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## **Employee Experiences with an ERP Implementation**

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Employee Experiences with an ERP Implementation

A DISSERTATION SUBMITTED TO THE FACULTY OF THE OPUS COLLEGE OF  
BUSINESS OF THE UNIVERSITY OF ST. THOMAS

By

Andy Lawton-Thesing

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**UNIVERSITY OF ST. THOMAS**

Employee Experiences with an ERP Implementation

by

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Finally, I would like to thank the participants who shared their experiences with me in this project. I hope that this study will help to solve some of the obstacles you faced during your implementations. These projects are never easy, and I resonated with every challenge and pain point you encountered. My hope is that your experiences will lead to an increased level of understanding and awareness of how these projects can be better managed.

## Abstract

Many companies operate using some form of a unified, enterprise-wide, computerized software solution known as an Enterprise Resource Planning (ERP) system which is used to monitor, control, standardize, and automate administrative tasks within a company's business functions such as financial accounting, customer service, supply chain, logistics, manufacturing, and production planning to name a few. ERP systems are a large financial investment for companies and are an integral part of executing daily activities. As a result, these systems are traditionally long-lived with companies and may be in use for many years. With any tool, however, newer versions or different brands may become better suited to the needs of an organization as they grow, and a new implementation or migration to a new system may be necessary for survival.

When a company decides to move towards or implement a new or updated version of an ERP system, companies frequently experience an increase in the rate of employee turnover during and shortly after the project goes live. Employee roles and responsibilities may increase, change, or be outright eliminated throughout an ERP implementation, as it may be necessary to redesign current business processes to better align with how the new system operates functionally. As there is support for the idea that changes in a person's job are likely to influence their attitudes toward their job the implementation project of an ERP system will likely influence an employee's job satisfaction.

The purpose of this study was to explore the lived experiences of employees who work through an ERP system implementation and secondarily identify areas of improvement, if any, that can be addressed to reduce employee turnover or dissatisfaction

as a result of the implementation. As turnover costs are expensive and risky for companies, the goal of this research was to uncover how human-level attributes or considerations may be accounted for during a software migration of which is more commonly thought of as a process and technology project – lessening cost, stress, and risk for a company as a result.

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## Chapter 1: Introduction

Many companies operate using some form of a unified, enterprise-wide, computerized software solution known as an Enterprise Resource Planning (ERP) system. ERP systems are used to monitor, control, standardize, and automate administrative tasks within a company's business functions such as financial accounting, customer service, supply chain, logistics, manufacturing, and production planning to name a few. Within each function, business processes are broken down into various modules such as accounts payable, accounts receivable, asset management, payroll, budgeting, purchasing, sales and marketing, shipping and receiving. The fundamental goal of using an ERP system, therefore, is to provide a single, centralized repository for all information shared by the various facets of the business to improve the flow of data across the organization. Further, an ERP system is a set of tools for employees and companies to execute these business processes while increasing competitive advantage through the automation, standardization, and integration of a company's business processes and data. ERP systems may also interface with a variety of external systems for niche requirements such as shipping and logistics systems, customer relationship management (CRM) systems, third party payment solutions, and data warehousing systems used by business analysts.

Zeng (2010) developed a model describing the concept of ERP systems in general. The model featured inputs, processes, and outcomes in relation to the central database but did not fully capture important elements of a comprehensive ERP system such as business governance, analytics, reporting, and non-transactional uses. A more complete model with these considerations is shown in Figure 1.

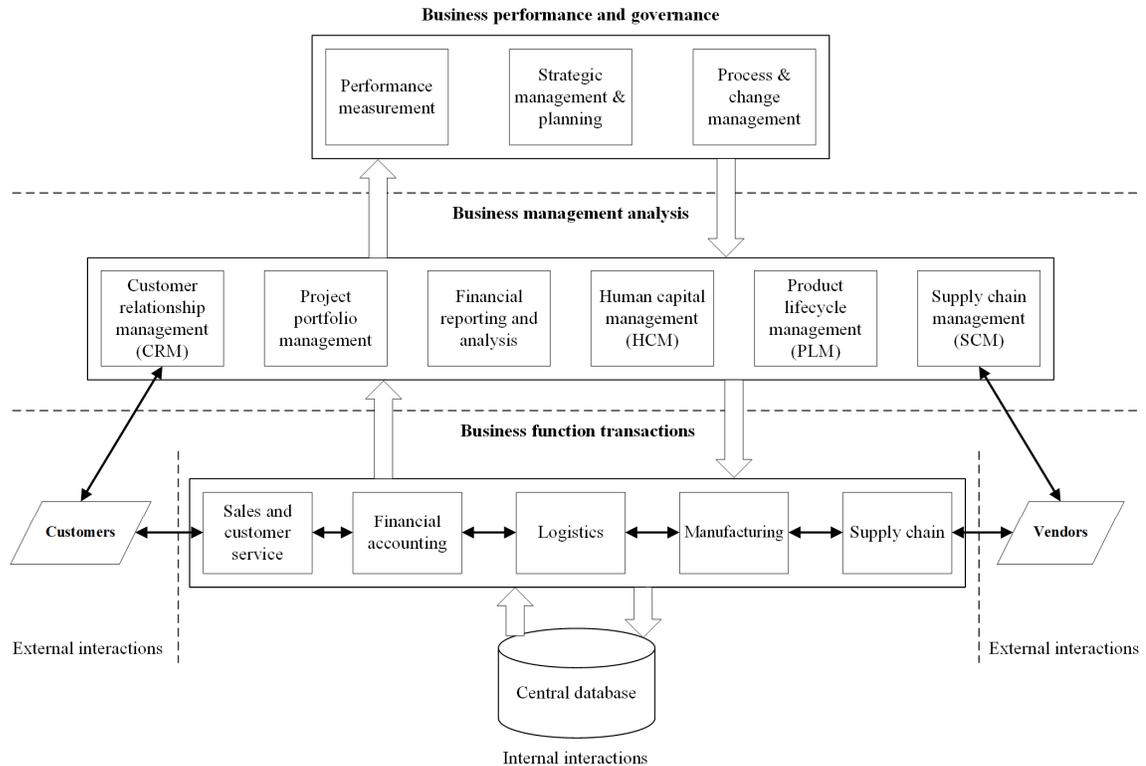


Figure 1. Architecture of an ERP System. Adapted from *Risk Management for Enterprise Resource Planning System Implementations in Project-Based Firms* (p. 13), by Yajun Zeng, 2010, ProQuest LLC.

Figure 1 illustrates the architecture of an ERP system in relation to business processes, departments, inputs and outputs across all functional areas of the business. Each requirement is satisfied and interacts directly or indirectly with the centralized database the ERP system houses.

ERP systems are a large financial investment for companies. ERP software itself accounts for more than half of the license and maintenance revenue in Western Europe alone (Žabjek, Andrej, & Štemberger, 2009), illustrating the large financial resources companies allocate to such systems. A survey conducted in 2016 consisting of 215 companies indicated 81% were either in the process of implementing an ERP system or had recently completed an implementation (Kaniyar, Peter, & Vogelgesang, 2015) with costs averaging around \$3,500 per concurrent user (Chartered Professional Accountants

of Canada, 2017). As a result, these systems traditionally are long-lived with companies and become an integral part of executing daily activities. They become a central repository for business knowledge and are relied upon by employees and management alike. With any tool, however, newer versions or different brands may become better suited to the needs of an organization as they grow, and a new implementation or migration to a new system may be necessary for survival.

### **Problem Statement**

ERP implementations require a significant financial investment, are complex, high-profile, and consequently high risk (Al-Mashari & Al-Mudimigh, 2003). The resources required for such a project extend past the business operations, structure, and technology aspects, but also into the realm of human capital as employees are inevitably the ones navigating and operating the new system. From data migration, to system stability, to employee training, the project of fully implementing an ERP system can take several months to several years to complete (Babey, 2006), and accounts for 30% of all major change activities companies undertake (Morris & Venkatesh, 2010). Employee roles and responsibilities may increase, change, or be outright eliminated throughout an ERP implementation, as it may be necessary to redesign current business processes to better align with how the new system operates functionally. As there is support for the idea that a person experiencing a change in their job roles or responsibilities is likely to affect their attitudes toward that job (Ang & Slaughter, 2000), the implementation project of an ERP system will likely influence an employee's job satisfaction. Because of these experiences, companies frequently experience an increase in the rate of employee

turnover during and shortly after the project goes live (Grabski, Leech, & Sangster, 2008).

As one example, a case study by Barker and Frolick (2003) documented high employee turnover at a soft drink manufacturing company during an ERP implementation. Elements that contributed to turnover included lack of communication regarding upcoming training and changing employee expectations, which led to many feeling overwhelmed and leaving the organization. Departmental managers in another study reported “huge increases in employee job difficulty, responsibility, amount of work, and multi-tasking, and decreases in job discretion and motivation” (Jones, Kalmi, & Kauhanen, 2011, p. 167), while a company in a third example reported 27% turnover throughout their ERP implementation project (McKinley, 2000). These examples highlight key concerns for companies as the loss of critical knowledge, competency, and headcount during this phase can have dire consequences on project success and cost.

### **Purpose Statement**

The purpose of this study was to explore the lived experiences of employees who work through an ERP system implementation and secondarily identify areas of improvement, if any, that can be addressed to reduce employee turnover or dissatisfaction as a result of the implementation.

### **Research Questions**

The following primary research questions addressed in this study are as follows:

1. What are the experiences of employees working through an ERP implementation?
2. Are there experiences related to retention and satisfaction that an organization should be mindful of during the process?

## Definition of Key Terms

The following are the operational and technical terms used in this study:

**Backfill.** Additional staff hired or allocated from other departments to replace key functional and technical personnel, of whom are assigned to the ERP implementation project and thus unable to perform their regular job functions.

**Consultants.** Third-party individuals from external companies specializing in ERP system implementations who assist in the design, execution, and go-live of the project.

**Core team.** A group of key company stakeholders traditionally tasked with representing and assisting with part of the overall implementation project. These members are utilized for their competency or function they represent within the company, and help charter the functionality and business process changes that will result from the implementation. Sometimes referred to as an “implementation team” or a “project team”.

**Customer Relationship Management (CRM) system.** A computerized software system that helps manage customer communication and data for sales management.

**Endogenous theories of motivation.** Theories of work motivation that focus on process-related or mediating variables that can indirectly influence motivation due to changes in exogenous variables. Endogenous theories include arousal/activation theory, expectancy-valence theory, equity theory, attitude theory, intention/goal theory, and attribution/self-efficacy theory.

**Enterprise Resource Planning (ERP) system.** A computerized software system that houses business data and enables administrative tasks to be executed.

**Exogenous theories of motivation.** Theories of work motivation that focus on independent variables that are affected by external factors, such as company incentives, rewards, and social aspects including leadership and group behaviors. Exogenous theories include motive/need theory, incentive/reward theory, reinforcement theory, goal theory, personal and material resource theory, group and norm theory, and sociotechnical system theory.

**Go-live.** A term used when a company starts using or becomes fully operational on the new ERP system.

**Human Capital Management (HCM) system.** A software system that is synonymous with human resource functions within a company, which includes modules of timekeeping, talent management, recruiting, training and workforce management. Also referred to as Human factors planning.

**Implementation.** The entirety of the project of choosing the new ERP system, to planning, configuration, training, execution, and the eventual go-live of the new system.

**Job satisfaction.** The extent of positive emotional response to one's job resulting from their assessment of the job as fulfilling as in correlation with one's values.

**Legacy system.** A term that is given to a customer's current ERP system in which they are planning to move or migrate away from, traditionally characterized as having been in use for many years.

**Material Requirements Planning (MRP) system.** A computerized software system used to manage production planning, scheduling, and inventory control.

**Migration.** The process of moving a company from one ERP system to another.

**Product lifecycle management (PLM) system.** An IT system used to oversee manufacturing processes from design, production, sale, and eventual retirement of the product.

**Subject matter experts (SMEs).** Employee resources that are chosen to contribute to or be part of an ERP implementation project or sub-project, on the basis of their departmental knowledge, presence, and expertise. Such representatives are responsible for providing input on departmental system needs, defining future-state processes, testing functionality or customizations, and training staff within their group or functional area.

**Supply chain management (SCM) system.** A computerized software system that helps manage vendor and supplier relationships and data for procurement management.

**Turnover.** The rate at which employees leave a company and are replaced, due to resignation from the position or through termination. The definition of turnover in the context of this research is further defined as being voluntary, as opposed to turnover resulting from job losses due to automation or obsolescence of the new system.

**User Acceptance Testing (UAT).** Large scale, end-user testing of the new system during implementation in which future-state business processes are tested and validated, ensuring the software meets the business requirements.

### **Significance of Research**

As technology continues to weave itself into humanity's work and personal lives, there is a need for companies to have a software solution in place that best meets the needs of the business. As such, these implementations have a large risk associated with execution as they are notoriously resource-intensive, highly complex, and time-

consuming. The process is traditionally a multi-year, multi-million dollar undertaking due to the impact and logistics of reforming an entire company's business processes to align with new technology (Leon, 2008). Therefore, the notion that there may be additional expenses due to turnover because of the implementation is alarming.

