REQUIREMENTS ENTERPRISE INFORMATION SYSTEM PROFESSIONALS NEED TO IMPLEMENT ENTERPRISE RESOURCE PLANNING

A Dissertation Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Computer Science

By

James T. Jackson

Colorado Technical University

March 2020

www.manaraa.com

ProQuest Number: 28088527

All rights reserved

INFORMATION TO ALL USERS
The quality of this reproduction is dependent on the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript
and there are missing pages, these will be noted. Also, if material had to be removed,
a note will indicate the deletion.

ProQuest 28088527

Published by ProQuest LLC (2020). Copyright of the Dissertation is held by the Author.

All Rights Reserved.
This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

www.manaraa.com

Committee

Dr. Kelly Hughes, DCS, Chair

Dr. Jeffrey Butler, PhD, Committee Member

Dr. Lance Revenaugh, PhD, Committee Member

3/26/2020

www.manaraa.com

© James T. Jackson, 2020

www.manaraa.com

Abstract

The purpose of this qualitative study is to explore the requirements EIS professionals need to successfully implement ERP systems in large technology companies. The problem was to address the requirements EIS professionals need to implement ERP systems in large technology companies. The intent is designed to identify unique protocols to successfully implement ERP large technology companies. The research question asked: What are the requirements EIS professionals need to successfully implement ERP systems in large technology companies? The results of the qualitative method were via telecom interviews. The interviews were coded, by rev.com, and the data were analyzed by using the NVivo software. Selected participants consisting of various I.T. professionals namely Computer Security Director, CRM operations manager, Infrastructure Operational manager, Systems information manager, and Enterprise systems manager, were interviewed as part of this research. Such professionals were carefully chosen from several I.T. professionals. These participants were at least 18 years old with five years of experience working with EIS or ERP systems implementation. Additional recruitment was conducted via social media platforms, such as LinkedIn. Such data collection was continued until a saturation point was reached.

www.manaraa.com

Dedication

This research dissertation is dedicated to my Mother, Father, family, friends and all those who stood with me through this journey. Most of all to the all mighty.

www.manaraa.com

Acknowledgements

My instructor Dr. Kelly Hughes, Dr. LaTasha Brown, Dr. Sonya Larkey and Nawaal Jalill who was instrumental in helping to aid with my dissertation.

www.manaraa.com

Table of Contents

www.manaraa.com

www.manaraa.com

www.manaraa.com

www.manaraa.com

www.manaraa.com

List of Tables

www.manaraa.com

www.manaraa.com

List of Figures

www.manaraa.com

CHAPTER ONE

Enterprise information systems (EIS) professionals' requirements utilize various tools in successfully implementing enterprise resource planning systems (Bhumgara, & Sayyed, 2017). Organizations are relying on ERP systems for organizing and maintaining various processes more efficiently and effectively for day to day operations (Jinno, Abe, & Iizuka, 2017). Enterprise information systems (EIS) professionals discovered that organizations achieve successful implementation with the ability to manage ERP systems by effectively installing and maintaining applications associated with the software (Jinno, Abe, & Iizuka, 2017).

Implementing an ERP continues to be challenging for businesses, small, medium, and large (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Enterprise resource planning (ERP) systems are utilized to enhance business processes, productivity, and efficiency within the various areas of an organization, critical success factors are shown to affect implementation (Jinno, Abe, & Iizuka, 2017). Ninety percent of ERP implementations run into costly or delayed strategies involving correcting issues involving correcting problems in the initial stage of systems (Saade, & Nijher, 2016).

Enterprise information systems professionals' requirements for successful implementation are resultant of critical success factors (Jenko, & Roblek, 2016). Consequentially, organizations are identifying critical success factors related to human factors with management, project management, training, capital, and end-users (Jenko & Roblek, 2016). Implementation of ERP designs is costly, requires extensive research, and disruptive to production environments (Becker, Stead, & Stead, 2016).

This chapter introduces the qualitative research approach, illustrated as a brief introduction to ERP implementation. The study identified the requirements EIS professionals

www.manaraa.com

need to successfully implement ERP systems in large technology companies. The study also identified the limitations and purpose of the research, along with delimitation and limitations.

Topic Overview/Background

When an ERP system is implemented in organizations, the business can implement multiple resources and advantages from the utilization of the system. Proper planning and implementation of ERP systems allow for solutions to legacy systems and include cost reductions in processes (Mahmood & Miller, 2017). Customizing ERP enables the integration of information systems identical to the organization's rules of standard management (Atsa, & Etame, 2018).

In retrospect, the problem with ERP systems is the implementation high failure rate. ERP failures in implementation are resultant of critical success factors attributed to human intervention and lack of planning (Jagoda, & Samaranayake, 2017). Enterprise resource planning failures on projects running 16.3 months average total cost of 2.8 million dollars (Mahmood, & Miller, 2017).

Systems implementations high failure attributed to unrealistic expectations of stakeholders, top management lack of involvement, user's resistance to change, and inadequate training of technicians after implementation (Ahmadzai & Paracha, 2016). Enterprise resource planning (ERP) over-runs create a loss with unrealistic expectations, poor planning, legacy hardware, and improperly trained technicians causes failures in system implementation (The mystery of ERP failures, 2015). Enterprise resource planning (ERP) implementations require operational performance improvement, financial management, customer services, web-based interface, and effective communications (Mahmood & Miller, 2017).

www.manaraa.com

Problem Statement

The problem addressed in the study is the requirements EIS professionals need to implement ERP systems in large technology companies successfully have not been identified (Mahmood, & Miller, 2017). Failure rates are showing rates of 73% in connection with information technology projects, change in organizational goals during the project is 75%, unfortunate management failure is 77% (Ahmadzai & Paracha, 2016). The study further illustrated its findings and significance for doctoral research.

Enterprise resource planning (ERP) systems are designed with pre-built software with no standards associated with organizations causing the implementation to be unsuccessful (Mahmood & Miller, 2017). Identifying various areas of research involving ERP consists of critical success factors (CSF) of implementation involving management, project management, human resources, logistical management, and other factors associated with the implementation of ERP (Jinno, Abe, & Iizuka, 2017). The study is designed to identify unique protocols to successfully implement ERP large technology companies.

Purpose Statement

The purpose of the qualitative study was to explore requirements EIS professionals need to successfully implement ERP systems in large technology companies. Enterprise resource planning (ERP) system is an integrated enterprise computing system that lets an enterprise automate the flow of material, information, and financial resources among all functions within the enterprise on a shared database (Wickramasinghe, & Gunawardena, 2010). Project managers, managers, and EIS professional's successful implementation of ERP in large technological companies identify medium success in the implementation of projects (Jagoda & Samaranayake, 2017).

www.manaraa.com

This study identified a set of protocols that can be used by EIS professionals to implement ERP systems successfully. To accomplish this, EIS professionals from large technology companies were interviewed. Understanding the primary reason for failures in enterprise resource planning implementation can be viewed in several areas of completion.

Research Question

The research question was: What are the requirements EIS professionals need to successfully implement ERP systems in large technology companies?

Propositions

The findings yielded various critical success factors in implementing ERP by EIS professionals. The findings also determined the requirements necessary for the successful completion of ERP and ways to alleviate failures within the lifecycle of ERP implementations. The dissertation looks at focusing on the understanding of requirements EIS professionals need to successfully implement ERP systems. The research question identified the requirements EIS professionals need to successfully implement ERP systems in large technology companies have not been identified. Successful implementation involves critical success factors and adequate requirements for completion.

Theoretical Perspectives

The study was based on understanding requirements EIS professionals need to successfully implement ERP systems in large technology companies based on the experience of IT project managers, managers, and subject matter experts. Identified various requirements in completing an ERP systems implementation within a large technology organization. Interview questions was asked of various participants to construct competencies within the research.

www.manaraa.com

The study was based on qualitative interview questions for gathering additional information on requirements for the implementation. Stakeholders was interviewed as part of the research information. EIS professionals was probed for information regarding the practical completion of ERP systems for large technical organizations and the complexities associated with the implementation.

The research analyzed Coleman's mix model of how change processes may hinder processes of implementation of the ERP implementation (Shaikh, 2017). Additionally, the study observed the change processes of users via questions of participants (Jabłoński et al., 2018). Capital, logistical management, project managers, and subject matter experts was used for the successful implementation of ERP (Shaikh, 2017).

Assumptions/Biases

Enterprise resource planning systems incorporated multiple software application which allowed organizations to integrate the business into a function allowing for the sharing of information, data, and data across the enterprise (Mahmood, & Miller, 2017). Technical skills, along with training, yielded a higher probability of properly setting up and designing ERP systems within EIS. Identifying leadership with strong managerial skills lead to successful systems implementation.

IT management was not well-trained in areas associated with EIS, or intellectual properties of addressing risks, time management, and motivational skills causing the implementation of ERP in the business to fail. The secondary biases reflected insufficient and inadequate directional and leadership abilities resulting in failed implementations of ERP. Capital and planning insufficient, causing budgetary overage and non-completion.

www.manaraa.com

Significance of the Study

This study provided evidence of various critical success factors being a significant factor in the implementation of a failed or successful ERP system implementation. Enterprise resource planning (ERP) systems are recognized as management information systems that streamline the business processes of an organization (Parthasarathy, & Sharma, 2017). Enterprise resource planning benefits are heterogeneous in the mechanism of their realization along with required organizational characteristics benefits can be classified into operational, managerial, strategic, IT infrastructure, and organizational benefits (Badewi, Shehab, Zeng, & Mohamad, 2018).

Critical Success Factors identified in the implementation of ERP with those being Client Satisfaction, Clear Goals and objectives, retaining key employees, and the use of development tools (Owusu-Manu, Addy, Agyekum, & Aidoo, 2017). The risks relate to the entire chain, regardless of the technical expertise possessed by the various individual nodes (Kaukola, Ruohonen, Tuomisto, Hyrynsalmi, & Leppänen, 2017). The study utilized surveyed operational ERP consultants from CRM, and information technology in gathering a technical and operational understanding of the various competencies utilized in successfully implementing ERP systems and identifying the lead consultant in determining the implementation lifecycle.

Delimitations

Delimitations identified the boundaries of the study as selected by the researcher (Creswell, 2003). The objectives of this work was to fill a gap that existed in the literature on parent-subsidiary ERP projects (Arefina, 2014; Gavidia, 2016). Filling this gap improved the chances of success for the developmental process during post and pre strategies (Arefina, 2014; Gavidia, 2016; Miller, 2013). Delimitation arises via the focus of work in research being done

www.manaraa.com

from a remote defined location. Additional information was the data collection sample, with eight individuals being the standard along with 2 participants on standby.

Limitations

Limitations can be described as the factors that can impact a study and are beyond the direct control of the researcher (Creswell, 2003). One of the limitations of this study was the ERP project selected for this investigation, not being a typical implementation in the target organization, the wider industry, or in the global environment. The limitation could have impacted the generalize results of this study. The study involved various participants, Senior ERP consultants, CRM consultants, project management, managers, and Subject Matter Experts in ERP implementation. Obtaining the participants resulted in bias in the study based on Consultants, CRM Consultants, and management minimal understanding during the implementation of ERP.

Definition of Terms

Critical Success Factor: Critical Success Factor (CSF) Critical areas of activity that yield favorable results that are definitively necessary for a project to be effective in the completion of its task and the success or failure of technological infrastructures (Al-Sabaawi, 2015).

Enterprise Resource Planning system: Enterprise Resource Planning system (ERP) – ERP system are systems integrated software systems supporting the internal operation of an organizations enterprise (Al-Sabaawi, 2015).

General Overview of the Research Design

The qualitative method of research required some methods of data collection. Common paths used for data acquisition on qualitative research endeavors consisted of documentation, observations, audio-visual materials, and interviews (Power & Gendron, 2015). The work

www.manaraa.com

involved interviews as the primary method of data collection. The interview process utilized as the most common method of data collection used during the qualitative research process (Bluhm et al., 2011).

The study interviewed 8 participants for 10 questions. The research design for the study is based on qualitative analysis. Researching of leadership and management allows for a basis of understanding ERP systems implementation.

The participant's interviews were held via telephone. Participants were subject matter expert's ERP consultants, management, and CRM senior consultants. The participants was aware of the factors of the research is the completion of a successful ERP implementation.

Summary of Chapter One

Analysis of why this study was conducted is detailed in chapter one. The high failure rate in enterprise resource planning systems associated with critical success factors. The problem with ERP systems was the implementation of a high failure rate. Enterprise resource planning failures in implementation are resultant of critical success factors attributed to human intervention and lack of planning (Jagoda, & Samaranayake, 2017). Enterprise resource planning failures on projects running 16.3 months average total cost of 2.8 million dollars with increasing duration over-runs, creating a loss with unrealistic expectation, poor planning, legacy hardware, and improperly trained technicians (The mystery of ERP failures, 2015). The study involved various participants, Senior ERP consultants, CRM consultants, project management, managers, and Subject Matter Experts (SMEs) in ERP implementation. Leadership and management are having limited knowledge and understanding of ERP implementations.

Obtaining the participants resulted in bias in the study based on Consultants, CRM Consultants, and management minimal understanding during the implementation of ERP. The

www.manaraa.com

disconnection between physical demand planning and capacity demand planning was not considered in the unified framework. Material demand planning was calculated based on the unlimited capacity and fixed production lead time, which cannot assure the feasibility of the calculated capacity result. Assessing an RoI of ERP software, the rate of unsuccessful implementations becomes even higher – 60–90% and ERP implementation projects failures of 40–60% of cases (Menon, 2016). An additional reason for high failure rates was a lack of training, poor management, time management issues, funding, and legacy software (Menon, 2016). The research identified no empirical evidence leadership contributed to ERP implementation being successful.

Organization of the Dissertation

The study consists of 3 chapters. Chapter 2 identified the literature review information. Chapter 2 highlights ERP success and failures, various critical success factors associated with implementing Enterprise Resource Planning systems. Chapter 2 identified various critical success factors associated with failures in ERP. Chapter 2 covers various leadership styles that leaders utilize during implementation. Chapter 3 identified the methodology utilized with sampling, population, and instrumentation used in collecting, data collection, and analysis procedures along with the theoretical framework.

Chapter 4 identified the data collected from qualitative interviews, data analysis, and peer-reviewed findings. Chapter 4 also identified the results of the data collected presented demographics of participants, emerging themes, categories, summary, and researchers' findings. Chapter 5 presents an overview of chapters 1 through 4. The summary of the findings concerning the research and problem statement. The conclusion, implications, recommendations and findings for further study and the significance of the research.

www.manaraa.com

CHAPTER TWO

The general problem being researched was the high failure rates of Enterprise Resource Planning (ERP) systems implementation (Goldston, 2019). Enterprise resource planning was one of the costliest projects for organizations to implement and manage. With enterprise resource planning, you will be required to integrate supply chain utilization, human resources, information systems, finance, and a host of other areas all needing to run through a centralized database (Mahmood & Miller, 2017). The areas of enterprise resource planning implementation allude to many achievements, complex systems, resulting in difficulties and failures (Débrosse-Bruno, 2017).

Enterprise resource planning systems are utilized globally for recording, processing, storing along with updating, and exchanging of information between organizations (Wagaw, 2017). Issues relating to failures of enterprise resource planning was a lack of planning, lack of training, lack of resources, lack of hardware, and lack of software (Al-Sabaawi, 2015). Understanding the primary reason for failures in enterprise resource planning implementation can be viewed in several areas of completion. Enterprise resource planning (ERP) systems will be recognized as management information systems that streamline the business processes of an enterprise (Parthasarathy, & Sharma, 2017). Enterprise resource planning benefits are heterogeneous in the mechanism of their realization along with required organizational characteristics benefits can be classified into operational, managerial, strategic, IT infrastructure, and organizational benefits (Badewi, Shehab, Zeng, & Mohamad, 2018).

The first topic of discussion in this chapter was critical success factors, integration, and challenges in ERP implementation. The following topic after critical success factor integration and challenges will address Enterprise Resource Planning, including advantages, implementation

www.manaraa.com

strategy, and associated failures. The third topic will discuss developing countries that are lacking in the process of incorporating enterprise resource planning. The final summary of the chapter will include the highlighted points of discussion and the introduction for chapter three.

Review and Discussion of the Literature

Various research has proven that often, implementation was not the challenge but post-implementation. Subject matter experts not having the proper training or relaying information to the organization was incomprehensible or minimal. Implementing an ERP system shows expectations of employee's improvement of quality information high (Jabłoński, Kawczyńska, Pietrzak, & Wnukâ-Pel, 2018). Employees, managers, and stakeholders are essential facets in implementing ERP (Rouhani, & Mehri, 2018). Managers and stakeholders are not incorporating the proper amount of risks into the project resulting in time management not being met, which affects budgetary challenges (Haq, 2016).

Critical success factors identified in the implementation process of ERP identify clear goals and objectives, in retaining key employees, and the use of development tools (Owusu-Manu, Addy, Agyekum, & Aidoo, 2017). The APT risks relate to the entire chain, regardless of the technical expertise possessed by the various individual nodes (Kaukola, Ruohonen, Tuomisto, Hyrynsalmi, & Leppänen, 2017). Technology Acceptance Model (TAM) will be used for technological acceptance and Critical Success Factors (CSFs) for the implementation of ERP in the air transport industry of Saudi Arabia (Samander, Siam, Basri, & Hamed, 2017). Enterprise resource planning systems require huge investments, and many companies have foregone the projects due to financial difficulties in completing the projects (Mekadmi, & Louati, 2018). A variation of critical success factors was considered part of the implementation cycle or linked directly to the implementation cycle, which will be identified as causes of failure mainly outside the implementation life cycle (Jagoda & Samaranayake, 2017).

www.manaraa.com

ERP Systems

Enterprise resource planning for business has many benefits when successfully implemented. Unfortunately, some of the projects have failed or not completed. ERP systems identify specific instruments for planning, managing, and analyzing crucial areas in business (Látečková, Bolek, & Szabo, 2018). Planning, training, resources, risk assets, database analysis, management working with the implementation team, along with regular training during implementation, would be beneficial in the success rather than the failure of an enterprise resource planning implementation (Jagoda, & Samaranayake, 2017).

Enterprise resource planning (ERP) plays a vital role in small and medium organization's processes and business factors (Kanchana & Sri, 2018). ERP systems are a system that was widely adopted by organizations of developed countries such as the USA, Canada, the United Kingdom, Australia, and developing countries that are lagging (Al-Sabaawi, 2015). Many of the developing countries are lacking in the process of incorporating enterprise resource planning for the lack of installation systems due to a lack of funding, training, management ability along with resources (Jagoda, & Samaranayake, 2017).

Enterprise resource planning (ERP) remains a cornerstone of innovation success in today's global business environment and organizations (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Enterprise resource planning continues to be companies' key factors regarding information systems and modern technology (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Enterprise resource planning systems are continuing to be a pivotal company asset despite the failures and risks (Amine, Hicham, & Noura, 2018). Globally, enterprise resource planning was continuing to grow in various organizations (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). The country of China was reflecting up to 40 percent of companies surveyed indicated an

www.manaraa.com

intention to substantially increase their investment in enterprise resource planning (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012).

Despite global economic challenges, risks, and failures of enterprise resource planning, the indication of such growth was engaging in the global market (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Innovations that concern the ERP software systems and the software for the management of credit risk increase the earning margin of banks (Campanella, Della, & Del, 2017). Information technology, logistics, and financial services analyzed the various models of incorporating a viable solution (Cyrus, Aloini, & Karimzadeh, 2018).

Managing business systems within an organization was one of the critical principles of ERP (Amine, Hicham, & Noura, 2018). The organizations are analyzing ways of automating deployment and management of material, finance, and human resources, along with streamlining processes and achieving process improvement to achieve global competitiveness (Basu, Upadhyay, Dan, & Das, 2010). Training, planning, risk, and resources are just a small part of enterprise resource planning systems (Jagoda & Samaranayake, 2017).

Critical success factor (CSF) interrelations include many causal loop dependencies with considered as being causal loops (Cyrus, Aloini, & Karimzadeh, 2018). Viewing ERPs as services, the combination of ERPs and Service-oriented perspective incorporates designing ISs that aim at bridging gaps between IS and business and allowing the business to fuse with IS forming SOA (Service Oriented Architecture) based ERPs (Holmberg, & Johansson, 2017). Casual loops may cause the failure of risk reduction efforts to a more severe failure in effect of a lack of system thinking on CSFs interrelations (Cyrus, Aloini, & Karimzadeh, 2018). Organizations are continually identifying ways of implementing successful enterprise resource planning systems (Mahmood & Miller, 2017). One of the practical functions of ERP was the

www.manaraa.com

utilization of HR planning functions, which was an additional part of the implementation process (Samkarpad, 2017).

