Trkman (2018) observed that the traditional centralized IT-driven approach is being replaced by a more department-specific management style. This shift, while important, has unintentionally led to the neglect of fundamental management disciplines. Consequently, gaps have emerged within project management practices. These insights are important in understanding the effects of evolving project management methodologies on implementation strategies. Recognizing these changes can help organizations adapt their approaches to maintain efficiency and effectiveness in project management (Klun & Trkman, 2018).

The impact of ERP implementation strategies on healthcare facilities was analyzed in a study published in *The Strategic Journal of Business & Change Management*. Bezuneh et al. (2021), analyzed how factors such as top management support, user training, and change management influence ERP adoption. They found that these factors play a significant role in shaping successful implementation outcomes. Their findings indicate that tailored strategies can substantially enhance both the adoption and effectiveness of ERP systems (Bezuneh et al., 2021).

Interdependence within project management is a critical theme, particularly in aligning organizational and product subsystems. Artto and Turkulainen (2018) identified the challenge of synchronizing these subsystems to enhance the design capabilities of related products. They emphasized that IT managers should critically evaluate the benefits of reprocessed organizational components. Such interdependence can

significantly impact product development and design capabilities. Their study highlighted the intricate link between organizational structure and product development, underscoring the need for strategic management of this interdependence. This research provides valuable insights into optimizing project management practices to align organizational and product goals effectively (Artto & Turkulainen, 2018).

Managing implementation projects is a complex and nonlinear process that requires different modes of learning and adaptation. The Implementation Research Logic Model (IRLM) has been developed to enhance the rigor and transparency of these processes, improving the specification, rigor, reproducibility, and testable causal pathways involved in implementation research projects. Smith et al. (2020) emphasized the importance of this model in their study. Similarly, De Mast et al. (2021) found that implementation often follows a punctuated equilibrium pattern, alternating between periods of incremental change and major organizational shifts. Their research highlighted the need for adaptive and dialectical learning in implementation, with 56% of events requiring the construction of new practices through these learning mechanisms. This underscores the dynamic nature of implementation processes and the importance of flexible, continuous learning to manage them effectively (Smith et al., 2020; De Mast et al., 2021).

The researchers conducting the studies on managing IT projects revealed that the strategic application of project management principles was instrumental in steering ERP implementation strategies. Their findings indicate the pivotal role of project management

in mitigating resistance to technological advancements during the rollout of information systems. However, the researchers also uncovered numerous deficiencies in the deployment of project management methodologies for driving such implementations. They noted that commonly employed project life cycles often failed to account for transformational elements, a critical oversight that could impede the evolution of business processes. Additionally, the research pointed out the inherent volatility of Project Management Offices (PMOs), which are subject to frequent shifts and changes, potentially affecting the stability and consistency of project governance. This comprehensive analysis stresses the necessity for a more integrated and transformation-focused approach in project management practices to support successful ERP implementations.

Rapidly Changing Technology

Digital initiatives and talent play a crucial role in organizational success. Research indicates that businesses achieve superior outcomes by cultivating digital capabilities. This involves not only adopting technology but also strategically integrating digital practices, fostering innovation, and nurturing a workforce that can excel in a digital landscape. Digital maturity is identified as a competitive necessity rather than a luxury. These findings emphasize the importance of developing and maintaining digital capabilities to remain competitive and achieve success (Kane et al., 2015).

Rapid technological evolution presents significant challenges for organizations. Research has shown that as organizations deal with ever-changing tools, platforms, and

paradigms, achieving digital maturity becomes increasingly critical. The environment is filled with ambiguity; new technologies emerge, old ones become obsolete, and the rules of the game shift unpredictably. This dynamic landscape means that even vigilant project managers often find themselves navigating uncharted waters. Understanding this evolving environment is essential for effective decision-making and strategic planning. These insights underscore the importance of staying adaptive and informed to successfully manage technological changes (Silva de Mattos et al., 2023).

In summary, both studies converge on a critical theme: rapid technological change. It is not merely about keeping up; it is about thriving amidst uncertainty, leveraging digital talent, and strategically adapting business approaches. As technology continues to evolve, it is important to incorporate agility, foresight, and a commitment to digital maturity to remain competitive in an ever-shifting landscape. This approach not only prepares organizations for current technological trends but also equips them to anticipate and respond to future innovations and challenges. By doing so, businesses can uphold a competitive advantage and guarantee longstanding success in a rapidly changing environment.

Understanding the nature of organizational changes, whether premeditated or emergent, is crucial for effective transformation. Smits and Bowden (2015) emphasized that managers should initiate feasible changes that offer the greatest benefits with the least risk and expenditure. In a related study, Altamony et al. (2016) highlighted the importance of managing various types of changes, particularly at the point of

implementing business processes. Both studies highlight the critical role of change management in leveraging technological dynamism to revolutionize business strategies. Managing these changes ensures that organizations can adapt and thrive in a constantly evolving environment. The integration of strategic change management practices helps organizations align their processes with technological advancements. These insights give emphasis to the need for a comprehensive approach to managing organizational transformations (Smits & Bowden, 2015; Altamony et al., 2016).

The relentless evolution of technology creates an environment of uncertainty, necessitating a consistent response from project teams. Hsu et al., (2016) found that organizations must stay in a state of perpetual change to keep pace with technological advancements. Effective communication about organizational change is critical to alleviating resistance, as suggested by Shrivastava et al., (2022). Understanding how technological changes induce uncertainties and managing these changes through communication is crucial for influencing business strategies. This knowledge helps organizations navigate technological shifts and adapt their strategies accordingly. Both studies emphasize the importance of proactive change management in response to evolving technologies.

The adoption and integration of information technology are strongly affected by external social dynamics. Hao et al., (2018) discovered that social impacts during and post-implementation can be challenging. They observed a preference for social learning over experimental learning among most companies. Early adoption combined with

practical education often leads to more successful and accurate implementations. This research highlights the importance of understanding the social implications of organizational change. The findings are pivotal for shaping business strategies and ensuring successful technology integration within organizations.

Understanding the origins and impacts of resistance to change is essential for effective organizational management. In their comprehensive study on user resistance to the implementation of information systems, Lin et al., (2018) traced the origins of resistance to change back to the late 1950s, a concept deeply rooted in the field of human behavior. Two decades later, this theory was embraced by management researchers who sought to inquire into the fundamental causes and repercussions of resistance, a subject that continues to be a focal point of research in the present day (Lin et al., 2018). In a parallel study centered on change, Martinsuo and Hoverfält (2018) discovered that the pace of organizational change tends to be swift and dynamic. This velocity necessitates the management of organization-wide agility to foster overall success (Martinsuo & Hoverfält, 2018). These studies offer invaluable insights into the genesis of organizational changes and the impact of these changes on the management of processes and the formulation of business strategies.

Research on rapidly changing technology has shed light on how the rapid advancement of technology can revolutionize the approaches taken for ERP implementation projects. Lin et al., (2018) found that an organization's culture significantly influences the adoption of new technology. Often, it is crucial to alter an

organization's existing mindset to incorporate any technology, including ERP systems, successfully. These researchers pinpointed that a lack of education, the ingrained culture of the organization, and resistance to change are all vital elements to consider when adjusting strategies to keep pace with technological evolution. These factors are indispensable in guaranteeing that the organization can effectively maneuver through the ever-changing technological terrain and sustain its competitive advantage.

Education

The significance of user education on the privacy and security facets of the Internet of Things (IoT) has been underscored, noting that such initiatives can spur corporate growth and transition and keep employees updated with swiftly evolving technology (Tawalbeh et al., 2020). In a parallel study, the realm of organizational culture and development was explored, unearthing a multitude of employee training methodologies that can foster organizational growth (Ibrahim et al., 2017). The efficacy of these training methods hinges on the individual needs and cultural contexts of the employees, as well as the broader organizational culture (Ibrahim et al., 2017). Collectively, these studies highlight the pivotal role of education in the judicious selection and implementation of strategies within organizations. Recent research further accentuates the importance of user education in IoT, particularly in relation to privacy and security concerns (Schuster & Habibipour, 2022).

The lessons learned process in project management reveals a prevalent trend among organizational leaders. This trend is the adoption of a hands-on approach to

education (McClory et al., 2017). The approach emphasizes learning through practical engagement with work routines, where formal processes are updated and then directly applied in practice. Educational methods within the context of industry highlight the effectiveness of involving users directly with technological changes rather than merely instructing them about the changes (Wanyama et al., 2018). Both studies underscore the value of hands-on learning, which plays a pivotal role in equipping users to make educated assessments when selecting and implementing business strategies.

IT project managers can apply their past experiences to educate the entire organization effectively. This approach highlights the importance of staying current with the latest management trends, evolving technologies, and societal norms. Similarly, mentoring by project managers fosters significant learning, as emphasized in a study on communication for social change. This method of employee education, through the transfer of knowledge from project managers, is essential in guiding users to select and implement appropriate business strategies. Overall, these findings stress the critical role of continuous learning and knowledge sharing in organizational success. Such practices ensure that project managers and their teams remain adaptable and well-informed in an ever-changing technological landscape (Müller & Kunisch, 2018; Ramírez & Quarry, 2019).

The importance of education in the successful adoption and implementation of suitable strategies cannot be overstated. It serves as a cornerstone in this process, guiding and informing the strategic decisions made by organizations. Despite its significance,

there is a noticeable gap in the educational leadership literature regarding this issue. This critical aspect has not received the attention it deserves, as highlighted by Carvalho et al., (2021). Their research points to the need for a stronger focus on educational leadership in strategic planning, bringing to light the vital role that education plays in navigating complex organizational changes. Addressing this gap can lead to more informed and effective strategic decisions, ultimately enhancing organizational success.

A systematic review of educational technology adoption has identified several key predictive factors, such as self-efficacy, subjective norm, perceived enjoyment, facilitating conditions, computer anxiety, system accessibility, and technological complexity. These findings demonstrate the critical role of education in shaping perceptions and acceptance of new strategies and technologies. Furthermore, the U.S. Global Change Research Program's 2022–2031 Strategic Plan emphasizes advancing scientific knowledge and engaging the nation to respond to global changes. This plan emphasizes the necessity for accessible and accurate information to inform decisions on mitigation, adaptation, and resilience. The convergence of these insights highlights the importance of knowledge transfer and education in navigating strategic changes. Understanding and addressing these predictive factors are essential for successful educational technology implementation and broader strategic planning efforts (Granić, 2022; U.S. Global Change Research Program, 2022).

The research on the significance of user education shows a consensus on the significance of education in the selection and execution of appropriate implementation

strategies. This was one of the key findings of their study. They emphasized that organizational leaders should involve employees in the change process through a hands-on educational approach. Additionally, they suggested that the best training methods could be determined by adhering to the organization's culture.

Leadership

Managing change requires a comprehensive approach that accounts for the complexities and uncertainties of organizational transformation. In their comprehensive guide to change management, Cameron and Green (2024) found that managers often tend to focus on outcomes that are easily measurable and clear-cut. However, they argue that this approach is largely ineffective when it comes to managing organizational change. Instead, they advocate for a more holistic approach that takes into account the complexities and uncertainties inherent in the change process. This approach, they suggest, leads to more successful and sustainable change outcomes. In comparison, Smits and Bowden (2015) stated, "A visionary leader sees an opportunity for competitive advantage, engages in futuristic, nonlinear, 'out-of-the-box' thinking, articulates his vision and obtains buy-in for a long-range strategic change that unfolds and must be reshaped over a multi-year period during which there are changes in the organization's political, economic, social, and technical environments" (p.11). It is imperative for all organizations to employ managers who possess both experience and expertise in managing rapid change. Additionally, these managers should be integral members of the organization's leadership team (Smits & Bowden, 2015). The significance of these

findings lies in their contribution to our understanding of leadership's role in the selection and implementation of corporate strategies.

Understanding the dynamics of power and politics is essential for successful organizational change. In their 2022 article on power and politics, Maes and Van Hootegem explored how different views on power and politics manifest in organizational change. Their findings indicate that political factors greatly influence whether organizational change succeeds or fails. They further highlighted that members of an organization, once equipped with political skills, are better positioned to steer through the challenges of organizational change. Additionally, in a 2023 study, Phillips and Klein presented a set of change management strategies and identified how frequently change management practitioners implement these strategies in practice. They suggested that strategies related to communication, stakeholder involvement, encouragement, organizational culture, vision, and mission should be used when implementing organizational change. This research is crucial in comprehending the role that leadership assumes in the selection and implementation of corporate strategies. The significance of these findings lies in their contribution to our understanding of leadership's role in the selection and implementation of corporate strategies.

Leadership plays a crucial role in projects that implement technological changes. Effective leaders have the ability to adapt the business to align with new processes rather than altering the processes to fit the existing business structure. This evolving approach to managing change highlights the significance of strong leadership. Studies have shown

that leadership is vital in all stages of project development, emphasizing its importance in corporate strategies. Understanding the role of leaders in these processes is essential for successful organizational change and development. These insights underscore the need for leaders to be adaptable and proactive in guiding their organizations through technological transformations (Aubry & Lavoie-Tremblay, 2018; Biesenthal et al., 2018).

Leadership is pivotal in managing resistance to change, particularly when leaders foster employee participation in the change process. The critical role of leaders in instigating change is highlighted by their ability to mitigate resistance effectively. Additionally, a key responsibility of organizational leaders is to enable cultural transformations within the organization. These insights underscore the efficacy of leadership in formulating and implementing corporate strategies. This is especially true when leaders are managing change in the framework of Enterprise Resource Planning (ERP) implementations. Understanding these roles and responsibilities helps in appreciating the broader impact of leadership on successful change management (Zainol et al., 2021).

Organizational leadership plays a vital role in ensuring strategic alignment, which is vital for the successful implementation of organizational strategies. A study by Ateş et al. (2020) highlighted the importance of visionary leadership at all levels, particularly middle and lower-level managers, in affecting their teams' strategic commitment. However, the study also revealed a potential dark side to visionary leadership. The study indicated that if a team manager's visionary leadership is not in strategic alignment with

the CEO, it could potentially undermine the team's strategic consensus, subsequently leading to a decrease in the team's commitment to the strategy (Ateş et al., 2020).

In the context of a large healthcare system, research has shown that the consistency of leadership effectiveness across hierarchical levels significantly influences the implementation of a strategic initiative. This implies that for significant performance improvement to occur, leaders' effectiveness at different levels should be considered collectively (O'Reilly et al., 2005). Likewise, leaders must focus their strategies on driving customer value and weave those strategies into everyone's daily work. His method guarantees that strategic objectives are formulated not in isolation but through a cooperative conversation involving top executives, middle-level managers, and frontline staff (Mittal et al., 2023).

The research findings brought to light the critical role that organizational leadership plays in aligning implementation strategies. This is not just a peripheral factor but a central driving force that can determine the success or failure of strategic initiatives. One of the key insights that emerged from the study was the indispensable need for managers who are not only experienced but also have a proven track record in managing rapid change. Navigating through change is not just about reacting to new situations but proactively anticipating and preparing for them. This is vital as it equips the organization with the agility to respond promptly and effectively to evolving circumstances, thereby minimizing disruption and maintaining operational continuity.

The importance of having leaders who are adept at aligning the business with its processes was evident in the research. This is a shift from the traditional approach of modifying processes to fit the business. Leaders who can realign the business to its processes demonstrate a deep understanding of the organization's core functions and the interdependencies between different units. This approach cultivates an environment of adaptability and quick decision-making within the organization. It ensures that the business is not just reacting to changes in the marketplace but is also capable of anticipating and preparing for them.

Communication

ERP systems play a fundamental role in streamlining organizational processes and enhancing efficiency. However, successful ERP implementation remains complex and often fraught with challenges. Recent research sheds light on the critical importance of communication during ERP projects, offering valuable insights for practitioners and organizations. Haddara and Elragal (2015) highlighted a specific difficulty associated with ERP implementation: a lack of open communication. Their study emphasized that effective communication is essential for overcoming barriers and ensuring successful ERP adoption.

The successful implementation of ERP systems relies heavily on proactive and open communication led by IT professionals. This type of communication is essential for facilitating knowledge exchange and aligning stakeholder expectations (Almajali et al., 2016). The role of IT professionals as key facilitators in ERP projects is critical. Their

ability to communicate effectively significantly influences the success of these implementations. By fostering a collaborative environment, IT staff can bridge understanding gaps and ensure all stakeholders are on the same page (Almajali et al., 2016). These practices are vital for achieving project success and meeting organizational goals (Almajali et al., 2016).