At the individual employee level, there are personal implications with an ERP implementation. Studies have indicated that people generally identify themselves through what they do for a living (Lucas, Clark, Georgellis, & Diener, 2004; Riffkin, 2014; Selenko, 2017), and as an extension of that thought, the tools they use (Alvarez, 2008). "We need work, and as adults, we find identity and are identified by the work we do" (Gini, 1998, p. 707). Changing systems, therefore, has the potential to propel one's professional identity into disarray as job responsibilities may change and new roles may form from the resulting changed environment (McKinley, 2000). Traditional change management techniques may not completely address the entire series of systems at work, hence a socio-technical systems approach is needed. The goal of this research was to uncover how human-level attributes or considerations may be accounted for during a software migration of which is commonly thought of as a process and technology project – lessening cost, stress, and risk for a company as a result.

My interest in the research originated from my occupation and my own experiences with ERP system implementations. Professionally, I have been involved in several ERP implementations in a variety of roles, both as the client and as the consultant assisting with the implementation. The one area in particular that had the greatest impact on my perspective regarding ERP implementations was employee satisfaction throughout the project. I have experienced and observed varying levels of challenges resulting from

poor human resource planning throughout an ERP implementation, and would not have believed the many reports of high workforce turnover throughout an ERP implementation had I not experienced it firsthand. One particular experience I had with an ERP implementation resulted in an annual loss of approximately 21% of the company's workforce from the start of the project to the end, spanning three years. Given the industry standard, according to a study conducted in 2016 (Bares, 2017), found the workforce turnover averages around 17% annually, this experience was alarming. Today, I work for an organization that functions as a consultant and implementer; helping clients switch from outdated ERP systems to newer platforms. As an implementer, I find there is a significant opportunity to integrate human resource elements into project planning to help reduce the risk of employee dissatisfaction and turnover due to the project.

### **Limitations**

The research and sample data was limited to five small to medium-sized businesses with research participants further limited to those not having served on the core ERP implementation or project team. This research may not be generalizable to all companies as a result. The objective of the research was to capture the experiences of those who are inevitably going to be the recipients and end-users of the resulting product.

### **Organization of the Study**

This research study is comprised of five chapters. Chapter 1 is an introduction to the study, a brief background of ERP systems, information regarding ERP implementations, statement of the problem, purpose, and significance of the study, research questions, and limitations. Chapter 2 includes the framework of the study, a literature review of wide-ranging research topics about ERP systems, why ERP

implementations fail, turnover and dissatisfaction, and a summary of research to date. Chapter 3 addresses the methodology and explanation of the research, including data collection, instruments used, and data analysis. Chapter 4 presents the results with a summary and discussion of the findings, implications, and recommendations for future research are included in Chapter 5.

## Chapter 2: Review of the Literature

### ERP Historical Perspective

Enterprise Resource Planning (ERP) systems are arguably one of the most important advancements in a company's information system architecture during the latter half of the 20<sup>th</sup> century (Davenport, 1998; Jacobs, 2007; Leon, 2008). The benefits companies gain from ERP systems are only partly related to the technology itself; equally or more important are the associated organizational changes. Some examples include new business processes, work procedures, organizational structure alignment, the centralization of operational and administrative tasks, and the standardization of work processes leading to organizational improvements, of which the technology supports (Hedman & Borell, 2003).

The origins of ERP began in the latter half of the 20<sup>th</sup> century when companies started utilizing computerized software systems to aid in bookkeeping, inventory management, and to automate simple tasks. As early as the 1940s, calculating machines were introduced to businesses to help improve factory output and switch from paper to electronic record-keeping (Jacobs, 2007). IBM began development of the first mainframe applications during the 1960s to aid in inventory management and machine control, which followed into the development of Material Requirements Planning (MRP) systems in the 1970s to automate production and master scheduling tasks for producers (Cassidy, 1998; Jacobs, 2007; Kalakota & Robinson, 2001). At the time, MRP was a source of competitive advantage for companies: they were not widely used and provided insight and automation to traditionally manual tasks. During this time, it was common for companies to have a multitude of different smaller niche software packages in place

to best meet the needs of a specific department. A purchasing department may have had a particular software system in place to aid in the procurement of goods, while the accounting department may have had a separate software system to manage the flow of capital. It was common for these “legacy systems” to be based on machine code and programming languages such as COBOL, ALGOL, BASIC, and FORTRAN. From the perspective of pulling data to gauge the overall health and direction of a company, however, it was very difficult. The data was often in differing formats, challenging to obtain, with typically little to no consistency or communication between systems. The separation of data in various systems made it difficult for organizations to consolidate information, to obtain a universal picture of what was happening within the organization, and to plan for the future (Davenport, 2000).

The 1980s saw an emphasis on more advanced computers designed for small and intermediate-sized companies with the advent of the IBM Application System/400 (AS/400) and other server technologies (Cassidy, 1998). During this time, the introduction of Manufacturing Resources Planning II systems, or MRPII, occurred as an extension of MRP with an emphasis on optimizing production processes as well as the inclusion of other business functions such as customer order processing, manufacturing, and distribution (Kalakota & Robinson, 2001). While MRPII offered a wider range of enhancements to MRP, it was highly focused on the manufacturing industry and suffered from a variety of limitations in the areas of inventory, order, and production planning (Jacobs, 2007). These challenges eventually necessitated the creation of a completely company-integrated solution called Enterprise Resource Planning or “ERP”.

ERP expanded on the foundations of MRP and MRPII and addressed the cross-functional, information-sharing needs by connecting departments through a single, centralized database (Cassidy, 1998). It was at this time where many production and manufacturing companies began replacing their proprietary and niche systems with these standardized packaged software solutions to aid in the effort (Kaniyar et al., 2015). “These commercial software packages promise the seamless integration of all the information flowing through a company– financial and accounting information, human resource information, supply chain information, customer information” (Davenport, 1998, p. 131). ERP now housed enterprise-wide functionality and included enhancements such as a graphical user interface, the use of object technology, workflow management, interconnected relational databases, and a client/server architecture (Cassidy, 1998). Whereas MRPII had focused on production efficiency and scheduling, ERP incorporated a broader business scope for use in a whole system adaptation.

The mid- to late-90s saw ERP vendors such as Oracle, JD Edwards, and SAP gain recognition and market presence as companies began migrating their aging platforms to these systems (Davenport, 1998). Throughout the 2000s, ERP slowly began integrating internet connectivity into the platform with further modular functionality expansions into areas such as business intelligence (BI), customer relationship management (CRM), supplier relationship management (SRM) and online commerce (Jacobs, 2007). Today, key players in the ERP system market such as SAP, Microsoft, Epicor, Oracle, and Infor continue to build their solutions while concentrating on the transition from on-site system architecture to cloud computing. Companies of all sizes are more likely today to utilize and implement ERP systems, as they were in the past generally considered only

applicable to larger corporations (Esteves, 2009). Kumar and Hillegersber (2000) stated that ERP systems are becoming so common in today's business environment that they are "the price of entry for running a business" (p. 24). Moreover, ERP systems account for the largest and most demanding information technology system that companies implement and represent the largest single IT investment affecting the greatest number of people and business processes (Chang, Cheung, Cheng, & Yeung, 2008). Companies today are retiring legacy systems in favor of ERP systems at an exponential rate, with a variety of options for implementing an ERP system to become "more competitive, efficient and customer-friendly" (Esteves, 2009, p. 25). As ERP continues to become more interconnected within the people and technology structures in an organization, this trend is likely to only increase.

### **Why ERP Implementations Fail**

Over the years, ERP has generated its share of mixed opinions regarding perceived benefits and risks to a company (Ang & Slaughter, 2000; Barker & Frolick, 2003; Chartered Professional Accountants of Canada, 2017; Davenport, 2000), and the subject of "why ERP implementations fail" has been well-researched. A failed ERP implementation refers generally to two ranges of failure: partial or complete failures. An implementation could be considered a partial failure if a company does not significantly meet their project objectives or the project resulted in some form of major disruption in daily activities. These disruptions can cause companies to experience decreases in performance instead of realizing the intended improvements the new system was to provide. Conversely, a complete failure occurs if the company suffered significant long-term financial damage due to the project or they abandoned the implementation

altogether, possibly reverting to their legacy system. Bearing in mind the immense amount of time, money, and resources allocated towards an ERP implementation, the damage companies endure resulting from a failed implementation can be staggering. Chen, Law, and Yang (2009) indicated that upward of 40% of ERP projects fail to meet business requirements, while another study by Robbins-Gioia (2002) found as many as 51% of companies felt their ERP implementations were unsuccessful.

Although there is seldom a single aspect responsible for a failed implementation, there are categories of risk associated with ERP implementations that can contribute towards its failure. A study conducted by Huang, Chang, Li, and Lin (2004) broke down the ERP implementation process and modeled these risk factors into six categories: organizational fit, skill mix, project management, system design, user involvement, and technology planning, with user involvement and project management being the two most heavily-weighted categories in terms of the effect on risk. Organizational fit refers to resource availability and change management capabilities for the company undergoing the implementation. Elements such as failure to document and redesign business processes to better align with system functionality and cross-departmental design are factors that fall within this category. An example of a failed ERP implementation due to organization fit challenges involved the Washington State Community College (WSCC) system in 2012. The project involved upgrading the community colleges' legacy systems to PeopleSoft's ERP platform and was delayed multiple times due to internal departmental issues. Each one of their 34 campuses had widely varying business processes that were not redesigned or standardized to fit within the scope in which PeopleSoft operated, an issue that was not recognized until well past the established go-

live in August 2013 (Washington State Board for Community and Technical Colleges, 2017). Two hundred and forty business processes needed to change with the new software. Furthermore, their implementation partner filed for bankruptcy in 2017 only to have their assets acquired by another company, which later canceled the contract with WSCC and sued them for \$13 million. They cited the failed rollout was due to "internal dysfunction" on the colleges' part (Washington State Board for Community and Technical Colleges, 2017).

The area of skill mix refers to the skillset shared by internal and external company resources versus the skillset required for successful implementation. Failures can originate from inadequate staffing and lack of subject matter experts (SMEs), and too few employees with both company and technology knowledge to effectively aid in determining how the software will meet business requirements. A failed implementation involving Woolworths of Australia is an example of this theme in the context of its \$200 million, six-year implementation. Woolworths' project involved migrating to SAP's ERP platform, and individual stores lost insight into key reporting capabilities after they went live (Boyd, 2016). A key challenge was that they did not fully understand their internal processes: daily business procedures were not properly documented, and store managers and subject matter experts were not involved with the implementation. Woolworths also saw an increase in the number of senior staff leaving the company due to the lengthy implementation, taking valuable institutional knowledge with them and further exacerbating the problem. Many of their replacements had little experience with ERP systems and therefore a steep learning curve was experienced during a critical phase of the project.

In terms of project management and control, risk areas include lack of agreement and consensus on project goals, commitment from senior management, project management methodology, and having the right team members on the project. The fourth risk category in ERP implementations is software system design. Factors can include a lack of effective software management methodology, lack of integration between enterprise-wide systems, and unclear or misunderstood system requirements. A case of ERP failure involving contributors from both categories of project management and software system design occurred with Hewlett Packard (HP) in 2004, resulting in \$160 million in order backlogs and lost revenue (Chaturvedi, 2005). HP's stated objective was a "reduction of its 35 ERP systems implemented worldwide to four ERP codebases along with a reduction in applications from 3,500 to 1,500" (Chaturvedi, 2005, p. 5). Upon go-live of HP's singular SAP system, they experienced problems involving legacy system data migration issues and programming errors, coupled with a lack of manual processes in place to meet order demand in the interim. Project management problems, such as coordination between project teams and functional areas, arose due to the high level of interdependence between project teams, while poor planning and inadequate testing resulted because they were not well defined in the project timeline. HP had not developed an effective contingency plan and was not prepared to address the build-up of problems that coincided with increased demand for its products in that timeframe. Meanwhile, the lack of effective product training, development, and data management practices were identified as major contributors to the technical issues experienced (Chaturvedi, 2005).

The fifth risk area is user involvement and training. Risk factors surrounding user involvement may include terms of insufficient end-user training, ineffective communication with end-users, lack of user buy-in and support, and departmental conflicts. One often-cited case study in ERP implementation failure resulting from risk factors in this area occurred with The Hershey Foods Company in 1996. Hershey's embarked to upgrade its legacy ERP systems into an integrated environment, using SAP's R/3 ERP platform, in conjunction with two other vendors for CRM and logistics functionality. Despite having been recommended a project timeline of 48 months, Hershey's demanded a 30-month timeline to complete the implementation before the year 2000 (Madu & Kuei, 2004). Because of these scheduling constraints, go-live was planned for July of 1999, which also coincided with their busiest Halloween and Christmas production periods of the year. To meet the aggressive scheduling demands, the Hershey's implementation team neglected critical end-user training and systems testing. When the company went live in July of 1999, unforeseen technical problems prevented orders from being communicated throughout the system, and Hershey's was unable to meet the demands of its major retailers even though they had ample supply of inventory. Hershey's employees had not received adequate communication throughout the project and were quickly faced with the compounded task of learning three new ERP solutions while trying to troubleshoot the ordering functionality to meet customer demands. These factors contributed to an unpleasant work experience and the rejection of the ERP system by employees (Madu & Kuei, 2004). Overall, the \$115 million project resulted in a 12.4% loss in third-quarter sales and earnings were reduced by 18.6% (Madu & Kuei, 2004). Hershey's error was trading user involvement, training,

and systems testing for expediency. As a result, data, process, and systems issues remained undetected until go-live.