ERP System

Enterprises resource planning systems have been implemented in correcting issues of organizational failures in information coordination due to the application of legacy systems (Mahmood, & Miller, 2017). Legacy systems are utilizing outdated or aging solutions that are difficult to maintain, no longer accept patches or updated, and no longer meet organizational needs (Mahmood & Miller, 2017). Systems often utilize technologies that are at the end of life or created by a developer of the company or better known as homegrown created software (Basu, Upadhyay, Dan, & Das, 2012).

The most challenging yet highly efficient area within enterprise resource planning was that it could multi-language, multi-legislative along with the ability to flow across multiple organizations (Basu, Upadhyay, Dan, & Das, 2010). Challenges relating to training in database communications result in complexities in ERP (Mahmood, & Miller, 2017). Planning often does not just relate to costs or risk, but legacy systems and critical success factors tend to hinder implementation and production (Basu, Upadhyay, Dan, & Das, 2010).

The critical success factor adversely has been an issue within Enterprise Resource Planning (ERP) systems during pre-implementation corporate organizations relating to a significant difference as compared to organizations or institutions that have completed ERP systems implementation (Débrosse-Bruno, 2017). Enterprise resource planning interaction with systems management and the management control system leads to an improvement in an organization (Eker & Eker, 2018). Critical success factors encompass planning the implementation, costs, training, software, hardware, and resources (Mahmood & Miller, 2017).

www.manaraa.com

Utilizing the change management theory, along with the diffusion of innovations theory, was recognized as a general practice as part of the studies (Débrosse-Bruno, 2017). Companies recognize potential technical support, along with integration costs being reduced by consolidation in minimizing systems along with various application packages (Basu, Upadhyay, Dan, & Das, 2012). Failures within enterprise resource planning systems are often a result of poor planning, poor management, lack of training, lack of capital, along with implementations into legacy-based infrastructures (Mahmood, & Miller, 2017).

Benefits of ERP System Implementation

When an ERP system was correctly implemented in organizations, the business can implement multiple resources and advantages from the utilization of the system (Mahmood & Miller, 2017). Proper planning and implementation of ERP systems allow for solutions to legacy systems and include cost reductions in processes, operational performance improvement, financial management, customer services, web-based interface, and effective communications (Mahmood, & Miller, 2017). Customizing ERP enables the integration of information systems identical to the organization's rules of standard management (Atsa, & Etame, 2018). Organizations regarding small and medium sizes face enormous challenges regarding business drivers and enterprise resource planning strategies (Al-Sabaawi, 2015). Small, medium-sized enterprise (SME) organizations are focusing on growth strategies and customer service balancing between the two and focusing exclusively on one or the other (Basu, Upadhyay, Das, & Dan, 2012).

Failures of ERP System Implementation

The problem with ERP systems was the implementation of a high failure rate. Enterprise resource planning failures in implementation are resultant of critical success factors attributed to human intervention and lack of planning (Jagoda, & Samaranayake, 2017). Enterprise resource

www.manaraa.com

planning failures on projects running 16.3 months average total cost of 2.8 million dollars with increasing duration over-runs, creating a loss with unrealistic expectation, poor planning, legacy hardware, and improperly trained technicians (The mystery of ERP failures, 2015).

Failure rates are showing rates of 73% in connection with information technology projects, change in organizational goals during the project was 75%, unfortunate management failure was 77%. (Ahmadzai & Paracha, 2016). Systems implementations high failure attributed to unrealistic expectations of stakeholders, top management lack of involvement, user's resistance to change, and inadequate training of technicians after implementation (Ahmadzai & Paracha, 2016). There are several disadvantages when setting up ERP, which affects the overall optimization mechanism (Wang & Liu, 2013).

The optimization in the planning system only focuses on the planning in each tier, and the harmonies among the plans in each tier depending on the feedback mechanism, which will be done manually, while the overall optimization proposal cannot be given automatically. Planning implementation of systems was also the most criticized part of the ERP (Wang & Liu, 2013). Material demand planning was calculated based on the unlimited capacity and fixed production lead time, which cannot assure the feasibility of the calculated capacity result.

Enterprise resource planning systems implementation was challenging, and traditional technologies are showing concerns for future consequences of the implementations (Islam, Rehman, Bilal, & Ilyas, 2017). The result of the material demand planning will be the input of capacity demand planning, so the calculation can only be checked passively, while optimization suggestions will be not given, and only manual adjustment can be applied when overloaded (Nassar, Warrad, & Yousef, 2017). Nonprofits needed to innovate operations due to the global financial crises and continuing global economic instability (Strang, 2018).

www.manaraa.com

Only material and capacity are put into considerations to determine whether it was reasonable to make the production planning arrangements, but other performance management objectives in the manufacturing process are not brought into the examination scope (Strang, 2018). In the situation with customers' needs changing rapidly and daily production management getting more and more complicated, the disadvantages as mentioned above are getting even more prominent, and the conventional ERP planning model cannot adopt the changing needs more and more (Bhumgara, & Sayyed, 2017). ERP systems are susceptible to malicious attacks, and the necessity was high in protecting technical, social components, trust among software developers, users, and stakeholders (Misra, Bisui, & Mahapatra, 2018).

Enterprise Resource Planning (ERP) projects systems approach, design, and methodology examined in this paper in observance of the utilization of project managers understanding for various categorized risk factors associated with Enterprise Resource Planning (Bhumgara, & Sayyed, 2017). Enterprise resource planning risk factors, it was noticed that risk factors had a significant impact on the success of the project. Risk also impacted the project in the sense of critical risk and success factorization of enterprise resource planning implementation within a small, medium, and many developing countries. The critical success factors are resultant of enterprise resource planning failure or success attributed to critical success factors and risk (Menon, 2016).

ERP Emerging Trends

Emerging trends with ERP systems are continuing to grow amongst small, medium, and large organizations (Haq, 2016). Information technology environments models reside in a heterogeneous based model utilizing various syntax and semantics (Navid, Lindberg, El-Khoury, & Sivard, 2017). Improving design and interrelation between models allows flexibility of ERP systems with legacy and the latest technologies. Migrating ERP into an information systems

www.manaraa.com

environment requires various hardware and software allowing for compatibility and performance increase depending on network speed and latency. ERP was used in organizations by ensuring a convenient means of communication, improve interdepartmental communication, and ensure production cost was reduced (Bhumgara, & Sayyed, 2017). Cloud technology allows for ERP to holistically function in a cloud-based environment and more excellent connectivity of additional software (Jagoda, & Samaranayake, 2017). Small and medium-sized organizations faced with not having enough resources to maintain or implement enterprise resource planning (Basu, Upadhyay, Das, & Dan, 2012). Observing the implementation of small and medium organizations, it was shown that several instances of enterprise resource planning systems failed to incur huge losses during and post implementations (Basu, Upadhyay, Das, & Dan, 2012).

Organizations face challenges from various global vendors in dealing with regulatory compliance requirements regarding products and services along with physical expansion (Basu, Upadhyay, Das, & Dan, 2012). Utilizing the Design/methodology/approach of ERP system was found to be an essential asset to business value, but CRM systems' impact on business value was found to be not significant (Ruivo, Oliveira, & Mestre, 2017). Enterprise resource planning systems failures are shown as being directly attributed to the way an organization or institution implements, manages, and executes the system to the networking systems (Débrosse-Bruno, 2017).

Analyzing the importance of enterprise resource planning in organizations, the institution of higher learning and small to medium-sized businesses has been shown that the critical success factors are one of the primary areas causing failures of ERP (Débrosse-Bruno, 2017). Critical success factors could include the systems not being able to migrate into the current organizations or institutes of higher learning infrastructure (Débrosse-Bruno, 2017). Critical success factors

www.manaraa.com

could also include poor planning, management, post-installation, and training (Débrosse-Bruno, 2017). Enterprise resource planning projects are very costly to implement and maintain and produce a much more effective organization if orchestrated properly during implementation (Débrosse-Bruno, 2017).

ERP System Implementation Lifecycle

The selection of technologies was based on the database, hardware, and software application in supporting ERP systems. Deployment of ERP requires planning, a stabilized infrastructure for supporting users, and ensure unpredictable interruptions or risk interventions will not occur. (Ajit et al. 2014). The research will factor in why such high failure rates in ERP implementations there are and how to effectively resolve the issue (Clegg, & Wan, 2013).

Enterprise resource planning systems software packages that integrate several business processes, such as manufacturing, supply chain, sales, finance, human resources, budgeting, and customer service activities (Schniederjans, & Yadav, 2013). Various successes, failures, and interactions of the ERP systems show interactions with legacy and off the shelf systems (Jalloh, Habib, & Turay, 2016). Enterprise resource planning systems generally are implemented to integrate business processes and support managerial decision making in organizations (Powell, 2013).

Enterprise resource planning systems have been updating business operations and organizations for many years. One of the challenges with ERP implementation was high failure rates. Chockalingam, & Ramayah (2013) states that 18.84 percent of the manufacturing organizations in India dealing with ERP implementation failures at a delay cost of US $200,000 in losses due to implementation delays (p. 574). After the inception of the ERP process, it must also be analyzed of how it will merge within the organization, teams, managers, and groups (Jahani, Seyyed, Reza, & Hassan, 2010).

www.manaraa.com

ERP System Implementation CSFs

Enterprise resource planning (ERP) systems are operational information technology (IT) systems enabling management, project management, database administrators, accounting, human resources, and users to have enough data on hand for analysis purposes (Yahia, 2010). Organizations could anticipate and exceed customer expectations that are evaluated based on quality, time, service, availability, and efficiency with efficient planning of ERP processes (Momoh, Roy, & Shehab, 2010). Enterprise resource planning systems are based in manufacturing and traditionally do not necessarily support the increasing scope of future business requirements for Internet-based commerce (Clegg, & Wan, 2013). One of the initial problems having been discovered was choosing the correct ERP project (Ratkevicius & Skyrius, 2012).

There are various disadvantages when setting up ERP such as lack of overall optimization mechanism, optimization in the planning system only focuses on planning in each tier, and harmonies among the plans in each tier depending on the feedback mechanism, which will be done manually, while the overall optimization proposal cannot be given automatically (Menon, 2016). The core was based on an enterprise web application that was backed by an object-oriented database, various knowledge spaces for users/groups, along with a configurable interface (Adisa, Schubert, Sudzina, & Johansson, 2010). Requirements in ERP system implementation are management skills, identifying risks, and project monument utilization (Mahmood, & Miller, 2017).

History of ERP CSFs

Critical success factors based on a framework for identifying effective monitoring and evaluation systems involved with the public sector (Abdelmoniem, 2016). The critical success factor identifies top management, training and education, project management, the composition

www.manaraa.com

of the team, selection of consultants, planning, communication plans, implementation strategy and timeframe, testing, post-implementation, evidence of analysis, citations, and a report of literature (Abdelmoniem, 2016). Enterprise systems require successful implementation planning, CSFs need to be centralized throughout the phases of system implementation, allowing for higher chances of successful system implementation (Navid, Lindberg, El-Khoury, & Sivard, 2017).

The wiki software sits on top of the database and provides the interface for interacting with the database objects through a web browser (Adisa, Schubert, Sudzina, & Johansson, 2010). Various wiki pages are set up in representing various objects located in the database (Adisa, Schubert, Sudzina, & Johansson, 2010). Analyzing the wiki software not only provides an electronic interface to the various collected requirements, but also allows for the easy creation of interlinked web pages using a simplified mark-up language or a WYSIWYG (what you see is what you get) as a text editor (Adisa, Schubert, Sudzina, & Johansson, 2010).

History of Leadership

Implementation of ERP systems requires leadership and management capabilities. Identifying leadership was the ability of an individual, team, or organization to guide or lead other teams or organizations in the beginning, production, or termination of a project (Mahmood, & Miller, 2017). Leadership and management are subdivided into managers directing the work or job to get done and in control of the project, whereas leaders research was the organizers of the group or organization (Débrosse-Bruno, 2017). Several large, medium, and small enterprises use a computer to deal with accounting challenges, limited not only in entry accounting documents but account books of registration and the preparation of financial information statements (Zhang & Li, 2010).

www.manaraa.com

Computer processing focuses on accessing data and provision for depreciation, inventory valuation, and cost, without such inter-communication function as accounting control, accounting forecast, and decision (Saade & Nijher, 2016). Such accounting computerization cannot satisfy the information-dealing need, let alone a standard measure of cost control (Saade & Nijher, 2016). Significant investments in IT and ERP could support the survival of the SME sector in Serbia (Ljutic, Marjanovic, & Djordjevic, 2014).

The future was to assist SMEs as potential buyers to become aware of the advantages and disadvantages of introducing IT and ERP. The right step was the education of prospective customers in business planning, budgeting skills, and managerial techniques (Saade & Nijher, 2016). Enterprise resource planning has several challenges with adequate manageability and implementation. Managers complained about the inadequacy of the knowledge transferred from the project team to the support team that was responsible for ERP systems post-go-live (Maheshwari, Kumar, & Kumar, 2010).

Benefits of Effective Leadership

The benefits of an effective leader are having an organization or individuals following and believing in the leader via the powers of persuasion in achieving common organization goals (Cote, 2017). Projects are resulting from enterprise resource planning are viewed as supporting the organization's business in a strategic manner (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Leaders of today utilize various styles of leadership, which create a positive culture to motivate, empower, and inspire all levels or the organization resulting in exceptional social endeavors (Cote, 2017).

Challenges in Leadership

Leadership plays a vital role in an organization. Challenges are resulting from the unstable organizational environment, changes in the organization, customer demands, strategy,

www.manaraa.com

culture, and future challenges (Said, & Shah, 2017). Today's technology allows for change continually in an organization affected by their environments (Cote, 2017). Understanding leadership challenges impacts such as positive thinking, control reflecting paradoxical thinking, inclusive behaving, along with developmental, organizational challenges (Said, & Shah, 2017).

The implementation of ERP projects was associated with a high rate of project failure, complicated and takes six months longer than initially planned to complete resulting in 20 percent will be abandoned before completion (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012) Research was shown to prove that enterprise resource projects failures are subjected to high risk, improper planning, improper training, and insufficient capital (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Further research shows two identifiable main reasons for Enterprise Resource Planning project failures as substantially higher than other information systems and information technology projects (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012).

The organizational fit of enterprise resource planning has two factors that should be implemented and planned before the business adaption of enterprise resource planning. The high failure rate of enterprise resource planning system (ERP) projects in Indian retail, project managers should analyze and understand the impact of the risk factor on ERP implementation (Garg, & Khurana, 2017). The first factor analyzed the structural adaptation regarding the understanding of the necessary programs which are required for the conditions of enterprise resource planning (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). The second factor utilized the process of adaptation, which looked at the organization and how it adapted its business processes to fit into the new enterprise resource planning systems (Garg, & Khurana, 2017). Risk orientation in testing was essential regarding balance quality and cost of software in

www.manaraa.com

dealing with small and medium enterprises (SME). If the risk was not considered and the adaption from a legacy system or the business was not in a position of adapting to the new system, the process will fail (Felderer, & Ramler, 2016).

Benefits to Company and Enterprise Resource Planning

Enterprise Resource Planning systems are advantageous when a company was seeking benefits associated with the integration of technologies and best practices organizational functionality across the business (Momoh, Roy, & Shehab, 2010). With large amounts of critical success factors impeding enterprise resource planning implementation, organizations will need to address the areas of risk, planning, resources, management intervention along with training, and a long-term budgetary analysis model (Momoh, Roy, & Shehab, 2010). Enterprise resource planning can be classified as failures at an estimated 68 percent, while Asian countries estimate the failures as high as ninety percent (Garg, & Khurana, 2017).

The core of ERP was based on an enterprise web application, backed by an object-oriented database, knowledge spaces for users/groups, and a freely configurable interface (Adisa, Schubert, Sudzina, & Johansson, 2010). The wiki software was situated on top of the database, which provides an interface for interacting with the database objects through a designated web browser (Adisa, Schubert, Sudzina, & Johansson, 2010). Wiki pages are generally set up to represent the various objects in the database with the wiki software not only providing an electronic interface to collect requirements, but also allows for easy creation of interlinked web pages using simplified mark-up language or a WYSIWYG text editor (Adisa, Schubert, Sudzina, & Johansson, 2010).

Several large, medium, and small enterprises use a computer to deal with accounting issues, limited not only in entry accounting documents but account books of registration and the preparation of financial statements. Computer processing focuses on accounting, afterward,

www.manaraa.com

reimbursement, access to data and provision for depreciation, inventory valuation, and cost, without such inter-communication function as accounting control, accounting forecast, and decision (Zhang, & Li, 2010). Only significant investments in IT and ERP support the survival of various SME's sector in Serbia (Marjanovic, & Djordjevic, 2014). The future was to assist SMEs as potential buyers to become aware of the advantages and disadvantages of introducing IT and ERP (Al-Sabaawi, 2015). The right step was the education of prospective customers in business planning, budgeting skills, and managerial techniques. Enterprise resource planning has several challenges with adequate manageability and implementation. (Marjanovic & Djordjevic, 2014).

Managers complained of the inadequacy of the knowledge transferred from the project team to the support team that was responsible for ERP systems post-go live. Enterprise resource planning systems are a central and integral part of a business organization for management, along with the operation of the organization to increase efficiency (Makori, 2017). Enterprise resource planning was handy when implemented correctly in organizations, especially needed regarding technology in humanitarian emergency logistics (Gavidia, 2017). These organizations found this to be a significant problem to deal with in the technical stage. Some of the organizations which did not find this problem to be so acute were those that had taken adequate measures to ensure knowledge transfer. Knowledge transfer was essential for the new team to manage the systems effectively (Gavidia, 2017).

Business executives are facing much uncertainty about when to invest in which resource to adopt ERP in their organizations effectively (Bernroider, 2013). The organization was trying to maintain the legacy information systems resulting in incompatibility between the legacy and new systems. Enterprise resource planning systems adoption rate in MSMEs was still low, and numerous cases have been reported where even after implementation, organizations are still

www.manaraa.com

depending on their legacy systems and even treating the cost incurred in implementation as a sunk cost (Upadhyay, Jahanyan, & Dan, 2011).

Enterprise resource planning system competence must be used effectively to harness the various capabilities of the ERP system for competitive advantage (Dey, Clegg, & Bennett, 2010). Critical areas are deserving extended focus include risk management, security, and the auditing of ERP systems, the extensions needed in ERP systems for inter-organizational support, and the design of management control systems within the organization (Al-Sabaawi, 2015). Three critical social enablers - committed and robust leadership, open and honest communication and a balanced and empowered implementation team are necessary conditions for a successful enterprise resource planning implementation (Subramanian & Peslak, 2010).

Businesses are identifying technologies having the ability to manage every aspect of their organization while making their internal processes more efficient and professional (Jalal, 2011). Enterprise resource planning systems enhance the synchronization and linkage of internal core complexities with the firm's external networks of customers, suppliers, advertisers, competitors, financiers along with various government entities (Groenewald, & Okanga, 2019). Enterprise resource planning focuses on forcing companies to prepare information systems involving agents in the supply chain to adhere to valuable information and calculations (Malakouti, Rezaei, & Milad, 2017).

With this technology, it allows for fewer resources to manage the applications apart from the application operators must be well trained (Carton, & Adam, 2010). Enterprise resource planning system implementation failure was considered high, the ERP market in developing countries was growing, and ERP adoption by organizations was increasing (Wibowo, & Sari, 2018). Projects within ERP had various challenges and the inability to merge with legacy

www.manaraa.com

systems. Enterprise resource planning based on either performing and succeeding or failing and being over budget (Wibowo, & Sari, 2018).

Integrating business processes by improving coordination among business units, and supply chain partners are successful when implementing enterprise resource planning (ERP), customer relationship management systems (Oswaldo, Claes, Koryak, & Diaz, 2017). Bintoro, Simatupang, Putro, & Hermawan (2015) states that ERP implementation was indicating project completion time, project expenditure, user's expectations or performing system of functionalities, and impact on the business performance or operational efficiency (p. 230). ERP has changed the way business was conducted in India based on various modules reflecting organizations and industries are utilizing the systems (Annamalai, & Ramayah, 2011).

Customer satisfaction was one of the main focuses of organizations dealing with ERP and ways of saving money and thinking lean (Annamalai, & Ramayah, 2011). Successful installation and implementation of an ERP system allow an organization the ability to get correct and timely information, make precise decisions at the right time, reduce cost, improve efficiency, reduce order cycle time and improve overall customer satisfaction (Lodhi, Aftab, Mahmood, & Cheema, 2014). The knowledge that was actionable based on experience, context, interpretation, and reflection by employees within an organization and was a critical resource that an organization possesses because it was inherent within the individuals of the organization (Henderson, 2017).