The researchers also highlighted the importance of IT staff in promoting open communication during implementations. Their active participation ensures that project goals, milestones, and potential challenges are communicated transparently across the organization (Almajali et al., 2016). Effective communication during ERP implementation has a direct impact on corporate strategies. Clear communication channels enhance strategic alignment, reduce resistance to the new system, and speed up its adoption (Almajali et al., 2016). In this context, communication is not just a tool; it is a strategic enabler.

Communication holds strategic value in organizational implementations. Its influence extends to change management, user acceptance, and project outcomes (Almajali et al., 2016). Prioritizing communication leads to smoother transitions within the organization. This approach facilitates higher user acceptance and successful implementations. Effective communication fosters a collaborative environment, bridging understanding gaps among stakeholders. Consequently, organizations are better aligned to achieve their project goals and meet strategic objectives (Almajali et al., 2016).

Effective communication remains a cornerstone of successful ERP implementation. The evolution of ERP systems, as noted by Zerbino et al. (2021), underscores the ongoing importance of communication. For these systems to succeed, organizations must focus on planning effective communication, engaging stakeholders, and establishing feedback loops.

These elements are important for steering the complexities of ERP implementations. Additionally, there is a need for future research to explore how communication strategies impact organizational culture. Such studies will shed light on the outcomes of ERP systems within ever-changing business landscapes. Understanding the interplay between communication and organizational culture can provide valuable insights for enhancing ERP implementation processes (Zerbino et al., 2021).

Understanding the importance of communication is crucial during the implementation of an ERP system. It is essential for navigating the complexities that arise. Recent studies provide valuable insights that organizations can use. These insights help foster collaboration and achieve strategic objectives. Likewise, effective communication serves as the linchpin that aligns team efforts with the overarching vision of the ERP project, ensuring a unified approach toward success. In a study on the role of absorptive capacity, communication, and trust in ERP adoption, Mayeh et al., (2016) stated that many ERP system users lacked sufficient technical knowledge for using the system, which made communication and engagement significant for the success of an ERP implementation project. Further, they noted that ERP systems typically require many

more customizations than most other systems, making user participation vital (Mayeh et al., 2016). This study is also important in understanding how communication influences the development and implementation of corporate strategies.

A comprehensive communication strategy is crucial for the success of IT projects. The necessity of a thorough communication plan is emphasized by Bragantini and Licciardi (2017), who argue that it is essential for project success. Complementing this perspective, Maylor and Turner (2017) advocate for a communication plan that prioritizes formal change communications directed at stakeholders alongside improving communication throughout the organization. The convergence of findings from these studies underscores the importance of a deliberate communication strategy. This strategic approach supports the development and implementation of organizational strategies and contributes significantly to the overall success of IT projects (Bragantini and Licciardi, 2017; Maylor & Turner, 2017).

In researching core roles in managing projects, it has been found that when communicating technological changes organization-wide, stakeholders needed to devise and continually use agreed-upon terminology. Communication became less complicated and more natural to deliver when recipients knew and understood the terms being used (Zwikael & Meredith, 2018). Recent research has further emphasized the importance of effective communication in project management. For instance, a study by Zwikael et al., (2023) identified key project management concepts that stakeholders should understand to improve communication. This research on communication during the management of

projects is also important in understanding how communication helps with the development and implementation of strategies.

The researchers' comprehensive analysis emphasized the pivotal role of communication throughout the entire lifecycle of strategy development and implementation. Clear and effective communication serves as the linchpin for successful execution. In summary, effective communication is the glue that binds strategy, execution, and organizational success. By promoting clarity, alignment, and shared understanding, organizations can navigate complex landscapes with confidence.

Transition and Summary

In this qualitative multi-case study, I explored the strategies that IT managers employ to implement ERP systems. The initial section offers an overview of ERP systems. ERP systems are instrumental in assisting organizational leaders in consolidating their supply functions and operations, which in turn optimizes business processes and impacts the dissemination of information across the entire organization (Caldwell and Anderson, 2021). However, leaders may encounter obstacles when introducing a new IT system. Specifically, complications such as increased expenses and prolonged delays can occur when shifting from obsolete software to ERP systems (Katu, 2020). In the current fast-paced and competitive market, leaders are obligated to update their technology to preserve their products and services consistently (Philip, 2021). Alterations in business operations can result in leaders surpassing their annual

budgets by millions of dollars in efforts to modernize existing ERP systems or introduce new ones (Stone, 2021).

Section 1 of the study primarily focused on the need to understand the strategies necessary to incorporate all aspects of the business when adopting ERP systems. It emphasized the use of a qualitative research design as the most effective approach to investigate the essential strategies for successful ERP implementation and to prevent potential failures. Additionally, this section presented the research questions, the qualifications of the participants, and the location of the study. It also incorporated a discourse on the implications of social change and the importance of the study, thereby elucidating the rationale behind this research. A comprehensive literature review on ERP processes, strategies, and design was also included and serves as the foundation for the study.

Section 2 includes the purpose statement, role of the researcher, participants, research method and design, population and sampling, ethical research considerations, data collection instruments, data collection techniques, data organization techniques, and the reliability and validity of the study. Each of these components is crucial for framing the research process and ensuring thoroughness. The third and final section of the study is dedicated to presenting the findings. This includes a detailed breakdown of the data collected, an interpretation of the results, and a discussion of the implications.

Section 2: The Project

Purpose Statement

This study was a qualitative multicase analysis focusing on the strategies IT managers use for successful ERP system implementation. The focus was on exploring these tactics in detail, addressing their intricacies and the challenges encountered during the process. Additionally, the analysis covered the solutions devised by IT managers to overcome these challenges. Ultimately, I provides a comprehensive view of the practical aspects of ERP implementation from the perspective of those managing the process.

The demographic focus was on IT managers employed in small businesses located in central Pennsylvania. Managers at these businesses have successfully implemented new ERP systems within the past 5 years. This makes them ideal subjects for this study, as they provide a rich source of relevant data. The selection of this specific demographic aims to offer a concentrated and pertinent viewpoint on the challenges and triumphs linked with ERP implementation in comparable business settings.

The study includes data from IT managers who have successfully navigated the complex process of ERP implementations. These individuals, with their extensive experience and unique insights, are invaluable contributors to the study. Their firsthand knowledge and understanding of the practical aspects of ERP implementation, from planning and design to execution and post implementation

evaluation, provide a comprehensive view of the process. Their active participation in the study is not just a contribution but a cornerstone of the research.

The research is intended to serve as a resource for IT managers, providing them with a shared perspective on ERP implementation strategies. The primary objective is to arm these professionals with valuable knowledge and insights that can steer their own efforts in implementing ERP systems. By disseminating the experiences and tactics employed by those who have successfully traversed this complex process, the study aspires to bolster the overall success rate of ERP implementations. This will then benefit the wider IT community.

The data collected from these IT managers substantially enriches the substance of the study. It offers a detailed understanding of ERP implementation strategies, casting light on the methodologies that have proven effective and those that have not. This in-depth exploration not only expands the study but also amplifies its pertinence to a broad spectrum of audiences, spanning both the academic realm and the industry sector. This method connects theoretical concepts with practical applications, providing useful insights for real-world use.

The implications of this study extend beyond the realm of ERP implementation. The findings could potentially lead to an increase in volunteerism opportunities if the implementation strategies result in improved organizational strategic alignment. This, in turn, could lead to more structured work environments,

thereby enhancing productivity and efficiency. As a result, the findings of the study have the potential to contribute positively to social change.

Role of the Researcher

In a qualitative case study, the researcher primarily collects and analyzes data. They define the scope of the study, identify the case or cases to be studied, and determine the aspects to investigate (Gaillet & Guglielmo, 2014). The researcher gathers detailed data from multiple sources, including interviews, observations, documents, and physical artifacts. Data are approached with an open mind, avoiding predetermined ideas or biases that could influence the analysis (Tomaszewski et al., 2020). The researcher presents the findings in an unbiased and balanced manner, accurately representing both the data and the participants' perspectives. They respect the rights and dignity of the participants, obtain informed consent, ensure confidentiality, and avoid causing harm (Tomaszewski et al., 2020). This ethical approach aligns with the principles outlined in the Belmont Report, which emphasizes respect for persons, beneficence, and justice. To mitigate bias and view data from a personal lens, the researcher engages in reflexivity, continually reflecting on their perspectives and potential influences on the research process.

In qualitative studies involving interviews, the researcher uses an interview protocol to ensure consistency and reliability in data collection (Elhami-Khoshnevisan & Khoshnevisan, 2022). The rationale for an interview protocol is to provide a structured but flexible framework that guides the interview process, allowing for in-

depth exploration of the participants' experiences while maintaining focus on the research objectives (Tomaszewski et al., 2020). The researcher interprets the data, constructs a narrative to describe the case, and provides an analysis of the case within its context (Tomaszewski et al., 2020). They use multiple sources of data, methods, investigators, or theories to corroborate the findings, a process known as triangulation (Tomaszewski et al., 2020). The researcher's role in a qualitative case study is not to prove a predetermined theory but to provide a deep understanding of the case in its real-life context (Tomaszewski et al., 2020).

Participants

I gathered data by purposefully selecting participants with relevant knowledge of the study topic and whose insights could enrich the research. Ames et al. (2019) emphasized the value of deliberate participant selection in qualitative studies to ensure meaningful contributions. Following this guidance, I formally requested permission from the appropriate authority within the selected organization to access potential participants. Crossman (2020) noted that identifying an adequate number of respondents is essential for high-quality data collection. In line with this, I identified participants who demonstrated proficiency in ERP system implementation within small businesses in central Pennsylvania, specifically those that have adopted new ERP systems within the past 5 years. This strategy is designed to align participant expertise with the overarching research question, thereby enhancing the relevance and depth of the data collected.

Research Method and Design

Research methodologies are a fundamental aspect of any study. They can be fundamentally classified into three categories: qualitative, quantitative, and mixed methods (Bell et al., 2022; Creswell & Poth, 2021; Johnson et al., 2021). Each of these methods has its unique strengths and is chosen based on the nature of the research question and the type of data required. Understanding these methods is crucial for any researcher or scholar. Additionally, a solid grasp of these methodologies enables researchers to design studies that are both robust and reliable (Creswell & Poth, 2021). This foundational knowledge also helps scholars critically evaluate existing research and contribute new insights to their respective fields (Bell et al., 2022).

Research Method

The qualitative research method is primarily exploratory in nature. It focuses on understanding concepts, ideas, or experiences from the viewpoint of the participants (Creswell & Poth, 2021). This approach is especially useful when the researcher plans to capture the richness and complexity of a phenomenon that cannot be easily quantified or measured. It provides a deep understanding of the participants' experiences and perceptions. Additionally, qualitative methods allow researchers to uncover unexpected themes and insights that may not have been initially anticipated (Creswell & Poth, 2021). This method is often employed in social sciences, humanities, and fields where contextual depth is critical.

On the other hand, the quantitative research method is grounded on the measurement of numbers or amounts. It is an applicable phenomenon that can be expressed in terms of quantity (Bell et al., 2022). This method involves the collection of numerical data to explain, predict, and/or control phenomena of interest. It is typically used when the research question is clear, specific, and measurable. Furthermore, quantitative methods provide the ability to test hypotheses and establish causality through controlled experiments and statistical analysis (Bell et al., 2022). This method is ordinarily used in natural sciences, economics, and other disciplines where precise measurement is essential.

Mixed-methods research, as the name suggests, combines both qualitative and quantitative approaches. This method enables a thorough analysis by leveraging the advantages of both qualitative and quantitative methods (Johnson et al., 2021). This approach is particularly useful when one type of data can be supported or supplemented by the other type. It provides a holistic view of the research problem. Additionally, mixed-methods research can enhance the validity of findings by triangulating data sources (Johnson et al., 2021). This integration offers a more refined understanding of complex research questions.

For this study, the views or opinions of the participants are not known in advance and cannot be quantified. In such a scenario, a qualitative approach is most appropriate as it allows for an in-depth exploration of the participants' experiences and perceptions (Creswell & Poth, 2021). This approach can uncover rich, detailed insights that

quantitative methods might overlook. Neither a quantitative nor a mixed-methods approach would have been suitable in this case, as there are no quantifiable measures. Using qualitative methods also enables the researcher to adapt to the participant's responses and delve deeper into emerging themes. Therefore, the qualitative methodology was the best suited for this research study.

Research Design

Expanding on the case study design, which is well-suited for exploring complex, real-world issues within a bounded system, I employed a complete approach to investigate ERP implementations. A case study approach is particularly practical for investigating ERP implementations because it allows for a holistic exploration of the interactions, decision-making processes, and contextual influences that shape outcomes (Zerbino et al., 2021). Since ERP systems involve multifaceted integration efforts across organizational units, observing managers' experiences through a case study method enables a detailed assessment of factors contributing to success (Mahmood et al., 2023). This design offers flexibility in gathering rich qualitative data, helping uncover patterns and nuances that would be difficult to quantify or capture through other methods.

For this qualitative case study, semistructured face-to-face interviews and document analysis served as the primary data sources. Interviews provided firsthand insights into managers' perceptions of ERP implementation challenges, decision-making processes, and the strategies that influenced project success. Document analysis supplemented these findings by offering additional perspectives from internal reports,

implementation guidelines, and performance evaluations, strengthening the credibility and depth of the research. To ensure that responses reflect recent experiences, participants consisted of IT managers who completed an ERP implementation within the last five years, which allowed the study to capture relevant developments in ERP technology and organizational practices.

Justification for the Case Study Approach

Alternative research designs were considered but ultimately deemed less suitable for the study's objectives. Phenomenological research, which focuses on understanding individuals' lived experiences, was initially explored as a potential option (King, 2020). This method typically involves deep, reflective accounts of personal encounters with a phenomenon, making it useful for exploring emotional and cognitive responses. However, the primary focus of this study was on organizational processes and comparative evaluations of ERP implementations rather than an individual's personal experience of the system. Additionally, phenomenological research often requires a smaller, homogenous sample, which did not align with my aim of analyzing experiences across multiple managerial perspectives and organizational contexts (see King, 2020).

Similarly, narrative research was assessed but found to be unsuitable due to its emphasis on storytelling and personal accounts over time. While narrative designs allow researchers to construct detailed, chronological depictions of an individual's experience, they rely heavily on autobiographical or biographical information, often derived from secondary sources (Creswell & Poth, 2021). This approach may lack the real-time

specificity needed to analyze how ERP implementation strategies evolve in different organizational settings. Additionally, narrative designs tend to focus on a limited number of cases, restricting the breadth of insights that can be gathered. Given the need for comparative and systemic analysis, neither the phenomenological nor the narrative approach was selected for this research (Zerbino et al., 2021).

Ensuring Data Saturation

To ensure data saturation, I employed multiple strategies to verify the completeness and reliability of findings. First, interviews were conducted until new themes and patterns ceased to emerge, signaling that the data sufficiently represented diverse managerial perspectives. This process ensures that no new insights remain undiscovered and strengthens the depth of qualitative analysis (King, 2020). Second, document analysis provided additional validation, allowing researchers to cross-check interview responses against organizational records, implementation reports, and industry guidelines. By integrating multiple sources, triangulation enhances the credibility of findings, reducing the potential for bias and ensuring a comprehensive understanding of ERP implementation experiences (Zerbino et al., 2021).

Thirdly, iterative coding and thematic analysis was performed on the interview transcripts to identify patterns across participant responses systematically. This approach ensured that data collection remains rigorous and exhaustive, contributing to a well-supported set of conclusions. Using multiple validation techniques, such as triangulation and iterative thematic analysis, strengthens the reliability of qualitative data and reduces

the likelihood of incomplete findings (Menon, 2020). These methods provided a comprehensive and credible analysis of ERP implementation experiences, accurately representing diverse managerial perspectives (Mahmood et al., 2023).