Lastly, technology planning is the sixth category of risk associated with ERP implementations, and this includes factors such as technology stability, excessive customization, newness, infrastructure capability, and integration capabilities. A case study involving the Egyptian state-owned company AML attributed their ERP system failure largely to factors within this category. Due to Egypt's largely state-controlled economy, a mandatory and uniformed accounting system was introduced in 1966, an architecture that defined how financial and cost accounting practices were conducted in the country. AML, a company based out of The Netherlands with a branch in Egypt, was one of the companies that were subject to this accounting system requirement. During their transition to the company's global SAP ERP platform, they found that the new system was too inflexible to satisfy the accounting standards of the Egyptian branch. AML's consultants highly customized the software in an attempt to satisfy those requirements, but the modifications ended up creating greater complexity while continuing to challenge Egypt's uniform accounting system (Kholeif, Abdel-Kader, & Sherer, 2007). Multiple iterations of the customized product saw stability and capacity issues, and the project was eventually abandoned after the cost of implementation continued to accrue, with little progress having been made.

The implementation of a new ERP system is often new territory for most organizations that may lack experience with large and complex IT projects. The research suggests that most ERP implementations do not fail due to a poor selection process or the functionality of the ERP software; instead, most of the post-project assessment points to

the implementation process, leadership shortcomings, or the project management process. However, considering the importance of human-related experiences in ERP implementations, relatively little research has been published regarding them in conjunction with ERP failure. Change management capacity and employee training were discussed throughout the review, but neither focused heavily on ERP use or its impact on the end-user.

### **Major Sources of Turnover and Dissatisfaction**

The third element of reviewed literature transitions from technical to psychological, focusing on the drivers of employee motivation, engagement, retention, and turnover. While each of these involves considerable complexity, this section was intended to explore commonalities between each topic to ascertain whether there are underlying factors that enable levels of high satisfaction and commitment and, conversely, those that contribute to dissatisfaction or possible voluntary turnover. Furthermore, the objective was to explore research into employee satisfaction itself, the experiences that drive employees to stay or leave an organization under normal circumstances, and to determine whether such experiences are present or affected during an ERP system implementation.

Thompson and Phua (2012) defined job satisfaction as “how content an individual is with his or her job” (p. 275), or aspects of the job in which the employee is engaged. These are multi-dimensional, psychological responses (Hulin & Judge, 2003), which are affected by such variables as the nature of their work, the tasks they need to perform, and the nature of their supervision. The measurement of job satisfaction can either be affective, which focuses on the feelings employees have about their job, or cognitive,

which focuses on how happy the employee is with the job and their tasks overall (Kumari, Joshi, & Pandey, 2014).

Subsequently, employee motivation is broadly defined as “pertaining to the conditions and processes that account for the arousal, direction, magnitude, and maintenance of effort in a person's job” (Katzell & Thompson, 1990, p. 144). Research surrounding employee motivation among behavioral scientists who study organizations has escalated over the past thirty years, and no other subject arguably has received more attention in recent journals and textbooks of organizational behavior (Hausknecht, 2017). Motivation can be categorized as either intrinsic or extrinsic in nature. Intrinsic motivation refers to working or engaging in an activity by desires to do something for its own sake (Deci & Ryan, 1975). Such tasks are those that people voluntarily perform with the absence of material rewards and are internally rewarding. Extrinsic motivation refers to being motivated by external factors: working to earn pay or a reward, having security, or avoiding punishment. Research by Saleh and Hyde (1969) found that employees who are more intrinsically oriented to their jobs have a higher level of job satisfaction than those that are more extrinsically oriented. These positive emotions come from the desire for people to participate competently in a role in which they have internalized into their identity (Deci & Ryan, 2000). They also stressed the importance of aligning employees with their work; tasks or jobs that are less challenging may not be as intrinsically satisfying to someone who puts importance on intrinsic rewards. This misalignment may leave the employee feeling unfulfilled and may contribute to a negative effect on their motivation.

There are at least ten theories and models of motivation that are relevant to understanding engagement, satisfaction, and turnover. Katzell and Thompson (1990) suggested a categorization of the many theories of employee motivation as either dealing with exogenous causes or endogenous processes. Exogenous theories are those that focus on independent variables that can be influenced by external forces such as company incentives, rewards, and social aspects including leadership and group behaviors. Of the many different theories provided, some examples used to illustrate this include motive/need theory, in which people have certain motives to seek or avoid certain kinds of stimuli in the workplace. These motives influence behavior and are seen as key determinants of performance. The motivations and values of employees must, therefore, be aligned with their jobs and the companies in which they work.

Incentive/reward theory describes aspects of an employee's work environment that leads the employee to associate certain forms of behavior, like the quality of work, with rewards, such as praise (Katzell & Thompson, 1990). Disincentives are stimuli that evoke avoidance, such as a company policy that docks pay when an employee is absent. Katzell and Thompson (1990) described the socio-technical system theory in which employees are driven to perform well when their work system is designed to harmonize the requirements for effective personal, social, and technological functionality. The work should be meaningful, challenging, and diversified, while employees should have the skills, autonomy, and resources to accomplish it well. Hackman, Oldham, and Pearce (1976) created a job characteristics model that identified five measurable job characteristics that, when present, aid in improving employee motivation, satisfaction, and performance. These include:

- Skill variety, the degree to which a job requires a variety of different work activities, allowing the employee to use different skills and talents.
- Task identity, the degree to which a job requires the completion of a whole and identifiable piece of work.
- Task significance, the degree to which a job has a direct impact on the lives or work of others, either internally within the company or externally.
- Autonomy, the degree to which a job provides flexibility, independence, and discretion to employees to schedule and complete their work.
- Feedback, the degree to which carrying out the activities required by a job results in the employee receiving direct and clear communication regarding their performance (Hackman et al., 1976, p. 395).

The takeaway from incentive/reward theory is that jobs must be attractive, interesting, and satisfying for employees, and has proven to be an important factor in attracting and retaining employees while encouraging behavior that produces positive behavior.

Reinforcement theory states that people are motivated to work well when effective performance is positively reinforced, while poor performance is not. This can take the form of financial incentive programs, recognition, and self-management opportunities. Goal theory explains how people will perform better if their goals are clearly defined, measurable, and attractive. This can be accomplished by providing specific, challenging yet attainable goals, combined with feedback on performance, which contributes to improved employee motivation.

Personal and material resource theory describes how constraints on an employee's abilities or opportunities to achieve their work goals are demotivating (Katzell &

Thompson, 1990). They found that the availability of resources in the form of personal, material, and social resources had a direct and significant effect on the perceived level of intrinsic and extrinsic rewards and thus had an indirect impact on employee morale and work commitment. Such findings indicate that this “resource adequacy” has a considerable effect on motivation. McAllister, Harris, Hochwarter, Perrewé, and Ferris (2016) stated that the perceived degree of resource adequacy of employees leads to their perception that they have the means needed to perform their work successfully. This can range from feeling they possess adequate time and tools to complete their assigned tasks, to having the freedom to step away when they feel overwhelmed. Their perceptions of resource adequacy are therefore likely to either strengthen or weaken their development and feelings of intrinsic motivation. Taken to the extreme, constraints on these perceptions can eventually lead to decreased motivation, indifference, and learned helplessness. Therefore, conditions that aid in goal attainment aid in positive motivation, including personal factors like skill level and development opportunities, social aspects such as group capacity, talent, and skillsets, and material aspects such as equipment or technology. Similarly, a variety of studies highlighted the importance of a satisfying work environment as a key factor in improving employee retention. Aktar and Pangil (2018) found that employees’ perceptions of human resource practices related to working conditions, in the context of skills and available resources, were a significant predictor of their level of engagement. Woo and Maertz (2012) reported that unexpected changes to an employee’s work schedule, intensity, and ability to perform their jobs contributed to their resulting job stress and turnover rates.

Group and norm theory states that employees have higher motivation when their team enables, facilitates, and approves of their work goals (Katzell & Thompson, 1990). Varieties of norms are formed during this process, including the development of group cohesion, accepted behaviors, and acceptable workloads. People are also likely to inherit the attitudes and behaviors of other group members. These factors collectively represent action levers that companies can use to change or impact employee motivation (Katzell & Thompson, 1990) as they are manageable.

Endogenous theories, conversely, are those that deal with process-related or mediating variables that can indirectly influence motivation based on changes in exogenous variables. Expectations and attitudes are some examples that are indirectly responsive to modification, responding to variations in one or more exogenous variables (Katzell & Thompson, 1990). Attitude theory, for example, suggests that people who have positive attitudes toward their job and organization will be more highly motivated to remain in and perform their jobs. Two main attitudes are job satisfaction, which is the affect associated with one's job, and job involvement which is how important the job is to the employee. Attribution theory describes the explanations that people have for why a particular event occurs or why people behave as they do. Such events can be considered to be what Lee and Mitchell (1994) refer to as a "shock." They define shock as "some sort of event, which we call a shock to the system, that causes the person to pause and think about the meaning or implication of the event in relation to his or her job" (p. 60). A large contributor to turnover comes from a shock event. They argued that this notion relates to the instinctual "fight-or-flight" response and that this mechanism may contribute to an employee's idea that leaving their job is an option to consider. Holtom,

Mitchell, Lee, and Inderrieden (2005) argued that companies can help manage negative reactions and turnover from shock events by reducing the dissatisfaction that develops from a lack of communication and transparency. If employees believe their performance is the result of stable, internal, and intentional factors, having successful performance will affect their self-efficacy beliefs favorably. Likewise, employees with perceptions of greater self-efficacy and higher self-esteem are more likely to have higher performance standards, goals, attitudes, and show greater willingness to put forth effort on challenging tasks (Katzell & Thompson, 1990). These endogenous elements and reactions are more difficult to control as they are essentially the result of or outcome produced by exogenous variables.

Although debated as to whether it is a state of being, a trait, or an exhibited behavior (Macey & Schneider, 2008), employee engagement generally refers to the extent to which employees are satisfied, committed, and prepared to support company goals and objectives (Armstrong, 2009). This can take place when employees are interested, emotionally connected, and excited about their jobs while feeling aligned with the values and direction the company is taking. This also has the potential to positively influence a person's sense of identity as their work becomes part of how they define themselves and that in which they are personally invested (Macey & Schneider, 2008). Disengagement, on the other hand, refers to the opposite position in which an employee feels misaligned with a company's values or mission, may not feel loyal to their company nor feel any willingness to put in extra effort at their job, potentially leading to turnover if not addressed. Moreover, research indicates that engagement has a strong relationship

with company profitability by means of increased productivity, satisfaction, and retention (Macey & Schneider, 2008).

Macey and Schneider (2008) proposed that drivers of employee engagement consist primarily within two areas: the nature of work, or the nature of leadership. The nature of work includes conditions in which there is clear job clarity, challenge, meaning, and career development opportunities. Sejit and Crim (2006) identified the area of job clarity as being a driver of employee engagement as people “want to understand the vision that senior leadership has for the organization, and the goals that leaders or departmental heads have for the division, unit, or team” (p. 4). Clarity of work fortifies an employee’s understanding of their work, their goals, and career advancement opportunities. Robinson, Perryman, and Hayday (2004) found that employees who have a firm understanding of their jobs, career paths, and had a personal development plan were more likely to be satisfied with access to development opportunities and have high engagement levels. This principle often applies interpersonally as well, since employees working in a team or collaborative environment will have higher levels of engagement and commitment when team priorities are clearly articulated through project management processes and goals (Macey & Schneider, 2008). This is also reflected in group and norm theory, where Katzell and Thompson (1990) stated that people are more motivated to perform well when their workgroup facilitates the success of group goals and objectives.

In terms of meaningful and challenging work, Macey and Schneider (2008) proposed an employee’s perceived job importance and challenge as one of the drivers of employee engagement. Furthermore, a study conducted into the major motivations of

voluntary turnover cited the desire for more challenging work and growth potential ranked within employees' top three reasons for leaving (Woo & Maertz, 2012). Studies have also shown that engagement levels trend downwards as an employee's length of service increases, which may be a trigger for companies to ensure that longer-tenured employees continue to be exposed to new and interesting challenges (Robinson et al., 2004).

Regarding the role of leadership in the subject of engagement, many models indicate organizational culture as being an important driver of employee engagement (Aktar & Pangil, 2018), and may be the key to setting the tone for engagement (Harter, Schmidt, & Hayes, 2002). Creating, maintaining, or changing the organizational culture is largely the opportunity and responsibility of leaders (Schein, 2017). Organizational culture is defined as a "shared set of characteristics such as beliefs, values, and behaviors by the members of the organizations that may help to enhance the quality employee performance" (Aktar & Pangil, 2018, p. 63). More specifically, organizational culture includes factors such as employees being involved in decision making, senior leadership showing employees that they are valued, companies demonstrating concern about employees' health and well-being, and having clear and accessible HR policies and practices (Robinson et al., 2004). Companies viewed as favorable are more likely to rank higher in levels of employee engagement as they create environments in which employees feel safe, respected, and valued; and the connections they feel to the company are such that they are more willing to make additional effort in the pursuit of its success (Stroh, 2003). Additionally, Harter et al. (2002) argued that company environments may play a large role in predicting employee engagement along with company processes, role

challenges, company values, work-life balance, information availability and transparency, rewards and recognition, and the hierarchical structure of management. Woo and Maertz (2012) furthered this theory by suggesting that these attitudinal constructs such as job satisfaction, organizational commitment, and perceived organizational support are important variables in the predictor of potential employee turnover behavior.

Wildermuth, Vaughan, and Christo-Baker (2013) argued that employees are more likely to be dissatisfied if they do not perceive a direct link between their work and the objectives of the company.