Service organizations have invested considerable resources in the implementation of Enterprise Resource Planning (ERP) systems to improve efficiency, cost-effectiveness, and quality of service operations of the various service industries regarding tourism (Chauhan, & Singh, 2017). Retailers depend on ERP systems for product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, and tracking

www.manaraa.com

orders (Garg, & Garg, 2014). Training and understanding of the tools utilized in ERP are vital to the success of the projects. Hassan (2010) states that the former devoted more resources to recruiting and selection, linking quality assurance to HRM and ERP employed more vigorous training regimes, established better performance management, and linked it to the compensation system (p. 643-644).

Leadership Research Investigation in Information Systems

Business organizations are involved in managing, along with being difficult in predicting risk without the utilization of computers and information systems (Hampel, 2018). Information systems deliver information to both the clients and businesses promptly with the usage of IT tools (Jabłoński et al., 2018). Enterprises depend on information systems to analyze problems and services, communicate with customers and clients, analyze data, and complete assorted tasks related to information systems (Jabłoński et al., 2018).

Implementation of enterprise systems have costs which would need to be justified by the business (Hampel, 2018). Information technology costs justification has challenges with benefits being questionable and often showing unpredictable advantages and disadvantages (Hampel, 2018). The organization was always competitive and having a highly effective information systems infrastructure allows for an active organization (Hampel, 2018).

Importance of Information Systems

Information systems are utilized and depended upon in privately owned, small, medium, and large organizations (Hampel, 2018). Computer-supported information systems enable organizations to establish corporate competitiveness from implementation to sunset of several IT devices (Hampel, 2018). Information systems have become complicated and a challenge to manage for some organizations (Hampel, 2018).

www.manaraa.com

Data transferred in multiple ways via information systems. Some of the ways data transferred via telephone, fiber optic, satellite, or local area networks (Jabłoński et al., 2018). Processing of data can be rather complex depending on many factors such as the service produced, the complexity of resources, number of customers or clients, the uncertainty of the climate of the business, and level of performance (Hampel, 2018).

Information Systems Before ERP

Organizations depend on information systems for day to day activities in dealing with accounting, human resources, along with other areas of the company in the utilization of data transference (Jabłoński et al., 2018). Information system allowed for the business tools utilization on an infrastructure network in various areas of the organization, such as the human resources department and the accounting department (Jabłoński et al., 2018). Incorporating ERP into an organization allows for unified production and access by integrating management systems into an individual enterprise (Jagoda, & Samaranayake, 2017). Incorporating ERP into an organization enhances the scalability and reliability of organizations accessing users, clients, data, and all data within the business promptly (Shaikh, 2017).

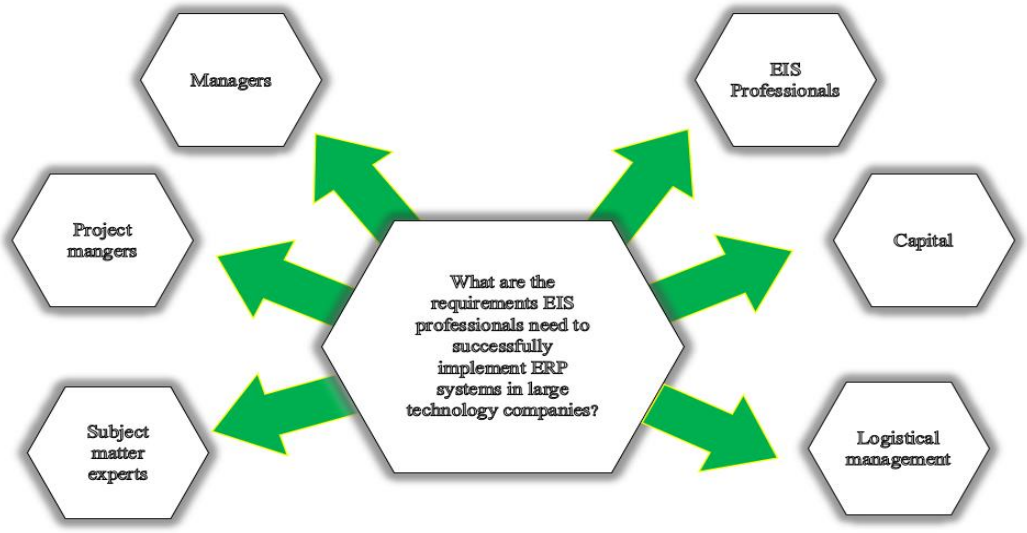

Figure 1. Conceptual Framework

www.manaraa.com

Figure 1. identifies the conceptual framework for enterprise resource planning and the requirements EIS professionals need to implement ERP systems in large technology companies. The challenges of project managers are the need to gain additional training and work with management with ERP implementation (Makori, 2017). Enterprise resource planning systems require a great deal of systems integrations and training, which has been a root cause of failure due to user resistance (Jagoda & Samaranayake, 2017).

Enterprise resource planning systems enhance the synchronization and linkage of internal core complexities with the firm's external networks of customers, suppliers, advertisers, competitors, financiers along with various government entities (Groenewald, & Okanga, 2019). Enterprise resource planning focuses on forcing companies to prepare information systems involving agents in the supply chain to adhere to valuable information and calculations (Malakouti, Rezaei, & Milad, 2017). Enterprise resource planning complex system implementation projects allow for businesses to have a substantial return on investments, increase investor confidence, increase technological competence, and link information technology and the organization with a broad range of disciplines (Jagoda & Samaranayake, 2017).

Enterprise resource planning software functionality, successful implementation, change management, business processes, training, and knowledge are essential factors of ERP implementation (Tejumola, 2017). High failure rates of ERP implementations have attributed to understanding critical success factors showing the most substantial impacts of ERP implementations (Jagoda & Samaranayake, 2017). Disciplines, including human resources, information technology, medical, technical infrastructures, accounting, and database querying (Jagoda, and Samaranayake, 2017).

www.manaraa.com

The study identifies critical areas of ERP failures and CSF's challenges in implementation. The study also identifies 11 critical success factors along with top and executive management for small and medium-sized organizations being an attributing factor to the unsuccessful implementation (Jagoda & Samaranayake, 2017). Additional critical success factors for successful implementation of ERP depend upon not having enough capital, improper training of users, improper IT knowledge and business experience, and management not supporting the project (Ahmadzai & Paracha, 2016).

Enterprise resource planning systems are often confused with being IT systems, which causes implementation failures when ERP systems implemented as much more than IT systems (Jagoda, & Samaranayake, 2017). Hardware and software vendors are showing interest in determining a better approach in the implementation of ERP, along with finding ways to reduce costs (Jagoda & Samaranayake, 2017). Pre-planning, travel, training, and upgrading of the technology associated with ERP systems was a necessary successful implementation (Ahmadzai, & Paracha, 2016).

Importance of Information Systems

Information systems are utilized and depended upon in privately owned, small, medium, and large organizations (Hampel, 2018). Computer-supported information systems enable organizations to establish corporate competitiveness from implementation to sunset of several IT devices (Hampel, 2018). Information systems have become complicated and a challenge to manage for some organizations (Hampel, 2018).

Data transferred in multiple ways via information systems. Some of the ways data transferred via telephone, fiber optic, satellite, or local area networks (Jabłoński et al., 2018). Processing of data can be rather complex depending on many factors such as the service produced, the complexity of resources, number of customers or clients, the uncertainty of the

www.manaraa.com

climate of the business, and level of performance (Hampel, 2018). Pre-implementation research was related indicative of risking analysis not being included in showing the readiness and weakness were lacking in implementation planning (Jabłoński et al., 2018).

Summary of Literature Review

Analysis of the literature review indicates that ERP system implementations have high rates of implementation failures **(**Goldston, 2019). Enterprise resource planning was one of the costliest projects for organizations to implement and manage. With enterprise resource planning, you are integrating supply chain utilization, human resources, information systems, finance, and a host of other areas all being run through a centralized database (Mahmood & Miller, 2017).

Enterprise resource planning failures on projects running 16.3 months average total cost of 2.8 million dollars with increasing duration over-runs, creating a loss with unrealistic expectation, poor planning, legacy hardware, and improperly trained technicians (The mystery of ERP failures, 2015). Failure rates are showing rates of 73% in connection with information technology projects, change in organizational goals during the project was 75%, unfortunate management failure was 77% (Ahmadzai & Paracha, 2016). Systems implementations high failure attributed to unrealistic expectations of stakeholders, top management lack of involvement, user's resistance to change, and inadequate training of technicians after implementation (Ahmadzai & Paracha, 2016).

Enterprise resource planning projects are considered to be complicated and associated with a high rate of project failures (Mahmood & Miller, 2017). Projects take six months longer than initially planned to complete resulting in 20 percent being abandoned before completion (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012). Enterprise resource planning can be classified as failures at an estimated 68 percent, while Asian countries estimate the failures as high as ninety percent (Ojiako, Papadopoulos, Thumborisuthi, & Yun, 2012).

www.manaraa.com

Assessing an RoI of ERP software, the rate of unsuccessful implementations becomes even higher – 60–90% (Mahmood, & Miller, 2017). An additional reason for high failure rates was a lack of training, poor management, time management issues, funding, and legacy software (Mahmood & Miller, 2017). Failures of ERP systems identified several areas of concern regarding ERP, which include implementation, post-implementation, organizational change, and managerial implications (Mahmood, & Miller, 2017).

The ERP market and industry, education and training, supply-chain management, and the ERP system itself have implications for managers, project managers, SME's, and researchers (Mahmood & Miller, 2017). Several disadvantages occur when setting up ERP systems involving optimization mechanisms (Menon, 2016). Optimization in the planning system primarily focuses on planning in each tier of the system (Menon, 2016).

Chapter 3 identifies the study from a research processing perspective. The chapter will discuss sample population, data collection, research analysis, and design, validation, and reliability of data and the various methods of research. Chapter 3 also relates to the purpose and problems of the research. Enterprise resource planning failures in implementation are resultant of critical success factors attributed to human intervention and lack of planning (Jagoda, & Samaranayake, 2017).

www.manaraa.com

CHAPTER THREE

The problem addressed in the study was the requirements Enterprise information systems (EIS) professionals need to implement Enterprise resource planning (ERP) systems in large technology companies successfully have not been identified (Mahmood, & Miller, 2017). Failure rates are showing rates of 73% in connection with information technology projects, change in organizational goals during the project was 75%, unfortunate management failure was 77% (Ahmadzai & Paracha, 2016). More research was required to determine industry standards of unique strategies for the implementation of ERP protocols (Mahmood & Miller, 2017).

Enterprise resource planning systems are designed with pre-built software with no standards associated with organizations causing the implementation to be unsuccessful (Mahmood & Miller, 2017). Identifying various areas of research involving ERP consists of critical success factors (CSF) of implementation involving management, project management, human resources, logistical management, and other factors associated with the implementation of ERP (Jinno, Abe, & Iizuka, 2017). The study was designed to identify unique protocols to successfully implement ERP large technology companies.

The purpose of the qualitative study was to explore requirements EIS professionals need to successfully implement ERP systems in large technology companies. Enterprise resource planning (ERP) system was an integrated enterprise computing system that lets an enterprise automate the flow of material, information, and financial resources among all functions within the enterprise on a shared database (Wickramasinghe, & Gunawardena, 2010). Project managers, managers, and EIS professional's successful implementation of ERP in large technological companies identify medium success in the implementation of projects (Jagoda & Samaranayake, 2017).

www.manaraa.com

This study created a set of processes that can be used by EIS professionals to implement ERP systems successfully. To accomplish this, EIS professionals from large technology companies were interviewed. Understanding the primary reason for failures in enterprise resource planning implementation can be viewed in several areas of completion.

Chapter three discusses how the study was conducted. The research was based on the approach, technique, methodology, design, along with the importance of the research and the overall aspect of the study. Topics are inclusive of the research participants, qualifications of the participants, instrumentation, consent form information, interview questions, established consent of the participants, qualifications of the participants. The chapter identified sample populations, interview questions, participants' consent, data tested, validated, and collected.

Research Tradition

The purpose of utilizing the qualitative study approach relates to the lived experience of the study (Alase, 2017). The qualitative methodology was used for the study on ERP with analysis by thinking through all aspects of the study related to the development of the industry-standard ERP implementation strategies (Alase, 2017). This study created a set of processes that can be used by EIS professionals to implement ERP systems successfully. To accomplish this, EIS professionals from large technology companies were interviewed.

Quantitative methods were not utilized as the methodology as the utilization of statistical, mathematical models, and theories are not relative to the studies (Koivu, & Damman, 2015). Quantitative and qualitative methods are considered as mixed iterations and would be utilized in the calculations and numerical instances of research, which was not utilized with qualitative studies (Chih-Pei, & Yan-Yi, 2017). Though the quantitative approach was a reliable method of research being based upon numeric, statistical data, computational techniques, and researchers could propagate the methods (Koivu, & Damman, 2015).

www.manaraa.com

The qualitative study was utilized in the research in describing the experiences as being lived regarding the developmental studies of ERP (Koivu, & Damman, 2015). Utilizing the qualitative method was based upon the understanding of experiences, behavior, interactions, and experiences (Koivu, & Damman, 2015). Observing the research of qualitative methods allowed for a much broader outlook of lived experiences (Riazi., & Candlin, 2014).

Utilizing a qualitative research methodology incorporated the purpose of the research design. The research design component provided a framework for data collection and analysis (Bryman & Bell, 2007). The research design directed the implementation of the selected research methodology (Schadewaldt et al., 2014), along with outlining the general methodological implementation process (Arefina, 2014). Quantitative and mixed methods designs will not be used as the study was not based on scientific analysis or hypothesis but was based upon lived experiences (Koivu, & Damman, 2015).

The expansive framework view, the research design must also include the mechanisms for ensuring the integrity, consistency, and reliability of any acquired data. The grounded theory qualitative approach was not suitable for this study because the research problem was not grounded in the views of the participants. The ethnographic design was not used in this study because the research problem statement was neither an anthropological issue nor a sociological one (Heckert, 2015).

The exploratory research approach method was based on research topics in nascent areas of investigation (Beall, 2002), where the emphasis was on evolutionary insight rather than a revolutionary or definitive view (Ugoani & Ugoani, 2017). Identifying ERP critical success factors for projects, Eberlein (2008) used the exploratory qualitative research method. Utilizing

www.manaraa.com

exploratory research allowed for probing and interviewing various subject matter experts (Ugoani & Ugoani, 2017).

Research Question

The research question was: What are the requirements EIS professionals need to successfully implement ERP systems in large technology companies?

Research Design

The research design was ultimately a framework for both the data collection and the subsequent data analysis in the investigation (Bryman & Bell, 2007; Schadewaldt et al., 2014). For this framework to be successful, the research design should guide and manage the execution of the selected research methodology, which in this case was the qualitative research methodology (Arefina, 2014; Schadewaldt et al., 2014). The design identifies various stakeholders associated with ERP implementation (Ugoani & Ugoani, 2017).

The research design encompasses policies for the population and sample, the sampling procedure, the types of instrumentation, the means for ensuring validity and reliability, the selected methods of data collection, the means of data analysis, and the ethical considerations for the research (Arefina, 2014; Schadewaldt et al., 2014). The research designed focused on the development of an industry-standard ERP implementation strategy, and case and other empirical studies on pre- and post-ERP implementation. The chapter outlines the details of the various components of the research design (Eaton, Stritzke, & Ohan, 2019).

Population and Sample

The participants were required to have a minimum of 10 years' experience, Project Management skills, Problem solving skills, teaching abilities and stable work history. The participants were also required to have knowledge of the technology of pre and post

www.manaraa.com

implementation strategies of ERP. In addition, participants were also selected with at least two current certifications within ERP systems along with working or living within the Georgia area. Additionally, the participants were required to have 10 years extensive experience in ERP systems.

Population in a research study was the universe of the potential subjects or participants from which the research will select its subjects (Bryman & Bell, 2007; Lin & Zhao, 2016; Trifilova, Bessant, Fu, & Gosling, 2013). Population was identified by profession, gender, age and years on the job. The population used was derived from an ERP group consisting of 200 members located on the professional networking site LinkedIn. There were 15 individuals in this group who stated interest in participation of the survey, of which, 8 had the appropriate skillset, information, certifications and credentials based on the researcher's requirements.

The group were chosen as they could answer the research question "what are the requirements EIS professionals need to successfully implement ERP systems in large technology companies". Additional requirements by the researcher for each of the 15 members included their resume, skillsets, and certification dates. This information was used as a preliminary research method to determine the actual participants and their ability to answer the research questions based on experience. The information was verified by receipt of the participants resume and by two ERP professionals with 25 years' experience in ERP implementations. Sampling took place by using notes, and recording interviews, of participants (Eaton, Stritzke, & Ohan, 2019).

Each interview took 30 - 45 minutes and recorded by Apple iPad record interviewing software with a redundant backup of a Toshiba portable audio recording device. Each interview question elicited a discussion of the participant's experiences. The recorded data were transcribed

www.manaraa.com

with rev.com professional transcribing services and password protected utilizing the year and date, 20190919, as an example. The data were cross-referenced with notes and relevant information that was collected (Eaton, Stritzke, & Ohan, 2019).

Sampling Procedure

The population sampling was derived via a rigorous analysis of individuals being identified as ERP professionals. The analyses consisted of questions developed by the researcher and was validated by two subject matter experts of ERP who worked in the industry for 25 years. The researcher asks the participants questions pertaining to their Project Management skills, Problem solving skills, teaching abilities and stable work history.

The researcher further asks the participants knowledge of ERP technology and pre and post implementation strategies along with certifications information in ERP. Additionally, the researcher asks participants questions related to experience in ERP systems. The information was verified by receipt of the participants resume and verified by two ERP professionals with 25 years' experience in ERP implementations. Suggestions made by the subject matter experts were to ask the participants the following question for verification and validation:

1. What are the main characteristics of an ERP systems implementation?
2. Have you implemented ERP systems in a large environment?
3. What are the steps necessary to implement ERP systems?
4. What are the dates of your certifications?

These suggestions were used for the study to provide better feedback and answers to the research questions. Participants were also selected with at least two current certifications within ERP systems along with working or living within the Georgia area. Upon completion of the questions and answers, the researcher further identified 8 participants who successfully answered

www.manaraa.com

all questions asks and a further breakdown was requested of verification of resumes and time working with ERP for reliability and validity.

A sampling procedure was a mechanism that selects a subset of a larger group in a way that adequately addresses the research problem (Bryman & Bell, 2007; Shenton, 2004). This study used the sampling procedure of purposive sampling. The sampling method involved the identification and selection of the participants who were subject matter experts of ERP along with the willingness in participating for the research and communicated in a professional manner of experiences in an articulate, expressive and reflective manner (Bryman & Bell, 2007; Elo et al., 2014).

Whereas random or probabilistic sampling was used in the generalizability of findings and minimizing bias in selection. This deliberative approach was appropriate for this study because purposive sampling was consistent with the best practices for qualitative studies (Arefina, 2014; Gavidia, 2016). The approach was also in line with other similar studies that used purposive sampling (Arefina, 2014; Gavidia, 2016).

The study allowed for information to be gathered and appropriately reviewed and coded for proper transcription. All the potential participants were contacted by electronic mail or telephone to initiate a request to participate in this research. When a participant expressed agreement either by electronic mail or verbally to participate in the study, an informed consent form to the participant for signature was sent and received before the interview. Investigating the differences between ERP implementation in Large Enterprise and SME s could be an exciting area of future research (Joslin & Müller, 2016).

Instrumentation

The interview questionnaire identified questions that was designed to gain a better view from participants (Stahl, Lampi, & King, 2019). The interviews were conducted via telephone,

www.manaraa.com

with the participants being requested to be in a library or conference room setting. The researcher's questions were presented in various ways in driving research and highlighted in various similarities (Kross & Giust, 2019).

Each participant shared their experiences by discussing various situations (Kross & Giust, 2019). The participants were requested to expand on a situation in order to understand the thinking, outcome, action, feelings, applications, and lessons learned, which the interviewee experienced (Stahl, Lampi, & King, 2019). If the participant did not understand the question, the researcher explained what the question meant.

The overall experience was to understand the participant's relationship and understanding of the information (Stahl, Lampi, & King, 2019). Utilizing open-ended questions for semi-structured interviews requiring complex answers and asking for clarification (Kross & Giust, 2019). Participants were asks questions relating to EIS professionals and the implementation of ERP systems (Groenewald & Okanga, 2019).

Validity

This researcher used standard techniques, peer reviews, and interview protocols (see Appendix B). The instruments that will be used in this study such as the survey and interview questions prove to be valid as they were reviewed by two subject matter experts for validity of the study. The feedback for the participants from the subject matter experts was incorporated into the instruments to make it a stronger instrument for the study. Suggestions made by the subject matter experts were to ask the participants:

1. What are the main characteristics of an ERP systems implementation?
2. Have you implemented ERP systems in a large environment?
3. What are the steps necessary to implement ERP systems?

www.manaraa.com

4. What are the dates of your certifications?

These suggestions were used for the study to provide better feedback and answers to the research questions. The questions were incorporated into the instruments to ensure the information was valid enough for the study. Qualitative research included using standard techniques from existing or similar studies and peer reviews of the results (Joslin & Müller, 2016).