Population and Sampling

Purposeful sampling involves selecting participants based on their relevance to the research question, ensuring rich, context-specific insights (Ames et al., 2019). As Andrade (2024) noted, while this approach limits generalizability beyond the subpopulation studied, it remains a valuable strategy when the goal is to deepen understanding rather than make broad statistical inferences. This study includes a focused sample of information technology managers who have been involved in ERP system implementations. Using purposeful sampling, I selected five knowledgeable participants to engage in semi-structured interviews. While some researchers, including Guest et al., (2020), proposed a method for assessing and reporting thematic saturation in qualitative research that recommends an average of 13 interviews to reach saturation, other disagreed. For example, Andrade (2024) emphasized that while a larger sample size improves accuracy and representation, there comes a point where the increase in accuracy becomes small and not worth the effort and expense. It is essential to strike a balance between the richness of data and the feasibility of the study. Johnson et al. (2021) also suggested that the specific context and goals of the research should guide decisions on sample size. Additionally, Lakens (2022) suggested that sample sizes can be justified based on resource constraints and the specific context of the study. Therefore, six

participants are sufficient to provide rich, detailed data while maintaining the study's feasibility.

Participants had at least 5 years of experience in roles that include managing IT staff, as expertise in ERP implementation is crucial for ensuring successful adoption. The participants' expertise was grounded in implementing ERP solutions. Initial contact occurred via email, followed by subsequent interactions through email, face-to-face meetings, or telephone conference calls. Participants had at least five years of experience in roles that include managing IT staff. Functional use requires business process knowledge and interaction with ERP system users, while technical knowledge encompasses system configuration, development, and hardware considerations. Participants engaged in semistructured interviews, fostering open-ended discussions during face-to-face meetings in comfortable, distraction-free settings.

The initial interview sessions were thoughtfully structured to ensure brevity while fostering substantive engagement. Based on the insights of Elhami-Khoshnevisan and Khoshnevisan (2022), I adopted a maximum interview length of 30 minutes to maintain efficiency. With participants' informed consent, the interviews were recorded, capturing both spoken content and nuanced expressions. The transcription process was completed within a 3-day window and yielded accurate and comprehensive transcripts. A transcript was offered to participants for their review and input. Prior to the interview process, I conducted background inquiries with potential participants to contextualize their professional experiences.

Ethical Research

In qualitative research, ethical considerations take center stage, particularly when exploring human experiences, emotions, and perspectives. The Belmont Report, a foundational document, provides essential guidance for researchers working with human participants. It outlines three core ethical principles: Respect for Persons, Beneficence, and Justice (Pritchard, 2021). These principles shape ethical perspectives in research involving human subjects. The Belmont Report emphasizes the distinction between research and clinical practice, providing a firm basis for ethical decision-making in qualitative studies. Researchers should uphold these principles to maintain trust, protect participants, and advance knowledge (Pritchard, 2021).

In adhering to ethical practices, after approval by the Institutional Review Board (IRB), participants received a consent form, signifying their voluntary participation in the study. The guidelines emphasized that involvement was entirely optional and outlined the steps for withdrawal. The consent form provided comprehensive information, including the study background, procedures, the researcher's contact details (telephone number and email address), risks, and benefits. Participants acknowledged receipt of the form via email, reaffirming their voluntary engagement. All data collected will remain confidential. Each participant was assigned a distinctive number to ensure anonymity. If a participant wanted to withdraw, they could send an email expressing their desire without penalty. No rewards or incentives were offered for participation. In accordance with IRB guidelines, the forms and documents are securely stored and will be kept for five years,

after which I will personally destroy physical copies, erase recordings, and delete digital files from local storage.

Data Collection

Instruments

In qualitative studies, the researcher holds a key position in guiding the process and analysis, with interviews being a primary method for data collection, especially in single-case studies (Smith & Davis, 2020). Once Institutional Review Board (IRB) approval was obtained and participants' consent was secured, interviews were conducted, ensuring alignment with the research questions to guide the inquiry (Johnson, L., 2021). Interviews remain a preferred tool for data collection in qualitative research due to their capacity to provide depth and detail. The richness of data obtained through interviews often provides valuable insights that are essential for the depth of understanding in qualitative analysis (Brown, 2020). This approach enables an in-depth exploration of participants' experiences, capturing the complexity and variability of human behavior and thought processes. The comprehensive insights gained from interviews can significantly enhance the quality and robustness of the research findings.

In my qualitative research, I incorporated member checking as a strategy to enhance the validity and credibility of the interview data, a technique supported by the works of Smith & Davis (2020) and Johnson, L. (2021). This process involves presenting the participants with a summary of their responses for verification, allowing them to confirm or correct the information, thereby aligning with the research's integrity, as

emphasized by Brown (2020). The participant's ability to review and amend their responses ensured that the data accurately reflects their perspectives and experiences, contributing to the study's overall credibility. This approach, rooted in the methodologies of established researchers, provided a robust checkpoint for the quality and reliability of the information gathered during the interviews. Using member checking enables participants to actively verify the accuracy and credibility of information, ensuring that it aligns with the context and is accurately transcribed (Johnson, L., 2021).

A structured approach in qualitative research significantly bolsters the reliability of case study results. This principle is echoed in the case study protocol utilized in the study on effective ERP implementation strategies. A meticulous case study database was curated, including a variety of materials such as detailed interview notes, verbatim transcripts of audio recordings, and both initial and revised drafts of the study's findings (Brown, 2020). The availability of this case study database to other scholars and investigators ensures a transparent exploration of the evidence and resources that form the basis of the study's conclusions. Furthermore, it allows for replication of the study by providing a clear and detailed roadmap of the research process. The use of a well-organized database promotes rigor and accountability in qualitative research.

Data Collection Technique

After obtaining IRB approval (IRB approval number 10-30-25-0640601), I proactively engaged with potential participants by reaching out to colleagues within professional organizations to which I belong. Specifically, I connected with members of

Women in Technology and the PMI Local Keystone Chapter, as well as utilized my LinkedIn network. Afterward, I conducted background checks with these potential participants to contextualize their professional experiences. Once I identified individuals who met the study criteria, I extended personalized invitations via email and ensure participants are fully informed about their rights throughout the interview process. Upon receiving signed consent forms from participants, I scheduled and conducted interviews to collect the necessary data.

The interview questions in Appendix A centered on the overarching inquiry ‘What strategies do IT managers employ for ERP system implementation?’, helped guide the data analysis. According to Coleman (2021), triangulation is a quality check for researchers to ensure that the research is disciplined and not based on intuition. In case study research, triangulation allows the researcher to verify the validity of the study. Coleman (2021) suggests using methodological triangulation as a strategy for data collection, as it can help improve the study's validity. By including multiple data sources, such as interviews, documents, and observations, researchers can cross-verify findings and enhance the robustness of their conclusions.

The advantage of this method lies in its ability to minimize bias and enhance the credibility of research results. By employing this approach, researchers can ensure that their findings are more reliable and valid. However, while interviews can offer profound insights and a deeper understanding of the subject matter, they also come with their own set of challenges. Interviews may introduce interviewer bias, where the interviewer's own

beliefs and attitudes could influence the responses. Additionally, conducting interviews requires a significant investment of time and resources, which can be a considerable constraint for many research projects (Goyes & Sandberg, 2024). Despite these limitations, interviews remain a valuable tool for capturing nuanced perspectives that other methods might overlook. Additionally, when combined with other data collection techniques, interviews can enrich the overall research design and provide a more comprehensive understanding of complex issues (Creswell & Poth, 2021).

Data Organization Techniques

After obtaining signed consent forms from each participant, I conducted interviews via Teams and transcribed them into Microsoft Word documents. Using Dovetail in connection with Teams helped me with the research analysis phase by facilitating the classification of data into categories and helping to identify themes. This step ensured that the data were organized and analyzed in a consistent manner, enhancing the reliability and validity of the research findings. Next, I transcribed the interview recordings into written text and organized the data based on topics and the participants' answers to the research questions. Finally, I will securely store all information and consent forms for a period of five years. After this duration, I will destroy the information.

Data Analysis

The data analysis process for this qualitative case study employs thematic analysis, a method useful for finding patterns and themes within qualitative data (Mwita,

2020). This approach aligns with the research design, focusing on the strategies IT managers use for ERP implementation. The analysis incorporates triangulation to ensure the validity and reliability of the findings by cross-validation of data from multiple sources (Mwita, 2020). This comprehensive approach allows for a distinction of the diverse strategies employed by IT managers. By systematically coding and categorizing the data, researchers can reveal underlying themes and insights. This method safeguards a comprehensive exploration of the various factors influencing ERP implementation, leading to a more nuanced understanding of the subject matter.

The data analysis process begins with the transcription of interviews and focus group discussions, followed by coding using NVivo software (Kimberling, 2020). NVivo facilitates the organization and categorization of data, allowing for easy identification of recurrent themes and patterns. The coding process involves both open coding to generate initial themes and axial coding to refine and relate these themes to the research questions (Kimberling, 2020). This structured approach ensures that the analysis remains systematic and comprehensive. Additionally, NVivo's visualization tools help in mapping relationships between themes, providing deeper insights into the data.

Once the themes are identified, I focused on correlating these themes with existing literature and the theoretical/conceptual framework (Awad et al., 2020). This step ensured that the findings are grounded in established knowledge while also contributing new insights. The analysis also incorporated recent studies published since the proposal, ensuring the research is up to date (Awad et al., 2020). By integrating recent literature,

the study maintains its relevance and rigor. In addition, this approach allows for a comprehensive comparison between the current findings and prior research. This not only highlights the study's contributions but also identifies any gaps or inconsistencies in the existing body of knowledge.

Reliability and Validity

Reliability

The assessment of reliability and validity plays a crucial role in qualitative research, ensuring the quality and credibility of the research findings. To achieve reliability, researchers must maintain consistency when formulating questions during the data collection process (Coleman, 2021). By drawing data from diverse sources, researchers enhance the robustness of their study and reduce potential ambiguities. Additionally, the technique of triangulation, where multiple methods or data sources are used to corroborate findings, further strengthens the reliability and validity of qualitative research (Coleman, 2021). Triangulation helps cross-verify the data collected, thereby increasing confidence in the results. Coleman (2021) also highlights the importance of documenting the research process meticulously to ensure transparency and replicability. This approach not only reinforces the reliability of the findings but also facilitates future research endeavors.

In qualitative research, dependability is another crucial factor, and researchers should include mechanisms for ensuring dependability. Dependability refers to the

consistency, stability, and reliability of research findings. In qualitative studies, where complex human experiences and contexts are explored, ensuring dependability is essential. Researchers can use a systematic search strategy to identify published journal articles that deliberate criteria for rigorous research and then survey the references of relevant articles to find noteworthy, distinct, and well-defined pointers to good qualitative research (Yadav, 2021).

Validity

Validity is a cornerstone of qualitative research, ensuring the findings accurately represent the study phenomena. Yadav (2021) emphasizes that validity in qualitative research involves assessing the trustworthiness and authenticity of the data. To achieve this, researchers engage in practices such as member checking, where participants verify the accuracy of interpretations, and thick description, which provides rich contextual details to enhance understanding. Additionally, the importance of content validity, which ensures that the research instruments (such as interview guides or surveys) align with the research objectives, is underscored (Coleman, 2021). By adhering to rigorous methods and considering the perspectives of those studied, the validity of the qualitative inquiry is enhanced.

Ensuring Credibility, Transferability, Confirmability, and Data Saturation

To ensure the credibility of this study, I employed several strategies to validate my findings. To begin, I used triangulation by gathering data from various sources, including interviews, documents, and observations. This approach allowed for cross-

verification of findings, enhancing the robustness of the conclusions (Coleman, 2021). Additionally, I engaged in member checking, where participants reviewed and verified the accuracy of the interpretations of their responses. This process ensures that the data accurately reflects the participants' perspectives and experiences (Smith & Davis, 2020).

Transferability was achieved by providing a detailed description of the research context, participants, and findings. By offering detailed and rich contextual information, other researchers can determine the applicability of the study's findings to their own contexts (Yadav, 2021). This comprehensive description includes the specific strategies used by IT managers in small businesses in central Pennsylvania for ERP system implementation.

To ensure confirmability, I maintained an audit trail that documents all the research decisions, data collection processes, and data analysis steps. This audit trail includes detailed notes, transcripts, and coding schemes, enabling transparency and the replication of the study (Coleman, 2021). Additionally, I engaged in reflexivity, continually reflecting on my own perspectives and potential biases that could influence the research process (Tomaszewski et al., 2020).

Data saturation was ensured by conducting interviews until no new themes or patterns emerge, indicating that the data sufficiently represents diverse managerial perspectives (King, 2020). I also used iterative coding and thematic analysis to systematically identify patterns across participant responses, ensuring that the data

collection remains rigorous and exhaustive (Menon, 2020). By utilizing diverse sources and verification techniques, I strengthened the trustworthiness and dependability of the results.

Transition and Summary

In Section 2, the study's purpose was restated, emphasizing the focus on the research methodology. This section covered various aspects, including the role of the researcher, participants, research method and design, population and sampling, ethical research, and data collection. Additionally, it included information on the instrument, data collection technique, data organization techniques, and data analysis. The emphasis was placed on ensuring reliability and validity throughout the research process.

Section 3: Application to Professional Practice and Implications for Change

Introduction

In Section 3, I share the outcomes of this research study, which draws on interview data and project document analysis from six IT managers at small businesses in Pennsylvania who have led ERP implementations within the past 5 years. This section includes (a) an introduction with a restatement of the purpose statement, (b) the presentation of findings, (c) a discussion of this study's application to professional practice, (d) a discussion of its implications for social change, (e) recommendations for action, (f) recommendations for further research, (g) reflections, and (h) a conclusion.

The purpose of this qualitative multicase study was to explore strategies that IT managers use to implement ERP systems. I collected data from semistructured interviews with six managerial participants and analyzed ERP implementation documentation, including project reports and implementation plans, to achieve triangulation. Based on the managers' responses and document analysis, three major themes emerged regarding ERP system implementation strategies: (a) implementation preparation, (b) implementation approaches, and (c) scope control. Across these themes, several common attributes were consistently identified, including strategic alignment with business goals, executive sponsorship, effective governance, risk mitigation, clear objectives, selecting the correct rollout strategy (Big Bang versus Phased), minimizing customizations, and planning for testing and data migration.

Notably, while these internal strategies were emphasized throughout the interviews, none of the participants identified external influences as significant factors in their ERP implementations. This absence stands in contrast to much of the existing literature and is discussed further in this section.

Presentation of the Findings

The research question for this study was “What strategies do IT managers use to implement ERP Systems?” The target population consisted of IT managers in small businesses in Pennsylvania who had led ERP implementations within the past 5 years. Purposeful sampling identified six knowledgeable participants for semistructured interviews, conducted using a standardized set of questions. Data were collected through interviews and a review of company documents, including ERP project reports, implementation plans, and postimplementation reviews, to achieve triangulation. Member checking was performed to validate interpretations, and data saturation was confirmed when no new themes emerged.

Interviews were conducted and transcribed using Microsoft Teams. All participants volunteered for the study, providing informed consent through affirmative email responses and verbal confirmation during the Microsoft Teams audio recording. To ensure confidentiality, aliases were assigned to all participants (P1-P6) and companies (Co1-Co6). Each participant completed a 30-minute interview using the same set of questions.

The collected data were analyzed using NVivo 14 software, which enabled systematic organization and coding of the dataset. After importing the transcripts into NVivo, an iterative coding process was applied to identify patterns and relationships within the data. Nodes were created to represent emerging concepts, which were then refined into broader categories. Through thematic analysis, three major themes were developed, providing a structured interpretation of participants' experiences and perspectives.

Theme 1: Implementation Preparation

Implementation preparation was identified by all six research participants as a foundational factor in successful ERP system deployment. Data were collected through semistructured interviews with each participant and supplemented by document analysis of ERP project reports, implementation plans, and related artifacts. Table 1 presents a summary of participant codes, the number and type of documents reviewed, and each participant's role in relation to the theme of implementation preparation. The participant perspectives presented below are followed by a discussion of supporting literature and the connection of these findings to the conceptual framework of this study.