Lastly, retention and, alternatively, turnover are two consequences that may be directly influenced by employee motivation and engagement. Over the past several decades, researchers have progressively started to capture the complexity of employee experiences and attitudes underlying their decisions to leave their current job and company. “Voluntary” turnover is defined as the event in which an employee decides to leave a company at a time in which they had the “legal opportunity to continue their employment” (Woo & Maertz, 2012, p. 2). The concern regarding turnover is that it creates a costly, dysfunctional event for a company while improving its management can yield considerable cost savings and potential competitive advantage. The total cost of turnover (i.e. separation of costs, replacement costs, and training costs) has been estimated to be as high as 150% or more of the departing employee’s salary (Cascio, 2006). High performing or “core” employees furthermore are often relied upon by companies (Hausknecht, 2017), thus the impact of turnover on this group can be even more detrimental.

Models that categorize employee turnover tend to fall within one of two categories: process models or content models (Maertz & Campion, 2004). Process models are those that focus on the steps employees go through during the process of leaving their job, including having feelings of dissatisfaction, thinking about quitting, actively searching for alternative employment, and eventually quitting their current jobs. Content models, alternatively, focus on the elements that contribute to employees wanting to quit, including aspects such as job satisfaction/dissatisfaction, affect towards the company, work environment, expectations of alternative internal opportunities, expectations of external work opportunities (availability of other comparable jobs available), and non-work values and contingencies (Maertz & Campion, 2004). A study conducted in 2018 using data from over 234,000 exit interviews estimated that 42 million employees would leave their job that year (Mahan, Nelms, & Bearden, 2018). The data collected revealed the 50 most important reasons why employees had decided to leave their jobs and grouped them into ten categories, seven of which were deemed preventable by employers. The top five categories of reasons that employees left their jobs include:

- Thought of little or no opportunity to grow in a preferred job and career (alternative internal opportunities).
- Seeking better work-life balance, which could include more favorable schedules, shorter commute times, and scheduling flexibility (job satisfaction/dissatisfaction).
- Manager behavior issues including unprofessional conduct, poor communication or lack of support/transparency (work environment).

- Well-being issues such as personal health, family health, or pregnancies (non-work values/contingencies).
- Compensation and benefits reasons such as pay (job satisfaction/dissatisfaction) (Mahan et al., 2018, p. 17).

The concept that employee perceptions of the work environment, transparency, and growth opportunities are particularly important to both job search and turnover offer insight into where employers may want to place the most emphasis on developing their retention strategies. Furthermore, this study (Mahan et al., 2018) not only clarified some of the redundancies and complexities in the prediction of employee turnover, but it also offered insight on managing these important employment outcomes.

### **ERP Implementations and Impact on Satisfaction**

Research has thoroughly documented the influences that risk factors have on the success of an ERP implementation, but surprisingly, relatively little research has focused on employees themselves or their experiences with satisfaction or resistance throughout an implementation. Of the research that has been conducted, the predominant focus has been on satisfaction resulting from user-system related technology adoption. One case study (Saatçioğlu, 2009) modeled employee or people-related success factors during an implementation into measurements of both user satisfaction and user expectations, which relates to how closely the new ERP system aligns with what the user's expectations are. The study found that people-related factors in both of these models had a significant impact on the success of the project, and resistance towards adopting the new system stemmed primarily from a lack of clear understanding of the perceived benefits of the new system and inadequate training (Saatçioğlu, 2009). The case further suggested the

importance of employee communication throughout the project, so that employees' expectations could be outlined and questions explained. This was in the form of bulletins that communicated the status of the project and milestones, posters that continually explained and marketed the project, and monthly town hall meetings to cover a variety of updates. In a related study, Sternad and Bobek (2013) found that employees throughout the ERP implementation timeline viewed communication as having a high impact on system acceptance as it aided in minimizing user resistance. Such studies have shown not only the value of managing perceived benefits and their relationship to employee satisfaction, but also the benefits of communication and post-implementation review to assess the need for further support or training.

Léger, Riedl, and vom Brocke (2014) focused on the importance of training in relation to employee satisfaction. They found behavioral and attitudinal differences in employees in their use of ERP systems specifically around knowledge and familiarity with the ERP system. The study demonstrated that in stressful or emotionally-charged situations, those that had a high familiarity with the software tended to trust and use the data and processes available within the system to aid in decision-making tasks, while those that had less familiarity tended to obtain information from outside the system and circumvent software workflows. As familiarity with an ERP system and its processes will undoubtedly be in its infancy during an implementation, it is important to point out its potential role as a risk to the project. Furthermore, Léger et al. (2014) determined that user behavior was strongly impacted by unconscious and automatic cognitive processes, and having effective end-user training will help establish more positive attitudes from employees towards the system, thereby increasing confidence in their ability to use the

system to complete their tasks. Jones, Kalmi, and Kauhanen (2011) supported this notion in their study that found evidence that more extensive initial training leads to a quicker turn-around time for recovery. As there will inevitably be a period of decreased productivity after go-live with a new ERP system, their study found that the initial dip in productivity and sales was shortened with companies that had a more rigorous training program for employees.

Jones et al. (2011) also found influences on reduced employee motivation and satisfaction during ERP implementations specifically around task reorganization and increased job functions. Their study found that many employees experienced broadened job tasks and increased job difficulty due to company processes that were redesigned during the project, leading to increased stress and reduced motivation. Organization surveys conducted during this time supported the negative views stemming from the project, while many felt the standardization of business processes contributed towards lower employee satisfaction due to a loss in discretion when it came to decision-making autonomy (Jones et al., 2011). Their study, however, did speculate that during and shortly after implementation, a substantial increase in work intensity and difficulty would be expected as problems were ironed out and people became more accustomed to the technology, thus the impact could be temporary. This further highlights the importance of managing employee expectations and establishing communication as many of these areas impact employee satisfaction. Although none of the literature reviewed explicitly linked employee turnover as a reaction to challenges faced during an ERP system implementation, it can be argued that the relationship does exist and is a powerful influence on employee motivation and satisfaction.

## Summary

The subject of ERP system evolution, development, and adoption are continually evolving as technology advances and more companies start incorporating technology into their core business strategies. During the years in which ERP was an emerging concept with only a handful of vendors in the market, literature tended to focus on all but very large companies as the complexity and high cost of these systems, coupled with the absence of cheaper alternatives, was prohibitive for many. Advances in technology and higher expectations of use within a business environment have aided in maturing ERP while introducing an array of complexities arising from people-related satisfaction experiences. Summarizing the problem statement: companies frequently experience an increase in the rate of employee turnover during and shortly after an ERP implementation project go-live (Grabski et al., 2008). The purpose of this literature review was to define the historical perspective of how ERP came to be while highlighting how a large amount of research available on risk factors for successful implementation focused on logistical topics and organizational preparedness. The gap identified in the literature review surrounds the importance of human-related experiences throughout an ERP implementation, and little research is currently available regarding the experiences employees have in combination with ERP implementation failure. Reviewing the topics of employee motivation, satisfaction, and turnover was intended to explore experiences related to employee satisfaction itself, what drives employees to stay or leave a company under normal circumstances, and determine if these elements are present or affected by an ERP system implementation. As current research on employee satisfaction in relation to ERP implementations has predominantly focused on satisfaction resulting from user-

system related technology adoption, the importance of further investigating human-related satisfaction experiences in relation to ERP implementations is strong. Chapter 3 describes the research design and methodology for this study, including the justification for using the narrative inquiry research methodology as an interview instrument for the qualitative approach.

### **Chapter 3: Research Methodology**

The purpose of this qualitative research was to explore the experiences of employees who have been involved with an ERP system implementation and secondarily identify areas of improvement, if any, that could be addressed to reduce employee dissatisfaction or potential turnover because of the implementation. There are numerous studies and analyses that focused on the causes of ERP implementation failure, however, most centered on technical and planning deficiencies throughout the project (Al-Mashari & Al-Mudimigh, 2003; Chaturvedi, 2005; Chen et al., 2009; Kholeif et al., 2007; Rajan & Baral, 2018; Sternad & Bobek, 2013). Relatively little research has acknowledged or studied the impact on the employee or their experiences with ERP implementations and this study was intended specifically to address that gap. This chapter will describe the qualitative research methodology chosen and address the research method design, research question, participants, data collection, and analysis procedures that were taken.

#### **Research Design – Narrative Inquiry**

Qualitative research generally focuses on participant experiences and the contextual nature of that experience. Narrative inquiry is a qualitative study of experiences of a phenomenon as told through stories (Clandinin, 2016). This study utilized narrative inquiry and phenomenological research, a research perspective of lived experience, to identify words, patterns, and themes that may have existed in what people had experienced in terms of their involvement in, or impact from, an ERP system implementation. The use of narrative inquiry, according to Polkinghorne (1995), illustrates “human activity as purposeful engagement in the world. Narrative is the type of discourse that draws together diverse events, happenings and actions of human lives”

(p. 5). Since the research question was concerned with if and how participants experienced the impact of ERP implementations at their jobs and subsequently in their lives, the narrative approach to the study was chosen as the most appropriate research methodology. The stories told by participants aided in illustrating the meaning the ERP implementation had on their jobs, work lives, and satisfaction.

A person's job and overall work-life is a large component of one's existence; people work for a variety of reasons and are driven by different rewards, both intrinsic and extrinsic (Ankli & Palliam, 2012; Deci & Ryan, 1975; Hausknecht, 2017; Katzell & Thompson, 1990). As the world of work becomes more technical and interconnected, people are faced with new opportunities and challenges in their careers as a result. This qualitative study of lived experiences provided insight into the phenomenon for not only employees going through an ERP implementation, but also provided a backdrop for management and stakeholders for reactions to be aware of when undertaking such projects.

Interview questions explored how the ERP implementation was conducted: how participants were involved in the decision-making process, what their involvement was in process mapping to the future state, how their jobs were affected as a result of the project, what stresses were encountered, and what those implications meant for them professionally. Interview questions explored the lived experiences of the participants and how they painted the landscape in which they were impacted by the ERP implementation. The phenomenological study allowed examination of the results with the objective of identifying the common themes encountered and the stories told by participants aided in anchoring the research.

## Participants

Purposeful sampling is a technique used to gather research participants based on satisfying key characteristics or demographics that are central to the research problem (Suen, Huang, & Lee, 2014). This research utilized purposeful sampling in recruiting five participants from five separate companies familiar to the researcher, which were considered to be small- to medium-sized businesses (SMBs). The Organization for Economic Cooperation and Development (OECD) (2005) defined small to medium-sized businesses as subsidiaries or independent firms that employ fewer than 500 people. The intent of this demographic was to capture employee experiences that may otherwise be obscured in larger companies, operating under the notion that larger companies generally have larger numbers of employees with greater access to dedicated resources in an ERP implementation project of which may have not revealed these experiences.

These companies were in the post-go-live stages of the ERP implementation project, having gone live within one year of the date of the interview. As experiences and attitudes may shift throughout the project lifecycle, the intent of conducting interviews with those in the later stages of the project lifecycle was to allow for reflection in each interviewee's narrative. Participants were considered for the study having met certain criteria, including:

1. Participants were those that had not served on the implementation project team. Employees belonging to or having participated in the implementation project inevitably have greater access to project information and communication, and were therefore excluded from the study.

2. Participants were those who had gone through the majority of an implementation as a user so that they could retrospectively describe their reactions of having gone through the process.

### **Data Collection**

Interviews were conducted virtually via web meetings using Zoom as the software medium. Each interview lasted for approximately 60 to 90 minutes, the shortest interview lasted 75 minutes and the longest interview lasted 90 minutes. Interviewees were informed that their participation in the interview was entirely voluntary and they could decline to participate in the study at any time. The study utilized an open-ended interview style with semi-structured questions allowing for follow-up probing and clarifying questions (see Appendix A). The interviews were transcribed verbatim by the researcher using Microsoft OneNote as the medium and subsequently transferred to Microsoft Excel for code development and analysis. Participants' individual identities, employers, and affiliations were kept confidential, although they were asked to provide informed consent to allow common themes, patterns, and experiences to be described and reported anonymously. Each participant in the study was provided a copy of the IRB consent form prior to the scheduled interview for review. All communications between participants and the researcher were conducted from personally-owned, password-protected computers and e-mail software to maximize confidentiality and eliminate potential conflicts of interest.

Basic demographic information was collected as outlined in Appendix B, and observational field notes were utilized as additional sources of information. This was intended to aid the reader in understanding the research participants in the study, and to

reduce any risk, limitation, or bias concerns that may have been present when using an exclusive data collection method. The interview transcripts, field notes and demographic data collected were stored on the researcher's personal, password-protected computer and will be destroyed once the files are no longer needed for analysis. All data collected will be stored for at least three years, in compliance with the IRB guidelines.

Member checking was utilized in this research to enhance the credibility of the interview transcripts. Member checking is an approach used in qualitative studies in which participants are asked to check the accuracy of a particular component of the study (Carlson, 2010). A follow-up meeting was subsequently held with each participant to share their interview transcripts for review. This was accomplished virtually via web meeting and participants were asked to provide feedback on the quality and accuracy of the transcripts taken. The responses from the follow-up meeting with each participant were used to finalize the transcripts in preparation for the analysis.