Confirmability aligned with Validity and Reliability by ensuring the user's credentials are valid or verifying the participants was knowledgeable in the area of ERP by verifying certifications and resume by asking the participants to verify the information (Joslin & Müller, 2016). The researcher asked each participant if the information, certification and resume posted in the ERP group was valid and true. Each participant agreed that the information posted in the ERP group was valid and true.

Validity was essential to the qualitative study because, with the study and information gathering, the sources and information are necessary to be factual and reliable (Singh, 2015). Ensuring the participants information was valid by verifying the resumes and certifications by asking each participant was another source of validating, and the information was valid (Joslin & Müller, 2016). Credibility of each participant by validating the resumes and certification was necessary to understand the participant's background and credentials (Joslin & Müller, 2016).

Validity showed credibility in the qualitative research process by asking open ended questions, analyzing themes, and utilizing probing techniques as compared to quantitative research of utilizing data in a numerical form and hypothesis (Singh, 2015). Identifying qualitative research does not have the option of using statistical tools and techniques to ensure credibility (Singh, 2015). Comparing and identifying the results of data identifying successful

www.manaraa.com

ERP implementations (Singh, 2015), validating the information from collected interviews identifying challenges within various critical success factors (Joslin & Müller, 2016).

Reliability

The reliability validation transpired by requesting verification of the participant's credentials (Leung, 2015). The verification process happened from requesting the certifications and resume on LinkedIn for the participant's validations and accreditation (Leung, 2015). Once the participants information was disclosed regarding the receipt of resumes, certification and information the researcher asked each participant to verify the information is true and accurate (Leung, 2015).

Consistency was discovered from the data being analyzed as it comes into the analyzer (Leung, 2015). The analyzer added the data to the results, which then became comprehensive and inclusive (Leung, 2015). The study results were performed with the reliability of the participants' knowledge, certifications and background within the ERP industry (Kirk Miller & Miller, 1986).

Reliability requirements in qualitative research extend to the results of instruments within the research (Creswell, 2014). In the qualitative research process, the researcher was identified as an instrument of the research (Sinkovics & Alfoldi, 2012; Xu & Storr, 2012). The reliability of the study looks at the basis of the participant's knowledge and understanding of ERP within large technical organizations (Groenewald & Okanga, 2019). Internal consistency identified the biases which could be unified within the study from the researcher (Leung, 2015). Reliability also uses semi-structured open-ended questions to further accomplish the goals of collected data and reliability (Singh, 2015).

www.manaraa.com

Data Collection

The research question guided the data collection process necessary to capture the needed information for this study. The research question states, what are the requirements EIS professionals need to implement (ERP) in large technology companies? The Qualitative research utilized to answer the research question was semi-structured interviews with reliable data (Eaton, Stritzke, & Ohan, 2019).

Interviews with participants were taken via telecom conferencing requesting the participant to select a conference room or local library for minimal background influence. If the participant was not able to obtain a secure area, time was negotiated to allow them to find an area that was convenient for the interview. Requesting participants to interview in a secure, quiet area was for achieving the full attention of the participant during questions.

Emailing a conference code number allowed communication to be established for conducting the interview. Eight selected participants were interviewed via teleconference from the population. As specified in the interview protocol (see Appendix C), participants were asked open-ended questions and potential follow-up questions during the semi-structured interviews.

The interviews were 30 - 45 minutes in length. Each interview included the following general process: (a) establish a general conversation with the participant to allow them time to relax; (b) state the nature of study regarding ERP and what are the requirements EIS professionals need to implement ERP systems successfully; (c) obtain the signed consent form before the interview which was emailed and was signed and either emailed or faxed back to me (see Appendix A), (d) utilize the interview protocol (see Appendix C) which had the research questions staged and set ensuring was asked and answered appropriately and in the correct format, (e) utilize various probing techniques to receive clarification or elaboration of the

www.manaraa.com

research question; (f) thank the participant for the time for their participation in the interview. The interview was recorded using zoom for audio and video recording.

Jotted down information in a personal journal to reminding me of a participant such as a person may talk slow, or another may have an accent. Additional notes would include the experience with the participant, along with how they responded to my interview questions. Considerations was also taken as to what was different from the next interviews.

Data Analysis

After the interview was complete, the recorded information was transcribed using rev.com. The interview was then sent to the 8 participants to validate accuracy, correctness and approval. Participants were to return the transcribed information back to the researcher with any changes, or questions within 48 hours after receipt. No changes were necessary to be made by the participants. This process involved allowing the application file to be transferred from the Apple iPad recording to an mp4 video, text audio file. The data is stored for five years on OneDrive within the google paid subscription cloud after encryption was completed utilizing MacAfee disk encryption software.

After the completion of each interview, the recorded audio file was downloaded into a computer for transcribing. Each interview was saved with the participant's code, year and date, to identify the audio file. The digital voice recorder enabled the conversion of audio files into MP3 audio coding format, which was used for starting, stopping, pausing, fast-forwarding, and rewinding during transcription.

The hardware which the applications were stored was an iPad Pro and a Dell Latitude 7490 laptop. Both devices are used to store information in case an internet connection was possible temporarily. The iPad Pro connected to Verizon via telecom or Wi-Fi. Memory on the

المنارة للاستشارات
www.manaraa.com

iPad was 512GB, and the dell latitude has 256GB of storage space. Both devices allowed for temporary storage in case of loss to the internet.

Apple iPad record was utilized in conducting interviews, recording, storing the mp4 format, and transcribing. Rev.com was utilized for the voice to text application and stored on files. Information was encrypted utilizing password enabled encryption for confidentiality. Passwords were enabled and encrypted with MacAfee disk encryption software on both CD and files stored on the OneDrive cloud. After encryption was completed, documents were sent to OneDrive for further archiving of audio, and video information

Ethical Considerations

The ethical considerations applied through the research process involved informing the participants of the right to have a safe environment during the interview, receiving an informed consent form (see Appendix A), and explaining a participant's right to terminate the interview without giving a reason for ending the interview (Gubrium, Holstein, Marvasti, & McKinney, 2012). Each participant signed an informed consent form before their interviews. To ensure the highest level of ethical research, principles of the Belmont report protocol was maintained. The Belmont report principles are primarily focused on the well-being of study subjects (Zagorac, 2016).

Ethical considerations were broken down to ten points when interviewing subjects (1) participants will not be subjected to any basis of harm in any manner (Bryman & Bell, 2007). (2) dignity and respect were prioritized during the interviewing process (Bryman & Bell, 2007). (3) Consent was established before the interview from the participants (Bryman & Bell, 2007). (4) Privacy was protected from each participant by ensuring confidential numbering and coding of the interview. (5) A high level of data confidentiality was maintained of research (Bryman & Bell, 2007). (6) Individuals had complete anonymity during and before the research (Bryman &

www.manaraa.com

Bell, 2007). (7) Deception, exaggeration, or falsification will be avoided (Bryman & Bell, 2007). (8) Conflicts of interest or person working in the same company were annotated (Bryman & Bell, 2007). (9) Communication about the research was done with transparency and honesty (Bryman & Bell, 2007). (10) Bias, misleading information misrepresentation of findings was avoided (Bryman & Bell, 2007). Participants voluntarily participate in the interviewing process freely and with the understanding that at any time, the interview can be terminated (Saunders, Lewis, & Thornhill, 2012).

Each participant was required to sign an informed consent form (see Appendix A). The consent form includes (a) the purpose of the study, (b) the involvement of participates, (c) participation procedures, (d) the benefits of the research, (e) the risks of taking part, (f) costs and compensation, (g) confidentiality, (h) voluntary nature of participating and the rights of the participant to withdraw (Raj, Choi, & Platt, 2017). Biases could occur due to preexisting knowledge and experience with the topic (Toews et al., 2017).

Bias was mitigated by using open-ended questions during the interview, focusing solely on the responses of participants, and using notetaking. Identifying and managing all possible ethical risks of the study was the responsibility of the researcher. The Academy of Management's published code of ethics identifies the importance of standards being enforced in the utilization of professional conduct (Academy of Management, 2015). The code of ethics also emphasizes the importance of maintaining privacy and confidentiality while gathering and using personal and confidential information (Academy of Management, 2015). Permissions will be obtained from LinkedIn groups by posting invitations to my study.

The ethical standards identify that studied participants be treated ethically and with concern for their welfare and well-being. The utilization of due diligence was used in treating

www.manaraa.com

each participant with an awareness of ethical considerations (Orb, Eisenhauer, & Wynaden, 2001). The study was upholding the welfare and dignity of participants by assuring that no one will be exposed to mental, physical, or emotional harm (Trochim & Donnelly, 2006). The participants were anonymous, and the LinkedIn moderators were advised when submitting invitations for study (Goldston, 2019). Maintaining ethics in the study, the human rights of each participant was protected, and the informed consent form mailed to participants explained the purpose of the study and gave participants the option to decline involvement (Cooper & Schindler, 2011).

Participants personal identities are kept confidential, and consent letters confirmed the willingness for acceptance and participation. Observing the target sample size was accomplished by assigning a numerical code instead of a name to each participant. Strictest of confidentiality and insurance that all participants can understand the purpose of the study and how the confidentiality of his or her responses and the use of the data are handled (Dul & Hak, 2008) — proposing to follow the interview guide and inline during the interview to allow for useable data (Patton, 2002).

Summary of Chapter Three

Chapter 3 included data collection analysis, reliability, validating, along with data analysis. The approach was appropriate for the proposed study because of the fundamental research question in determining that were to determine critical success factors associated with the failures of ERP implementation (Groenewald, & Okanga, 2019). Data will be collected from 8 participants. These participants will consist of various participants knowledgeable of the field.

This study followed a qualitative analysis methodology. The research design is evaluated from documentation and groups related to the qualitative study (Creswell, 1998). The groups were based on subject matter experts, project managers, team leaders, managers, users, analysts,

www.manaraa.com

and sample size allowed for a useable research study (Gerring, 2007). The qualitative research was looking to identify and answer the research question of high failure rates in ERP and what are the critical success factors during implementation, allowing the framework regarding future implementation and analysis.

The instrumentation is detailed with the ten research questions. The research questions is attached to Appendix B. Once consent was obtained from the participants in the study, according to Appendix A, we then commenced the interview and questions aligned with the research question after approval from the IRB. Analyzing the responses involved thematic analysis in categorizing the various participant's responses (Goldston, 2019). Upon receiving approval from the IRB, studies commenced along with the scheduling of telephone interviews of participants. Chapter 4 identifies the research of the data transition of the study for the reader.

www.manaraa.com

CHAPTER FOUR

The conceptual framework identified enterprise resource planning and the requirements EIS professionals need to implement ERP systems in large technology companies. The challenges of project managers are the need to gain additional training and work with management with ERP implementation (Makori, 2017). Enterprise resource planning systems require a great deal of systems integrations and training, which has been a root cause of failure due to user resistance (Jagoda & Samaranayake, 2017). This qualitative research study explored the research question, "What are the requirements EIS professionals need to successfully implement ERP systems in large technology companies?" The purpose of the proposed qualitative study was to explore requirements EIS professionals need to successfully implement ERP systems in large technology companies. Enterprise resource planning (ERP) system was an integrated enterprise computing system that lets an enterprise automate the flow of material, information, and financial resources among all functions within the enterprise on a shared database (Wickramasinghe, & Gunawardena, 2010).

Project managers, managers, and EIS professional's successful implementation of ERP in large technological companies identify medium success in the implementation of projects (Jagoda & Samaranayake, 2017). Chapter 4 was a presentation of the data collected from the qualitative interviews, peer-reviewed findings, and data analysis. Chapter 4 includes the results of data collected and will present the participant's demographics, emerging themes, categories, the researcher's findings, and a summary. Table 1 indicates the participant's identification, gender, and position of the participants.

Table 1

Participant Demographics

www.manaraa.com

PID	Gender	Position
1	Female	CISSP Computer Security Director
2	Female	Accounting/Financial Director
3	Female	CRM operations manager
4	Male	Infrastructure operational manager
5	Male	Director of information systems
6	Male	Director of infrastructure
7	Male	Systems information manager
8	Male	Enterprise systems information manager

PID = Personal Identification

Table 2 identifies the type of industry participant is associated. Succession planning experience indicates participants having experience in the field. Key position held during succession planning relates to participants status in the organization. Benefits of succession planning indicates profession of participant which were gathered during the data collection process.

Table 2

Additional Statistics from Participants

Type of industry	Succession planning experience	Key position held during succession planning	Benefits of succession planning
• Information Security	Yes	CISSP	Information security planning

www.manaraa.com

• Payroll Accounting	Yes	Comptroller	Auditing/payroll accounting
• Customer relations management	Yes	CRM operations analyst	Database query analyst
• Infrastructure operations management	Yes	Systems analyst	Network computer systems
• Information systems	Yes	Information systems director of operations	Director of operations and systems
• Developer systems director	Yes	Managers/supervisors	Develop query for database
• Infrastructure systems organization	Yes	Technical infrastructure management	Global analyst infrastructure
• Enterprise resource supervisor	Yes	Manager of ERP systems	Database and query engagement

www.manaraa.com

Presentation of the Data

Ten interview questions were asked of each of the 8 participants. The interview questions for this study were:

1. In your experience of implementing ERP systems, what area of the lifecycle caused the most failures?
2. In working with your team of EIS professionals, what type of challenges have you experienced in implementing the ERP System? What are the least significant challenges?
3. From one of your successful ERP project implementations, what characteristics of resource management helped in the process of implementing the ERP system?
4. What communication methods were used in the process of implementing ERP systems?
5. In your opinion, what was the best communication used from the various methods above?
6. What are the critical success factors of ERP implementation?
7. What strategies are useful for EIS professionals during ERP implementation?
8. What are business processes integrated within your ERP system?
9. What is the nature of your business organization?
10. What designs were used in the implementation of ERP systems?

This researcher has covered several areas, which works bests for the interview process. Utilizing approved groups on LinkedIn allows for a generalized population for this researcher's study. The sample size or participants are 8 with a 30 - 45-minute interview. Each participant was required to sign an informed consent form (see Appendix A) (Jackson, 2019). The consent form includes (a) the purpose of the study, (b) the involvement of participates, (c) participation procedures, (d) the benefits of the research, (e) the risks of taking part, (f) costs and compensation, (g) confidentiality, (h) voluntary nature of participating and the rights of the participant to withdraw (Raj, Choi, & Platt, 2017). Biases could occur due to preexisting

www.manaraa.com

knowledge and experience with the topic (Toews et al., 2017). Bias was mitigated by using open-ended questions during the interview, focusing solely on the responses of participants, performing triangulation, and using notetaking.

Participants Demographics

Identifying and managing all possible ethical risks of the study is the responsibility of the researcher. Participant's demographics include two females and six males from the following areas: Accounting, Banking, Manufacturing, Human resources, Information Technology, and Real Estate with experience in enterprise resource planning. Interviews have been taken via telephone, recording via voice application on Apple iPad, and transcribed via rev.com.

Interview Question 1

In your experience of implementing ERP systems, what area of the lifecycle caused the most failures?

***Probe question* – what led to your involvement with the systems?**

Aggregated data for Interview Question 1 yielded four themes: (a) implementation, (b) management, (c) planning, and (d) requirements. The number of responses about each of the themes or topics for Interview Question 1 is shown in Table 3.

Table 3

Themes for Interview Question 1

Themes	*N*
• Implementation	14
• Management	10
• Planning	8
• Requirement	7

www.manaraa.com

Interview Question 1, Theme 1: Implementation. For Theme 3 of Interview Question 1, implementation is not just the installation of ERP but planning and designing within the organization. Dynamic EIS and ERP implementation involve department leaders, HR, department managers, and project managers to exchange ideas, share skills, and talk shop across the organization to create a successful implementation within the organization. Dynamic ERP systems and EIS professionals build pools of people within the implementation phase that will provide a successful implementation. Table 4 contains representative Theme 3 responses from Interview Question 1.

Table 4

Interview Question 1, Theme 1 Responses: Implementation

Responses
There were implementation problems with my corporation. One of them was the requirements that the company did not match the capabilities of the software.
I would recommend that you are very meticulous in making sure that you know exactly what is going on with the implementation, the expenses, the resources, the planning, the benefits, the returns on the investment.
Poor planning and changes in implementation are some of the main challenges.
The thing with that challenge is documentation, documenting any information during the implementation, and providing that information through our training.
You got to tackle this stuff weekly and make sure people get their stuff done. If they let it go too long, it just is going to delay the implementation.
Lack of communication and poor coordination during the implementation.

www.manaraa.com

I think that is one place where an ERP system will go awry, and another time during the implementation phase is exactly when uses, and maybe particularly end-users being trained when the validation of the whole project is tested.

The biggest challenge I think for EIS professionals is understanding the business where they are doing the implementation.

Interview Question 1, Theme 2: Management. For Theme 2 of Interview Question 1, 75% of the participants believed that management strategy was crucial to the successful planning of ERP. Information management was identified as requiring a change in the practices of information management (Goldston, 2019). Regarding EIS professionals, succession planning is used in an organization developing ERP platforms. Modern intelligent information management systems allow users to search for information using context established by the type of documents, such as a contract or proposal, and its relationships to customers, projects, cases, or any other organizational element essential to the business (Goldston, 2019). Table 5 contains representative Theme 2 responses from Interview Question 1.

Table 5

Interview Question 1, Theme 2 Responses: Management

Responses
We had inadequate planning and a lack of executive sponsors and poor change management and user training.
Knowledge of the people who work in the company would be one of the characteristics of resource management.
Poor planning and lack of direction and commitment from upper management.

www.manaraa.com

Management needs to be involved in every step, from inception to completion and then beyond. Furthermore, management often goes and does what they think instead of what the group has agreed.

Management is generally involved in the front end. They set the expectations and the timeline in the budget.

Well, that is one of the things that in the ERP implementation we will have to address, but mostly when you implement an ERP system, senior management is behind it, and they push it. So, then the resistance that ends you pull up for an ERP implementation is the least of your concern because they have no choice because senior management pushes this.

You need to have management commitment. If you have that, then you have the backing of management so you can work on the problems and not trying to convince people this is what you are going to do. You can work on what you should be working on.

Interview Question 1, Theme 3: Planning. For Theme 3 of Interview Question 1, planning, is essential with EIS professionals and ERP systems. Without investing in coordinated efforts between leaders, resources, projects, managers, and managers, it is ineffective for the completion of ERP systems. Table 6 contains representative Theme 4 responses from Interview Question 1.

Table 6

Interview Question 1, Theme 3 Responses: Planning

Responses

www.manaraa.com

The implementation problems with my corporation. One of them was the requirements that the company did not match the capabilities of the software. And then also, number two is inadequate planning and lack of executive sponsors.

One of the things on the planning was done with the software. Most of the software that we have was loaded, and we did not have any compatibility issues with it.

A couple of strategies. Budget requirements, user training, change management, planning.

The implementation, the expenses, the resources, the planning, the benefits, the returns on the investment.

Somebody did not think of during the planning process that interfered with the installation that either caused it to fail or caused it to be held up.

You have to go back to the planning, and we have to make sure that that piece fits

Poor planning and changes in implementation are some of the main challenges.

Planning, planning would be the most critical success factor. Planning from beginning to end and also planning for setbacks or mishaps to happen.

Poor planning and lack of direction and commitment from upper management. If you do not have buy-in from the top-level management that is pushed down to the managers, people are not going to get this done.

You need proper planning and a clear direction from upper management.

The planning, you can only do so much, you know as far as hardware-wise, getting everything together, but then when you implement an ERP system, you have to have a few trains of thought.

It is a lot more detailed in, and then you can go into, okay, how can we do to the planning.

For project planning, we used our tool that was called SDW, which was called a system development workbench from Capgemini, which is very akin to Visio now.

www.manaraa.com

Interview Question 1, Theme 4: Requirements. For Theme 4 of Interview Question 1, most participants indicated requirements as being essential in the necessity for the EIS professional's implementation. It did not matter the type of ERP implementation being initiated organization, nor did it matter the area of the life cycle caused the most failures. Some of the company's area of the life cycle was seen to cause failures plans were well defined and developed for their needs. Some organizations used a combination of methods that ranged from well-defined and designed systems to less defined. Areas addressed included designing the goals that minimize risks in the ERP environment; we all have different process strategies in place; and that for people to explore their process strategies to improve their EIS assets, individuals need to continue improving.

Requirements for EIS professionals do not have to be a set of nicely formed and defined for ERP implementations. What each of the ERP implementations revealed is that there is always a need to develop better goals and to identify processes with clear identifiable solutions. The exchange of knowledge needs to occur with EIS professionals who identify challenges within the implementation of the ERP systems and correct the issues. Table 7 contains representative Theme 1 responses from Interview Question 1.