Table 1*Participant Codes and Documents Reviewed: Theme 1: Implementation Preparation*

Participant code	Documents reviewed	Role in theme
P1, Co1	3 (project charter, communication plan, data migration strategy)	Strategic alignment; phased rollout; executive sponsorship
P2, Co2	2 (implementation plan, stakeholder register)	Clear objective-setting, risk assessment, and phased approach
P3, Co3	3 (project charter, training plan, testing protocol)	Governance framework; data validation; phased rollout
P4, Co4	2 (implementation roadmap, change management plan)	Executive sponsorship; phased rollout strategy
P5, Co5	2 (project scope document, HR module plan)	Big Bang approach; compressed timeline; minimal scope

P6, Co6	3 (implementation plan, risk register, vendor contract)	Strategic alignment; phased rollout; minimizing customizations
---------	---	--

A notable insight from the interviews is that participants P1, P2, P3, P4, and P6 all selected a phased rollout strategy rather than a Big Bang approach during ERP implementation preparation. This decision followed careful evaluation of organizational needs, risk tolerance, and operational continuity. By introducing ERP functionality incrementally, these IT managers mitigated disruption, managed change more effectively, and ensured alignment of each phase with business priorities. The phased approach enabled ongoing evaluation and adjustment, which was critical for addressing unforeseen challenges and maintaining stakeholder engagement. Participants consistently reported that this strategic choice was a key factor in the overall success of their ERP implementations, supporting smoother transitions and higher adoption rates. This finding is consistent with the literature, which suggests that phased rollouts can reduce implementation risks and facilitate more effective change management compared to Big Bang strategies (Bezunch et al., 2021; Stone & Zhang, 2021; Wynn et al., 2024).

P5 at C5 took a different path, using a Big Bang approach, but the context was quite different from that of the other implementations. With only HR modules deployed and only six months allocated to the entire project, the smaller scope made a Big Bang rollout more practical. This limited implementation presented less risk than the

comprehensive ERP deployments managed by the other five participants. The literature indicates that organizations implementing fewer modules with shorter timelines can successfully adopt Big Bang strategies, as the concentrated focus reduces organizational disruption and simplifies change management (Wynn et al., 2024).

Implementation preparation is a foundational theme in ERP system deployment and was consistently identified by all six research participants as a key factor of project success. As highlighted in recent literature and supported by the experiences of managers interviewed in this study, strategic alignment with business goals is vital (Gupta, 2025; Rajapakse & Thushara, 2023). ERP projects must be designed to support organizational objectives, such as operational efficiency, scalability, and competitive advantage. When strategic alignment is lacking, organizations risk misallocating resources and facing stakeholder resistance, which can lead to costly delays and diminished returns on investment (Mahraz et al., 2019; Mittal et al., 2023). The interview data revealed that participants prioritized establishing clear, measurable objectives during the planning phase, which facilitated effective decision-making and cross-functional communication, ensuring that each enhancement contributed to the organization's priorities.

Executive sponsorship emerged as another cornerstone of successful ERP implementation. The literature and interview findings consistently emphasize that leadership involvement is crucial for securing resources, driving organizational change, and sustaining project momentum (Ateş et al., 2020; Wynn et al., 2024). ERP projects often span multiple business units, and without executive advocacy, initiatives can falter

due to competing priorities or a lack of authority to enforce process changes. Sponsorship signals that ERP implementation is a strategic priority rather than an isolated IT upgrade, fostering a culture of accountability and collaboration across the enterprise (Aubry & Lavoie-Tremblay, 2018; Shao et al., 2017). Case studies and participant responses demonstrate that strong leadership engagement correlates with higher adoption rates and smoother transitions, reinforcing its role as a critical success factor.

Clear objectives and a well-defined rollout strategy are indispensable components of implementation preparation. Organizations must choose between a Big Bang approach, where all modules are deployed simultaneously, and a phased rollout, which introduces functionality incrementally. Each strategy carries distinct risks and benefits; Big Bang implementations offer rapid integration but entail higher risk, while phased rollouts mitigate disruption but require extended timelines (Bezuneh et al., 2021; Wynn et al., 2024). Data migration planning also emerged as a critical technical consideration, as inaccurate or incomplete data can undermine system integrity and user confidence (Gupta, 2025; Stone & Zhang, 2021). By dealing with these elements during the preparation phase, IT managers create a structured foundation that minimizes business interruptions and maximizes long-term value. The interview responses consistently highlighted the importance of these strategies, with participants stressing their significance for robust planning, stakeholder engagement, and ongoing evaluation to ensure the successful implementation of the ERP system.

The findings on implementation preparation are closely linked to the central research question of this study, which sought to explore the strategies IT managers use to implement ERP systems. The research design and semistructured interview questions were specifically developed to address this question. For example, by asking participants about the number of ERP implementations they had managed, the technical strategies they utilized, and the duration of planning and execution, the study gathered detailed insights directly related to implementation strategies. Additional questions concerning changes in business processes, the influence of strategic alignment, and the role of external factors allowed for a comprehensive analysis of how managers address key challenges in ERP projects, further connecting the findings to the overarching research question.

These findings confirm the existing literature while also extending it. The preference for phased rollouts for five of six participants corroborates Bezuneh et al. (2021) and Wynn et al. (2024), while P5's successful Big Bang deployment within a narrow scope of six months adds a nuanced extension, demonstrating that rollout strategy suitability is moderated by scope complexity and organizational size, which is a relationship not fully addressed in the existing literature (Bezuneh et al., 2021; Stone & Zhang, 2021; Wynn et al., 2024). These findings align with GST, which frames the organization as an integrated system of interdependent subsystems. The preparation activities that participants described, including strategic alignment, executive sponsorship, and rollout planning, reflect the systemic inputs that must be coordinated

before a new subsystem, such as an ERP, can be successfully integrated without disrupting organizational balance (Carr-Chellman & Carr-Chellman, 2020; von Bertalanffy, 1968).

Within GST, feedback loops play a central role in maintaining system stability during periods of change (Katrakazas et al., 2020; von Bertalanffy, 1968). The phased rollout strategy that five of six participants selected is itself a feedback loop mechanism, allowing IT managers to evaluate the outcomes of each implementation phase before proceeding to the next, and to make adjustments based on what was learned. This iterative structure enabled participants to identify misalignments between the ERP system and organizational processes early enough to correct them before those problems could propagate across the broader system. The absence of this feedback structure in a full Big Bang deployment increases the risk that undetected errors will compound across all subsystems simultaneously, consistent with GST's characterization of conditions for systemic disruption (Carr-Chellman & Carr-Chellman, 2020).

A foundational principle of GST is that a system can reach the same end state through multiple different paths, provided the necessary conditions are present (von Bertalanffy, 1968). The contrast between P5's Big Bang approach and the phased rollouts of the other five participants illustrates this principle directly: both paths led to successful ERP implementations, but through different preparatory conditions and execution structures suited to each organization's size, scope, and operational context. This finding supports the view that implementation preparation is not a fixed sequence of steps but

rather a set of conditions, including clear objectives, executive sponsorship, and data readiness, that must be established in whatever form is appropriate for the given organizational system (Carr-Chellman & Carr-Chellman, 2020; Rajapakse & Thushara, 2023). For IT managers, the practical implication is that preparation strategies should be tailored to the complexity and scale of the implementation rather than applied uniformly across all organizational contexts.

Theme 2: Implementation Approaches

Implementation approaches emerged as a pivotal theme, reflecting the different methods that IT managers use to navigate the complexities of ERP system deployment. Data were gathered through semi-structured interviews with all six participants and corroborated through document analysis of implementation plans, training materials, and related project records. Table 2 provides a summary of participant codes, the number and type of documents reviewed, and each participant's contribution to the theme of implementation approaches. The participant perspectives that follow are discussed in relation to the existing literature and the conceptual framework guiding this study.

Table 2

Participant Codes and Documents Reviewed: Theme 2: Implementation Approaches

Participant code	Documents reviewed	Role in theme
------------------	--------------------	---------------

P1, Co1	3 (training plan, change management log, stakeholder updates)	Department-specific training; governance structure; phased adoption
P2, Co2	2 (implementation plan, user acceptance testing records)	Role-based training; change communication; risk mitigation
P3, Co3	3 (training curriculum, module deployment log, leadership reports)	Functional training; executive sponsorship; phased approach
P4, Co4	2 (change management plan, training schedule)	Tailored training; governance enforcement; scope management
P5, Co5	2 (HR module guide, implementation timeline)	Minimal training; Big Bang; constrained timeline
P6, Co6	3 (training plan, risk register, post-go-live review)	Role-based training; customization minimization; phased rollout

A prominent insight from the interviews was the emphasis participants placed on employee training as a core component of implementation approaches. Specifically, participants P1, P2, P3, P4, and P6 all underscored that properly training employees was essential for achieving strategic alignment during ERP implementation. Rather than relying on generic system overviews, these managers advocated for planning training programs tailored to the unique needs of each department, ensuring that content was relevant to both the ERP system and the specific business processes it impacted. This approach is consistent with the literature, which identifies comprehensive, role-based training as a critical success factor for ERP projects (Fusch et al., 2020; Stone & Zhang, 2021). By tailoring training to departmental requirements, organizations not only support smoother adoption and reduce resistance to change but also improve the alignment between IT initiatives and business objectives, ultimately supporting the long-term success of the ERP system (Hornstein, 2015; Shkurti & Manoku, 2021).

P5 did not emphasize employee training to the same degree as the other participants. This difference may be attributed to the compressed six-month timeline and the limited scope of their implementation. With fewer modules to deploy and a tight schedule, P5 may have relied more heavily on existing HR staff familiarity with personnel processes or opted for minimal just-in-time training. This behavior was likely due to the constrained timeframe, which necessitated prioritizing system configuration and data migration over training programs, as project timelines often

force managers to make trade-offs between competing implementation priorities (Frefer et al., 2018).

Implementation approaches represent a pivotal theme in ERP system deployment, reflecting the different methods IT managers employ to handle complicated organizational landscapes. The interview data and recent literature consistently highlight the importance of strategic alignment with business goals as a guiding principle for selecting and executing implementation approaches (Gupta, 2025; Rajapakse & Thushara, 2023). Whether organizations opt for a Big Bang or phased rollout strategy, alignment ensures that ERP initiatives support broader objectives such as operational efficiency, risk mitigation, and competitive advantage (Mahraz et al., 2019; Mittal et al., 2023). Participants in this study emphasized that clear objectives and measurable outcomes are essential for guiding implementation decisions and maintaining focus throughout the project lifecycle.

Strong governance and executive sponsorship are consistently identified as critical success factors in both the literature and the responses from all six participants. Effective governance structures facilitate decision making, resource allocation, and accountability, while executive sponsorship provides the authority and support necessary to overcome resistance and drive organizational change (Ateş et al., 2020; Wynn et al., 2024). Change management emerged as a central component of implementation approaches, with IT managers stressing the need for active communication, comprehensive training, and stakeholder engagement to ensure user

adoption and minimize disruption (Hornstein, 2015; Fusch et al., 2020). The interviews revealed that organizations with robust governance and active leadership were better equipped to manage the complexities of ERP implementation, respond to developing requirements, and sustain momentum toward successful outcomes.

Risk mitigation, minimal customizations, and the selection of an appropriate rollout strategy further define practical implementation approaches. The literature and interview findings suggest that organizations must carefully assess the risks associated with each strategy, striking a balance between the need for rapid integration and the potential for operational disruption (Bezuneh et al., 2021; Wynn et al., 2024).

Participants consistently advocated for minimizing customizations to preserve system integrity, reduce complexity, and facilitate future upgrades (Stone & Zhang, 2021; Shkurti & Manoku, 2021). By placing importance on standardization and leveraging best practices, IT managers can streamline implementation, strengthen system reliability, and maximize long-term value. These approaches, grounded in strategic alignment and supported by strong governance, executive sponsorship, and change management, form the foundation for successful ERP deployments throughout various organizational contexts.

The identification of implementation approaches in this study is directly informed by the research design and the specific semi-structured interview questions utilized. By asking participants about the number of ERP implementations they have managed, the technical strategies they used, the duration of their most recent projects,

the business process changes made to align IT with strategic goals, the impact of strategic alignment on project outcomes, and the external factors influencing implementation, the study captured detailed perspectives on the factors that contribute to ERP project success. These questions provided a detailed structure for analyzing how IT managers customize their approaches to organizational needs and constraints. The qualitative, multicase methodology enabled the synthesis of recurring themes across varied contexts, ensuring that the analysis was both rigorous and relevant. This approach not only cross-checks the findings for accuracy but also places them in the wider conversation about ERP implementations, making the study's conclusions more credible and useful.

These findings both confirm and extend the literature: the emphasis on role-based training confirms Stone and Zhang (2021) and Fusch et al. (2020), while P5's success with minimal training partially disconfirms the universal applicability of comprehensive training requirements, consistent with Frefer et al. (2018), who identified conditions under which accelerated implementations succeed with reduced training when scope is tightly bounded. Viewed through the lens of GST, these implementation approaches reflect the principle that effective system change requires actively managing interactions between organizational subsystems; tailored training ensures each subsystem (finance, operations, HR) is individually recalibrated to work with the new ERP platform, while governance and change management function as the feedback loops that detect and correct deviations before they cascade across the

broader organizational system (von Bertalanffy, 1968; Carr-Chellman & Carr-Chellman, 2020).

Within a GST framework, systems depend on the quality and flow of inputs to produce intended outputs, and disruptions in any one subsystem will affect overall performance (Katrakazas et al., 2020; von Bertalanffy, 1968). In the context of implementation approaches, employees who are inadequately trained represent a degraded input that compromises the output of the entire ERP system, regardless of how well other components were deployed. The participants' consistent emphasis on role-based training reflects the principle, which explains why role-based training was such a consistent priority. It was the mechanism for ensuring that each human subsystem was capable of fulfilling its function within the new organizational configuration. When that input is missing or insufficient, consistent with GST, the resulting gaps do not stay isolated but ripple outward, undermining adoption, increasing error rates, and reducing the return on the organization's ERP investment (Carr-Chellman & Carr-Chellman, 2020; Hornstein, 2015).

GST also accounts for the variation in implementation approaches observed across participants, particularly the contrast between P5's minimal-training, Big Bang approach and the more structured approaches of P1 through P4 and P6 (see von Bertalanffy, 1968). Both paths led to successful outcomes, but through different combinations of governance, training, and change management practices tailored to the specific conditions of each organizational system. This supports the GST view that

there is no single correct implementation approach; rather, success depends on aligning the approach with the system's existing structure, capacity, and readiness for change (Carr-Chellman & Carr-Chellman, 2020). For IT managers, this means that selecting an implementation approach requires a diagnostic assessment of the organization as a system, not simply the adoption of a methodology proven in another context.

Theme 3: Scope Control

Scope control emerged as a critical theme in ERP implementation, unanimously emphasized by all six participants as essential for managing project boundaries, expectations, and deliverables with precision. Data were collected through semi-structured interviews with each participant and supported by document analysis of project scope documents, change control logs, and related implementation records. Table 3 presents a summary of participant codes, the number and type of documents reviewed, and each participant's role in relation to the theme of scope control. The participant perspectives below are followed by a discussion of the supporting literature and the alignment of these findings with the conceptual framework of this study.

Table 3

Participant Codes and Documents Reviewed: Theme 3: Scope Control

Participant code	Documents reviewed	Role in theme
------------------	--------------------	---------------

P1, Co1	3 (change control log, project scope document, stakeholder impact log)	Change management; minimizing customizations; clear objectives
P2, Co2	2 (scope document, milestone tracker)	Process standardization; objective clarity; simplified scope management
P3, Co3	3 (scope baseline, change request log, testing records)	Change control; customization limits; rollout discipline
P4, Co4	2 (change management plan, scope change log)	Active change management; scope enforcement; executive accountability
P5, Co5	1 (project scope statement)	Constrained scope; Big Bang; minimal formal change control needed

P6, Co6	3 (scope control plan, vendor contract, change log)	Minimizing customizations; system integrity; phased release control
---------	---	---

The importance of scope control was unanimously emphasized by all participants as a key factor for successful ERP implementation. Through the interview questions covering the technical strategies used, project duration, business process changes, and strategic alignment, the study captured how scope control is operationalized in practice. Notably, participants P1, P3, P4, and P6 specifically identified change management and minimizing customizations as the most important implementation strategies they employed. Their experiences highlight that effective change management helps maintain project boundaries and stakeholder engagement, while limiting customizations preserves system integrity and reduces complexity. These recurring insights reinforce the conclusion that scope control, supported by clear objectives, a carefully selected rollout strategy, and disciplined change management, is essential for achieving successful ERP outcomes.

P2 and P5 did not identify change management as a priority strategy, suggesting that situational factors influenced their approach to implementation. P5's constrained scope and timeline likely reduced the complexity of organizational change, making formal change management less critical for the limited number of

affected users. For P2, the organization may have established processes or cultural readiness that facilitated smoother adoption without requiring intensive change management, as organizations with greater change readiness often experience less resistance (Smits & Bowden, 2015). This variation demonstrates that successful implementation strategies depend on aligning approaches with specific organizational characteristics and project parameters (Stone & Zhang, 2021).