### **Data Analysis**

Upon completion of the interview process and after the interviews were transcribed, data analysis occurred in a series of linear steps aimed at examining the raw data, reducing the data to themes through coding and recoding processes, and finally representing the data in figures, tables, and narratives in the final report (Saldana, 2015). Data collection occurred over a period of three months with an additional two months needed for analysis and compilation. Once the interview data was collected, names and identities were masked through pseudonyms, and two stages of "In Vivo coding" processes occurred to condense and categorize the data. The intention of creating an In Vivo code is to ensure the concepts stay as close as possible to the participants' own

words or terminology as they capture a key element of what was described (Saldana, 2015). Each interview transcript was examined chronologically; key phrases and terms that represented or symbolized a specified portion of the experience were identified and the In Vivo codes were created. Each In Vivo code was then transferred to a spreadsheet for further analysis; the codes were sorted by each research question and categories were developed that grouped similar themes or characteristics together. Recoding occurred as needed to refine the categories and to condense similar underlying concepts; some In Vivo codes were omitted that overlapped or repeated an experience from another participant. Once the first-order themes were generated, they were categorized into higher-level concepts in order to organize the data further, formed around descriptions of the themes that were common across the collected stories (Biddle, Chatzisarantis, Gilbourne, & Markland, 2001). Corbin and Strauss (2007) described this process of grouping codes into categories as axial coding, which “comes from the interpretation and reflection on meaning” (p. 94), which are formed from patterns and regularity of concepts. As coding continued, some rearrangement and reclassification of the first-order themes occurred to better fit the second-order themes generated. Representative quotes were collected from each participant’s interview transcript to aid the reader in comprehension of each first-order theme. Tables were produced to represent the participant demographics, first-order themes and their representative quotes, and the hierarchical presentation of In Vivo codes, first-order themes, and second-order concepts.

### **Summary**

The outcomes of the research were intended to provide a set of recommendations and solutions to companies and ERP vendors to better proactively identify and address

experiences that contribute to employee dissatisfaction and potential turnover during and shortly after an ERP migration. The decision to use a narrative inquiry approach as the methodology and analysis was intended to gain a better understanding of how ERP implementations impact employees by using their own words and dialogue to produce codes and themes. Exploring the stories of a generally under-represented group of employees made it possible to capture the dynamics that contributed to their subsequent experiences with job satisfaction. The research participants and their experiences are presented in Chapter 4, with the interpretations and analysis that follow.

## **Chapter 4: Presentation of the Data**

The purpose of this narrative inquiry study was to explore the experiences of employees having recently gone through an ERP system implementation, furthermore aiding companies and ERP vendors by proactively identifying and addressing experiences contributing to employee dissatisfaction. The data analysis and results of the study presented in this chapter are organized into five sections: introduction, demographics, results in the form of narratives of each experience, data analysis, and summary. During data analysis, it became evident that there were commonalities across the narratives that can provide leaders with valuable information as it pertains to pain points encountered during implementations.

### **Demographics**

The interviewees who participated in this study comprised of five individuals between the ages of 34 and 54 from the greater Minneapolis/St. Paul metropolitan area. Table 1 presents the participant ages, education levels, ERP system experience, the role in which they use technology in their daily work, and their comfort with technology. As shown in Table 1, participants were 30 years old or older, and four of five had completed at least an Associate's degree. Although by design the participants were selected because they were end-users and specifically not part of an implementation design or planning team, most reported that technology plays a critical role in their daily activities and that they have a high level of comfort using technology.

Table 1

*Participant (n = 5) Demographic and Background Information*

Variable	No. of Participants
<b>Age</b>	
30-35 yrs.	2 (40%)
36-40 yrs.	1 (20%)
41-45 yrs.	0
45-50 yrs.	1 (20%)
51-55 yrs.	1 (20%)
<b>Education Level (Highest Degree Obtained)</b>	
High school degree or equivalent	1 (20%)
Associate's degree (e.g. AS, AB)	1 (20%)
Bachelor's degree (e.g. BA, BS)	2 (40%)
Master's degree (e.g. MA, MS, Med)	1 (20%)
<b>ERP Systems Experience</b>	
SAP	2 (18%)*
Oracle	1 (9%)*
Microsoft Dynamics (AX, NAV, GP, CRM, SL, RMS, 365)	3 (27%)*
Epicor	1 (9%)*
Lawson	1 (9%)*
Sage	1 (9%)*
Other	2 (18%)*
<b>Role of Technology</b>	
Does not play a major role in daily activities.	0
Used occasionally during the day.	1 (20%)
Critical component in daily activities.	4 (80%)
<b>Comfort with Technology</b>	
Very comfortable	1 (20%)
Comfortable	3 (60%)
Somewhat comfortable	1 (20%)
Not comfortable	0

*Note:* \*percentage of total number of systems mentioned in the interviews.

## **Results**

The interviews conducted are presented here as stories of each person's experience. These stories are enhanced by direct quotes to aid in capturing the essence of the lived experiences with ERP implementations. As narrative inquiry centers around the concept of experiences of a phenomenon as told through stories (Clandinin, 2016), presenting them back in the same manner is intended to continue this theme.

### **Interview 1 – Kim at ABC Electronics**

Kim was the first person interviewed and she is a full time-employee of ABC Electronics, an electronics manufacturing and distributing firm that specializes in circuit board and wireless adapter technology for use in GPS and related motion-control systems. ABC Electronics employs roughly 250 people and has offices in three cities across Minnesota, Iowa, and Wisconsin. Kim has been employed at ABC Electronics for 12 years, having initially been appointed as a purchasing clerk in 2007, and promoted to a buyer position in 2010. The purchasing department has eight, full-time employees, and Kim's daily responsibilities surround maintaining ABC Electronics' ordering needs from their suppliers based on their manufacturing demands. All of the buyers at ABC Electronics have specific product lines which they are in charge of, ensuring not only that they have enough material on hand to satisfy their production requirements, but that they are also strategically purchasing material from their suppliers contingent on existing special pricing arrangements. Ordering in certain volumes, at specific times, or in specific product combinations could contribute to cost reductions in the realm of thousands of dollars, therefore Kim's job is keenly dependent on real-time information

and building relationships with suppliers. Actively managing those relationships is a large facet of Kim's role. She explained:

I'm actively managing the relationships with our suppliers which is a large factor for us because, for some of these companies, we've been working with them for years. We make it a point to make sure we manage those relationships to not only get the best pricing we can but over time, we almost get preferential treatment... they've been a reference for us and they'll recommend our products to people if they feel we could meet their needs... they've also come to us when they get wind of things in their supply chain... so it really is a tight relationship. Not all of our suppliers are like that mind you but many are, and you get to curate those types of relationships over time and that really is what I love to do.

Kim clearly emphasized that her enjoyment in her job stemmed from not simply "entering in purchase orders all day," but rather from the ability to nurture those supplier relationships both internally and externally. She considers the role of technology to be critical to her daily activities and is very comfortable with technology in general. Kim holds a Master's degree in Supply Chain Management.

In 2017, an all-company meeting was held in which ABC Electronics' president notified employees that they would be undertaking a large project to migrate from their current ERP system, called Manage 2000, to a newer platform called Epicor. ABC Electronics had been on Manage 2000 for over 20 years, but the ability to update and get meaningful data out of the system was limited which necessitated the change. Kim recalled:

In our old system, a lot of people would work around processes to get things pushed through or wouldn't do things correctly and no one would get any notice of it. Our visibility into what was really going on was really low I think.... I remember that it was also really hard to update the old system so that may have been a reason why too.

She was not aware of what the selection process looked like to move forward with Epicor and had not worked through an ERP implementation in the past.

Having not gone through an ERP implementation before, Kim assumed that their consulting firm would have handled the project much more independently and that the timeline would have been within the realm of a year, whereas it took them three years from the beginning to go-live. She had assumed that the majority of the time requirements needed consisted of simply getting their information from the old system into the new system, but explained it was much more complicated than that:

When they told us they would be moving systems and my boss was going to be on the project team, I figured it would maybe take a couple of months to get everything moved over, people trained, and that would be about it. This thing took two years, which I thought was crazy because they basically [recreated] all of our processes from the ground-up. I figured it would just be moving over the old data from the old system to the new system, but it was a lot more involved... they never [discussed] those types of things in the beginning, and not really knowing we'd be doing this for years is a lot to swallow. Maybe if we had we would have had a different mindset about it.

The early stages of the project seemed uneventful and Kim did not recall hearing much information until her manager was recruited to be part of the implementation team. His role was to represent the supply chain facet of the company, and he soon became heavily involved with meetings and process design to ensure the new system could meet their requirements. Kim noted how much less she saw of her manager throughout the project and how stressful it was on him due to the time commitments needed and its interference with his personal life and family time. She added:

Once we started the [implementation] project, I saw my boss a lot less for a while. He had to start having meetings that outlined what we do and why we do it that certain way... since my boss was so involved with the project we saw a lot less of him and that was hard because we had to, a lot of times, fend for ourselves. So that was stressful.

Although she did not experience these stresses first-hand, she did mention that with him absent more, her team became less cohesive without a leader in which to go to for support.

Kim and the other purchasing department employees occasionally took part in meetings throughout the project with their project consultants regarding how they do things daily, but this type of contact was sporadic and they often would not hear from them for months. She recalled:

It was sporadic though; we'd be invited to a few show-and-tell meetings here and there with the consultants, but then wouldn't hear from them for months. So it was weird not knowing all of what was going on. My boss had the majority of the interaction [with the consultants], but his interactions were roughly the same.

She would occasionally ask questions as to whether their current processes would remain the same in the new system, however, the response was frequently “they’re still working all of that out,” and therefore there was often ambiguity when trying to obtain these types of answers. Her manager was often unavailable for questions or was unable to provide any additional insight himself. Kim felt that the lack of insight into what was going on as it pertained to their department was unsettling, but assumed they would be “in good hands” because her manager led most of those discussions. Nonetheless, she felt anxious that he might not “have a complete understanding of the nuances [they] go through on a daily basis,” thus not being able to communicate their needs.

In terms of readiness, Kim’s team was not provided training until near the conclusion of the project. She recalled:

[The consultants] had a few testing systems that management wanted us to log into and poke around, but no one really had the time to do any of that. We had no clue what we were doing in there anyway, so it wasn't really a good thing to me.

Kim's group inevitably underutilized these environments. During their training sessions, they had had multiple end-to-end process workshops in which many people from across the business were brought together to perform mock trails of their jobs and how they would interact with other departments and groups using the new system. Kim felt that this training was helpful but difficult to grasp. She recalled her frustration:

It was really hard to visualize [how her job would function] because it was all fake data in the test system. None of our parts or customers matched what was in the [test] system, so it was like apples and oranges.... I really wish training had been more focused on. I [understand] why they segmented the [workshops], because there are a lot of people that have to go through the same kind of training. We were really unprepared for how slow everything would become in the end when we went to the new system, and our training really didn't prepare us for everything.

Furthermore, Kim recalled the difficulty she encountered with the design of the training itself:

The training sessions we had [involved] a lot of "perfect world" scenarios, but that's not really how the real day-to-day business works. The processes aren't always the same beginning-to-end. And back then, the terms used in the new system were a bit different too so there were issues there too... it was just hard to get used to everything all at once. If we could go back and do it all over again I really would have liked to see training as a major bullet point on the list.

Overall, Kim felt that the training they received was far too minimal for the scope of the project and this negatively affected her confidence in her ability to do her job well once they went live. Kim expressed that she felt as if she were "back in grade school," and that it was frustrating being taught tasks without context and a framework in which to learn. She would have preferred to see training as a major focal point for the project, being more comprehensive and holistic than simply "learning mouse clicks."

Three years into the project, ABC Electronics went live with Epicor. Kim's group had many issues during the first three months with processing orders and as a

result, there were a variety of bugs in which code fixes needed to be implemented to resolve. The training deficiencies were also apparent and she mentioned being behind in work was a common occurrence. Recalling their go-live, Kim explained:

[They] finally got the system up and running over a weekend in August when our fiscal year ended, and there were a lot of people working that weekend I remember. But then, Monday came and everyone was so lost on what we needed to do, lots of people forgot big pieces of our work, so we had to use our work instructions for months. The system was really slow compared to [the old system], so it was hard to get used to being so behind with all of our work... sometimes it was hard because everyone was stressed out so it was kind of toxic at times. The first few weeks were a nightmare, we stayed late most nights just to get our daily [work] done. It got better, yes, but it was a really helpless feeling, especially because we worked so well before.

Shortly after go-live, one of Kim's colleagues resigned. Although for reasons not publically communicated, Kim believes the changes to his workload prompted the decision. Kim described her job becoming more stressful during this time and saw others having the same types of reactions. People were frustrated with how slow things had become. She added:

I'd say my job got a lot more stressful with the whole project. I think other people were just as frustrated with the new system at first then I was.... Overall though, my job is more stressful because I have less visibility into my vendors, and the time that I used to have to be able to build those relationships is pretty much gone. I feel more like an order entry clerk. A lot of the analysis part of my job is done automatically every night through their nightly calculation of demand, so all I get is just a listing of things I need to order for the upcoming day or week. The controls are really tight too. If I know that one of our warehouses needs a certain product, and since I know the industry and how that product is used before I could just say "let it wait" while we get enough demand to order other parts to get that discount. But I don't have that control any longer, it's all done for me. So I sort of feel like a cog in the big machine, which is sad because I really like what I do I just don't have much pull any more to do those things.

Kim had less visibility into her vendors, and the time she had in the past to build those relationships was now occupied with trying to keep up with the workload. Overall, she felt her productivity and autonomy had been reduced.

Kim noted it took three to four months before work processes and system stability issues were resolved at ABC Electronics, and she explained how she felt during that time:

I was more stressed, but I try not to bring that kind of thing home because then your whole life becomes about work life and that's not good either. But I will say, my excitement to drive to work every morning was affected. Professionally, I think it was both good and bad. I got a lot of new experience working in a new system, and it did make us have to go through our business processes and get rid of the garbage that we used to do,... but it was also very stressful because of all of the issues we had, and some of us just aren't equipped for that kind of change... I did what I could, but a lot of the older people here can't use computers very well to begin with so I felt their pain. It really made me question why we were doing what we were doing... it seemed like no one knew what they were doing so no one could trust that we were going to make it.