Table 7

Interview Question 1, Theme 4 Responses: Requirements

Responses
There were implementation problems with my corporation. One of them was the requirements that the company did not match the capabilities of the software. Also, we had unfortunate change management and user training. And then it metastasized to miscalculations of resources and budget requirements, along with an aggregated segregated project team.

www.manaraa.com

Most of the software that we have was loaded, and we did not have any compatibility issues with it because it matched the company's requirements.

There were no shortcuts around the initial fact that need to determine the company's business needs and requirements.

Budget requirements, user training, change management, planning. Making sure that you had sufficient executive sponsors, angel funding.

Companies fail to properly plan for the implementation of ERP due to cost, resources, or information management (Goldston, 2019). Managers, directors, and EIS professionals utilize information systems management systems in designing ERP with EIS professionals to allow for successful implementation (Goldston, 2019). It is essential to place the proper people in the right place when designing and implementing ERP systems.

Interview Question 2,

In working with your team of EIS professionals, what type of challenges have you experienced in implementing the ERP System?

***Probe question* - Please elaborate, what are the least significant challenges?**

Aggregated data for Interview Question 2 yielded four themes: (a) communication; (b) projects; (c) people; and (d) systems. The number of responses about each of the themes or topics for Interview Question 2 is shown in Table 8.

Table 8

Themes for Interview Question 2

www.manaraa.com

Themes	*n*
• Communication	13
• Projects	7
• People	6
• Systems	6

Interview Question 2, Theme 1: Communication. For Theme 1 of Interview Question 2, when employees communicate with managers or managers to communicate with employees, users, managers, and resources are better adept at fully understanding the aspects of the project (Wagaw, 2017). When management hires the right people for the job, fewer errors occur within the implementation phase (Wagaw, 2017). Ensuring EIS professionals are knowledgeable is key to completing the project (Wagaw, 2017). Table 9 contains representative Theme 1 responses from Interview Question 2.

Table 9

Interview Question 2, Theme 1 Responses: Communication

Responses
The best communication was when we were face to face. Your job. You perform well and push yourself to develop.
The communication methods that were used on the implementation and the meetings could be a daily meeting just to come up or get together and give a status update on what is going on, where we are in the process of the implementation.
The best form of communication because you can talk to a person, see their expression when they are given information, or give it a status or an update or when they are receiving their

www.manaraa.com

information, you can tell if they are really on the same level that you're on.

If they had not been in excellent communication and pushed things down, I think really with any software implementation.

It seems like we make many lists in Excel and a lot of emails back and forth. Those are the primary means of communication.

The life cycle that caused most failures and lack of communication, and yeah. Lack of communication and poor coordination during the implementation. General, telephone meetings, conference calls, video conferencing meetings, emails so that there is a paper trail of communication. Most importantly is having everyone in the communication groups, not leaving people behind, and having your project to get out of step.

Interview Question 2, Theme 2: Projects. For Theme 2 of Interview Question 2, effective succession planning systems encourage a supportive future for projects in the organization. The process of investing in ERP projects cost significant amounts of capital, involving training and education, and can be time-consuming; however, it is worthwhile for future growth and projects in the organization. Table 10 contains representative Theme 2 responses from Interview Question 2.

Table 10

Interview Question 2, Theme 2 Responses: Projects

Responses
Budget requirements, along with an aggregated a segregated project team.
You would have a project plan and just following that plan but having a weekly meeting.

www.manaraa.com

You are having everyone in the communication groups, not leaving people behind and having your project to get out of step
The implementation phase is correctly when using, and maybe particularly end-users being trained when the validation of the whole project is tested.

Interview Question 2, Theme 3: People. For Theme 3 of Interview Question 2, having people resources focusing not only on replacing skills updating talent; although, equally important is developing process, training, and resources from within to fulfill long-term organizational goals for successful implementations (Wagaw, 2017). Utilizing highly skilled EIS professionals ensures higher success rates and provides a more significant knowledge base for ERP implementation and designs (Wagaw, 2017). Table 11 contains representative Theme 3 responses from Interview Question 2.

Table 11

Interview Question 2, Theme 3 Responses: People

Responses
Cost, meaning how many may want to have a system implemented, but they have certain people that are already working with the companies who may know the system.
Training would be one of the least significant challenges because the people that you usually training are the people who were using your old system so, although it is a challenge because many people do not like to learn new things.
The knowledge of the people who work in the company would be one of the characteristics of the resource management, that person knowing the ins and outs of the system.
You got to tackle this stuff weekly and make sure people get their stuff done.

www.manaraa.com

It is easier to communicate with people when you can see their facial expressions.

The moment that we do start with the implementations, that is when people start to realize that things are working or not working.

Interview Question 2, Theme 4: Systems, projects, people, and communication. For Theme 4 of Interview Question 2, if systems are to be successful, companies will be required to know before implementation (Wibowo & Sari, 2018). There is no single defined or developed approach; there are critical issues that should be addressed when planning ERP systems implementation (Wibowo & Sari, 2018) — creating a plan of action with various models in place to help achieve successful systems implementation with the proper communication and resources in place (Wibowo & Sari, 2018). Table 12 contains representative Theme 1 responses from Interview Question 2.

Table 12

Interview Question 2, Theme 1 Systems: Projects, People, and Communication

Responses
Implementing a portion of the ERP system and I get to a point, far as with the data, so they did not include everything or leave the data portion of the data or what part of the data was not met due to the lack of oversight.
When I say cost, meaning how many may want to have a system implemented, but they have certain people that are already working with the companies who may know the system.
Instead of spending the money to get a consultant, like for instance SAP, we are implementing the SAP system, and you have an SAP expert already working in a company, then they will try to use that person to try to implement the system instead of hiring SAP consultant who

www.manaraa.com

does implementation and that is their job is.

There is a lot of brainstorming and planning involved before you ever making your first moves toward getting any particular ERP system in motion.

With customer service in mind, system tracks, customer service requests for repairs on defective product maintains the warranty system for those.

Interview Question 3

From one of your successful ERP project implementations, what characteristics of resource management helped in the process of implementing the ERP system?

***Probe question* – what was the least successful in the process?**

Aggregated data for Interview Question 3 yielded three themes: (a) challenges, (b) process, and (c) data. The number of responses about each of the themes or topics for Interview Question 3 is shown in Table 13.

Table 13

Themes for Interview Question 3

Themes	*n*
• Challenges	10
• Process	9
• Data	4

Interview Question 3, Theme 1: Challenge. For Theme 1 of Interview Question 3, identifying the areas of having environments setup and importing legacy systems into newly updated software of ERP. Significant challenges often occur during system implementation,

www.manaraa.com

which requires testing and due diligence. People change their minds and make decisions, which causes challenges with management and with their environments, which creates expectations for management. Table 14 contains representative Theme 1 responses from Interview Question 3.

Table 14

Interview Question 3, Theme 1 Responses: Challenge

Responses
A big company that has a ton of money, they have everything, but a small company that is on a budget, they still want all those features. They do not want to have to pay for it. That is the biggest challenge.
The biggest challenge I think for EIS professionals is understanding the business where they are doing the implementation.
Everything is a challenge when you are doing an ERP implementation. I mean, you have some constraints when you work with third parties in terms of travel and all that sort of stuff, and that is easily overcome, mainly by money and people's willingness to travel.

Interview Question 3, Theme 2: Process. For Theme 2 of Interview Question 3, a rapidly changing world along with continuously evolving technologies, global mobility, and new markets are being created, making processes even more vital than in the past. How well leadership continues to employ key people determines the success of ERP implementations. It is critical to have a qualified EIS professional ready to manage as a resource in critical positions for training purposes. Table 15 contains representative Theme 1 responses from Interview Question 3.

Table 15

www.manaraa.com

Interview Question 3, Theme 2 Responses: Process

Responses
The planning process that interfered with the installation that either caused it to fail or caused it to be held up.
That will hold up or help the process. Furthermore, in some cases, it could end the installation, depending on how severe that piece was.
The meetings could be a daily meeting just to come up or get together and give a status update on what is going on, where we are in the process of the implementation.
Configuring the system to calculate all your inventory, configuring the system to be able to accept the information you put in for payroll, you know, process it to get it back out to you the way you expected.
A plan for training time and running, what we call, a conference room pilot, which is a mock go-live and month-end close process.
Work-in- process, finished product that's available for sale, recording orders from customers, in this case using an internet portal, all of the manufacturing processes from supply chain going all the way through the work-in-process, printing production tickets, maintaining the status of every part of the manufacturer.
The user communities are the most important that they get early in the implementation process to make an ERP system a successful implementation.

Interview Question 3, Theme 3: Data. For Theme 3 of Interview Question 3, data conversion occurs within the ERP setup. Typically, data sets are stored in specific ways, and upgrading to another might mean the service order is split up into multi parts. Understanding the

www.manaraa.com

various data sets is crucial in the operations of ERP. When migrating to another ERP grouping, the data sets could be different which could fail in the process of implementation for ERP. Table 16 contains representative Theme 3 responses from Interview Question 3.

Table 16

Interview Question 3, Theme 3 Responses: Data

Responses
Implementing a portion of the ERP system and I get to a point, far as with the data, so they did not include everything or leave the data portion of the data or what part of the data was not met due to the lack of oversight.
All the intricate parts of the payroll system, not just entering employees and their data, but setting up the background of it to be able to take that information as well.

Interview Question 4

What communication methods were used in the process of implementing ERP systems?

***Probe question* – what was the least effective communication methods?**

Aggregated data for Interview Question 4 yielded two themes: (a) business and (b) training. The number of responses about each of the themes or topics for Interview Question 4 is shown in Table 17.

Table 17

Themes for Interview Question 4

Themes	*n*
• Business	8
• Training	8

www.manaraa.com

Interview Question 4, Theme 1: Business. For Theme 1 of Interview Question 4, business is more challenging to quantify. Businesses and ERP focus on characteristics associated with the database inside of ERP. Businesses encompass incorporating various information necessary to update the datasets within ERP. One participant expressed that we use an extensive interview process that includes behavioral interviewing to helps us assess candidates. One participant stated you could implement ERP out of the box and then edit what you need to tailor to the business, or you can tailor it for launch with no exact dataset listed. Table 18 contains representative Theme 1 responses from Interview Question 4.

Table 18

Interview Question 4, Theme 1 Responses: Business

Responses
Most of the software that we have was loaded, and we did not have any compatibility issues with it. Because it matched the company's requirements. There were no shortcuts around the initial fact that need to determine the company's business needs and requirements.
Things were comparable to the business sector because the CEO had to fly from Alaska to the East Coast many times to meet with teams.
Need the business people to test and make sure things work. Moreover, even business people who are considered vital users would help us tweak the software to their needs to begin with. That poor planning and lack of commitment from the top down,
ERP systems are typically the most complex and touch most areas of the business.
Well, the biggest challenge I think for EIS professionals is understanding the business where they are actually doing the implementation.
Understanding exactly what it is that the application is going to do in business from a functional

www.manaraa.com

perspective.

Interview Question 4, Theme 2: Training. For Theme 2 of Interview Question 4, training encompasses precise knowledge and abilities, such as technical proficiency, on the job training, previous experience, and educational degrees such as Certifications in ERP, and Bachelors of Science (Rouhani & Mehri, 2018). One participant talked about post-training education on ERP systems is essential to the day to day operations. ERP systems outbox is considered efficient after customization to the organization and training completion before and after installation. Table 19 contains representative Theme 2 responses from Interview Question 4.

Table 19

Interview Question 4, Theme 2 Responses: Training

Responses
A good team of expert users who, those would be people who are very, your rock star employees in each department. They are going to help implement, define the specs, do testing and training and they are going to have to be trained first, but then they are going to have to be the ones who train the rest of their staff. Training is the next one, proper training.
Training would be one of the least significant challenges because the people that you usually training are the people who were using your old system.
Within training, you have some people who have pushback or cannot grasp, cannot grasp the information as quickly, but it is not that big of a challenge to overcome.
Documenting any information during the implementation and providing that information through our training.

www.manaraa.com

Interview Question 5

In your opinion, what was the best communication used from the various methods above?

***Probe question* - in your opinion, does this process work?**

Aggregated data for Interview Question 5 yielded two themes: (a) talent pipeline, (b) selection process, (c) job portals, and (d) training and education. The number of responses about each of the themes or topics for Interview Question 5 is shown in Table 20.

Table 20

Themes for Interview Question 5

Themes	*N*
• Brainstorming	6
• Video	6

Interview Question 5, Theme 1: Brainstorming. For Theme 1 of Interview Question 5, for organizations to thrive and remain competitive in their markets, organizations must adapt to innovative ideas that often come from management and teams brainstorming. Management would come together for areas of the ERP implementation and brainstorm parts of the unplanned areas. One participant stated that brainstorming would occur if the customer required more environments or network speed necessary for the implementation. Table 21 contains representative Theme 1 responses from Interview Question 5.

Table 21

Interview Question 5, Theme 1 Responses: Brainstorming

Responses

www.manaraa.com

Brainstorming was only when the customer would request more environments or more network speed, et cetera, more bandwidth, et cetera, and maybe more space on the SQL server for database.

It was more like a question and answer because I already knew what they could do, but as in their meetings and everything, they would have much brainstorming for what they had not planned for the application for ERP.

Brainstorming works, but I generally use either the traditional method or the turnkey method.

Interview Question 5, Theme 2: Video. For Theme 2 of Interview Question 5, the EIS resources and management would be in different locations, making video teleconferencing an essential part of the implementation process. Management would initiate training within the videos or include weekly meetings during pre and post-implementation of ERP. Organizations use many strategies for testing and evaluation of ERP within video representations and digital animation. The key to a successful implementation is to match the organization's predetermined requirements with the correct skill sets (Samkarpad, 2017). Table 21 contains representative Theme 2 responses from Interview Question 5.

Table 21

Interview Question 5, Theme 2 Responses: Video

Responses
You have face to face meetings, video calls, and even just handwritten notes and ideas and procedures and such. So basically, every method of communicating what you usually would do, phone calls, but then again phone call, video call, all of those are using an ERP system.
Meeting or a video call or a phone call or you have a bunch of written notes, and then you use

www.manaraa.com

email to list what was agreed upon, not in emails.

Video conferencing meetings, emails so that there is a paper trail of communication.

Video conferencing. In general, it is easier to communicate with people when you can see their facial expressions, the mannerisms that they are using, the motions that they are making with their hands, or even whether they are paying attention.

If you have a face to face meeting, you said were you sitting there looking at the person, whether it is video conferencing or actually face to face.

Interview Question 6

What are the critical success factors of ERP implementation?

***Probe question* - how did you overcome any barriers?**

Aggregated data for Interview Question 6 yielded two themes: (a) failures, (b) caused. The number of responses about each of the themes or topics for Interview Question 6 is shown in Table 22.

Table 22

Themes for Interview Question 6

Themes	*n*
• Failures	8
• Communication Effectiveness	6

Interview Question 6, Theme 1: Failures. For Theme 1 of Interview Question 6, failures yielded the most responses from participants. Failures would come from several facets of

www.manaraa.com

the implementations according to the participants. One participant stated that one of the areas of failure is in the planning and design phase of the project.

Another participant stated that risk was not identified in the project causing several mishaps in the beginning phases of the implementation. Critical success factors impact the implementation phases by identifying the problems either with users, management, resources, design or capital within ERP (Saade & Nijher, 2016) Table 23 contains representative Theme 1 response from Interview Question 6.

Table 23

Interview Question 6, Theme 1 Responses: Failures

Responses
Two areas caused the most failures. First, is that designing the goals of what you want to achieve for ERP software is extremely important, and if you do not define your goals correctly or in much detail, then you are setting yourself up for failure. If you have too much interpretation in your goals, then the following steps will spiral out of control very quickly.
The second one is if you use your production processes and you want to redesign them for a new ERP or for ERP on its own, if you don't have an ERP system, you need to make sure that you document those production processes in a way that there aren't too many different ways of doing it.
The life cycle that caused most failures, lack of communication lack of communication and poor coordination during the implementation.

www.manaraa.com

Interview Question 6, Theme 2: Communication Effectiveness. For Theme 2 of Interview Question 6, Causes and failures of ERP succession according to a participant in understanding and defining the goals be correct and attention to detail. Effective working communicative relationships are the backbone of successful organizations; they shape interactions, expectations, and outcomes for the organizations. When managers and employees communicate effectively, productivity is high and both parties establish a common understanding of expected results. Another participant states that having too many processes or variations in the implementation of ERP causes challenges, and it is best to utilize tried and tested processes for the successful implementation of ERP.

Table 24 contains representative Theme 2 responses from Interview Question 6.

Table 24

Interview Question 6, Theme 2 Responses: Communication Effectiveness

Responses
If you look at the operational part of it, the commitment of how much time can be spent on an ERP project can be a significant issue.
Area of the life cycle that caused most failures. Boy, lack of communication, and yeah. Lack of communication and poor coordination during the implementation.
The installation portion of the lifecycle caused the most failures that would be because in the middle of something else may come up like somebody did not think of during the planning process that interfered with the installation that either caused it to fail or caused it to be held up.

Interview Question 7

What strategies are useful for EIS professionals during ERP implementation?

www.manaraa.com

***Probe question* - Going forward, how can you maximize opportunities?**

Aggregated data for Interview Question 6 yielded two themes: (a) organization development, (b) factors. The number of responses about each of the themes or topics for Interview Question 6 is shown in Table 25.

Table 25

Themes for Interview Question 7

Themes	*n*
• Organization development	11
• Factors	7

Interview Question7, Theme 1: Organization development. For Theme 1 of Interview Question 7, organization development yielded the most responses from participants. Several participants noted organizational development would, at times, have a positive or negative effect on the implementation. Another participant would state how developmental changes in software or hardware would also relate to causes for the change in ERP. Organization development would affect the overall project according to one participant who identified capital decrease was involved in the project, thereby suspending resources and skilled talent. Table 26 contains representative Theme 1 responses from Interview Question 7.

Table 26

Interview Question 7, Theme 1 Responses: Organization Development

Responses
Having only a few positions, but many qualified people.

www.manaraa.com

In the last few years, we have had some leadership changes, which means my the focus has to be elsewhere.

The East Coast many times to meet with teams to further assist with the hiring, everything from software development, approving new software standards, whether or not we wanted to use a Cloud-based or whatever type of functionality that we wanted to use.

We used a variant of SDM, which was called system development methodology, which is an excellent way of saying that it is a comprehensive design tool. For project planning the... Yeah, we used our tool that was called SDW, which was called system development workbench from Capgemini, which is very akin to Vizio now.

Interview Question 7, Theme 2: Factors For Theme 2 of Interview Question 7, factors of ERP succession, according to a participant, is understanding and defining the goals be correct and attention to detail. Effective working communicative relationships are the backbone of successful organizations; they shape interactions, expectations, and outcomes for the organizations. When managers and employees communicate effectively, productivity is high and both parties establish a common understanding of expected results. Another participant states that having too many processes or variations in the implementation of ERP causes challenges and it is best to utilize tried and tested processes for the successful implementation of ERP. Table 27 contains representative Theme 2 responses from Interview Question 7.

Table 27

Interview Question 7, Theme 2 Responses: Factors

Responses

www.manaraa.com

I would say those are the success factors, but the one thing, and I touched on this earlier, that I would do, I would try to avoid as much customization as possible. Use as much out of the box stuff as you can. Keep customization to a minimum. I mean, keep it simple.
Critical Success Factors the beginning is planning, the cooperation of management from beginning to end, providing the appropriate resources, both financially and in human terms, and hardware terms.
Factors of ERP implementation? Than intended or at capacity. When you put much load on those servers, primarily clustered servers, it is critical you get that piece right because if you don't then nobody will be able to use anything.

Interview Question 8

What are business processes integrated within your ERP system?

***Probe question* - how did you overcome any barriers?**

Aggregated data for Interview Question 8 yielded two themes: (a) Information, (b) ERP. The number of responses about each of the themes or topics for Interview Question 8 is shown in Table 28.

Table 28

Themes for Interview Question 8

Themes	*n*
• Information	11
• ERP	3

Interview Question 8, Theme 1: Information. For Theme 1 of Interview Question 8,

www.manaraa.com

information according to the participant allows for if you are working with a legacy system, the ability to compare to ensure the implementation is done correctly. Pulling data from one system to another from the database creates reports and charts stated a participant, which allows for information to be verified from a legacy to a new implementation ERP system. Scheduling systems and coding states a participant is two way due to gathering information to and from the ERP systems with reporting pulling information out.

Table 29 contains representative Theme 2 responses from Interview Question 8.