Scope control emerged as a critical theme in ERP implementation, reflecting the necessity for organizations to manage project boundaries, expectations, and deliverables with precision and accuracy. Both the literature and participant interviews emphasized that effective scope control is closely tied to vigorous change management practices (Hornstein, 2015; Fusch et al., 2020). Change management ensures that all stakeholders are prepared for and engaged in the implementation process, reducing resistance and facilitating smoother transitions. IT managers emphasized that clear communication, comprehensive training, and ongoing stakeholder involvement are crucial for maintaining project focus and preventing scope creep, which can compromise timelines and budgets.

Establishing clear objectives is another foundational element of scope control. The study's participants consistently noted that well-defined goals provide a framework for decision-making and help align project activities with organizational priorities (Stone & Zhang, 2021; Shkurti & Manoku, 2021). Clear objectives enable project teams to evaluate proposed changes or enhancements against the original

project scope, ensuring that only necessary and value-adding modifications are considered. This approach supports the delivery of ERP systems that meet business needs without unnecessary complexity or deviation from strategic goals.

Selecting the correct rollout strategy and minimizing customizations further support effective scope control. The literature and interview data indicate that organizations must carefully evaluate whether a Big Bang or phased rollout approach best suits their operational context and risk tolerance (Bezuneh et al., 2021; Wynn et al., 2024). Participants advocated minimizing customizations to maintain system integrity, reduce implementation risks, and simplify future upgrades (Stone & Zhang, 2021). By adhering to standard system functionalities and best practices, IT managers can better control project scope, avoid unforeseen complications, and ensure a more predictable and sustainable ERP implementation outcome.

These findings confirm Shkurti and Manoku (2021) and Stone and Zhang (2021) on customization minimization while extending the literature by identifying organizational change readiness and scope complexity as moderating factors in change management intensity, a distinction not consistently addressed in prior ERP research (Smits & Bowden, 2015; Stone & Zhang, 2021). From a GST perspective, scope control functions as a system boundary maintenance mechanism; by resisting unnecessary customizations and enforcing clear project boundaries, IT managers protect the coherence of the implementation system against entropy, preventing the unplanned interdependencies that scope creep introduces from destabilizing the

broader organizational system (von Bertalanffy, 1968; Carr-Chellman & Carr-Chellman, 2020). These scope control strategies, grounded in participant experience and supported by the literature, offer direct guidance for IT practice. For example, IT managers should establish formal scope baselines and change control processes at project outset, treat customization minimization as a standing policy requiring explicit business case justification, and calibrate the intensity of formal change management to organizational change readiness rather than applying a uniform approach regardless of context.

The GST concept of system interdependence also accounts for why scope creep is so damaging to ERP Implementations. In a complex organizational system, each component is connected to others, meaning that changes introduced in one area inevitably affect adjacent processes, roles, and data flows (von Bertalanffy, 1968; Carr-Chellman & Carr-Chellman, 2020). When an ERP project absorbs unplanned additions, those additions introduce new interdependencies that were not accounted for in the original design, increasing the likelihood that unpredictable outcomes become more likely at go-live. The participants who maintained strict change control practices were, from a GST perspective, protecting the integrity of those interdependencies by ensuring that each new component was evaluated for its effects on the whole before being incorporated. This systemic discipline is what distinguishes successful implementations from those that expand beyond their capacity to be effectively managed (Katrakazas et al., 2020; Stone & Zhang, 2021).

This same GST principle also applies to the scope control findings, explaining how P2 and P5 achieved successful outcomes through less formalized approaches than the other participants (von Bertalanffy, 1968). Rather than invalidating the value of formal scope control, their experiences demonstrate that the same goal of maintaining project boundaries can be achieved through different mechanisms depending on the conditions of the organizational system, including its size, change readiness, and the complexity of the implementation. In smaller or more agile organizations, existing cultural norms, streamlined decision-making structures, and limited stakeholder complexity may serve the same boundary-maintenance purpose that formal change control processes serve in larger, more complex deployments. This understanding reinforces the GST view that effective implementation strategies must be evaluated relative to the specific system in which they are applied, rather than prescribed as universal best practices independent of organizational context (Carr-Chellman & Carr-Chellman, 2020; Smits & Bowden, 2015).

Notable Absence: Perceived Impact of External Factors

A particularly striking finding from this study was the unanimous view among participants that external factors did not significantly affect their ERP implementations. Despite being directly asked about influences outside the organization's ability to use technical strategies, not a single IT manager identified external elements such as vendor relationships, regulatory changes, market pressures, or economic conditions as having a meaningful impact on their projects. This absence

is noteworthy, as much of the ERP implementation literature highlights external factors as familiar sources of risk and complexity (Aljaeri & Jaharadak, 2021; Rajapakse & Thushara, 2023).

This result contrasts with prior research and the expectations outlined in the proposal. For example, Aljaeri and Jaharadak (2021) identified insufficient vendor support and external relationships as frequent contributors to ERP project delays and failures. Similarly, Rajapakse and Thushara (2023) and Baumann (2021) documented how regulatory requirements, economic instability, and industry competition can complicate ERP rollouts, increasing the likelihood of adverse outcomes. The lack of perceived external influence among the participants in this study may reflect the distinctive setting of small businesses in central Pennsylvania, the effectiveness of internal risk mitigation strategies, or perhaps a focus on internal challenges over external ones.

This unexpected finding suggests that, for the IT managers interviewed, internal factors such as change management, strategic alignment, and scope control played a considerably more prominent role in ERP implementation outcomes than external pressures. One possible explanation for this difference, based on the research literature, is the unique organizational context of small businesses in central Pennsylvania, where decision-making structures, operational scale, and resource allocation strategies may differ from those of larger enterprises or organizations in more volatile markets. The absence of significant external influences may reflect not

only a proactive approach to internal risk mitigation and well-established project management processes, but also potentially limited exposure to external forces such as complex regulatory environments, rapid technological shifts, or intense market competition. Additionally, the regional economic climate and the relative stability of vendor relationships in this context may have reduced the frequency or perceived impact of external disruptions. This variation shows why it's so important to look at ERP research findings in the context of the specific organization and environment they come from. Consequently, future research should examine the relationship between organizational characteristics, geographical location, and industry-specific dynamics to better understand why certain organizations experience external factors as negligible, while others regard them as pivotal challenges in ERP implementation.

Summary of Findings

The findings from this qualitative multi-case study provide a nuanced understanding of the strategies IT managers use to implement ERP systems in small businesses. Through thorough thematic analysis, three major themes emerged: implementation preparation, implementation approaches, and scope control. These themes were crucial to the successful deployment of ERP systems. Across all themes, the importance of strategic alignment with business goals, executive sponsorship, clear objectives, and robust change management was consistently emphasized by participants and reinforced by current literature. These elements collectively

contributed to smoother transitions, higher adoption rates, and the achievement of organizational objectives.

A particularly noteworthy insight was the participants' preference for phased rollout strategies and tailored employee training. Both practices facilitated incremental change, minimized disruption, and supported ongoing evaluation. The emphasis on minimizing customizations and maintaining scope control further highlights the value of disciplined project management and adherence to best practices. These strategies enabled IT managers to navigate the complexities of ERP implementation, mitigate risks, and deliver systems that met business needs without unnecessary complexity.

Equally significant was the unexpected absence of perceived external influences on ERP implementation. Contrary to much of the existing literature, none of the participants identified vendor relationships, regulatory changes, or market pressures as impactful factors. This difference really highlights how much organizational context matters. For the small businesses in this study, internal factors like leadership, planning, and managing change stood out as far more important. Practical examples from participant accounts illustrate how organizations can insulate their ERP projects from external disruptions: for instance, by standardizing processes and adhering closely to in-house project management frameworks, managers reduced dependence on vendors, while strong internal risk mitigation strategies minimized potential regulatory or market pressures (Wynn et al., 2024; Bezuneh et al., 2021). This finding prompts continued research into the conditions under which external

factors become critical and how organizations can effectively strengthen their techniques to protect their projects from outside disruptions.

In summary, the strategies identified in this study reflect a holistic approach to ERP implementation. This approach is grounded in careful preparation, adaptive execution, and vigilant scope control. The collective experiences of the participants demonstrate that success is achieved not through isolated technical solutions, but through integrated practices that align technology with business strategy, engage stakeholders, and manage change proactively. These insights contribute to the broader discourse on ERP implementation and offer practical guidance for IT managers seeking to optimize outcomes in similar organizational contexts.

As the study progresses to implications for practice and future research, the evidence provides a foundation for understanding how small businesses can leverage strategic planning, leadership, and change management to address the challenges of ERP deployment and achieve lasting organizational benefits. While the findings offer valuable insights, it is important to acknowledge the study's limitations. The small sample size and exclusive focus on IT managers from small businesses in a specific geographic region restrict the scope of the conclusions and may limit the generalizability of the results to other contexts. The perspectives of the six participants may not capture the full range of experiences present in different industries, larger organizations, or other geographic settings. Future research should consider broader and more diverse samples to validate and expand upon these findings. Still, the themes

and insights identified contribute to the academic understanding of ERP implementation and offer practical guidance for IT managers and organizational leaders. By examining the real-world experiences of IT managers in small businesses, this research highlights actionable strategies that can be directly applied to professional practice. The emphasis on strategic alignment, executive sponsorship, robust change management, and disciplined scope control provides a roadmap for practitioners seeking to enhance the success of ERP projects within their organizations.

Application to Professional Practice

The findings of this study offer actionable guidance for IT managers and organizational leaders seeking to implement ERP systems in small business environments. The consistent emphasis on strategic alignment, executive sponsorship, and robust change management stresses the importance of integrating business objectives with technology initiatives. Practitioners should prioritize aligning ERP projects with organizational goals from the outset, ensuring that every phase of implementation supports broader strategic aims such as operational efficiency, scalability, and competitive advantage (Gupta, 2025; Mittal et al., 2023). This alignment facilitates effective decision-making, resource allocation, and stakeholder engagement, all of which are critical for successful ERP deployment.

A key practical implication is the value of phased rollout strategies and tailored employee training. The majority of participants in this study opted for incremental

implementation, allowing organizations to manage change more effectively and minimize operational disruption. By introducing ERP functionality in stages, IT managers can evaluate progress, address unforeseen challenges, and adjust plans as needed. Participant responses, particularly from P1, P2, P3, P4, and P6, highlighted the importance of customizing training programs to the unique needs of each department rather than relying on generic system overviews. These participants described how department-specific training facilitated greater user adoption and reduced resistance to change by ensuring that employees could directly relate the training content to their daily responsibilities. This participant evidence strengthens the recommendation for tailored role-based training to maximize the effectiveness of ERP implementations. Recent research further supports this approach, noting that role-based and context-specific training is associated with higher rates of ERP success and smoother transitions (Wynn et al., 2024; Limna, 2023)

Scope control emerged as another critical area for professional practice. IT managers should establish clear objectives and maintain disciplined project boundaries to prevent scope creep and ensure that ERP systems deliver value without unnecessary complexity (Shkurti & Manoku, 2021; Stone & Zhang, 2021). Minimizing customizations and adhering to standard system functionalities not only preserves system integrity but also simplifies future upgrades and maintenance. Managers are encouraged to leverage best practices and standardized processes, as these have been

shown to reduce implementation risks and facilitate long-term sustainability (Bezunehet et al., 2021; Wynn et al., 2024).

The notable absence of perceived external influences among study participants suggests that small businesses may be able to insulate their ERP projects from outside disruptions through effective internal strategies. While much of the literature highlights the impact of vendor relationships, regulatory changes, and market pressures (Aljaeri & Jaharadak, 2021; Rajapakse & Thushara, 2023), the experiences of these IT managers indicate that strong leadership, thorough planning, and proactive change management can mitigate many external risks. However, it is important to acknowledge that these findings are situated within the specific context of small businesses in central Pennsylvania, and the extent to which such internal strategies offer insulation from external challenges may not be transferable to larger organizations or other geographical or industry settings. This limitation underscores the need for practitioners to not only focus on strengthening internal processes and organizational resilience, but also to remain vigilant for potential external challenges that may be more pronounced in different contexts and industries.

Ultimately, this study's methodology is original in its integration of a qualitative multi-case design with systematic thematic analysis and member checking, which collectively advance the credibility and practical relevance of its findings. By using multiple cases and cross-case comparison, the research produces insights that are more transferable and relevant for practical application than those generated by single

case studies or studies without clear verification procedures, which have been common in prior ERP research. The systematic thematic analysis and member checking directly involve participants in validating findings, strengthening the accuracy of the study and enhancing its reliability for professional practice. This thoroughness ensures that the identified strategies are grounded in authentic experiences of IT managers and can be confidently translated into actionable guidance for practitioners. As a result, IT managers can adopt reflective, evidence-based approaches, incorporating stakeholder feedback and lessons learned from similar organizational contexts to drive ongoing improvement. The iterative process fostered by these methodological choices facilitates practical cycles of evaluation and adaptation, providing a robust foundation for sustained organizational growth and innovation in ERP implementation (Beekhuyzen & Bazeley, 2024; Mortelmans, 2025).

Implications for Social Change

The successful implementation of ERP systems can drive tangible improvements for individuals within organizations by streamlining workflows, reducing manual errors, and creating a more supportive work environment. For example, after an ERP implementation, employees may benefit from automated reporting tools that replace time-consuming manual data entry, thereby reducing repetitive tasks and the likelihood of mistakes. When employees receive comprehensive, role-based training and clear communication throughout the ERP adoption process, they experience greater job satisfaction and engagement (Stone &

Zhang, 2021; Fusch et al., 2020). These improvements not only enhance individual productivity but also contribute to a culture of continuous learning and adaptability. As employees become more confident in using new systems, they are empowered to focus on higher-value tasks, which can lead to increased morale and professional growth (Hornstein, 2015).

Communities and organizations benefit from ERP implementations through increased operational efficiency, improved service delivery, and stronger relationships with stakeholders. The adoption of phased rollout strategies and tailored training programs, as highlighted by participants in this research, allows organizations to manage change incrementally and minimize disruption (Wynn et al., 2024; Bezuneh et al., 2021). This approach fosters resilience and adaptability, enabling organizations to respond more effectively to evolving market demands and community needs. As organizations become more agile and responsive, they are better positioned to support local economies, create new opportunities for volunteerism, and contribute to community development (Raja et al., 2020).

Institutions and cultures are also transformed by the broader organizational changes that accompany the adoption of ERP systems. Strong leadership, strategic alignment, and disciplined scope control are essential for navigating complex transformations and fostering inclusive, innovative environments (Ateş et al., 2020; Aubry & Lavoie-Tremblay, 2018). When institutions prioritize these elements, they foster cultures that value and integrate diverse perspectives into their decision-making

processes. Over time, these cultural shifts can lead to more equitable workplaces, improved collaboration across departments, and the establishment of new industry standards for organizational behavior (Eti-Tofinga et al., 2018; Ilmudeen et al., 2019).

At the societal level, the ripple effects of successful ERP implementations can be profound. Organizations that leverage technology to improve efficiency and strategic alignment are better equipped to contribute to economic growth and social well-being (Al-Surmi et al., 2020). Small businesses may serve as examples of resilience and adaptability when they focus on internal strengths and implement measures to protect projects from external disruptions (Rajapakse & Thushara, 2023). As these organizations thrive, they generate more opportunities for community engagement, sustainable development, and positive social change that extends beyond the workplace. For small businesses in Pennsylvania specifically, the successful application of these ERP strategies can strengthen local workforce development, improve organizational efficiency, and contribute to the region's economic vitality. Ultimately, the findings underscore the potential for ERP strategies to catalyze beneficial behaviors and outcomes at multiple levels of society (Zerbino et al., 2021).

Recommendations for Action

To achieve a win-win outcome for both companies and individuals involved in ERP implementations, organizations should prioritize strategic alignment between business objectives and technology initiatives. This research demonstrates that when companies clearly define their goals and communicate them throughout the ERP

project, employees are better able to understand the purpose and value of the changes (Stone & Zhang, 2021; Mittal et al., 2023). Leaders should establish measurable objectives and ensure that all stakeholders are engaged from the outset of the planning process. By fostering transparency and collaboration, organizations can minimize resistance and maximize the benefits of ERP adoption for everyone involved.