ABC Electronics has now been live on Epicor for eleven months and Kim is noticing people have a better attitude towards the system. She is happy that they have greater reporting capabilities and that her skill set is improving, but admits progress still needs to be made by continuing to provide releases and updates to fix lingering issues. She also questioned if she will ever return to the job responsibilities she enjoyed in the past.

Reflecting on the implementation, Kim felt that the largest challenge they encountered was a lack of involvement in the project, communication, and training:

We didn't start hearing about what was going on until the very end, so it was like, "okay are we still doing this?" Didn't seem like we knew the direction we were taking. Maybe getting some experts to come in beside the consultants would have been a nice touch just to see how it was working for other people.

She mentioned that their consultants were helpful with the training, but that it had been conducted too late in the project to be effective. She also reiterated how her job has become more monotonous and how she feels her ability to build relationships with her vendors and actively seek new opportunities has been negatively impacted. Kim is hopeful that as people become more efficient and the "daily drama" has decreased, that she may be able to resume those functions, but is open to considering other options if that

does not happen. Kim concluded the interview by stating, “I’m really interested to see how this paper turns out, this was a nice venting session!”

### **Interview 2 – Sean at ChemCo, Inc.**

Sean is a senior accountant at ChemCo, Inc. ChemCo is a construction material and chemical distribution company and employs roughly 450 people across seven locations nation-wide. Sean has worked at ChemCo for fourteen years and considers the role of technology to be a critical component in his daily activities. He also feels very comfortable with technology in general. Sean’s daily activities include tasks in accounts receivable, accounts payable, coding transactions for their workflows, preparing draft financial statements, and collaboration with other departments. Sean has a dashboard of daily tasks that he uses to organize his backlog and works in a team of four other accountants that have varying areas of responsibility within the department. Sean emphasized the importance of time management and communication skills in his job, and that it is closely associated with attention to detail as the importance of accurate numbers in the accounting group was high. Sean’s works a standard 40-hour week but can expect upwards of 50 hours during the March to April months which is their financial year-end. Sean holds a Bachelor’s degree and expressed his desire to continue his education to become a Certified Public Accountant.

ChemCo was running an ERP system called Lawson, which they had used for nearly 20 years. Sean stated:

We were using a program called Lawson M3 for our financials, but we bought another company that was using an older system called Fishbowl, which was pretty basic. So there was a time where we had to use two systems.

Sean added that Lawson was limited and the process of obtaining reporting data was difficult. Since there was little integration functionality between Lawson and Fishbowl, Sean had to learn and use both interchangeably for two years. In 2017, ChemCo decided they were going to move away from both systems and invest in implementing SAP company-wide. Sean recalled ChemCo's reasoning behind moving to SAP:

We were using Lawson for a really long time, but they wanted to move to SAP S/4 because they liked that SAP could be run in the cloud, and the president was really [excited] about SAP. I had never used SAP before, but I've heard the name in the past. They wanted to get all of the sub-companies onto one system and they wanted something newer than Lawson, so it made sense to me to go down that route.

ChemCo's president and the executive board gave a presentation to the company regarding their decision to move to SAP and promoted the project's benefits eliminating the challenges of having multiple parts of the company using separate systems. Sean had not taken part in an ERP implementation project but mentioned that software changes are inevitable so he was eager to see how their jobs would improve as a result. He explained:

The older systems we were on took a lot longer to get through the [analysis] and statement reporting to see what was going on. When they were demonstrating how SAP could handle all of this, our jaws kind of dropped because it was a lot easier.

Sean was not part of the core implementation team but felt that he was generally informed about project progress. "I felt that we were kept in the loop about how the project was going, and we got weekly updates from the steering committee about what was going on, and where we were on the project timeline." Sean's team was involved in a few planning meetings to discuss how to incorporate their processes into the new system. Sean was not heavily involved with the project but felt he contributed to conversations that concerned his job or his team's responsibilities. He recalled:

I felt that I added my fair share to the conversation. For example, one time the steering committee gave a presentation to our branch on how things were going to work in the new system, and some of the steps that we needed to take in the current system to make it easier... cleaning up our data, and consistency, and getting rid of old or unclosed transactions. So it was a good way to make sure that we were bringing in only the most important things, and we knew it was all accurate because we went through it all, so that was a relief.

Sean added that over its lifespan, Lawson had become an “explosion of data,” and that he looked forward to having a “cleaner” system moving forward.

His direct manager and ChemCo’s controller were on the core implementation team, and this required much of their time. Sean recalled this had a negative impact on their financial year-end, and his team needed to commit additional hours to close the books. He felt the event was more challenging without his manager and controller involved. Nonetheless, Sean felt their frequent communication with his team made him feel included. He added, “They made sure to keep us in the loop about what was going on because they didn’t want us to be caught off guard with the updates we were getting about the project.”

ChemCo conducted training in the form of “mock pilots,” sessions in which employees were provided books of work instructions and guides to aid learning to use the system and how to perform their daily activities. This was accompanied by training sessions with a larger subset of the company, where their consulting partners taught employees how to use the new system, demonstrated how things looked, worked, and how it compared and contrasted with their old system. Sean felt that presenting both systems side-by-side during their training sessions was valuable as it aided in translating terminology and processes. Sean generally viewed the training sessions as positive, and explained:

I think the training overall was pretty adequate. Maybe they could have had more one-on-one time training with us all. I think some people were not picking up how to do things as fast as others, and I could tell they may have been frustrated at times. But I really didn't have that many problems in that area.

The accounting team furthermore was provided a subscription to Lynda, which is an online video training database in which they were able to review SAP-related training material as needed.

ChemCo went live with SAP after two years in 2019. Their consultants had people on-site in each office during the first month of go-live to help with answering questions and provide additional training to employees as needed. Sean commented on how this helped make them feel "that they weren't on their own." He recalled his go-live experience:

We had daily meetings with our management team about what was happening, and if there were any issues, we would write them up on our whiteboard and assign someone to look into the problems. There were a couple of times that week that I would get more calls about accounting questions because some people were confused about how things [worked] in the new system. I think the reporting capabilities that we had now helped a lot... Before we went live it was a lot of preparation work like making sure we were all working off the same work instructions and making sure the data was accurate before they started moving everything over. I helped out a lot with that: making sure all of our I's were dotted and T's were crossed to make sure it came over nicely... after we were live on the new system it was a lot like trying to put out small fires here and there.

ChemCo has now been live on SAP for nine months, and they have started planning for a further subset of enhancements to SAP. Post-go-live, Sean said his job became increasingly fast-paced. Merging all of the companies into one system was beneficial, but he believes his department is now understaffed due to increased workload. In terms of his perception of SAP, he stated:

I like our new system, it has a lot more features, like reporting and workflows, than [the old system] did. I know we are planning a few additional changes to the system in the future, and I may help with that too, but I'm not sure. I know that

the other accountants are happy with how the new system works, and it seems to help make sure things are processed correctly now. In the old system, there were a lot of workarounds for things and sometimes things would get posted wrong or would show up wrong on reports and our [business intelligence] analysis. I think users are getting up-to-speed on how the new system works too. I'm not really sure if everybody in the company likes it, but I haven't heard too many things they think are wrong about it.

Reflecting on the implementation, Sean did not recall many challenges throughout the project and felt there was adequate testing and communication into each process. He described an instance in which he had to devote a significant amount of time to discuss and redesign a large subset of their financial accounts, but Sean mentioned this did not negatively influence his attitude. He further described a setback ChemCo experienced in which they had to extend the timeline for user acceptance testing (UAT) by several weeks. This was disappointing to Sean, but he felt the project was coordinated well overall. He attributed the success of the project to regular communication and comprehensive testing and added:

I think the whole project was coordinated nicely. I have heard horror stories before about going to SAP, but I think it went off well. I think what went well was communication. It was a pretty large project because so many people were involved, and some processes changed, but it felt that we were really a team with everybody on board to move to the new system. It felt that it was well planned... I think since our president was really on board with SAP, maybe he knew more about it and was able to guide us down that road more successfully.

Sean added that some members of the implementation team had undertaken ERP implementation projects in the past, and he believed this further aided in knowing what to expect.

### **Interview 3 – Chris at Innovative Warehousing**

Chris is a site manager at Innovative Warehousing, a third party food logistics (3PL) and supply chain company with roughly 400 employees across four sites. Major

food producers across the United States and Canada use Innovative Warehousing as a storage and distribution center for their goods. If they do not have space for their inventory or cannot manage it themselves, they use Innovative to perform that function for them.

Chris has been an employee for Innovative for ten years and has a high school education. He initially started working in a warehouse as a seasonal job and continued to advance in warehousing as opportunities presented themselves. Chris worked towards obtaining a distribution and warehousing certificate, which enabled him to transition to a leadership role and now a site manager. His primary daily responsibilities include coordination and contact with his floor staff. He supervises 50-60 full-time employees across two shifts with two shift leads, and steps in to help when there are absences. Chris also manages their shift scheduling, task assignments, and acts as a liaison for customer contacts to address their needs. He works closely with their customer service department for order fulfillment: once customer service receives customer requests for products either inbound or outbound, they will enter the order into their ERP system, and this generates a work order for Chris' team to process and fulfill. His team will then retrieve the materials from the warehouse, pack, and ship them. Chris uses technology occasionally during the day, primarily for email correspondence and task scheduling within their ERP system. He feels somewhat comfortable with technology: he has an understanding of the basics but feels anything more can be intimidating.

Innovative undertook a project to upgrade their ERP system, Microsoft Dynamics AX 2009, to a newer version, Microsoft Dynamics AX 2012. Chris recalled their decision to upgrade:

We were on 2009 for a long time, and back maybe 5 years ago they wanted to upgrade to 2012 because it had more warehouse functionality, and would let our [warehouse personnel] be able to use mobile devices out in the warehouse, which would be really efficient.

Chris did not recall what the selection process looked like, and shared that he rarely was included in conversations regarding the implementation project at the time. He does not work at their main headquarters, and most of what he knew of the project had been communicated second-hand from his manager, who described the project as simply an upgrade. He had never been involved with an ERP system implementation; the role of technology in his daily activities had been minimal before transitioning to the role of a site manager, which occurred after the project had started. Chris described his training on the new system as minimal:

We had a few sessions with the vendor and some of our analysts on how to do things, I think it was productive for some but it was way too early on in the project and there was not a lot of follow up, so we all forgot a lot.

After two years, the project was facing challenges and they had made little progress with their software vendor. Chris recalled Innovative having to change dates for readiness testing and training sessions multiple times with little information provided as to when or why it was occurring. There was little communication from management to employees regarding project milestones or go-live dates, and Chris felt they were always “waiting to get word on what they were supposed to do,” and when they should expect to be fully trained. Eventually, management announced in a company-wide email that they were parting ways with their software vendor and were now “putting the project on hold” to reevaluate their options. Chris shared:

We worked with them for about two years and they just weren't cutting it. It seemed like the whole project was stalled.... then management came in and basically said they were putting the project on hold for a few months while they

reevaluated vendors to "restart" the project. I think that turned out to be maybe 8 or 9 months, and we basically didn't hear anything during that time so people were like, is this still happening? What is going on? I think some people felt that something was going on, like maybe we were going to be bought out by [Innovative's competitor] or something like that, maybe that's why the project was stopped... so I think there was a feeling of anxiety about it too for a little while.

Many believed their vendor was simply understaffed and unequipped for the scope of the customizations that Innovative requested, and thus the project scope became unmanageable. For over a year, they received little communication about whether the project was still being pursued and Chris felt many people forgot about it.

In 2018, Innovative partnered with a new vendor to resume the implementation project and restructured how they wanted to proceed with customizations. They began hosting meetings with key people from across the business to evaluate and map their business processes. Chris mentioned this was a stressful time and many people felt they were having to "rehash" many of the same conversations they had with their prior vendor. Others felt they should move onto a separate program altogether. Innovative eventually decided to abandon much of the work their prior vendor had produced, and Chris expressed that this had a large negative impact on people since many felt they were starting over. He recalled, "A lot of people felt that this was starting over so I think morale suffered, especially at the corporate office," which later saw two of their IT personnel resign within a few months of each other. Chris believes project stressors motivated their resignations.

Innovative's new vendor provided training sessions for each warehouse and issued work instructions to management regarding how the warehousing employees would be interacting with the new system. New equipment was sent to each warehouse

for the integration of mobile devices and scanning functionality. Most of Chris's team at the time did not use Microsoft Dynamics during their daily activities, and this was a large change in their work responsibilities. He described that some of his staff, particularly some of the longer-tenured employees, expressed concern about using technology in their tasks since they felt "it would slow them down." This was particularly stressful for Chris:

There wasn't a real direction I was given to move with it... if you were to say "okay, Chris, your guys are going to be doing this-and-that now in the new system, then I can roll with it. But it wasn't that way at all. It was more, "well your guys are going to need to know how to use AX because warehousing is a bigger deal in 2012, so have them get used to the environment and just work with the vendor to walk them through how to do things," was how it came out to be... I thought the whole point of going to 2012 was to eliminate the need for all of this manual entry work, but I think they had to scrap a lot of what they had promised to begin with.

He felt decisions had been made about his warehousing operations with little input from him regarding how or why they were being made in the first place, and expressed his frustration of often receiving communication second-hand. "I spoke up to the leaders of our group and [asked], why wasn't I brought into the conversations before [they] started re-designing the entire thing?"