Table 29

Interview Question 8, Theme 1 Responses: Information

Responses
We pull the data directly from the database, and we create reports and charts from that information. While whether or not it can be management information or operational information, which can be significantly different, we have the scheduling system for the technician's linked to this.
When we create a service order that it gets to a technician's tablet and tells him where he needs to go, and the information is then relayed back to the ERP system.
Whatever the ERP system says is the actual result of the information. So the quote to it and of course, pushed into the ERP system. Furthermore, whatever the ERP has listed is the leading data, which is a specific approach.
The intricate parts of the payroll system, not just entering employees and their data, but setting up the background of it to be able to take that information as well.
The total breakdown of the, not just how do you put the information in its setting up the module two accept that information as well. So it is like configuring the system to calculate all your

www.manaraa.com

inventory, configuring the system to be able to accept the information you put in for payroll, you know, process it to get it back out to you the way you expected.

Interview Question 8, Theme 2: ERP. For Theme 2 of Interview Question 8, ERP yielded the most responses from participants. Participants identified setting up employees, HR, payroll, and various modules inputting inventory. The participant stated the configuring the system to be able to accept the information required a great deal of exactness by understanding the process. Various participants stated that the business processes varied depending on the role of the organization and the job of the ERP setup. One participant identified within ERP, each area, is separated into individual reporting areas.

Table 30

Interview Question 8, Theme 2 Responses: ERP

Responses
From implementing a portion of the ERP system and I get to a point, far as with the data, so they did not include everything or leave the data portion of the data or what part of the data was not met due to the lack of oversight. So now that I'm implementing, I cannot continue because this portion is missing or was not planned and as much stated as to where it should go within the installation.
Two systems that I integrated with ERP systems and that was payroll and inventory slash, manufacturing. So payroll would be all the aspects of payroll as far as setting up all of the employees, all of your benefits, your taxes, your third party vendors that are attached to your payroll system.

www.manaraa.com

All the intricate parts of the payroll system, not just entering employees and their data, but setting up the background of it to be able to take that information as well. With inventory, it would be the same thing. I'm setting up all of the different modules or different categories of inventory.

How are you going to accept from the, how are you going to count them for the hub, the total breakdown of the, not just how do you put the information in its setting up a and the module two accept that information as well.

Interview Question 9

What is the nature of your business organization?

***Probe question* - How successful is the process in your organization?**

Aggregated data for Interview Question 9 yielded two themes: (a) Industry and, (b) perspective. The number of responses about each of the themes or topics for Interview Question 9 is shown in Table 31.

Table 31

Themes for Interview Question 9

Themes	*n*
• Industry	8
• Perspective	1

Interview Question 9, Theme 1: Industry. For Theme 1 of Interview Question 9, organizations are unique just as setting up ERP systems unique within the characteristics of the organizations. Employees have more obstacles than ever before, such as leverage, competition,

www.manaraa.com

and global markets. ERP systems are based on the needs of the organization versus the wants. Medical, payroll, HR, construction, and IT all benefit from the usage of ERP (Rouhani & Mehri, 2018). Table 32 contains representative Theme 1 responses from Interview Question 5.

Table 32

Interview Question 9, Theme 2 Responses: Industry

Responses
One of the characteristics that helped is knowing the client, knowing the industry that they were dealing with. And then, from there, you get a baseline of what is needed to implement their system.
The healthcare industry has specific requirements from the restaurant industry. So when doing implementation based on knowing your client and knowing what their industry are, you are better focused on what the need is for that particular type of industry or business.

Interview Question 9, Theme 2: Perspective. For Theme 2 of Interview Question 9, Organizations use many strategies for testing and evaluation of ERP systems. A participant stated the business they are associated does manufacturing, on doors, locks and commercial docking products. The participant's organization utilizes ERP systems as part of the organization's infrastructure, including, HR, Finance and information technology. The organization must accurately define and identify the need for ERP and justification of costs, according to a participant. Table 33 contains representative Theme 2 responses from Interview Question 9.

www.manaraa.com

Table 33

Interview Question 9, Theme 1 Responses: Perspective

Responses
To understand precisely what it is that the application is going to do in business from a functional perspective. Some other issues that we have had with EIS professionals in the past are maybe a few interpersonal relationships with customers, but the personalities of the people, the project may not always necessarily jive, which makes it a little bit difficult and I mean, because they are third parties, there's always budgets constraints, so there's limitations in terms of what you can do with the EIS professionals in general.
There is certain requirements that are around the HR perspective with minimum wage and tips and gross receipts. Whereas, when you're working with someone that's in the health care, the laws are a little different where you're setting them up. And this is both just speaking from a human resources perspective.

Interview Question 10

What designs were used in the implementation of ERP systems?

***Probe question* - how do you identify the designs in the implementation of ERP systems?**

Aggregated data for Interview Question 10 yielded two themes: (a) production and (b) plan. The number of responses about each of the themes or topics for Interview Question 10 is shown in Table 34.

Table 34

Themes for Interview Question 10

www.manaraa.com

Themes	*n*
• Production	10
• Plan	4

Interview Question 10, Theme 1: Production. For Theme 2 of Interview Question 10, production design, according to a participant, allows for ERP to be configured in an environment that is customized with the proper hardware, software and resources. Another participant stated that design and production-related to implementation, training and testing to ensure ERP operates according to the customer's request. One participant talked about the top five required skills including education and experience as part of facilitating the production of ERP systems. Table 35 contains representative Theme 1 responses from Interview Question 10.

Table 35

Interview Question 10, Theme 1 Responses: Production

Responses
Things like sales management, like order entry and quoting, inventory management, purchasing management, job production management, like creating manufacturing jobs and routing sheets for the shop floor and scheduling those jobs, that sort of stuff for job management. Oh, the big one, financial management, like accounts payable, accounts receivable, general ledger stuff, and tax stuff.
Properly using the expert users or the key users to help implement and test and train, that is an important design feature. Moreover, we have time to train. You've got a plan for training time and running, what we call, a conference room pilot, which is a mock go-live and month-end close process. You will enter a bunch of transactions in the order entry and then do everything you need to do to ship and invoice that customer and receive the bill from any vendors you

www.manaraa.com

had received in and then you pretend to do the financials of the month-end close.

The SDM was used to map the steps, and the variation was that because the SDM is reasonably straight forward, we had to make variations in different steps, in different applications

---

Interview Question 10, Theme 2: Plan. For Theme 2 of Interview Question 10, plans are more challenging to quantify. Plans focus on designs along with the interactions with ERP and the organization according to a participant. Plans are set up to follow detailed layouts of the organization and software, hardware compatibility in the implementation phase according to a participant. One participant expressed having a prototype of the system, that particular design of how the users were going to work for us. The design of the user role, what everybody in the company's role was upon the new system and implementing the new system and design of procedures on how you are going to document everything that you do according to the participant.

Table 36 contains representative Theme 1 responses from Interview Question 4.

Table 36

Interview Question 10, Theme 2 Responses: Plan

Responses
There is always going to be some different and with that being said documentation throughout the installation, the testing of your implementation needs to be documented well so that when the person who implemented this system is long gone and something happens, then user who took over, we can always refer back to documentation to see, well how do I fix it? Instead of always just making a call.
As far as master record with customer or employee, all of their records that would need to be

www.manaraa.com

implemented into the new ERP system. Structures of the old system versus the new system as far as a database table, more database structure walkthrough of the system or how the new system was designed and how it would, how your old system information would integrate within that new system.

Properly using the expert users or the key users to help implement and test and train, that is an important design feature. Moreover, we have time to train. You have got a plan for training time and running, what we call, a conference room pilot, which is a mock go-live and month-end close process.

We used a variant of SDM, which was called system development methodology, which is an excellent way of saying that it is a comprehensive design tool. For project planning, we used our tool that was called SDW, which was called a system development workbench from Capgemini, which is very akin to Vizio now.

Presentation and Discussion of Findings

Table 37 indicates the aggregated theme data from the ten interview questions asked by the investigator. Once the data were analyzed, the investigator created two categories, significant themes and prominent topics as indicated in Table 37. The major themes are topics that were recurrent with the participants, while the prominent topics are findings that were less frequently mentioned by participants. Nevertheless, they are noteworthy and included in the findings. Complete results are discussed in Chapter 5.

Table 37

Themes and Topics Emerging from the 11 Interviews

Themes	*n*

www.manaraa.com

Frequency of reference for themes related to Interview Question 1	
• Implementation	14
• Management	10
• Planning	8
• Requirement	7
Frequency of reference for themes related to Interview Question 2	
• Communication	13
• Projects	7
• People	6
• System process	6
Frequency of reference for themes related to Interview Question 3	
• Challenge	10
• Process	9
• Data	4
Frequency of reference for themes related to Interview Question 4	
• Business	8
• Training	8
Frequency of reference for themes related to Interview Question 5	
• Brainstorming	6
• Video	6
Frequency of reference for themes related to Interview Question 6	
• Failures	8

www.manaraa.com

• Communication effectiveness	6
Frequency of reference for themes related to Interview Question 7	
• Organization development	11
• Factors	7
Frequency of reference for themes related to Interview Question 8	
• Information	11
• ERP	3
Frequency of reference for themes related to Interview Question 9	
• Perspective	11
• Industry	8
Frequency of reference for themes related to Interview Question 10	
• Production	10
• Plan	4

Table 38

Major Themes and Prominent Topics of Research Data

Major Themes and Prominent Topics	48
Major Themes	
• Implementation	14
• Communication	13
• Organization development	11
• Management	10
Prominent Topics	

www.manaraa.com

• Implementation	14
• Organizational development	11
• Management	10

Table 38 is the cumulative total of the major themes found in this qualitative study. The investigator used member checking to ensure the validity and credibility of the raw data gathered through interviews. Saturation reached after interviewing all 8 participants. The researcher conducted a thorough review of the raw data and began the process of coding by looking for themes, patterns, and experiences. Responses were translated based on what was happening or what was said by the participants. Once all data had been coded and saturation reached, the investigator began the process of analyzing the data looking for major themes and prominent topics.

Table 39 the investigator analyzed data a second time to ensure that a thorough and unbiased assessment of the data had achieved. From the unbiased assessment, four major themes and three prominent topics emerged from the data. The participants answered each of the ten interview questions and from the data, four major themes and three prominent themes emerged.

Table 39

The four major themes were

Major Themes
Four major themes were:
• Implementation
• Management
• Communication

www.manaraa.com

- Organizational Development

The three prominent themes

Prominent Themes

Three prominent themes are:

- Implementation
- Management
- Organizational Development

The findings directly relate to the current literature used for researching requirements EIS professionals need to successfully implement ERP systems in a large technology company. The construct for creating sustainable ERP implementation planning highlights the importance of the decision maker's perception of ERP planning and the complex systems they create to address the long-term planning needed for successfully implementing ERP into an organization. These findings indicate that when management has a transparent approach to the internal investment succession planning offers for the sustainability of the organization, a high degree of satisfaction produced and a return on investment for the organization achieved.

The participant responses show an interconnectedness and openness to ERP systems planning and show how collaboration can enhance ERP planning as an effort used by leadership to move the organization forward. Additionally, the four major themes and three prominent themes support the findings. Managers who understand the goals and needs of the organization and are willing to work with selected candidates must develop effective ERP systems planning initiatives. The literature supports the findings in this dissertation and correlates with the participant interviews. These findings clearly show the alignment between various safeguards

www.manaraa.com

and the theoretical implications that ERP systems implementation and the strategies managers use to establish leadership usage in minimizing risks affecting the successful implementation of ERP systems in an organization.

Summary of Chapter Four

Included in Chapter 4 are study outcomes, findings, data analysis, major, and prominent themes that relate to the problem. Organizational leaders lack strategies for implementing successful policies and procedures to minimize risks. The investigator used the saturated data from the participant interviews to argue the results of this study. Consequently, Chapter 4 provided the data results assembled for this research study and began with collecting information about the pilot study and information about the study participants. Participants were selected based upon specific criteria such as various experience and industry working as an ERP systems specialist or director. The researcher required the participants to have a minimum of five years qualified in experiences and knowledge including technological understanding and years of working with ERP systems. Technology changes with the understanding of ERP having a centralized basis of the 8 participants understanding the integrated management of the various organizational processes which the researcher wanted to achieve. Participants were also selected with at least two current certifications within ERP systems along with working or living within the Georgia area.

The methodology used was qualitative study in the research in describing the experiences as being lived regarding the developmental studies of ERP (Koivu, & Damman, 2015). Utilizing the qualitative method was based upon the understanding of experiences, behavior, interactions, and experiences (Koivu, & Damman, 2015). Chapter 5 is the final chapter in this study and presents an overview of chapters 1 through 4. Chapter 5 includes a summary of

www.manaraa.com

the findings concerning the research question and problem statement. Chapter 5 includes the conclusion, findings, implications, and recommendations for further study and the significance of succession planning.

www.manaraa.com

CHAPTER FIVE

The conceptual framework identified enterprise resource planning and the requirements EIS professionals need to implement ERP systems in large technology companies. The challenges of project managers was the need to gain additional training and work with management with ERP implementation (Makori, 2017). Enterprise resource planning systems requires a great deal of systems integrations and training, which has been a root cause of failure due to user resistance (Jagoda & Samaranayake, 2017).

This qualitative study focused on the problem requirements EIS professionals need to implement ERP systems in large technology companies successfully have not been identified (Mahmood, & Miller, 2017). The purpose of the proposed qualitative study is to explore requirements EIS professionals need to successfully implement ERP systems in large technology companies. The single overarching research question was, "What are the requirements EIS professionals need to successfully implement ERP systems in large technology companies?"

Qualitative research chosen because it was the best methodology that fits the purpose of presenting research on ERP systems — over the phone, interviewing allowed for questions to be asked for clarification purposes. Based on the selection of the qualitative methodology, the approach used for conducting telephone interviews. The qualitative approach is appropriate for the proposed study because allowing for telephone interviews of the participants, along with incorporating the findings from the perception of the participants and researcher.

The interview expectation met within allotted constraints of time, and the participant's interview responses to questions were subjective. Obtaining permission to research the various organizations did not result in limitations for the completion of the interview. Each probe was initiated to gather a better understanding and details of what the participants are stating.

www.manaraa.com

Researcher identified that the participants were speaking in abbreviated terms with an assumption of what is being said. Probes was the tool utilized to get exactly what was necessary from the participant.

Researching with human participants required a particular set of criteria that allowed for the protection of ethical concerns. Research projects in the past violated the participant's human rights, which then set the stage for standardizing protection for participants. Out of this need was initiated the Belmont Principles, a comprehensive set of working rules for research integrity. The Belmont Principles not based on being regulations or rules but a blue for research integrity throughout the study.

Chapter 5 is a summary of the findings and conclusions related to the problem statement and research question. The research questions were used in determining the interview questions. Limitations of the study, conclusions, and recommendations are in this chapter — recommendations for further research and requirements for successful implementation ERP systems in large technology companies.

Findings and Conclusions

An important theme emerged from the ten interview questions; organizations utilized various elements for planning and implementing ERP systems. Processes were similar in methods of communications, and customization according to the organizational needs. Eight study participants who were directors, leaders, or managers in their perspective organizations shared their knowledge, experiences along with information on the particular job titles with the investigator.

The demographics of the participants were three females and five males. Each participant was in a leadership role varying from information technology director, to technical accounting

www.manaraa.com

manager, to computer security manager. Interview questions, based on being open-ended, allowed the eight participants to share experiences, insights, and perceptions regarding ERP implementations.

Raw data collected by using the following ten semi-structured interview questions:

1. In your experience of implementing ERP systems, what area of the lifecycle caused the most failures?

   Probe question - what led to your involvement with the systems?

2. In working with your team of EIS professionals, what type of challenges have you experienced in implementing the ERP System?

   Probe question - Please elaborate, what are the least significant challenges?

3. From one of your successful ERP project implementations, what characteristics of resource management helped in the process of implementing the ERP system

   Probe question - what was the least successful in the process?

4. What communication methods were used in the process of implementing ERP systems?

   Probe question - what was the least effective communication methods?

5. In your opinion, what was the best communication used from the various methods above?

   Probe question - in your opinion, does this process work?

6. What are the critical success factors of ERP implementation?

   Probe question - how did you overcome any barriers?

7. What strategies are useful for EIS professionals during ERP implementation?

   Probe question - Going forward, how can you maximize opportunities?

8. What are business processes integrated within your ERP system?

   Probe question - how did you overcome any barriers?

www.manaraa.com

9. What is the nature of your business organization?

   Probe question - How successful is the process in your organization?

10. What designs were used in the implementation of ERP systems?

    Probe question - how do you identify the designs in the implementation of ERP systems?

Probe questions used when the investigator required additional inferences from the participant's responses. Each participant answered all the study questions, except for several participant's answers for one question included the answer to other questions. Each participant was assigned a specific identification number, and all files regarding this qualitative secured in a nondescript file on the investigator's iPad tablet. Interviews were conducted via telephone and lasted approximately 30 to 45 minutes. Open coding was used by highlighting sections of the text, key terms, phrases, descriptions, and particular identified themes. The coding exercise was a non-hierarchical flat coding and themes (Creswell, 2014). As themes merged into subcategories and various categories, frameworks of essential and prominent themes emerged from the data.

Participant's responses were categorized and subcategorized, creating a matrix of information that revealed behaviors, knowledge, feelings, and opinions (Creswell, 2014). Participants shared their expertise with the investigator through ideas, insights, and experiences, when combined with data from other participants, themes emerged. Themes were placed into categories and subcategories, which aided the investigator to understand the protocol for creating strategies. From this data, the investigator used current literature to compare and further advance knowledge on the topic by including participant responses, for example, having a critical success factor during the implementation phase, not accurately aligned with the organization's long-term goals. The investigator did another observation of the data and created two categories, major

www.manaraa.com

themes, and prominent topics. Significant themes are topics that are recurrent with the participants. Prominent topics are findings that are frequently less mentioned.

Major Theme 1: Implementation

The major them implementation was mentioned 14% of the participant responses. Implementation is not just the installation of ERP but planning and designing within the organization. Dynamic EIS and ERP implementation involve department leaders, HR, department managers, and project managers to exchange ideas, share skills, and talk shop across the organization to create a successful implementation within the organization. Dynamic ERP systems and EIS professionals build pools of people within the implementation phase that will provide a successful implementation. Several of the participants mention implementation as having challenges within the organization regarding matching skillsets of the project with the capabilities of the software. Several participants addressed inadequate planning and changing requirements in some of the areas of implementation. One of the areas which were identified by a large number of participants was enormous implementation challenges was improper documentation and information necessary for pre and post-implementation.

Major Theme 2: Communication

The communications theme was mentioned by 13% of the participants. Employees communicate with managers or managers to communicate with employees, users, managers, and resources are better adept at fully understanding the aspects of the project (Wagaw, 2017). When management hires the right people for the job, fewer errors occur within the implementation phase (Wagaw, 2017). Ensuring EIS professionals are knowledgeable is key to completing the project (Wagaw, 2017). Participants stated communication methods that were used on the implementation and in meetings would produce valuable information for the process of

www.manaraa.com

implementation. A few participants stated the life cycle that caused most failures was due to lack of communication, and poor coordination during the implementation. Participants unanimously agreed that face to face communication was the best form of communication due to be interactive with the group and provide real-time feedback while brainstorming.

Major Theme 3: Organizational Development

The significant theme organization development was mentioned in 11% of the participant responses. Today's leaders must embrace diversity, manage change, and meet the needs of all involved stakeholders. Respondents in this study believed organizational development was necessary for future projections, and maintaining a talent pipeline, through a constant renewal of systems, processes, and growth for individuals. Organizational development encompasses many areas in an organization, including changing people and organizations for growth, helping individuals and organizations with training, coaching, using talent management, building teams, and changing management to meet the needs and goals of the organization. Increasingly, diverse markets require a variety of expectations and needs met if they are to remain competitive in their markets.

Major Them 4: Management

Management was mentioned by 10% of the participants. One participant responded that training is both essential and necessary, although it could compromise workflow, which in turn could place the department behind schedule. Overall, participants believed that having a well-trained and developed workforce through continual development, workshops, training, and education is extremely important. Management includes project managers and decision-makers within the organization. Developing talent in an organization's workforce indicates the need to identify all unique strengths and needed improvements so employees can succeed in their current

www.manaraa.com

positions as well as identifying future positions for which employees can ideally match within information systems. Management is the cornerstone of an organization's workforce and its successes.

Prominent Topic 1: Implementation

A large organization would need a formal, systematic system, while a small organization may handle security measures through regular meetings. Decision-makers expected to have a strong vision of what implementation requirements and critical success factors involved. Staff develops management policies according to 14% of the participants. A sizeable technical organization required well trained personal when implementing ERP systems for successful completion of the projects.

Prominent Topic 2: Organizational Development

Several participants noted organizational development would, at times, have a positive or negative effect on the implementation. Another 11% participant would state how developmental changes in software or hardware would also relate to causes for the change in ERP. Organization development would affect the overall project according to one participant who identified capital decrease was involved in the project, thereby suspending resources and skilled talent.