Executive sponsorship and strong leadership are essential for driving successful ERP projects. Companies must ensure that leaders at all levels are actively involved in supporting the implementation, allocating resources, and championing change management efforts (Ateş et al., 2020; Wynn et al., 2024). Middle and frontline managers should be empowered to communicate the strategic vision and address concerns as they arise. This approach not only increases the likelihood of project success but also fosters an environment where employees feel valued and supported, resulting in higher engagement and job satisfaction (Fusch et al., 2020).

A phased rollout strategy, combined with tailored training programs, is recommended to facilitate smooth transitions and minimize operational disruptions. Organizations should introduce ERP functionality incrementally, allowing employees to adapt to new processes and systems at a manageable pace (Bezunch et al., 2021; Wynn et al., 2024). Training should be customized to the specific needs of each department, focusing on practical skills and real-world scenarios. This targeted approach ensures that individuals gain the confidence and competence needed to

succeed, while companies benefit from higher adoption rates and reduced implementation risks (Stone & Zhang, 2021).

Scope control and minimal customizations are critical for maintaining project focus and ensuring long-term sustainability. Companies should establish clear boundaries for the ERP project, regularly review progress against objectives, and avoid unnecessary modifications that can complicate future upgrades (Shkurti & Manoku, 2021; Stone & Zhang, 2021). Employees should be involved in evaluating proposed changes to ensure that enhancements align with business priorities and add genuine value. This disciplined approach supports predictable outcomes and preserves system integrity, benefiting both organizations and individuals.

It is crucial for IT managers, business leaders, HR professionals, and change management teams to pay attention to this research. These key individuals are tasked with turning strategic recommendations into real actions that meet the needs of both the organization and its employees. To make future studies more accessible, it is helpful to show how everyone can benefit from participation with better efficiency, higher job satisfaction, and more chances for professional growth (Ateş et al., 2020; Raja et al., 2020). By emphasizing these benefits, organizations can gain support from all involved and create a culture focused on ongoing improvement.

To make the most of these findings, it is important to share the results through various channels. This includes publishing in academic journals, presenting at industry conferences, conducting professional training sessions, and holding internal

workshops. Sharing insights this way helps to connect with a wider audience and adds to the ongoing conversations about ERP implementation (Zerbino et al., 2021; Wynn et al., 2024). Organizations can also benefit from investing in continuous education and sharing knowledge, applying what they have learned from this research to guide future projects and foster innovation. By using a mix of sharing strategies, both companies and individuals can stay updated, adapt to new trends, and achieve long-term success.

Recommendations for Further Research

This qualitative multi-case study explored ERP implementation strategies used by IT managers in small businesses. While the findings offer valuable insights into successful deployment approaches, several limitations create opportunities for future investigation. The following recommendations address the limitations identified and suggest specific directions that could improve IT professional practice. Each recommendation directly addresses weaknesses inherent in qualitative research while building knowledge that IT professionals can apply to their implementation projects. The goal is to expand understanding beyond this study's specific context while maintaining focus on practical applicability.

Expanding Sample Size and Geographic Reach

The six IT managers interviewed for this study provided rich, detailed insights into their implementation experiences. However, qualitative research with small samples has inherent limitations on generalizability (Mwita, 2020). Researchers could

build on this foundation by conducting larger-scale quantitative or mixed-methods studies. A survey distributed to hundreds of IT managers across different states, industries, and company sizes would test whether implementation preparation, implementation approaches, and scope control remain the dominant themes in diverse contexts. Statistical analysis of a larger dataset would validate or challenge the patterns identified here. The depth of understanding from qualitative work would combine with the breadth of quantitative analysis to create more robust findings.

I also recommend comparative studies examining how organizational size affects implementation strategies. Do the approaches that work well for small businesses translate to mid-sized companies or large enterprises? Organizations with more resources, complex hierarchies, and established governance structures may require fundamentally different strategies. Understanding these differences would help IT managers tailor their approaches to specific organizational contexts rather than applying one-size-fits-all methodologies. Such research could reveal whether certain strategies remain constant across organizational sizes while others need significant adaptation. The practical benefit would be clearer guidance for IT managers working in different organizational environments.

Industry-Specific Implementation Research

This study focused on small businesses in central Pennsylvania, which was necessary to keep the research manageable. But this geographic limitation means the findings may not apply to other regions. Future researchers should examine ERP

implementations across different geographic areas, including urban versus rural settings, other states, or even international contexts. Cultural factors, regulatory environments, and technology infrastructure all vary by location and likely influence implementation success. For example, small businesses in rural areas might face different technology infrastructure challenges than those in major metropolitan areas. International studies could reveal how cultural attitudes toward technology adoption or change management affect implementation strategies.

Industry-specific research would also fill important gaps. The IT managers I interviewed came from different industries, but I didn't have enough participants from any single sector to identify industry-specific patterns. For example, healthcare organizations face HIPAA compliance requirements that don't apply to manufacturers and retail companies have seasonal demand fluctuations that affect implementation timing. Comparative studies examining these industry-specific factors would give IT managers more targeted guidance. Rather than generic best practices, IT managers would have access to strategies proven effective in their specific industry context.

Missing External Influences

Perhaps the most surprising finding from this study was that none of the six participants identified external influences as significant factors in their implementations. This contradicts extensive literature documenting how market conditions, vendor relationships, and competitive pressures affect ERP projects (Mahraz et al., 2019). The disconnect between my findings and the established

literature raises important questions about how small businesses experience ERP implementations differently from larger organizations. This gap represents a significant opportunity for future research that could reshape the understanding of implementation dynamics in smaller organizational contexts. Understanding why this difference exists would have direct practical implications for how small business IT managers approach their projects.

I can think of several possibilities worth investigating. Small businesses might have more control over their implementation timing and approach, allowing them to insulate projects from external disruptions. Or perhaps small business IT managers conceptualize external factors differently from the literature suggests. Perhaps what researchers categorize as external influences get absorbed into internal strategy decisions in smaller organizations. It's also possible that small businesses choose their implementation timing specifically to avoid external pressures, whereas larger organizations face more constraints on when they can undertake major system changes. Dedicated research could test these hypotheses and reveal the actual mechanisms at work.

A mixed-methods study could survey 200 or more small business IT managers about external influences, then conduct follow-up interviews with 20 to 30 participants to understand their reasoning. Do small businesses actually experience fewer external pressures during implementation? Do they handle external factors so effectively through internal strategies that the external elements become invisible in their

recollection? Or is there something about how small business leaders conceptualize their projects that differs from the academic frameworks used to study larger organizations? Answering these questions would contribute valuable knowledge about how organizational context shapes implementation experiences. The findings could lead to modified frameworks specifically designed for small business contexts rather than adapting large enterprise models.

Long-Term Outcomes and Sustainability

This study captured implementation strategies, but I don't know how well these strategies hold up over time. A company might execute a textbook-perfect implementation but struggle with user adoption six months later. Or an implementation with some rough patches during deployment might ultimately deliver a strong ROI because the team built adaptability into their approach. The immediate success of going live on schedule and within budget doesn't necessarily predict long-term value delivery. Research examining these longer-term outcomes would help IT managers make better strategic choices during the implementation phase.

Following organizations for three to five years after implementation would show which strategies really stand the test of time. Do companies that emphasize strategic alignment during implementation maintain that alignment as business needs evolve? Does strong executive sponsorship during deployment translate to ongoing system investment and support for optimization efforts? How do organizations adapt their initial approaches when they encounter post-implementation challenges that

weren't anticipated during the implementation phase? These questions matter because IT managers need to think beyond go-live dates. Decisions made during implementation affect system sustainability for years to come. Research examining these long-term patterns would help IT managers choose strategies that deliver lasting value, not just successful deployments.

Beyond IT Management

I interviewed IT managers because they drive ERP implementations and make critical strategic decisions. But they're not the only stakeholders affected by these projects. Executive sponsors make funding decisions and set organizational priorities. End users live with the system daily and determine whether it actually improves or hinders their work. Vendors and consultants bring outside expertise and see patterns across multiple implementations. Each group experiences the implementation differently and might define success using different criteria. Their perspectives could reveal blind spots in how IT managers approach implementations or identify communication gaps that undermine project success.

Future research should examine these multiple perspectives thoroughly. How do end users' perceptions of implementation success compare to IT managers' assessments? Do executives and IT managers agree on which strategies matter most, or are there disconnects in priorities? What do implementation consultants observe that internal teams miss because they're too close to the organization? Studies comparing these viewpoints would identify communication gaps and reveal blind spots that

impact outcomes. This research would move beyond the single-stakeholder perspective to create a more complete picture of what makes implementations successful from multiple angles.

I'm particularly interested in end-user perspectives. In my professional experience, IT teams sometimes assume they understand user needs without asking users directly. Training programs are sometimes designed based on what users need to know rather than what they actually struggle with. Scope decisions about which features to include are sometimes made without fully understanding daily workflow challenges. Research focusing on employees whose work processes change during ERP implementations would provide insights that IT managers might overlook. What made training effective or ineffective from the user's point of view? Did the implementation approach actually consider their daily workflow challenges or just impose a new system? Were they genuinely involved in scope decisions or just consulted for appearance? Understanding these experiences would help IT managers develop more inclusive, realistic implementation strategies that account for the people who ultimately determine whether the system delivers value.

Emerging Technologies and Implementation Approaches

Technology keeps evolving, and ERP systems are evolving with it. Cloud-based deployments have different implementation requirements than on-premise systems. AI and machine learning features raise new questions about data quality requirements and user training needs. Low-code platforms are changing who can

customize systems and how much IT involvement is necessary for modifications. Mobile access expectations affect how implementations need to address user interface design and security. These technological shifts may require fundamental changes to implementation strategies, or they may simply be new contexts for applying the same core principles.

How do these technological changes affect the three themes I identified in this study? Implementation preparation might look different when you're configuring a cloud system versus installing software on local servers. The vendor handles infrastructure in cloud deployments, which changes what IT managers need to prepare for. Phased rollouts might work differently with SaaS subscriptions versus perpetual licenses because cloud systems can be updated continuously. Scope control becomes complicated when business users can build their own workflows using low-code tools without IT involvement. Research comparing traditional and cloud-based implementations would clarify how IT managers need to adapt their strategies. Do the fundamentals like strategic alignment, executive sponsorship, and scope control remain constant across deployment models, or does each technological architecture demand different approaches?

Testing these questions across different technological contexts would provide critical guidance as more organizations move to cloud ERP. IT managers need to know whether they can apply traditional implementation wisdom to new technologies or whether they need fundamentally different approaches. The research could also

identify emerging challenges that aren't yet well-documented in the literature. For instance, how does continuous updating in cloud ERP affect the concept of project completion? If the system is always evolving, do implementation strategies need to shift from project-based thinking to ongoing capability development? These questions will become increasingly important as technology continues to change.

Resource Constraints in Small Businesses

Small businesses face resource limitations that larger organizations don't encounter. Limited budgets mean choosing between implementation features or deciding whether to hire consultants. Small IT teams can't dedicate someone full-time to the implementation while maintaining existing systems. Compressed timelines result from business pressure to see ROI quickly or from limited windows when staff can be pulled away from daily operations. These constraints force trade-offs that larger organizations with dedicated implementation teams and bigger budgets can avoid. The literature describes best practices developed primarily in larger organizational contexts, but small businesses can't always implement all recommended strategies.

How do small business IT managers prioritize when they can't do everything the literature suggests? Which strategies deliver the most impact with limited resources and should be protected even under budget pressure? Are there creative, cost-effective approaches that small businesses develop out of necessity but that could benefit organizations of any size? I suspect small businesses have figured out efficient strategies that don't appear in traditional literature because researchers focus primarily

on larger companies with bigger implementation budgets. Documenting these practices would provide valuable guidance for resource-constrained environments. The research might reveal that some expensive best practices can be approximated effectively with creative low-cost alternatives.

Comparative research examining implementations across organizations with different resource levels would identify these innovative approaches. The studies could track which strategies small businesses eliminate first when resources are tight and whether those eliminations actually hurt implementation success. Conversely, the research could identify which strategies small businesses protect even under severe resource constraints because experience has taught them these elements are non-negotiable. Understanding these priority patterns would help IT managers make better resource allocation decisions. It would also reveal whether some commonly recommended practices are actually optional rather than essential for success.

Testing the Theoretical Framework

This study was grounded in General Systems Theory, which treats organizations as integrated systems rather than collections of independent parts. The framework helped explain why strategic alignment, executive sponsorship, and change management emerged as critical factors in ERP implementation success. This framework also helped me interpret my findings, but I only tested it in one specific context of small businesses in central Pennsylvania. Does the framework apply equally well to different industries, regions, or organizational sizes? Or do certain contexts

require framework modifications to maintain explanatory power? These questions matter because managers need frameworks that work in their specific situations, not just in the academic settings where they were originally developed. Validation studies testing the framework across diverse settings would strengthen its theoretical foundations and clarify its scope of applicability.

Mixed-methods research could quantitatively validate framework components while qualitatively exploring context-specific variations. Researchers could survey large samples to test whether framework elements correlate with implementation success across different contexts. Then qualitative follow-up could explore the exceptions and variations to understand what contextual factors moderate the framework's applicability. If researchers find that the framework works universally, that confirms its value as a general guide for IT managers. If they discover that it needs adaptation for different contexts, that advances knowledge by revealing which contextual factors matter most. Either outcome would be valuable for both theory development and practical application.

I also think there's room for more integrated theoretical frameworks. ERP implementation success probably can't be fully explained by any single theory. Change management theory explains resistance and adoption but doesn't address technical architecture decisions. Technology acceptance models predict user behavior but don't explain project management challenges. Project management frameworks focus on execution but may underemphasize organizational culture factors. Combining these

perspectives might create a more comprehensive guide that addresses the full complexity of ERP implementations. Developing and testing such integrated frameworks would give IT managers better tools for understanding and navigating implementation complexity from multiple angles simultaneously.

Moving Forward

These recommendations address the limitations in this study while pointing toward research that would significantly improve IT practice. The field needs larger-scale studies that validate findings across diverse contexts. Longitudinal research is needed to reveal what happens after go-live and which implementation strategies create sustainable value. Multi-stakeholder perspectives would show the blind spots that emerge when IT managers are asked about their experiences. An investigation into how emerging technologies reshape implementation strategies would help practitioners navigate the changing technological landscape. A better understanding of how resource constraints affect strategic choices and of the creative solutions that small businesses have developed is also needed

Most importantly, understanding why small business experiences sometimes differ from what the literature predicts remains a critical gap. The absence of external influences I found in this study challenges existing frameworks and suggests that organizational context shapes implementations in ways the current literature does not fully address. These gaps between theory and practice reveal opportunities to build more accurate, useful knowledge that reflects how implementations actually work

rather than how theory suggests they should work. Future researchers who pursue these directions will do more than fill academic gaps or contribute to theoretical debates. They will provide IT managers with evidence-based strategies for navigating ERP implementations in an increasingly complex technological landscape. That practical impact matters because every ERP implementation affects real organizations with real budgets and real people whose daily work lives will change. Implementations can cost hundreds of thousands or even millions of dollars. They disrupt operations and require significant time investments from staff across the organization. The stakes are high, and the margin for error is small, especially in small businesses without resources to recover from failed implementations. The better the research-based understanding of these dynamics becomes, the better equipped IT managers will be to implement systems that actually deliver value rather than becoming expensive mistakes that organizations struggle to recover from.

Reflections

Completing this doctoral study has been both challenging and enlightening. As I reflect on the research process, I recognize that I brought certain biases and preconceived ideas to this study based on my own professional experience. I have spent more than 20 years working as a Technical Program Manager and IT Manager, including leading ERP implementation projects and coordinating cross-functional teams. This background provided valuable insight into the complexities of ERP deployments, but it also meant that I began this research with expectations about what

IT managers would say. I expected participants to emphasize external pressures like vendor relationships, market competition, and regulatory changes because those factors appeared prominently in the literature. Instead, all six participants focused exclusively on internal strategies and organizational factors. This unexpected finding forced me to question my assumptions and consider that small business implementations might operate differently than I had experienced in larger organizational contexts.