Furthermore, although Chris had originally little involvement with the project, he was now asked to attend training sessions at the corporate office with their vendor regarding their roles within the new system. The expectation was that he would become an on-site resource or "subject matter expert" for subsequent training of his employees. This added to his frustration as he felt his daily responsibilities in the warehouse precluded much else from being added to his workload. He said:

I was stressed out from work a lot more. Some days I had to work late because the test system was slow or we had after-shift training, so it did take its toll in that

way... It was hard to keep the momentum up because it felt I was doing two jobs: trying to make sure everyone was trained and we had all of our needs taken care of, and still trying to make sure the day-to-day activities were covered. I had a few people quit on me halfway through the project too so that put me in a really hot position because I needed to not only train, and do the daily work, but I had to now find replacements and train them on the basics. It just at times felt like I was being pulled in too many different directions.

Chris was able to negotiate with management to get an additional resource from their vendor to assist with training, however, he felt such a request should not have been necessary to begin with. Chris felt the training he received was adequate and he was, in turn, able to train his employees, but did not feel that he could have done so alone. In 2018, Chris eventually started looking for other employment and began submitting his resume to companies. He recalled that experience:

It just got to the point that I couldn't take it anymore. It was too much with too little. I started looking at other companies, got my resume together and I had one interview... they offered me a warehousing position that was a step back if I'd taken it... [Innovative] had good health insurance and I decided to see if I could hold out a little while longer to see if things got any better.

For Chris, remaining with Innovative had shifted to being a matter of necessity rather than a matter of desire.

Innovative went live on Microsoft Dynamics AX 2012 in February of 2019. He noted that go-live was "surprisingly not as bad" as he had predicted, however, their productivity did decrease considering they now had added steps in their workflow. There were a few technical issues during the first few weeks of their go-live, but their IT department resolved these problems quickly. In terms of people's reactions to the new system, he recalled:

It was a messy thing for a while and I still think people don't quite trust the system with all of the problems we'd had with it earlier. Slowly, I think people are starting to work with it more but there is a lot of distrust there still. My guys are getting better, I keep track of errors made and they're slowly going down. I don't

think the project was handled very well at all, but I've got to make sure we don't fall apart in the meantime, so I'm doing my best to make sure we are all on track with things.

Reflecting on the experience, Chris feels the project was quite draining for people, particularly during the pause on the project that occurred in 2017. He added:

If I had any input on things I would have completely changed how we did the whole thing. It was just so inconsistent, we never heard anything. We never got much word of why things were happening, or why the decisions that were made were being made. It just seemed like this super-secret project at times and that was really hard to deal with.... I think we just trudged through it and got it done, and I think that's what it took to get us over that hurdle.

Chris believes he was unequipped to assume the responsibilities of acting as a primary contact for training and felt management's expectation that he take on the additional workload was shortsighted. This resulted in negatively affecting his attitude and trust in Innovative's management. He is happy that they were able to finally complete the project, but stated he is "not looking forward to the next upgrade."

#### **Interview 4 – Jenny at MetFab**

Jenny is a business development analyst at MetFab, a metal fabrication and manufacturing company that produces raw sheet metal used in automotive and farm equipment. MetFab employs roughly 350 people in three locations in the upper Midwest; Jenny works at their headquarters office and has been employed at MetFab for six and a half years. She holds a Bachelor's degree and has a background in communications and customer service. She was initially hired in their purchasing department where she worked for three years. During this time, she obtained a certificate in project management and became involved in several business development projects where she worked with production teams and customer service. MetFab created a new business analyst team to handle those duties and Jenny eventually transitioned to that team full-

time. She works with various departments across the business including purchasing, customer service, and finance. She is one of three analysts who are responsible for process improvement projects across the company, reporting of information to management, identifying trends, developing projections, and uncovering new business opportunities. Jenny considers the role of technology to be a critical component in her daily activities and indicated she spends most of her time analyzing data from their ERP system. She considers herself comfortable with technology in general. Jenny's focus for the last year and a half has been on a company acquisition project as they seek to differentiate their fabrication divisions to supply their raw materials.

MetFab recently finished implementing SAP, having migrated from a software package called Sage Accpac. At the time, customer service, finance, and business analysts were the only groups within MetFab that used Sage and many had a poor impression of it. Jenny stated, "it was slow, it was old, it was difficult to use, and wasn't dependable." Jenny described her surprise when MetFeb decided to move to SAP:

It was surprising to me when we made the decision to go with SAP because I had never heard anything good about it... Some people in finance and inventory were familiar with it. So, it was helpful for them, but for everyone else, it was brand new.

Jenny further described their selection process:

The decision to fully implement [SAP] is still kind of a mystery. It would be really helpful to understand what we liked about SAP and why did we do it? That set us off on the wrong path where it was all technology-driven, versus what was our business requirements, and what kind of technology would suit that. So I always felt that the approach from the beginning was wrong. I don't agree with the CIO running it, picking these systems, because nothing about this showed a real understanding of our business.... We are a large scale manufacturing and production company, that's what we were built on, but as a company, we've always chased these "cool widgets" without necessarily having that insight of how we do things and how it's sustainable.

She believed politics played a large part in the selection process as the CIO running the implementation project had experience with SAP, which she felt placed undue influence on that choice. She mentioned how some people are still “irked” about not having any say in the decision to select SAP.

Jenny expressed concern when they initially announced the implementation project and felt they were pushing the company acquisition project too hard in parallel with moving from Sage to SAP. The new company acquisition was roughly six to eight months away, and she believed the workload would burn out their IT department in particular. She added:

At the time, we had three people on the ERP team in IT. They requested four more to get them through the implementation. Most of our internal IT staff were focused on day-to-day [needs] and didn't have time for SAP things, so they [assigned] that over to our consultant. Then the IT manager went through all of the customizations to determine what we could do internally, because of resources though, they had to give up a lot of that. I just don't think three people can run the entire company in addition to SAP support. Just didn't seem likely.

To Jenny's surprise, she was informed that the core team had assigned her some reporting tasks and the objective was to ensure their reporting requirements were incorporated into the design of the new system. She did not feel that the core team members understood the level of commitment needed for that role and they were not willing to allocate any additional people for assistance. She also expressed concerns regarding how her team and the rest of the company would react to changing systems:

I was super concerned with how my team and the rest of the company would deal with this kind of change to use a different system, some of the departments in the company never used Sage to begin with and had no idea where or what SAP was. Because I [thought] we have underqualified people, and we may lose people, it was scary to me.

Jenny was, however, eager to work towards making their business processes standardized through SAP.

MetFab's consultants held an educational set of meetings with the analyst team, but she felt these meetings were too high-level and the consultants provided little follow-up with her team. Jenny began working to ensure they could get the necessary reports from SAP while trying to maintain her daily responsibilities. She found the process very frustrating:

I felt like I didn't know SAP at all, and for a long time that was really hard for me as I didn't have any clue about what I was supposed to do. Since some parts of the company used Sage before, some of us know and some of us don't know a lot about ERP systems to begin with.... We often said "SAP doesn't do this" but we never heard why. We report off this today, why can't we [continue] going forward? I felt like I didn't know much of anything.

Jenny felt she did not have a base understanding of SAP nor their future-state process to effectively communicate their needs. She recalled management placing a high importance on guaranteeing the reports they currently had in Sage would be available in SAP, however, this was problematic because Jenny felt there was little information available as to how the new system would operate or how the data itself would look. She compared this to "putting the cart before the horse" and felt she did not have the foundation to be a competent resource for the task.

Jenny described the limited one-on-one sessions she had with the vendor as not being valuable and eventually purchased books on the basics of SAP to aid in her training. In addition, she attended two SAP reporting classes to introduce her to the technology and reporting tools, which she found helpful. She described herself as feeling very "alone" during this time and said it had a disengaging effect on her due to not being given the resources needed to complete her task. She added:

It was just so off-putting at first because I had a full-time job I [was responsible for] to begin with, and I kept wondering, "isn't anybody else better qualified to do this?" But, it's not like I could say "no, I won't do that," so I did the best I could.

After roughly a year, she was satisfied she was able to produce the reports that management deemed "critical" for go-live. She felt some of the reports were not necessary since many of their business processes were changing and consequently they would no longer be measuring their company by the same metrics. Nearing the completion of the implementation project, Jenny was designated a primary resource for analysis and reporting. She expressed, "It worked out in the end, but all of the self-learning on the fly and management expecting the moon" was very stressful to her.

As anticipated, the company acquisition project she was also involved with was becoming very demanding, and she felt this had a negative impact on her work attitude. She felt that the project was unorganized, often requiring her to attend meetings without a clear agenda or objective in mind, and often getting off track or into topics other than what the meeting was called for. Jenny described days where she would be in nothing but meetings, and how her personal life suffered:

I brought my laptop home a lot because of the [additional workload]. The thing was scheduling vacation around meetings and important dates.... I was just overall tired, and I didn't like who I was becoming.

She mentioned how people's attitudes shifted at MetFab regarding the use of paid time off; she felt people made you "feel bad" for taking vacation. During the summer of 2018, MetFab management implemented a mandatory "no vacation" policy for the implementation, accounting, and analyst teams in order to ensure their CRP and training sessions had adequate representation over the summer months. Jenny described having a wedding in July which she had been asked to be the maid of honor, and how she

struggled with having to “justify” taking that time off to attend. This necessitated approval from the CIO, and although Jenny was able to attend the wedding, she felt this experience was “very belittling” and was inappropriate to have been required to explain when and why she wanted time off. She said she is still upset today with how that unfolded.

In terms of readiness, MetFab conducted UAT and training sessions at each office, which Jenny was asked to attend. She felt the training went well, however she believed they should have tailored the training to an audience that had never used an ERP system. She also felt they could have been better organized, as many employees who attended these sessions did not have a clear understanding of their roles and responsibilities within SAP. Jenny helped by “making those translations” during the sessions and indicated that many people today still come to her for help and questions, although at times feels she is unequipped for the type of trainer role in which she is now finding herself.

After three years, MetFab went live with SAP. Jenny recalls the first month involving simply getting people up to speed on and efficient with the new processes. She was pleased that they now had more visibility into the health of the company, but it was a challenging process to get everybody to that point. She mentioned:

I think on the positive side, it turned out great that we don't have to be in an old, slow system while the other half of the company is running off of spreadsheets. So we fixed a lot of things because we needed to be aligned in our services and departments. That was a great goal of the project, so it wasn't all bad. Parts of my job did get easier, I have a lot more access to information now that can help me do my job better, so that is a good thing too... it's hard to point out specifics process-wise that we've done super well. This project had a lot of opportunities for us to grow and do things, but many times, we were not at the place at the time to do that. We talked a lot about how we can do better and organization and communication were huge things. But we were always stuck for this time

element. I can only do so much in a day, I've got to go home and see my family, I feel like we've been here for a week straight.

She perceived others as generally having an “okay impression” of SAP, however, she believes more could have been done to better prepare the company for the shift in processes, workloads, and technical expectations from users. She recalled the negative attitudes she observed in her colleagues before go-live:

A lot of people in the company were feeling it, not just those on the core team. Everybody felt it, it was really contagious... I always thought if we did a pause on this for three months and did the business work, we could do this really smoothly, so it didn't bring out the best of us.

She mentioned how her job has now shifted away from company acquisitions and market analysis work to supporting the ERP system almost exclusively. A lot of that transition was subtle; some of the work she would perform previously was given to teammates who had more capacity, and other work inevitably could not get done. She is happy that she now has additional technical responsibilities in SAP, however, she mentioned she does not want to be a “full IT systems analyst,” and hopes she can soon resume some of her prior responsibilities.

Reflecting on the experience, she mentioned she did not have much of an opinion about what went “exceedingly well.” She felt their vendor did not prepare MetFab well enough with technical and functional resources to be able to transition easily from the old system to such a complicated new system as SAP. She also faults the core team for not emphasizing the importance of industry-standard processes earlier in the project as it contributed to problems during go-live. She recounted this experience:

No one knew what they were doing, and we didn't have a clear line of communication to get help. We had a lot of people putting in overtime and a lot of frayed nerves. People were doing processes wrong, expecting the new system to just “work,” but it doesn't work like that. Bad processes in, bad processes out,

and that's really what happened until they tightened down the security access and put in checks and balances here and there to force people to do things right. A lot of angry managers and a lot of consultants were here like it was their home. It took us 6 months to finally be able to breathe a little bit, but it was a nasty time. Now, we're following the processes that our consultant does: procure-to-pay, concept-to-market, order-to-cash, quality, post-to-close, pick-to-ship, and then production. It came from a top-down order that this is the way we're going to do things, and this is the way it's going to go for people to finally get on board with it.

Her training was minimal and this was a very negative experience for Jenny. She spoke about having to "take matters into her own hands" to learn to use a system she would inevitably be responsible for. She felt it was difficult to "learn on-the-fly," but that it was effective learning. She did not believe that the project was effectively coordinated; to her, it seemed they often would work towards a date, and not a meaningful project milestone. She found this methodology confusing since it was never clear why a certain date mattered, or what objective was they were trying to work toward. Nothing about the experience to Jenny was "this is great." She ended the conversation by stating, "One of the best outcomes for many departments was that we were able to wipe the slate clean and start out clean with our groups to start over. Process wise, sometimes it's good to start over."