Prominent Topic 3: Management

Management with several of the participants was compromising their organizations as a critical success factor. Management was mentioned by 10% of the participants. Decision-makers must expect that their team will review development management policies for volunteer practices like the ones implemented for their team. Some states have regulations regarding the liability organizations face for their volunteers and the protection of the organization's information

www.manaraa.com

systems. In general, management and the information systems professionals must be the right fit for the implementation of a successful ERP system according to several participants.

Limitations of the Study

The investigator formulated ten distinct interview questions regarding the requirements EIS professionals need to successfully implement ERP systems in large technology companies to answer the study's research question. Research questions and probing of the participants allowed the investigator to reach saturation. The research identified there are limitations, and areas of further research still existing. The study had several distinct limitations: (a) methodology, (b) small sample size, (c) limited research sites and geographic areas, and (d) potential for coding errors.

Another limitation would be the use of NVivo qualitative software as all of them do not provide a full version of the product as the trial version. Some free software has a limit to what can be entered and analyzed without licenses. Utilizing NVivo allowed for granular structuring of the participants information and responses. The software allowed for saturation to be made in the utilization of the participant questions and answers. Research various software and tools such as MS Excel and test prior to deciding the application to use for the project.

Implications for Practice

The results from the study are relevant to practitioners in the field as the information can be for future qualitative research. Practitioners understand how critical successes affect ERP implementations. Some practitioners should be able to utilize this qualitative information to determine causes for successes or failures related to ERP implementation in large technical organizations. From this information, practitioners can determine how to raise awareness in the successful completion of ERP implementation by EIS professionals.

www.manaraa.com

ERP strategies are necessary to take the next steps for EIS professionals and training. Some EIS professionals focus on installation while neglecting training, education and security risk planning, which are the key ingredients and building blocks to creating an organization that achieves its goals. One participant explained how important it was to become have effective communication in the organization. Since he works for a large technology organization connected to another technology businesses, he believes his corporate headquarters does an excellent job of promoting ERP implementation strategies and training. He believes this approach provides an opportunity to explore implementation training and awareness to minimize failures of implementations.

As ERP systems implementation continue to expand nationally and globally, an implication for practice is to explore what an organization needs to do to achieve successful results using proper strategies by focusing on practical risk assessments that explore organizational excellence using the four significant findings of this study. Numerous other research possibilities could be derived from this dissertation. The investigator's overall intent was to add to the body of knowledge and contribute to best practices for the successful implementation of ERP systems. The answers were what the researcher was expecting after saturation was completed from the participants.

Implications of Study and Recommendations for Future Research

During the study, a few things came up that could be recommended for future use. One recommendation could be to survey people from a trade show, conference, or a place where people are there to gain information and provide relative feedback. All of the researcher's participants allotted enough time to participate in the study. The next suggestion would be to focus on what people really think is the issue in the implementation processes of ERP within

www.manaraa.com

organizations. A third recommendation would involve focusing on specific areas of ERP, end-users, and determine what the perception would be regarding the hinderance of implementing ERP systems. The recommendation mentioned as one participant felt the study was broad.

Recommendation One

Recommendation one is for determining requirements for EIS professionals to analyze previous successes in the implementation of ERP systems. Identifying failures and critical success factors would alleviate the necessities within the systems pre and post-implementation. Critical success documentation and training within management, planning, and cost analysis would be ideal for the completion of the projects.

Recommendation Two

EIS professionals will need to have the proper training in the implementation of ERP systems with an emphasis on the type of environment. Having knowledge of the environment regarding financial, technical, construction, or medical will determine the proper installation of the systems. Communication while working with EIS professionals and other critical success factors are considered necessary regarding the completion of the project.

Recommendation Three

Ensure time management correctly allocated for risks during the pre-implementation of ERP systems. ERP systems require a great deal of capital during the lifecycle due to migrations of various applications and training. Ensuring that users trained after implementation are essential in maintaining the ERP system's proper day to day operations.

www.manaraa.com

Future Research

This dissertation leads to future research on examining additional tools and requirements needed to implement ERP systems in large technology companies succeed. Further research can also identify additional critical success factors and ways of enhancing the implementation of an ERP system's life cycle. Additional research needed for identifying specific areas of the lifecycle and breakdowns of failures and successes within ERP systems implementations. The GAP of the study alludes to flexibility and adaptability of the software, hardware, training and management requirements associated with critical success factors of successful implementation. Further research is necessary for the study.

Future research needed in identifying ERP critical success factors requires funding increases and where there is a breakdown in funding challenges. Additionally, identifying legacy and current requirements being an essential area for research of ERP implementation systems. Future research is necessary for the lifecycle of ERP implementation related to EIS professionals relating to tools, and documentation of the systems planning. Additional research required in the determination of management, documentation, and EIS professional training is needed to be enhanced or if time management is the primary identifying factor in success or failure of implementation.

Reflections

ERP systems implementation is essential at this time as several attempts to implement projects in organizations have been met with challenges. Interviewing participants in various areas of the implementation identified multiple areas that require attention. Additional reflections identified some of the participants not wanting to record. This researcher was allowed to identify several areas needing research for successful ERP implementation.

www.manaraa.com

Conclusion

In conclusion, researchers' qualitative findings answered questions and were able to determine the end user's perception of ERP implementation. The answers to the research questions were the answers necessary to complete saturation. The questions were created by the researcher based upon the research question. The researcher collaborated with two experts in the ERP field and the questions were refined and validated. The population sampling was derived via a rigorous analysis of individuals being identified as ERP professionals. Upon completion of the questions and answers, the researcher further identified 8 participants who successfully answered all questions asks and a further breakdown was requested of verification of resumes and time working with ERP for reliability and validity.

ERP implementation within large organizations continues to require capital along with well-trained EIS professionals during pre and post implementations. The purpose of the qualitative study was to explore requirements EIS professionals need to implement ERP systems in large technology companies successfully. Utilizing qualitative methodology identified a set of processes that can be used by EIS professionals to implement ERP systems successfully. Identifying additional ERP and EIS professionals was additional validation for the qualitative methodology studies completion. The chapter reflected that over time implementations will continue to get better as communication, training, and documentation continue to improve. The investigator reviewed current and scholarly and practitioner literature and used a qualitative approach to establish the meaning of the phenomenon from the viewpoint of participants to solve the problem. Through research it was discovered organizational leaders lack strategies for implementing ERP systems. Also, the literature was organized to understand how the proposed

www.manaraa.com

study adds to the body of knowledge, experiences, or replicates before ERP planning research (Creswell, 2014).

The education and training created the conceptual framework for the literature review. The literature was reviewed, examined, and summarized to generate a basis for a study finding comparisons and contrasted with the results, which were presented in chapter 4. The findings revealed critical success factors in ERP planning, which are communication, along with education and training. Creating ERP strategies requires decision makers to take a hard and realistic look at their organizational needs. However, three key factors should be considered: (a) Organizational information and needs; (b) EIS professional understanding of the operations and activities relating to the organization's implementation, and (c) Organizations should look at the cost of an implementation of ERP. Failing to assess and address ERP implementation strategies could have an unsuccessful systems setup in the organization.

The author discovered that training and educating the development of employees are thought to be increasingly important for the ERP implementations to be successful n an organization. The investigator would recommend that the technology organizations work with an educational resource and hire a EIS professional for a month to work with a consultant during pre and post implementation.

www.manaraa.com

REFERENCES

Abdelmoniem, E. M. (2016). The critical success factors and the effect of ERP system implementation on business performance (case study in Egyptian environment). *International Journal of Computer Science Issues (IJCSI), 13*(3), 66-77. doi: 10.20943/01201603.6677

Academy of Management (2015). *Academy of Management code of ethics.* Retrieved from http://aom.org/aom.asp?ID=268&page_ID=240

Adisa, F., Schubert, P., Sudzina, F., & Johansson, B. (2010). Living requirements space. *Online Information Review, 34*(4), 540-564. doi. /10.1108/14684521011072972

Ahmadzai, N., & Paracha, S. (2016). Why do projects crash & burn-in fragile countries? Review of Integrative Business and Economics Research, 5(1), 315-328.

Alase, A. (2017). The interpretative phenomenological analysis (IPA): A guide to an excellent qualitative research approach. *International Journal of Education & Literacy Studies, 5*(2)

Al-Sabaawi, M. (2015). Critical Success factors for Enterprise Resource Planning Implementation Success. *International Journal of Advances in Engineering & Technology, 8*(4), 496-506.

Althonayan, M., & Althonayan, A. (2017). E-government system evaluation. *Transforming Government: People, Process and Policy, 11*(3), 306-342

Amine, E., Hicham, A., & Noura, A. (2018). An intelligent model for enterprise resource planning selection based on BP neural network. *International Journal of Computer Science Issues (IJCSI), 15*(1), 41-47. doi:10.20943/01201801.4147

Annamalai, C., & Ramayah, T. (2011). Enterprise resource planning (ERP) benefits survey of Indian manufacturing firms. *Business Process Management Journal, 17*(3), 495-509.doi: 10.1108/14637151111136388

Arefina, A. (2014). The national cultural context of organizational change*: Implementation of change initiatives of multinational corporations in their Russian subsidiaries* (Doctoral dissertation, University of St. Gallen). Retrieved from https://www.unisg.ch/en

Asiamah, N., Mensah, H. K., & Oteng-Abayie, E. (2017). General, target, and accessible population: Demystifying the concepts for effective sampling. *The Qualitative Report,* 22(6), 1607-1621.

Atsa, R., & Etame, F. (2018). *Survey on ERP's customization-driven requirements engineering,*

www.manaraa.com

Badewi, A., Shehab, E., Zeng, J., & Mohamad, M. (2018). ERP benefits capability framework: Orchestration theory perspective. *Business Process Management Journal, 24*(1), 266-294. doi:10.1108/BPMJ-11-2015-0162

Basu, R., Upadhyay, P., Das, M. C., & Dan, P. K. (2012). An approach to identify issues affecting ERP implementation in Indian SMEs. *Journal of Industrial Engineering and Management, 5*(1), 133-n/a. doi: 10.3926/jiem.416

Basu, R., Upadhyay, P., Dan, P. K., & Das, M. C. (2010). A comparative analysis of issues affecting ERP implementation in developed and developing countries. *International Journal of Advanced Research in Computer Science, 1*(4)

Beall, G. H. (2002). Exploratory research remains essential for the industry. *Research-Technology Management,* 45(6), 26-30. Retrieved from http://www.iriweb.org

Becker, Lana L, EdD., C.P.A., Stead, J. G., PhD., & Stead, W. E. (2016). Sustainability assurance: *A strategic opportunity for CPA firms. Management Accounting Quarterly,* 17(3), 29-37.

Bernroider, E. W. N. (2013). Effective ERP adoption processes: The role of project activators and resource investments. *European Journal of Information Systems, 22*(2), 235-250. doi: 10.1057/ejis.2012.51

Bhumgara, A., & Sayyed, I. (2017). Enterprise Resource Planning Systems. *International Journal of Advances in Engineering & Technology, 10*(2), 283-284.

Bintoro, B. P. K., Simatupang, T. M., Putro, U. S., & Hermawan, P. (2015). Actors' interaction in the ERP implementation literature. *Business Process Management Journal, 21*(2), 222-249.

Bluhm, D. J., Harman, W., Lee, T. W., & Mitchell, T. R. (2011). Qualitative research in management: A decade of progress. *Journal of Management Studies, 48*(8), 1866-1891. doi:10.1111/j.1467-6486.2010. 00972.x

Bryman, A. & Bell, E. (2007). "Business Research Methods," 2nd edition. *Oxford University Press.*

Campanella, F., Della Peruta, M. R., & Del Giudice, M. (2017). The effects of technological innovation in the banking sector. *Journal of the Knowledge Economy, 8*(1), 356-368. doi: 10.1007/s13132-015-0326-8

Carton, F., & Adam, F. (2010). Towards a model for determining the scope of ICT integration in the enterprise: The case of enterprise resource planning (ERP) systems. *Electronic Journal of Information Systems Evaluation, 13*(1), 17-25.

www.manaraa.com

Chauhan, V., & Singh, J. (2017). Enterprise resource planning systems for service performed in the tourism and hospitality industry. *International Journal of Hospitality and Tourism Systems, 10*(1), 57-62.

Chockalingam, A., & Ramayah, T. (2013). Does the organizational culture act as a moderator in Indian enterprise resource planning (ERP) projects? *Journal of Manufacturing Technology Management, 24*(4), 555-587.doi:10.1108/17410381311327404

Chih-Pei, H. U., & Yan-Yi, C. (2017). John W. Creswell, research design: Qualitative, quantitative, and mixed methods approach. *Journal of Social and Administrative Sciences, 4*(2), 205-207.doi:10.1453/jsas. v4i2.1313

Chong, S. L. (2019). Making critical connections: How to apply the analytic guiding frame (AGF) and overall guiding frame (OGF) in qualitative data analysis. *The Qualitative Report*, 24(2), 298-306.

Clegg, B., & Wan, Y. (2013). Managing enterprises and ERP systems: A contingency model for the interpretation of operations. *International Journal of Operations & Production Management, 33*(11), 1458-1489.

Cooper, D. R., & Schindler, P. S. (2011). *Business research methods (11th ed.).* New York, NY: McGraw-Hill/Irwin.

Cote, R. (2017). The vision of effective leadership. *Journal of Leadership, Accountability, and Ethics, 14*(4), 52-63.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approach.* (J. Young Ed. & ed.). Thousand Oaks, California: Sage Publications.

Cyrus, K. M., Aloini, D., & Karimzadeh, S. (2018). How to disable mortal loops of enterprise resource planning (ERP) implementation: *A system dynamics analysis. Systems*, *6*(1), 3. doi:10.3390/systems6010003

Débrosse-Bruno, M. M. (2017). *Critical success factors (CSFs) for the implementation of enterprise resource planning (ERP) systems in various industries, including institutions of higher education (IHEs)* (Order No. 10639432).

Dey, P. K., Clegg, B. T., & Bennett, D. J. (2010). Managing enterprise resource planning projects. *Business Process Management Journal, 16*(2), 282-296. doi: 10.1108/14637151011035606

Dul, J., & Hak, T. (2008). *Case study methodology in business research*. Oxford, UK: Butterworth-Heinemann.

Eaton, K., Stritzke, W. G. K., & Ohan, J. L. (2019). Using scribes in qualitative research as an alternative to transcription. *The Qualitative Report*, 24(3), 586-605.

www.manaraa.com

Eberlein, M. (2008). Culture as a critical success factor for project management. *Information Technology Management, XIX (3),* 15. Retrieved from http://www.springer.com

Eker, M., & Aytaç, A. (2017). The role of ERP in advanced managerial accounting techniques: A conceptual framework 1. *Business and Economics Research Journal, 8*(1), 83-100. doi: 10.20409/berj.2017126246

Eker, M., & Eker, S. (2018). The impact of the interaction between an enterprise resource planning system and management control system on firm performance in the Turkish manufacturing sector. *Business and Economics Research Journal, 9*(1), 195-212. doi: 10.20409/berj.2018.100

Felderer, M., & Ramler, R. (2016). Risk orientation in software testing processes of small and medium enterprises: An exploratory and comparative study. *Software Quality Journal, 24*(3), 519-548. doi:10.1007/s11219-015-9289-z

Feng, X., & Behar-Horenstein, L. (2019). *Maximizing NVivo utilities to analyze open-ended responses.* The Qualitative Report, 24(3), 563-571.

Francis, A. (2010). *Leadership Styles,* MBA Knowledge Base,

Garg, P., & Khurana, R. (2017). *Applying structural equation model to study the critical risks in ERP implementation in Indian retail. Benchmarking,* 24(1), 143-162. doi:10.1108/BIJ-12-2015-0122

Garg, P., & Garg, A. (2014). Factors influencing ERP implementation in the retail sector: An empirical study from India. *Journal of Enterprise Information Management, 27*(4), 424-448.

Gavidia, J. V. (2017). A model for enterprise resource planning in emergency humanitarian logistics. *Journal of Humanitarian Logistics and Supply Chain Management, 7*(3), 246-265. doi:10.1108/JHLSCM-02-2017-0004

Gavidia, J. V. (2016). Impact of parent-subsidiary conflict on ERP implementation. *Journal of Enterprise Information Management, 29*(1), 97-117. Retrieved from http://www.emeraldgrouppublishing.com/

Gerring, J. (2007). *Case study research: Principles and practices (1st ed.).* Cambridge, UK: Cambridge University.

Gentles, S. J., Charles, C., Ploeg, J., & McKibbon, K. A. (2015). Sampling in qualitative research: Insights from an overview of the methods literature. *The Qualitative Report, 20*(11), 1772-1789.

www.manaraa.com

Goldston, J. L. (2019). *Critical success factors in enterprise resource planning implementation in U. S. Manufacturing* (Order No. 13808114).

Grabski, S. V., Leech, S. A., & Schmidt, P. J. (2011). A review of ERP research: A future agenda for accounting information systems. *Journal of Information Systems, 25*(1), 37-78.

Groenewald, D., & Okanga, B. (2019). Optimizing enterprise resource planning system to leverage a firm's absorptive and adaptive capabilities. *South African Journal of Information Management, 21*(1) doi:10.4102/sajim. v21i1.962

Gubrium, J. F., Holstein, J. A., Marvasti, A. B., & McKinney, K. D. (Eds.) (2012). The SAGE Handbook of Interview Research: *The Complexity of the Craft (2nd ed.).* Thousand Oaks, London, New Delhi, Singapore: Sage.

Hampel, G. (2018). *Information and Information systems as keys to success.* Quaestus, (13), 72-83.

Haq, H. (2016). *Enterprise resource planning system implementation based on leadership emotional intelligence* (Order No. 10169224). Available from ProQuest Dissertations & Theses Global. (1846950908).

Hassan, A. (2010). Linking quality assurance to human resource management: A study of SMEs in Malaysia. *The International Journal of Quality & Reliability Management, 27*(6), 641-657. doi:10.1108/02656711011054533

Hatipoglu, C. (2017). Impact of cultural factors on enterprise resource planning. *Journal of Economic and Social Thought, 4*(3), 306-311. doi:10.1453/jest. v4i3.1366

Heckert, C. M. (2015). "Do you want to live, or do you want to die?": *The gendered politics of life during an AIDS funding crisis* (Doctoral dissertation).

Henderson, J. C. (2017). *Enterprise business system effects on workforce staffing levels: Examining organizational learning and knowledge transfer within the department of defense, defense logistics agency* (Order No. 10641010). Available from ProQuest Dissertations & Theses Global. (2006656847).

Holmberg, N., & Johansson, B. (2017). A service-oriented perspective of enterprise resource planning systems. *Journal of Systems Integration, 8*(2), 14-24.

Huang, Z., & Palvia, P. (2001). ERP implementation issues in advanced and developing countries. *Business Process Management Journal, 7*(3), 276-284.

Islam, K., Rehman, A. C. H., Bilal, A. R., & Ilyas, M. (2017). Accounting information systems: Traditions and future directions (By using AIS in traditional organizations). *Journal of Internet Banking and Commerce, 22*(2), 1-13.

www.manaraa.com

Jabłoński, A., Kawczyńska, M., Pietrzak, Ż., & Wnukâ-Pel, T. (2018). *The desired impact of an ERP implementation on the quality of information.* Acta Universitatis Lodziensis.Folia Oeconomica, (336), 117-135. doi:10.18778/0208-6018.336.08

Jackson, J. (2019). *Requirements EIS professionals need to implement ERP*.

Jagoda, K., & Samaranayake, P. (2017). An integrated framework for ERP system implementation. *International Journal of Accounting and Information Management, 25*(1), 91-109. doi:10.1108/IJAIM-04-2016-0038

Jahani, B., Seyyed Reza, S. J., & Hassan, A. J. (2010). Measurement of enterprise architecture readiness within organizations. *Business Strategy Series*, 11(3), 177-191. doi: /10.1108/17515631011043840

Jalal, A. (2011). Enterprise resource planning: An empirical study of its impact on job performance. *International Journal of Business and Information, 6*(1), 77-90.

Jalloh, A. A. A., Habib, M. A., & Turay, B. (2016). The effects of human resource planning in the implementation of operational activities in large scale enterprises. *International Journal of Information, Business, and Management, 8*(1), 252-274.

Jenko, A., & Roblek, M. (2016). *A primary human critical success factors model for the ERP system implementation.* Organizers, 49(3), 145-160. doi:10.1515/orga-2016-0014

Joslin, R., & Müller, R. (2016). The impact of project methodologies on project success in different project environments. *International Journal of Managing Projects in Business, 9*(2), 364-388. Retrieved from http://www.emeraldgrouppublishing.com/

Jinno, H., Abe, H., & Iizuka, K. (2017). Consideration of ERP effectiveness: From the perspective of ERP implementation policy and operational effectiveness. *Information, 8*(1), 14. doi:10.3390/info8010014

Kanchana, V., & Sri, R. S. (2018). Investigation and study of vital factors in the selection, implementation, and satisfaction of ERP in small and medium scale industries. *International Journal of Electrical and Computer Engineering, 8*(2), 1150-1155.