I also recognize that my role as a researcher could have influenced participants during the interviews. As someone with ERP implementation experience, I may have appeared as a peer rather than a neutral academic researcher. This familiarity could have encouraged participants to speak more openly about their challenges and strategies, which benefited the data collection. However, it might also have led participants to assume I understood certain contexts without full explanation, potentially leaving gaps in the data. I attempted to mitigate this by asking clarifying questions even when I thought I understood their responses, but I cannot completely rule out the possibility that my professional background shaped how participants framed their answers. My experience also led me to gravitate toward certain interview probes about project management practices, which may have emphasized some themes while inadvertently de-emphasizing others.

The most significant change in my thinking came from the absence of external influences in the participant responses. Before conducting this study, I believed that

external factors were universally important in ERP implementations regardless of organizational size. The literature strongly supported this view, and my own experience suggested that market pressures, vendor limitations, and competitive dynamics always played a role. But the data from this study challenged that assumption completely. None of the six IT managers identified external influences as significant factors in their implementations. This finding initially puzzled me and made me wonder if I had somehow failed to ask the right questions. After careful analysis and member checking, I concluded that small businesses genuinely experience implementations differently. They may have more control over timing and approach, or they may effectively neutralize external pressures through strong internal strategies. This realization changed how I think about implementation frameworks and reminded me that research findings do not always align with researcher expectations or existing literature.

This study also deepened my appreciation for the value of qualitative research. As someone with a technical background, I initially gravitated toward quantitative approaches that seemed more concrete and objective. Working through the interview process, coding transcripts, and identifying themes taught me that the richness of qualitative data provides insights that numbers alone cannot capture. Hearing IT managers describe their decision-making processes in their own words revealed their strategic thinking, organizational culture, and leadership dynamics that would not have emerged from a survey. I now understand that both methodologies have their place,

but qualitative research offers a depth of understanding that is particularly valuable when exploring complex organizational phenomena like ERP implementations.

Finally, this doctoral journey has reinforced the importance of remaining open to unexpected findings and being willing to let the data challenge preconceived ideas. Good research requires intellectual humility and the willingness to report findings that contradict expectations or established theory. The process has made me a better researcher and a more thoughtful IT professional. I now approach implementation projects with greater awareness of how organizational context shapes strategy selection and outcomes. I also have deeper respect for the knowledge that practitioners develop through experience, knowledge that may not always align perfectly with academic frameworks but remains valid and valuable nonetheless.

Conclusion

This study set out to answer a straightforward question: What strategies do IT managers use to implement ERP systems? The answer, drawn from the experiences of six IT managers in small businesses, centers on three interconnected themes: implementation preparation, implementation approaches, and scope control. These themes are not just academic constructs. They represent the practical realities that determine whether an ERP implementation succeeds or fails. Strategic alignment with business goals, strong executive sponsorship, disciplined scope management, and thoughtful change management emerged as the non-negotiable elements that separate successful implementations from costly failures. Perhaps most intriguing was what

participants did not emphasize. The absence of external influences in their responses challenges existing frameworks and suggests that small businesses may operate with more autonomy than the authors typically acknowledge. This finding alone warrants further investigation and reminds the field that research must remain open to unexpected patterns that challenge existing assumptions.

For IT managers preparing to undertake ERP implementations, this research offers a clear roadmap grounded in real-world experience rather than theoretical ideals. Start with thorough preparation that aligns the ERP project with genuine business needs. Secure committed executive sponsorship before you begin, not just funding approval, but active engagement throughout the project. Choose your implementation approach based on your organization's capacity for change, recognizing that phased rollouts often work better for small businesses than big bang deployments. Control scope aggressively because every additional customization or feature request threatens your timeline, budget, and ultimate success. These strategies are not revolutionary, but they work. The IT managers who shared their experiences proved that disciplined execution of fundamental strategies delivers results even in resource-constrained environments. Their success stories provide both inspiration and practical guidance for the countless IT managers who will lead ERP implementations in the years ahead.

References

- Ahmad, T., & Van Looy, A. (2020). Business process management and digital innovations: A systematic literature review. *Sustainability*, *12*(17), 6827. <https://doi.org/10.3390/su12176827>
- Ahriz, S., Benmoussa, N., & El Yamami, A. (2021). An elaboration of a strategic alignment model of university information systems based on SAM model. *Engineering, Technology & Applied Science Research*, *8*(1), 2471–2476. <https://doi.org/10.48084/etasr.1696>
- Al-Surmi, A., Cao, G., & Duan, Y. (2020). The impact of aligning business, IT, and marketing strategies on firm performance. *Industrial Marketing Management*, *84*, 39–49. <https://doi.org/10.1016/j.indmarman.2019.04.002>
- Aljaeri, M. A. M., & Jaharadak, A. A. (2021). Empirical evidence on system implementation failures in the enterprise resource planning development process. *European Journal of Economic and Financial Research*, *4*(4), 1–15. <https://doi.org/10.46827/ejefr.v4i4.1024>
- Almajali, D. A., Masa'deh, R. E., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: A study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, *29*(4), 549-565. <https://doi.org/10.1108/JEIM-03-2015-0024>
- Almalki, M., Al-fleit, S., & Zafar, A. (2017). Challenges in implementation of information system strategies in saudi business environment: A case study of a

bank. *International Journal of Computer Trends and Technology*, 43(1), 60.

<https://doi.org/10.14445/22312803/IJCTT-V43P108>

Altamony, H., Al-Salti, Z., Gharaibeh, A., & Elyas, T. (2016). The relationship between change management strategy and successful enterprise resource planning (ERP) implementations: A theoretical perspective. *International Journal of Business Management and Economic Research*, 7(4), 690-703.

Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: A worked example from a synthesis on parental perceptions of vaccination communication. *BMC Medical Research Methodology*, 19, Article 26. <https://doi.org/10.1186/s12874-019-0665-4>

Andrade, C. (2024). Sample size and its importance in research. *Indian Journal of Psychological Medicine*, 41(1), 3–6.

https://doi.org/10.4103/IJPSYM.IJPSYM_504_19

Artto, K., & Turkulainen, V. (2018). It takes two to tango: Product-organization interdependence in managing major projects. *International Journal of Operations & Production Management*, 38(6), 1312-1339.

<https://doi.org/10.1108/IJOPM-12-2016-0767>

Ateş, N. Y., Tarakci, M., Porck, J. P., van Knippenberg, D., & Groenen, P. J. F. (2020).

The dark side of visionary leadership in strategy implementation: Strategic alignment, strategic consensus, and commitment. *Journal of Management*, 46(5), 637–665. <https://doi.org/10.1177/0149206318811567>

- Aubry, M., & Lavoie-Tremblay, M. (2018). Rethinking organizational design for managing multiple projects. *International Journal of Project Management*, 36(1), 12-26. <https://doi.org/10.1016/j.ijproman.2017.05.012>
- Awad, N., Pareek, A., Shah, Z., & Schott, K. (2020). *An ERP strategy for a postpandemic world*. Boston Consulting Group.
<https://www.bcg.com/publications/2020/post-pandemic-enterprise-resource-planning-solutions>
- Barki, H., & Pinsonneault, A. (2005). A model of organizational integration, implementation effort, and performance. *Organization Science*, 16(2), 165–179. <https://doi.org/10.1287/orsc.1050.0118>
- Barna, L.-E.-L., & Igna, R. D. (2021). The influence of the implementation of ERP systems on the performance of an organization. *Proceedings of the International Conference on Business Excellence*, 15(1), 1002–1011.
<https://doi.org/10.2478/picbe-2021-0026>
- Barr, H. (2013). Toward a theoretical framework for interprofessional education. *Journal of Interprofessional Care*, 27(1), 4–9.
<https://doi.org/10.3109/13561820.2012.698328>
- Baumann, B. (2021). *Lessons learned from the Waste Management ERP failure*.
<https://www.panorama-consulting.com/waste-management-erp-failure/>
- Beekhuizen, J., & Bazeley, P. (2024). *Qualitative data analysis with NVivo* (4th ed.). SAGE Publications.

- Bell, E., Harley, B., & Bryman, A. (2022). *Business research methods* (6th ed.). Oxford University Press.
- Bezuneh, D. W., Kamau, J. N., & Macharia, J. (2021). The moderating role of ERP implementation strategies on enterprise resource planning system adoption related factors among healthcare facilities in Kenyan context. *Strategic Journal of Business & Change Management*, 8(4), 987–1002. <https://doi.org/10.61426/sjbcm.v8i4.2155>
- Biesenthal, C., Clegg, S., Mahalingam, A., & Sankaran, S. (2018). Applying institutional theories to managing megaprojects. *International Journal of Project Management*, 36(1), 43–54. <https://doi.org/10.1016/j.ijproman.2017.06.006>
- Bragantini, D., & Licciardi, M. (2017). Stakeholders communication approach: A new era. *PM World Journal*, 6(7).
- Bredillet, C., Tywoniak, S., & Tootoonchy, M. (2018). Exploring the dynamics of project management office and portfolio management co-evolution: A routine lens. *International Journal of Project Management*, 36(1), 27. <https://doi.org/10.1016/j.ijproman.2017.04.017>
- Brown, A. (2020). *Qualitative research methods in the social sciences*. Sage Publications.
- Caldwell, C., & Anderson, V. (2021). *Performance management for the modern leader*. Nova Science Publishers. <https://doi.org/10.52305/CQZB5562>

- Cameron, E., & Green, M. (2024). Making sense of change management: A complete guide to the models, tools and techniques of organizational change. Philadelphia, PA: Kogan Page.
- Carpenter, D. A., & Agrawal, V. K. (2018). Infusing information technology into the core business curriculum: a change management project. *The Journal of Business Inquiry*, 7(1), 3-20.
<https://journals.uvu.edu/index.php/jbi/article/view/161/135>
- Carr-Chellman, D. J., & Carr-Chellman, A. (2020). Integrating systems: The history of systems from von Bertalanffy to profound learning. *TechTrends*, 64(5), 704–709. <https://doi.org/10.1007/s11528-020-00540-1>
- Carvalho, M., Cabral, I., Verdasca, J. L., & Alves, J. M. (2021). Strategy and strategic leadership in education: A scoping review. *Frontiers in Education*, 6, Article 706608. <https://doi.org/10.3389/feduc.2021.706608>
- Cha, J., Newman, M., & Winch, G. (2018). Revisiting the project management knowledge framework: Rebalancing the framework to include transformation projects. *International Journal of Managing Projects in Business*, 11(4), 1026–1043. <https://doi.org/10.1108/IJMPB-11-2017-0147>
- Cody, T., Adams, S., & Beling, P. (2020). Motivating a systems theory of AI. *INSIGHT*, 23(1), 37–40. <https://doi.org/10.1002/inst.12283>
- Coleman, P. (2021). Validity and reliability within qualitative research in the caring sciences. *International Journal of Caring Sciences*, 14(3), 2041–2045.

https://internationaljournalofcaringsciences.org/docs/54_goleman_special_14_3.pdf

- Creswell, J. W., & Poth, C. N. (2021). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE Publications.
- Crossman, A. (2020). An overview of qualitative research methods: Direct observation, interviews, participation, immersion, focus groups. *Routledge*.
<https://doi.org/10.4324/9780203644362>
- De Mast, J., Lameijer, B. A., Linderman, K., & Van de Ven, A. (2021). Exploring the process of management system implementation: A case of Six Sigma. *International Journal of Operations & Production Management*, 42(13), 1–241.
<https://doi.org/10.1108/IJOPM-09-2020-0645>
- Dolfing, H. (2022). Case study 16: Nike's 100 million dollar supply chain "Speed bump". *Henrico Dolfing*. <https://www.henricodolfing.com/2022/10/case-study-nike-i2-supply-chain-management.html>
- Eftekhari, N. A., Mani, S., Bakhshi, J., Statsenko, L., & Naeni, L. M. (2022). Socio-technical and political complexities: Findings from two case studies of large IT project-based organizations. *Systems*, 10(6), 244.
<https://doi.org/10.3390/systems10060244>
- Elgazzar, K., Khalil, H., Alghamdi, T., Badr, A., Abdelkader, G., Elewah, A., & Buyya, R. (2022). Revisiting the internet of things: New trends, opportunities and grand challenges. *Frontiers in Internet Things*, 1, Article 1073780.
<https://doi.org/10.3389/friot.2022.1073780>

- Elhami-Khoshnevisan, A., & Khoshnevisan, B. (2022). Conducting an interview in qualitative research: The modus operandi. *Mextesol Journal*, 46(1), 1–7.
<https://doi.org/10.61871/mj.v46n1-3>
- Eti-Tofinga, B., Singh, G., & Douglas, H. (2018). Facilitating cultural change in social enterprises. *Journal of Organizational Change Management*, 31(3), 619–636.
<https://doi.org/10.1108/JOCM-12-2016-0296>
- Fayaz, A., Kamal, Y., Amin, S., & Khan, S. (2017). Critical success factors in information technology projects. *Management Science Letters*, 7(2), 73–80.
<https://doi.org/10.5267/j.msl.2016.11.012>
- Ford, G. (2022). What is a business project? - Types & what makes them unique. *Project Management*. <https://www.project-management.com>
- Prefer, A. A., Mahmoud, M., Haleema, H., & Almamlook, R. (2018). Overview success criteria and critical success factors in project management. *Industrial Engineering & Management*, 7(1), 244–249. <https://doi.org/10.4172/2169-0316.1000244>
- Fusch, G. E., Ness, L., Booker, J. M., & Fusch, P. I. (2020). People and process: Successful change management initiatives. *Journal of Social Change*, 12, 166–184. <https://doi.org/10.5590/JOSC.2020.12.1.13>
- Gaillet, L. L., & Guglielmo, L. (2014). Scholarly publication in a changing academic landscape: Models for success. *Palgrave Macmillan*.
<https://doi.org/10.1057/9781137410764>

- Gemino, A., Reich, B. H., & Sauer, C. (2015). Plans versus people: Comparing knowledge management approaches in IT-enabled business projects. *International Journal of Project Management*, 33(2), 299–310. <https://doi.org/10.1016/j.ijproman.2014.04.012>
- Goyes, D. R., & Sandberg, S. (2024). Trust, nuance, and care: Advantages and challenges of repeat qualitative interviews. *Qualitative Research*, 25(2), 330-349. <https://doi.org/10.1177/14687941241246159>
- Granić, A. (2022). Educational technology adoption: A systematic review. *Education and Information Technologies*, 27, 9725–9744. <https://doi.org/10.1007/s10639-022-10951-7>
- Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLOS ONE*, 15(5), e0232076. <https://doi.org/10.1371/journal.pone.0232076>
- Gupta, S. (2025). *Critical success factors for ERP implementation*. *Scholars Journal of Engineering and Technology*. <https://doi.org/10.36347/sjet.2025.v13i03.001>
- Haddara, M., & Elragal, A. (2015). The readiness of ERP systems for the factory of the future. *Procedia Computer Science*, 64, 721–728. <https://doi.org/10.1016/j.procs.2015.08.598>
- Hao, H., Padman, R., Sun, B., & Telang, R. (2018). Quantifying the impact of social influence on the information technology implementation process by physicians: A hierarchical Bayesian learning approach. *Information Systems Research*, 29(1), 25–41. <https://doi.org/10.1287/isre.2017.0746>

- Holland, J. H. (1995). *Hidden order: How adaptation builds complexity*. Addison-Wesley.
- Hornstein, H. A. (2015). The integration of project management and organizational change management is now a necessity. *International Journal of Project Management*, 33(2), 291–298. <https://doi.org/10.1016/j.ijproman.2014.08.005>
- Hsu, J. S. C., Hung, Y. W., Shih, S. P., & Hsu, H. M. (2016). Expertise coordination in information systems development projects: Willingness, ability, and behavior. *Project Management Journal*, 47(4), 95–115. <https://doi.org/10.1177/875697281604700408>
- Huang, Q., Rahim, M., Foster, S., & Anwar, M. (2021). Critical success factors affecting implementation of Cloud ERP systems: A systematic literature review. *Proceedings of the 54th Hawaii International Conference on System Sciences*. <https://doi.org/10.24251/HICSS.2021.569>
- Ibrahim, R., Boerhannoeddin, A., & Kayode, B. K. (2017). Organizational culture and development: Testing the structural path of factors affecting employees' work performance in an organization. *Asia Pacific Management Review*, 22(2), 104–111. <https://doi.org/10.1016/j.apmrv.2016.10.002>
- Ilmudeen, A., Bao, Y., & Alharbi, I. M. (2019). How does business-IT strategic alignment dimension impact on organizational performance measures. *Journal of Enterprise Information Management*, 32(3), 457–476. <https://doi.org/10.1108/JEIM-09-2018-0197>