Kaukola, J., Ruohonen, J., Tuomisto, A., Hyrynsalmi, S., & Leppänen, V. (2017). The tightrope between APT and BCI in small enterprises. *Information and Computer Security,* 25(3), 226-239. doi:10.1108/ICS-07-2016-0047

Khaleel, Y. K. & Alkhaldi, A. N. (2017). Enterprise resource planning (ERP) model for small and medium-sized manufacturing firms based on UML. *International Journal of Information, Business, and Management, 9*(3), 41-62.

www.manaraa.com

Kharabe, A. T. (2012). Organizational agility and complex enterprise system innovations: *A mixed-methods study of the effects of enterprise systems on organizational agility* (Order No. 3530110). Available from ABI/INFORM Collection. (1143247461).

Kim, S. H., & Mouritsen, J. (2013). Enterprise resource planning, operations, and management. *International Journal of Operations & Production Management, 33*(8), 1075-1104.

Kirk, J., Miller, M. L., & Miller, M. L. (1986). *Reliability and validity in qualitative research* (Vol. 1). Sage.

Koivu, K. L., & Damman, E. K. (2015). Qualitative variations: *The sources of divergent qualitative methodological approaches.* Quality and Quantity, 49(6), 2617-2632. doi: 10.1007/s11135-014-0131-7

Kouki, R., Poulin, D., & Pellerin, R. (2010). The impact of contextual factors on ERP assimilation: Exploratory findings from a developed and a developing country. *Journal of Global Information Technology Management, 13*(1), 28-55.

Koohang, A., & Hatch, M. (2017). Leadership effectiveness in IT-centered organizations: Gender and levels of management. *The Journal of Computer Information Systems, 57*(4), 385-391. doi:10.1080/08874417.2017.1330128

Kross, J., & Giust, A. (2019). *Elements of research questions in relation to qualitative inquiry.* The Qualitative Report, 24(1), 24-30.

Látečková, A., Bolek, V., & Szabo, Ľ. (2018). Information systems in agricultural enterprises: An empirical study in the Slovak Republic. *AGRIS on-line Papers in Economics and Informatics, 10*(2), 49-60. doi:10.7160/aol.2018.100205

Leung, L. (2015). *Validity, reliability, and generalizability in qualitative research*.

Lin, Z., & Zhao, Z. (2016). Culture, expatriation and performance: *Case of Chinese multinational enterprises.* Chinese Management Studies, 10(2), 346-364. doi:10.1108/CMS-01-20160017

Ljutic, B., Marjanovic, P., & Djordjevic, Z. (2014). *Enterprise resource planning in small and medium-sized enterprises in Serbia.* Aktual'Ni Problemy Ekonomiky = Actual Problems in Economics, (162), 403-409.

Lodhi, R. N., Aftab, F., Mahmood, Z., & Cheema, F. (2014). Success of absorptive capacity for enterprise resource planning (ERP) system: *Empirical evidence from Pakistan. Global Management Journal for Academic & Corporate Studies, 4*(2), 26-37.

Macia, L. (2015). Using clustering as a tool: *Mixed methods in qualitative data analysis.* The Qualitative Report, 20(7), 1083-1094.

www.manaraa.com

Maheshwari, B., Kumar, V., & Kumar, U. (2010). Delineating the ERP institutionalization process: Go-live to effectiveness. *Business Process Management Journal, 16*(4), 744-771. doi:10.1108/14637151011065982

Maguire, S., Ojiako, U., & Said, A. (2010). *ERP implementation in omantel*: A case study. Industrial Management & Data Systems, 110(1), 78-92. doi: /10.1108/02635571011008416

Mahmood, A., & Miller, L. (2017). ERP system implementation in large enterprises – a systematic literature review. *Journal of Enterprise Information Management, 30*(4), 666-692. doi:10.1108/JEIM-07-2014-0071

Makori, E. O., & Mauti, N. O. (2016). KOHA Enterprise resource planning system and its potential impact on information management organizations. *Library Philosophy and Practice*, 0_1,1-23.

Makori, E. O. (2017). Promoting innovation and application of the internet of things in academic and research information organizations. *Library Review, 66*(8), 655-678.

Malakouti, M., Rezaei, S., & Milad, K. S. (2017). Agile supply chain management (ASCM): A management decision-making approach. *Asia Pacific Journal of Marketing and Logistics, 29*(1), 171-182. doi:10.1108/APJML-02-2016-0031

Menon, S. A. (2016). Critical challenges in ERP implementation: *A qualitative case study in the Canadian oil and gas industry* (Order No. 10252616).

Mikami, S., & Louati, R. (2018). An evaluation model of user satisfaction with enterprise resource planning systems. *Electronic Journal of Information Systems Evaluation, 21*(2), 143-157.

Misra, S. C., Bisui, S., & Mahapatra, G. (2018). Trust issues in ERP implementation: *Modeling and analysis. Software Quality Professional*, 20(3), 4-16.

Momoh, A., Roy, R., & Shehab, E. (2010). Challenges in enterprise resource planning implementation: *State-of-the-art. Business Process Management Journal, 16*(4), 537-565. doi:10.1108/14637151011065919

Mukasa, O., Mushi, H. P., Maire, N., Ross, A., & de Savigny, D. (2017). Do surveys with paper and electronic devices differ in quality and cost? *Experience from the Rufiji health and demographic surveillance system in Tanzania. Global Health Action,* 10(1), 1-10. doi: 10.1080/16549716.2017.1387984

Nassar, M., Warrad, L., & Yousef, A. S. (2017). *The implementation of an enterprise resource planning system within the Jordanian industrial sector*. International Review of Management and Marketing, 7(3)

www.manaraa.com

Navid, S. Z., Lindberg, L., El-Khoury, J., & Sivard, G. (2017). Service-oriented integration of distributed heterogeneous IT systems in production engineering using information standards and linked data. *Modeling and Simulation in Engineering, 2017* doi: 10.1155/2017/9814179

Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing,* 18(2), 34-35. doi:10.1136/eb-2015-102054

Ojiako, U., Papadopoulos, T., Thumborisuthi, C., & Yun, F. Y. (2012). Perception variability for categorized risk factors. *Industrial Management & Data Systems*, 112(4), 600-618. doi: doi:10.1108/02635571211225503

Orb, A., Einsenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. *Journal of Nursing, 33*(1), 93–96

.

Oswaldo, L. O., Claes, B., Koryak, O., & Diaz, A. (2017). Integration through orchestration. *Journal of Enterprise Information Management, 30*(4), 555-582. doi:10.1108/JEIM-02-2016-0060

Owusu-Manu, D., Addy, M. N., Agyekum, K., & Aidoo, C. (2017). Exploring the critical success factors of Ghanaian built environment consulting firms. *International Journal of Construction Project Management, 9*(2), 137-152.

Parthasarathy, S., & Sharma, S. (2017). Impact of customization over software quality in ERP projects: An empirical study. *Software Quality Journal, 25*(2), 581-598. doi: 10.1007/s11219-016-9314-x

Pasaoglu, D. (2011). Analysis of ERP usage with the technology acceptance model. *Global Business and Management Research,* 3(2), 157-165.

Patton, M. (2002). *Qualitative evaluation and research methods* (3rd ed.). Thousand Oaks, CA: Sage

Phelan, C., Wren, J., (2006), *Exploring reliability in Academic Assessment*.

Poba-nzaou, P., & Raymond, L. (2011). Managing ERP system risk in SMEs: A multiple case study. *Journal of Information Technology, 26*(3), 170-192. doi:10.1057/jit.2010.34

Powell, D. (2013). ERP systems in lean production: New insights from a review of lean and ERP literature. *International Journal of Operations & Production Management,* 33(11), 1490-1510.

Power, M. K., & Gendron, Y. (2015). Qualitative research in auditing: A methodological roadmap. Auditing: *A Journal of Practice & Theory, 34*(2), 147-165. doi:10.2308/ajpt10423

www.manaraa.com

Presley, A. R. (1997). *A representation method to support enterprise engineering* (Order No. 9804680). Available from ABI/INFORM Collection. (304407519).

Raj, M., Choi, S. W., & Platt, J. (2017). A qualitative exploration of the informed consent process in hematopoietic cell transplantation clinical research and opportunities for improvement. *Bone Marrow Transplantation,* 52(2), 292-298. doi:10.1038/bmt.2016.252

Ratkevicius, D., Ratkevicius, C., & Skyrius, R. (2012). ERP selection criteria: *Theoretical and practical views.* Ekonomika, 91(2), 97-116.

Riazi, A. M., & Candlin, C. N. (2014). Mixed-methods research in language teaching and learning: *Opportunities, issues, and challenges. Language Teaching*, 47(2), 135-173. doi: 10.1017/S0261444813000505

Rouhani, S., & Mehri, M. (2018). Empowering benefits of ERP systems implementation: Empirical study of industrial firms. *Journal of Systems and Information Technology, 20(*1), 54-72.

Ruivo, P., Oliveira, T., & Mestre, A. (2017). Enterprise resource planning and customer relationship management value. *Industrial Management & Data Systems,* 117(8), 1612-1631. doi:10.1108/IMDS-08-2016-0340

Saade, R. G., & Nijher, H. (2016). Critical success factors in enterprise resource planning implementation. *Journal of Enterprise Information Management, 29*(1), 72-96.

Said, B., & Shah, M. (2017). Impact of leadership responses to communication challenges in organizational development. *Paradigms,* 11(1), 48-53.

Samander, B. A., Siam, M. R. A., Basri, W. S., & Hamed, A. A. (2017). Enterprise resources planning acceptance in the airline industry of Saudi Arabia: A mediating effect of job security. *International Journal of Economic Perspectives*, *11*(2), 327-340.

Samkarpad, S. (2017). The effectiveness of a human resource information system on HR functions concerning manufacturing units of the sangareddy district. *Splint International Journal of Professionals, 4*(4), 29-33.

Saunders, M., Lewis, P. & Thornhill, A. (2012) "Research Methods for Business Students" 6th edition, *Pearson Education Limited.*

Saxena, A., Desanghere, L., Stobart, K., & Walker, K. (2017). Goleman's leadership styles at different hierarchical levels in medical education. *BMC Medical Education,* 17 doi: 10.1186/s12909-017-0995-z

Schadewaldt, V., McInnes, E., Hiller, J. E., & Gardner, A. (2014). Investigating characteristics of collaboration between nurse practitioners and medical practitioners in primary healthcare:

www.manaraa.com

A mixed-methods multiple case study protocols. *Journal of Advanced Nursing, 70*(5), 1184-1193. doi:10.1111/jan.12269

Schlichter, B. R., & Kraemmergaard, P. (2010). A comprehensive literature review of the ERP research field over a decade. *Journal of Enterprise Information Management, 23*(4), 486-520. doi:10.1108/17410391011061780

Schniederjans, D., & Yadav, S. (2013). Successful ERP implementation: An integrative model. *Business Process Management Journal, 19*(2), 364-398. doi: 10.1108/14637151311308358

Singh, K. D. (2015). Creating your qualitative research approach: *Selecting, integrating, and operationalizing philosophy, methodology, and methods.* Vision (09722629), 19(2), 132146. doi:10.1177/0972262915575657

Sinkovics, R., & Alfoldi, E. (2012). Progressive focusing and trustworthiness in qualitative research. *Management International Review (MIR),* 52(6), 817-845. doi:10.1007/s11575012-0140-5

Stahl, N., Lampi, J., & King, J. R. (2019). Expanding approaches for research: Mixed methods. *Journal of Developmental Education, 42*(2), 28-30.

Strang, K. D. (2018). Strategic analysis of CSFs for not-for-profit organizations. *Measuring Business Excellence, 22*(1), 42-63.

Subramanian, G. H., & Peslak, A. R. (2010). User perception differences in Enterprise Resource Planning implementation. *The Journal of Computer Information Systems, 50*(3), 130-138.

Surmiak, A. D. (2018). Confidentiality in qualitative research involving vulnerable participants: Researchers' perspectives. *Forum: Qualitative Social Research,* 19(3)

The mystery of ERP failures. (2015). *Ciol*.

Toews, I., Booth, A., Berg, R. C., Lewin, S., Glenton, C., Munthe-Kaas, H., Meerpohl, J. J. (2017). Further exploration of dissemination bias in qualitative research required to facilitate assessment within qualitative evidence syntheses. *Journal of Clinical Epidemiology, 88, 133-139*. doi: 10.1016/j.jclinepi.2017.04.010

Trochim, W. M. K., & Donnelly, J. P. (2006). *The research methods knowledge base (2nd ed.).* Mason, OH: Atomic Dog.

Ugoani, J., & Ugoani, A. (2017). Information and communication technologies management and Nigerian banking sector liquidity. *Independent Journal of Management & Production, 8*(3), 849-873. doi:10.14807/imp. v8i3.548

www.manaraa.com

Upadhyay, P., Jahanyan, S., & Dan, P. K. (2011). Factors influencing ERP implementation in Indian manufacturing organizations. *Journal of Enterprise Information Management, 24*(2), 130-145. doi:10.1108/17410391111106275

Van_Manen, M. (2017). Phenomenology and meaning attribution. *Indo - Pacific Journal of Phenomenology, 17*(1), 1-12. doi:10.1080/20797222.2017.1368253

Wagaw, M. (2017). Acceptance of homegrown enterprise resource planning (ERP) systems in Ethiopia. *Applied Informatics, 4*(1), 1-10. doi:10.1186/s40535-017-0034-5

Wang, C., & Liu, X. (2013). Integrated production planning and control: A multi-objective optimization model. *Journal of Industrial Engineering and Management, 6*(4), 815. doi: 10.3926/jiem.771

Wibowo, A., & Sari, M. W. (2018). Measuring enterprise resource planning (ERP) systems effectiveness in Indonesia. *Telkomnika, 16*(1), 343-351. doi: 10.12928/TELKOMNIKA.v16i1.5895

Wickramasinghe, V., & Gunawardena, V. (2010). Critical elements that discriminate between successful and unsuccessful ERP implementations in Sri Lanka. *Journal of Enterprise Information Management, 23*(4), 466-485. doi:10.1108/17410391011061771

Widodo, H. P. (2014). Methodological considerations in interview data transcription. International *Journal of Innovation in English Language Teaching and Research,* 3(1), 101-107,111.

Williams-McBean, C. (2019). The value of a qualitative pilot study in a multi-phase mixed methods research. *The Qualitative Report, 24(5),* 1055-1064.

Xu, M. A., & Storr, G. B. (2012). Learning the concept of the researcher as an instrument in qualitative research. *Qualitative Report, 17*, 1-18. Retrieved from http://tqr.nova.edu/

Yahia, Z. M. (2010). Enterprise resource planning: Risk and benefit analysis. *Business Strategy Series, 11(5),* 308-324. doi:10.1108/17515631011080722

Yazan, B. (2015). Three approaches to case study methods in education: *Yin, Merriam, and stake. The Qualitative Report, 20(2),* 134-152.

Zagorac, I., Ph.D. (2016). How should we treat the vulnerable? A qualitative study of authoritative ethics documents. *Journal of Health Care for the Poor and Underserved, 27*(4), 1656-1673. doi:10.1353/hpu.2016.0154

Zhang, Q., & Li, Z. (2010). Study on ERP-based cost control in SME. *Management & Engineering,* (1), 57-61.

www.manaraa.com

APPENDIX A

Informed Consent

Title of Study: Requirements EIS professionals need to implement ERP.

Investigator: James Jackson

Purpose of the Study

You are invited to participate in a research study. The purpose of this study is to explore requirements Enterprise Information Systems professionals need to successfully implement Enterprise Resource Planning systems in large technology companies. The intent of this study is to create a set of protocols that can be used by EIS professionals to implement ERP systems successfully. To accomplish this, EIS professionals from large technology companies will be interviewed.

Participants

You are being asked to participate in the study of determining the requirements EIS professionals need to successfully implement ERP systems in large technology companies. Identifying you as an active member with the EIS professionals and part of the CRM, ERP implementation team, your experience, knowledge, and insights are requested.

Procedures

If you volunteer to participate in this study, you will be asked to do the following: You will be asked a total of 10 interview questions lasting 30 to 45 minutes in length. The interview questions will be based around the following of the requirements of EIS professionals need to successfully implement ERP systems in large technology companies. The interview application utilized will be “Apple record”. Meeting request will be sent to you for download and acceptance. It is asked that you use an telephone or mobile phone. It is also requested that you provide a secondary means of communication such as your phone number in case of interruptions via the internet. The interview will be recorded using Apple record for audio recording. After the completion of each interview, the recorded audio file will be downloaded into a computer and sent to rev.com for transcribing. Each interview will be saved with the participant’s code, year and date, to identify the audio file. The code will be set up as the date, time, and year, for example, 10180719. The digital voice recorder will enable conversion of

www.manaraa.com

audio files into MP3 audio, coding format, which will be used for starting, stopping, pausing, fast-forwarding, and rewinding during transcription.

Benefits of Participation

There may/may not be direct benefits to you as a participant in this study. However, we hope to learn evidence of various critical success factors being a significant factor in the implementation of a failed or successful ERP system implementation.

Risks of Participation

There are risks involved in all research studies. This study is estimated to involve minimal risk. An example of this risk is:

o Social/Economic risks include relationships with others, loss of respect of others, or diminishing those opportunities and powers a person has under relationships. Economic is paying a person to participate in the research.

o Psychological risks involve dealing with post-traumatic stress individuals, or people who are stress or negative states of mine, such as depression, loss of self-esteem, or behavior that has been altered, abused persons, war veterans are examples of psychological behavior.

o Physical Risks involve diseases, medical procedures, or physical stimuli such as hallucinogenic drugs, hypnosis, sleep deprivation or mind-altering drugs can involve physical risks.

o Loss of confidentiality participants has the right to be protected against injury or illegal invasions of their privacy and to the preservation of their dignity. With some research being empathetic, extreme care must be taken and observed. The identities of the participants should not be released without consent of the participant.

o Legal Risks comes into play when the research risks violate the law or subject matter that will result in criminal misconduct or dealings with civil liability.

Cost/Compensation

This will be no financial cost to you to participate in this study. The study will take (provide time estimate). You will not be compensated for your time. *Colorado Technical University will not provide compensation or free medical care for an unanticipated injury sustained as a result of participating in this research study.*

Contact Information

If you have any questions or concerns about the study, you may contact James Jackson.

Voluntary Participation

www.manaraa.com

Your participation in this study is voluntary. You may refuse to participate in this study or any part of this study. You may withdraw at any time without prejudice. You are encouraged to ask questions about this study at the beginning or at any time during the research study.

Confidentiality

Confidentiality of the identity of research participants and information from research participants is an integral part of any research activity. Breach of confidentiality and invasion of privacy may pose the most considerable risks of harm associated with the research. Each interview will be saved with the participant's code, year and date to identify the audio file. The data will be transcribed by rev.com. The data will be stored for 5 years on OneDrive with the google paid subscription cloud.

Participant Consent

I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

_____

Participant Name (Please Print)

www.manaraa.com

APPENDIX B

Interview Questions

1. In your experience of implementing ERP systems, what area of the lifecycle caused the most failures?
2. In working with your team of EIS professionals, what type of challenges have you experienced in implementing the ERP System? What are the least significant challenges?
3. From one of your successful ERP project implementations, what characteristics of resource management helped in the process of implementing the ERP system?
4. What communication methods were used in the process of implementing ERP systems?
5. In your opinion, what was the best communication used from the various methods above?
6. What are the critical success factors of ERP implementation?
7. What strategies are useful for EIS professionals during ERP implementation?
8. What are business processes integrated within your ERP system?
9. What is the nature of your business organization?
10. What designs were used in the implementation of ERP systems?

www.manaraa.com

APPENDIX C

Interview Protocol

1. This study is focused on increasing an understanding of what are the requirements EIS professionals need to implement ERP systems.
2. Assure participant confidentiality and have the participant sign the informed consent agreement form.
3. Address participant physical comfort concerns (lighting, room temperature, chair, and ambient noise distraction, make water available).
4. Record the subject's number on the top of the interview field notes.
5. Encourage participants to open about their experiences.
6. Monitor participant body language to minimize influencing subject answers.
7. Precisely record participant responses and annotate any non-verbal responses.
8. Audio record and assign a sequential number to each interview.
9. Ask interview questions in order and ask follow-on questions for clarification (see Appendix B).
10. Demographic information, name, job title, industry, certification.
11. This researcher will thank the participant for the time and advise of the next steps with a timeline and expectation.

www.manaraa.com