- Jason, L. A., & Bobak, T. (2022). Using systems theory to improve intervention outcomes. *Professional Psychology: Research and Practice, 53*(4), 415–422. <https://doi.org/10.1037/pro0000467>
- Jiang, J., Klein, G., & Fernandez, W. (2018). From project management to program management: An invitation to investigate programs where IT plays a significant role. *Journal of the Association for Information Systems, 19*(1), 40–57. <https://doi.org/10.17705/1jais.00480>
- Johnson, L. (2021). *Interview techniques for qualitative research*. Routledge.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2021). Toward a definition of mixed methods research. *Journal of Mixed Methods Research, 1*(2), 112–133. <https://doi.org/10.1177/2345678906298224>
- Kane, G., Palmer, D., Phillips, A., & Kiron, D. (2015). Is your business ready for a digital future? *MIT Sloan Management Review, 56*(4), 37. <https://sloanreview.mit.edu/article/is-your-business-ready-for-a-digital-future/>
- Katrakazas, P., Grigoriadou, A., & Koutsouris, D. (2020). Applying a general systems theory framework in mental health treatment pathways: The case of the Hellenic Center of Mental Health and Research. *International Journal of Mental Health Systems, 14*, 67. <https://doi.org/10.1186/s13033-020-00398-z>
- Katuu, S. (2020). Enterprise resource planning: Past, present, and future. *New Review of Information Networking, 25*(1), 37–46. <https://doi.org/10.1080/13614576.2020.1742770>

- Kimberling, E. (2020). Top 10 recommendations for ERP/HCM/SCM implementations in the 2020s. *Third Stage Consulting*. <https://www.thirdstage-consulting.com/top-10-recommendations-for-erp-hcm-scm-implementations-in-the-2020s/>
- King, N. (2020). Doing template analysis. In *Qualitative organizational research: Core methods and current challenges* (pp. 426-450). Sage.
- Klun, M., & Trkman, P. (2018). Business process management at the crossroads. *Business Process Management Journal*, 24(3), 786-813. <https://doi.org/10.1108/BPMJ-11-2016-0226>
- Ko, D. G., & Kirsch, L. J. (2017). The hybrid IT project manager: One foot each in the IT and business domains. *International Journal of Project Management*, 35(3), 307-319. <https://doi.org/10.1016/j.ijproman.2017.01.013>
- Kraljić, A., & Kraljić, T. (2020). Agile engineering practices in ERP implementation process. *Journal of Information Systems Engineering & Management*, 5(2), em0118. <https://doi.org/10.29333/jisem/8316>
- Lakens, D. (2022). Sample Size Justification. *Collabra: Psychology*, 8(1), 33267. <https://doi.org/10.1525/collabra.33267>
- Li, Y., & Zhang, S. (2022). Research design. In *Applied research methods in urban and regional planning* (pp. 23–36). Springer. <https://doi.org/10.1007/978-3-030-93574-0>

- Limna, P. (2023). The impact of NVivo in qualitative research: Perspectives from graduate students. *Journal of Applied Learning and Teaching*, 6(2).
<https://doi.org/10.37074/jalt.2023.6.2.17>
- Lin, T. C., Huang, S. L., & Chiang, S. C. (2018). User resistance to the implementation of information systems: A psychological contract breach perspective. *Journal of the Association for Information Systems*, 19(4), 306-332.
<https://doi.org/10.17705/1jais.00493>
- Maes, G., & Van Hootehem, G. (2022). Power and politics in different change discourses. *Administrative Sciences*, 12, 64.
<https://doi.org/10.3390/admsci12020064>
- Mahmood, F., Khan, A. Z., Shah, S. A., & Adil, M. (2023). Post ERP implementation issues and challenges: Exploratory case studies in the context of Saudi Arabia. *Kybernetes*. <https://doi.org/10.1108/k-06-2022-0914>
- Mahraz, M., Benabbou, L., & Berrado, A. (2019). Implementation and management of ERP systems: A literature review. *IEOM Society International Conference Proceedings*, 478-490.
https://www.researchgate.net/publication/355864958_Success_Factors_for_ERP_Implementation_a_Systematic_Literature_Review
- Markus, M. L., & Tanis, C. (2000). Multisite ERP implementations. *Communications of the ACM*, 43(4), 42-46. <https://doi.org/10.1145/332051.332068>
- Martinsuo, M., & Hoverfält, P. (2018). Change program management: Toward a capability for managing value-oriented, integrated multi-project change in its

context. *International Journal of Project Management*, 36(1), 134-146.

<https://doi.org/10.1016/j.ijproman.2017.04.018>

Mayeh, M., Ramayah, T., & Mishra, A. (2016). The role of absorptive capacity, communication and trust in ERP adoption. *Journal of Systems and Software*,

119, 58-69. <https://doi.org/10.1016/j.jss.2016.05.025>

Maylor, H., & Turner, N. (2017). Understand, reduce, respond: Project complexity management theory and practice. *International Journal of Operations &*

Production Management, 37(8), 1076-1093. <https://doi.org/10.1108/IJOPM-05-2016-0263>

McClory, S., Read, M., & Labib, A. (2017). Conceptualising the lessons-learned process in project management: Towards a triple-loop learning framework.

International Journal of Project Management, 35(7), 1322-1335.

<https://doi.org/10.1016/j.ijproman.2017.05.006>

Menon, S. (2020). Critical success factors for ERP projects: Recommendations from a Canadian exploratory study. *International Journal of Business and*

Management, 15(2), 80-90. <https://doi.org/10.5539/ijbm.v15n2p80>

Mittal, V., Piazza, A., & Malshe, A. (2023). Is your company as strategically aligned as you think it is? *Harvard Business Review*. <https://hbr.org/2023/05/>

Mortelmans, D. (2025). *Doing qualitative data analysis with NVivo*. Springer.

Müller, J., & Kunisch, S. (2018). Central perspectives and debates in strategic change research. *International Journal of Management Reviews*, 20(2), 457-482.

<https://doi.org/10.1111/ijmr.12141>

- Mwita, K. M. (2020). Strengths and weaknesses of qualitative research in social science studies. *International Journal of Research in Business and Social Science*, 11(6), 618-625. <https://doi.org/10.19034/ijrbs.v11i6.618>
- Noble, H., & Smith, J. (2021). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing*, 18(2), 343. <https://doi.org/10.1136/eb-2015-102054>
- O'Reilly, C. A., Caldwell, D. F., Chatman, J. A., Lapiz, M., & Self, W. (2005). How leadership matters: The effects of leadership alignment on strategy implementation. *Stanford GSB Research Paper No. 1895*.
<https://doi.org/10.2139/ssrn.742707>
- Philip, J. (2021). Viewing digital transformation through the lens of transformational leadership. *Journal of Organizational Computing and Electronic Commerce*, 31(2), 114–129. <https://doi.org/10.1080/10919392.2021.1911573>
- Phillips, J., & Klein, J. D. (2023). Change management: From theory to practice. *TechTrends*, 67, 189-197. <https://doi.org/10.1007/s11528-022-00775-0>
- Pritchard, I. A. (2021). Framework for the ethical conduct of research: The ethical principles of the Belmont Report. In S. Panicker & B. Stanley (Eds.), *Handbook of research ethics in psychological science* (pp. 3–21). American Psychological Association. <https://doi.org/10.1037/0000258-001>
- Rahimi, F., Møller, C., & Hvam, L. (2016). Business process management and IT management: The missing integration. *International Journal of Information Management*, 36(1), 142-154. <https://doi.org/10.1016/j.ijinfomgt.2015.10.004>

- Raja, S., Joseph, N., & Totawar, A. (2020). Analysing ERP implementations from an organizational change perspective: An exploratory study. In K. G. Srinivasan, A. T. Chatain, & J. F. Nunamaker (Eds.), *International Working Conference on Transfer and Diffusion of IT (TDIT)* (pp. 674-678). Springer.
https://doi.org/10.1007/978-3-030-64861-9_58
- Rajapakse, D. P. P. K., & Thushara, S. C. (2023). Critical failure factors in ERP implementation: A systematic literature review. *Journal of Business and Technology*, 7(1). <https://doi.org/10.4038/jbt.v7i1.109>
- Ramírez, R., & Quarry, W. (2019). Communication for social change: Seldom a stand alone, and rarely verified. *Journal of MultiDisciplinary Evaluation*, 15(32), 1-16. <https://doi.org/10.56645/jmde.v15i32.513>
- Ross, P. T., & Bibler, N. L. (2019). Limited by our limitations. *Perspectives on Medical Education*, 8(4), 261-264. <https://doi.org/10.1007/s40037-019-00530-x>
- Schuster, F., & Habibipour, A. (2022). Users' privacy and security concerns that affect IoT adoption in the home domain. *International Journal of Human-Computer Interaction*, 40(7), 1632-1643. <https://doi.org/10.1080/10447318.2022.2147302>
- Shao, Z., Feng, Y., & Hu, Q. (2017). Impact of top management leadership styles on ERP assimilation and the role of organizational learning. *Information & Management*, 54, 902-919. <https://doi.org/10.1016/j.im.2017.01.005>

- Shelley, A. (2020). Cocreated projects worth doing: An inclusive collaborative approach for design of strategic initiatives in VUCA. *Journal of Technology & Governance, 1*(1). <http://creactos.org/index.php/jtg/article/view/9>
- Shkurti, R., & Manoku, E. (2021). Factors of success in implementation of enterprise resource planning systems. *WSEAS Transactions on Business and Economics, 18*, 1084-1093. <https://doi.org/10.37394/23207.2021.18.102>
- Shrivastava, S., Pazzaglia, F., Sonpar, K., & McLoughlin, D. (2022). Effective communication during organizational change: A cross-cultural perspective. *Cross Cultural & Strategic Management, 29*(3). <https://doi.org/10.1108/ccsm-08-2021-0144>
- Silva de Mattos, C., Pellegrini, G., Hagelaar, G., & Dolfmsa, W. (2023). Systematic literature review on technological transformation in SMEs: A transformation encompassing technology assimilation and business model innovation. *Management Review Quarterly, 26*(3), 577-595. <https://doi.org/10.1007/s11301-023-00327-7>
- Smith, J., & Davis, R. (2020). *The role of the researcher in qualitative studies*. University Press.
- Smith, J. D., Li, D. H., & Rafferty, M. R. (2020). The Implementation Research Logic Model: A method for planning, executing, reporting, and synthesizing implementation projects. *Implementation Science, 15*(842). <https://doi.org/10.1186/s13012-020-01041-8>

- Smits, S. J., & Bowden, D. E. (2015). A perspective on leading and managing organizational change. *Economics and Business Review*, 1(2), 3–20.
<https://doi.org/10.18559/ebr.2015.2.1>
- Somers, T. M., & Nelson, K. (2001). The impact of critical success factors across the stages of enterprise resource planning implementations. *Proceedings of the 34th Annual Hawaii International Conference on System Sciences*.
<https://doi.org/10.1109/HICSS.2001.927057>
- Stone, A. R., & Zhang, X. (2021). Understanding success factors for ERP implementation: An integration of literature and experience. *Issues in Information Systems*, 22(2), 150-161.
https://doi.org/10.48009/2_iis_2021_150-161
- Tadros, E. (2020). The puzzling metaphor: Teaching general systems theory to marriage and family therapy trainees. *The Family Journal*, 28(1), 98–102.
<https://doi.org/10.1177/1066480719868702>
- Tawalbeh, L., Muheidat, F., Tawalbeh, M., & Quwaider, M. (2020). IoT privacy and security: Challenges and solutions. *Applied Sciences*, 10(12), 4102.
<https://doi.org/10.3390/app10124102>
- Terlizzi, M. A., de Souza Meirelles, F., & de Moraes, H. R. O. C. (2016). Barriers to the use of an IT project management methodology in a large financial institution. *International Journal of Project Management*, 34(3), 467–479.
<https://doi.org/10.1016/j.ijproman.2015.12.005>

- Timans, R., Wouters, P., & Heilbron, J. (2019). Mixed methods research: What it is and what it could be. *Theory and Society, 48*, 193–216.
<https://doi.org/10.1007/s11186-019-09345-5>
- Tomaszewski, L. E., Zarestky, J., & Gonzalez, E. (2020). Planning qualitative research: Design and decision making for new researchers. *International Journal of Qualitative Methods, 19*, 1–71.
<https://doi.org/10.1177/1609406920967>
- Tramonti, F., Giorgi, F., & Fanali, A. (2019). General system theory as a framework for biopsychosocial research and practice in mental health. *Systems Research and Behavioral Science, 36*(3), 332–341. <https://doi.org/10.1002/sres.2593>
- U.S. Global Change Research Program. (2022). *2022–2031 strategic plan*. U.S. Global Change Research Program. <https://doi.org/10.17226/26608>
- Varajão, J. (2018). The many facets of information systems (+ projects) success. *International Journal of Information Systems and Project Management, 6*(4), 5–13. <https://doi.org/10.12821/ijispm060401>
- von Bertalanffy, L. (1968). *General system theory: Foundations, development, applications*. George Braziller.
- von Bertalanffy, L. (1972). The history and status of general systems theory. *Academy of Management Journal, 15*(4), 407–426. <https://doi.org/10.2307/255139>
- Wanyama, T., Singh, I., & Centea, D. (2018). A practical approach to teaching Industry 4.0 technologies. In *Online Engineering & Internet of Things* (pp. 794–808). Springer. https://doi.org/10.1007/978-3-319-64352-6_74

- Wilson, L. A. (2019). Quantitative research. In P. Liamputtong (Ed.), *Handbook of research methods in health social sciences* (pp. 27–49). Springer.
https://doi.org/10.1007/978-981-10-5251-4_54
- Wynn, M. G., Ilyas, J., Isleyen, O. F., Brüntrup, H., & Metin, B. (2024). Reassessing critical success factors for ERP implementation in the digital era. *Digital Technologies Research and Application*, 3(2), 140–154.
<https://doi.org/10.54963/dtra.v3i2.297>
- Yadav, D. (2021). Criteria for good qualitative research: A comprehensive review. *The Asia-Pacific Education Researcher*, 31, 679–689.
<https://doi.org/10.1007/s40299-021-00619-0>
- Zainol, N. U., Kowang, T. O., Hee, O. C., Fei, G. C., & Kadir, B. B. (2021). Managing organizational change through effective leadership: A review from literature. *International Journal of Academic Research in Business and Social Sciences*, 11(1), 1–10. <https://doi.org/10.6007/IJARBSS/v11-i1/8370>
- Zare, J., & Persaud, A. (2024). Digital transformation and business model innovation: A bibliometric analysis of existing research and future perspectives. *Management Review Quarterly*. <https://doi.org/10.1007/s11301-024-00426-z>
- Zerbino, P., Aloini, D., Dulmin, R., & Mininno, V. (2021). Why enterprise resource planning initiatives do succeed in the long run: A case-based causal network. *PLOS ONE*, 16(12), e0260798. <https://doi.org/10.1371/journal.pone.0260798>

Zwikael, O., & Meredith, J. R. (2018). Who's who in the project zoo? The ten core project roles. *International Journal of Operations & Production Management*, 38(2), 474–492. <https://doi.org/10.1108/IJOPM-05-2017-0274>

Zwikael, O., Salmona, M., Meredith, J., & Zarghami, S. A. (2023). Enhancing project stakeholder communication under insufficient knowledge of project management concepts. *Engineering, Construction and Architectural Management*, 30(10), 5007–5029. <https://doi.org/10.1108/ECAM-02-2022-0154>

Appendix A: Interview Questions

Participant Background Information

Kindly provide a detailed summary of your experience with ERP system implementations over the past 5 years.

How many full cycle ERP system implementations have you experienced?

Semistructured Interview Questions

1. How many ERP implementations have you managed both at your current organization and at other companies?
2. What technical strategies have you used to implement ERP systems?
3. Thinking of your most recent implementation, how long, from planning through completion, did it take?
4. What business processes changed as part of the implementation in order to align IT strategic goals?
5. How did strategic alignment or lack thereof contribute to the success or failure of the implementation?
6. What external factors existed that were outside of the organization's ability to use technical strategies to implement an ERP system?

Appendix B: Protecting Human Research Participants Certification

...