### **Interview 5 – Miles at Rapid Machining**

Miles is an inventory control analyst at Rapid Machining, a rapid prototyping and manufacturing company of CNC-milled, 3D-printed, and injection-molded custom parts for use in electronics, appliances, and consumer products. Rapid Machining employs over 300 people in four locations in Minnesota. Miles has worked for Rapid Machining for over six years, having started his employment on the production floor as a material handler. His responsibilities at the time were strictly inventory management: transferring

goods and completing bills of materials. Miles' use of their software systems and technology at the time was infrequent, only for essential tasks. He later transitioned to the shipping department, which utilized a custom-built ERP system for shipping tasks. He was responsible for the picking and packing of products for customer orders and arranging them for transit. Miles then transitioned to leading the Receiving department where he was in charge of inventory management, receiving, and storing materials from customers or vendors. His experience within the Receiving department, which was using Microsoft Dynamics AX 2009, enabled him to gain experience and exposure to ERP systems: he would post material receipt transactions, consolidate and manage inventory locations, and often had to troubleshoot inaccurate inventory figures stemming from data or process-related issues. Miles soon discovered that there were many inconsistencies in how employees were recording transactions within Microsoft Dynamics and subsequently undertook a variety of projects to clean up their data, correct errors, and provide training to the warehousing staff. Miles recognized the importance of the role he was fulfilling and created the position of inventory control analyst in which he works today. Miles is responsible for the inventory accuracy of his warehouse: he manages their cycle count program; performs root cause analyses on inventory discrepancies; and provides inventory analysis, audits, and reporting information to management. He is also the on-site floor staff trainer, in charge of onboarding and ensuring compliance with work instructions. Miles holds an Associate's Degree in Business and considers the role of technology to be a critical component of his daily activities. He feels comfortable with technology in general.

Rapid Machining began an ERP implementation project in 2015. At the time, various divisions of the company used different ERP systems: customer service, production, and shipping using a home-built ERP system created in 1999; while finance, warehousing, purchasing, and receiving used Microsoft Dynamics AX 2009. These two systems had a variety of integration and connection points, but after 20 years, they found that the architecture of the custom-built ERP system was not scalable and difficult to update. Miles added:

The [custom-built ERP system] architecture was high maintenance. It wasn't built for scalability. It was about 20 years old, was around when Rapid and was founded in 1999.... So part-by-part things have been added to it, and it was very interconnected. People didn't know what changes would hurt other things. Considering a lot of people that created the [custom-built ERP system] from the beginning are no longer there, new people would come here and try to figure things out, and would find it was a spider web of connections.

Therefore, the objective was to migrate to newer technology, reduce complexity, and transition the company onto one platform: Microsoft Dynamics AX 2012. Miles stated he does not know why Rapid chose Microsoft Dynamics; he recalled hearing that Rapid considered alternatives such as SAP but did not know what the selection process looked like. Miles described this as illustrating an ongoing frustration he has had. He explained that he is “generally not as informed” of company decisions or changes compared to those in the corporate office.

Rapid partnered with a consulting company to lead the implementation, and they experienced delays throughout the project. Miles recalled:

What I heard was that the core team wasn't actively managing their project at the beginning. They'd go into a meeting, have a conversation, then pull in resources. They were never getting any questions answered, or making decisions, so I think that delayed things quite a bit. The CEO and the company were continuing to throw resources at the project.

He further explained how members of the implementation team were siloed: each group was working toward a different subset of goals with little communication amongst themselves about how it would all work together. They were finding that processes were not working effectively across functional areas, nor did they understand how a change requested from one group would adversely affect another. He mentioned this contributed to a sense of tension and frustration that people on the project team experienced and that this attitude tended to “seep into other areas of the business.” He recalled people in other departments having a negative attitude toward the project and that they expressed frustration with the amount of money spent on it. This inevitably pushed back numerous milestone dates and continued to lengthen the project timeline. They eventually stopped publishing potential go-live dates and instead, Rapid’s president announced they would “go-live when they are ready.”

Miles described his involvement in the implementation project as a “roller coaster.” He recalled:

We were over three years into the project and hadn't really had many conversations about specifics, or how things were going to work. But then every once in a while I'd get pulled into conversations, like cycle counting conversations.... What do we need, what do we want, specifics on what we want it to look like, and deciding which avenue we want to take with it, with a pros/cons list. Then I'd hear nothing for a while, and later was told, out of the blue, that we're going the other direction from what was decided on. It sounds like it was a miscommunication at some point. I don't know where the fallout happened.

Miles felt confused and upset that he had wasted his time, and had little information as to why the plan changed. He described other scenarios in which he felt his involvement with the project was inconsistent:

Some other times I would get pulled into transfer order meetings which they were all gung-ho about for a week, and then you wouldn't hear about it for a while.

You wonder if anything was done with it. My scenario is a little different because most of this is happening on the other side of the Twin Cities at corporate. Since we are in [a different office], we may be out of sight, out of mind. I don't think this is the case in all departments though.

Miles believes people generally felt negatively towards the project. He described some of their frustrations:

A lot of people didn't hear anything about it, just the President giving an update. The last three years was pretty much: "no go-live date", "don't know when this will happen", "still working on it," so I think many people were frustrated with it and considering they had no visibility to it, they had no understanding of what's going on. All they see is: it's a drain on resources, there's no output as of yet. So I think that is where a lot of the frustrations came from. I suppose their experience of having to continually put projects on hold due to it is hard on them. Those projects are much more apparent to them and affect them more. And when they're told that "yeah, it will help you a lot but we can't do that right now," it's harmful to somebody's work ethic and attitude towards everything.

Since there was nothing tangible in terms of progress for most people to see, many questioned what the attention and effort were accomplishing. Miles said employees soon learned not to trust any publicized go-live dates because they were continually missed.

He explained:

Whenever we would talk about the go-live date, it was always "supposedly" or "we hope." And that turns into not trusting the go-live dates at all, because throughout the whole project... those dates would come and go and they'd push it back again. It's detrimental to their attitudes that they keep missing their goals.

The vice president of manufacturing became involved in triaging the project issues, and eventually became a project manager for the implementation. Miles stated it was at this point in which he believes the project started shifting: their organization improved, they were getting clearer goals, and meeting due dates. Nevertheless, people remained anxious to work towards milestone dates and many were skeptical of the timetable offered to go live. Miles' boss was part of the implementation team, and Miles

began receiving updates from him on the project. Being more aware of what was happening helped lessen the discomfort he experienced.

Miles described some of the frustration he felt regarding the training he received throughout the project:

By go-live, there had been very literally no training. The only thing that even came close to training was during my conversations on how cycle-counting would look in the future.... [The consultants] ran through some scenarios and gave us some training documentation on how to do it, the options on what to do, but that's been literally the only training I had. I had some conversations on transfer orders; it was a Skype meeting with a screen-share and an email with a Word document with steps and screenshots. After that, it was just me logging into the test environment and poking around. That's all I could do.

Subject matter experts in other departments provided their staff with work instructions to assist with their daily activities, but Miles did not receive any such assistance. He assumed that he was simply overlooked because his position at Rapid was somewhat unique. He said this harmed his work attitude.

Following the initial delays and resolution of persistent problematic issues, Rapid eventually went live on Microsoft Dynamics AX 2012 after three years. Miles expressed that the project had a negative impact on his happiness at work. He found it frustrating when he often could not get resources for resolving issues or completing projects. It was difficult to see daily operational problems affecting his work, without being able to address them until the project had concluded. Miles also spoke to the impact the project had on his personal life:

Being frustrated at work will bleed into your personal life. It's easy to have a short temper at home or to have less patience at home. Or even due to the lack of resources, having to put in extra time or hours at work means less time with the family.

Reflecting on the experience, Miles felt communication was the largest aspect that could have been strengthened throughout the implementation project.

There was a lot of unease about the whole project and how it would affect everybody because they didn't know. It's wasn't being communicated to them. Who's to say these decisions hadn't been made yet? People would say "they're not telling us what this will look like" and they're [concerned with] how it will affect their job. It's not easy for people because it's their jobs and it's being threatened.

Miles described the training as lacking and felt he was unprepared for the necessity to train himself in his spare time. He further stated:

There were a lot of emails with Word documents; high-level procedural steps of what to do. But for me, it wasn't helpful because it wasn't detailed enough for what we do. I once got work instructions from [the consultants] that weren't thorough enough. This resulted in several email conversations back-and-forth; they were telling me two different things, and what they were telling me wasn't clear on what needed to happen... different setup that needs to be completed in different environments.... Given what they *do* [emphasis added], I would expect them to be a *lot* [emphasis added] more clear. You would think their documentation would be thorough.

He frequently felt out of touch with critical pieces of information that pertained to his job and often felt the communication he did receive was either inconsistent or too vague to be of much value. Expectations regarding the changing scope and timelines of the project were something that Miles felt could also have been improved. He mentioned it was difficult not knowing what to work towards when communication about the project was so vague and a go-live date was unpublished. He does give credit to Rapid's management team for finally getting the company live on the new system. When discussing areas that went well during the project, he stated:

It's a difficult one to answer because I wasn't part of the core team. I can't even imagine what the core team had to go through. [The project] was a big thing, and it had big implications. I would say a lot of what had gone well was getting us this far. The president was always very open on this, "we want to make sure we

do things right, and push a go-live with something [substantial], not just pick a go-live date.” I've always respected that.

Miles concluded by reporting that he is working towards becoming a subject matter expert, so he can make more informed decisions while also having a stronger voice on proposals for process improvement.

### **Data Analysis**

Following the interview and data collection processes, data analysis was initiated by reviewing the interview transcripts to identify ideas and themes common to each experience. To code the data, a combination of open coding and axial coding methods was utilized as described by Corbin and Strauss (2007). Using open coding, important concepts were identified using In Vivo codes, which are based on the actual language spoken in the interviews. The In Vivo codes were categorized into higher-level groupings called first-order themes based on underlying similarities. Table 2 presents representative interview quotes for specific In Vivo codes.

Table 2

#### *In Vivo Codes: Representative Quotes*

First-Order Themes (In Vivo Codes)	Representative Quotes
Job autonomy	My job is more stressful now because I have less visibility into my vendors, and the time that I used to have to be able to build those relationships is pretty much gone... I feel more like an order entry clerk... the job that I used to do is really different than what I do now. (Kim)
Changes to task variety and challenge	

(continued)

Table 2 (continued)

*In Vivo Codes: Representative Quotes*

First-Order Themes (In Vivo Codes)	Representative Quotes
Project leadership Project planning	<p>At times, it felt like we had never [undertaken] a project before. We had meetings without agendas, simply to just get us all into a room together... then you'd have all of these side conversations going on, and no one really knowing what we're even here for, or why we're wasting our time... Management didn't seem like they were actively managing the project, as if it's just going to happen on its own?... It just seemed like everything scheduled out was either not realistic, or didn't make any sense. (Miles)</p>
Decision-making input Participation	<p>This project really had a negative impact since day one... there were so many things that were done wrong or weren't thought through all the way or decisions that were made about my team and how they were going to do their jobs, without any involvement from me or input from any of us. It just seemed like everything was being decided on behind closed doors, and we'd just have to deal with it. (Chris)</p> <p>We rarely had many conversations about specifics or how things [were] going to work, but then every once in a while I'd get pulled into conversations... what do we need, what do we want, specifics on what we want it to look like... deciding which avenue we want to take with it, with a pros/cons list... They're all gung-ho about for a week and then you never hear about it for a while... you wonder if anything was done with it. (Miles)</p>
Operational disruptions	<p>It was hard to keep the momentum up because it felt I was doing two jobs: trying to make sure everyone was trained and we had all of our needs taken care of, and still trying to make sure the day-to-day activities were covered... I think it was hard on a lot of people, even those [who weren't involved with the project] because all of the work trickled down while everyone else was taken away for training or testing. (Chris)</p>

(continued)

Table 2 (continued)

*In Vivo Codes: Representative Quotes*

First-Order Themes (In Vivo Codes)	Representative Quotes
Material disruptions	<p>It was a running joke that when we were met with a problem that we want to [address], that we're "on a code freeze," and we're not going to get [resources to resolve the problem]... Any project in the company needs a code change, and it was a running joke... If any change initiative that we want to make happen to the process requires a code change, it's not going to happen. (Miles)</p>
Resource availability	<p>The project drained people, there was a definite shift in attitudes which was hard. Particularly for the finance group... having to manage more than their jobs... we [consistently] had to draw more lines to pull in people. Because we were too overburdened to test and contribute, which doesn't help [the success of the project]... We would put in all of this time, throw more people in it, and have to keep going at it like nothing happened. It's not sustainable. (Jenny)</p>
Time constraints	<p>We were always stuck for the time element. I can only do so much in a day. I've got to go home and see my family. I feel like we've been here for a week straight. (Jenny)</p>
Personal impact	<p>Being frustrated at work will bleed into your personal life. It's easy to have a short temper at home or to have less patience at home. Or even due to the lack of resources, having to put in extra time or hours at work means less time with the family. (Miles)</p>
Clarity of decision-making Communication	<p>If I had any input on things I would have completely changed how we did the whole thing. It was just so inconsistent, we never heard anything. We never got much word of why things were happening, or why the decisions that were made were being made. It just seemed like this super-secret project at times and that was really hard to deal with. (Chris)</p>

(continued)

Table 2 (continued)

*In Vivo Codes: Representative Quotes*

First-Order Themes (In Vivo Codes)	Representative Quotes
Alignment of expectations	When they told us they would be moving systems and my boss was going to be on the project team, I figured it would maybe take a couple of months to get everything moved over, people trained, and that would be about it. This thing took two years... I figured it would just be moving over the old data from the old system to the new system but it was a lot more involved... they never [discussed] those types of things in the beginning, and not really knowing we'd be doing this for years is a lot to swallow. Maybe if we had we would have had a different mindset about it. (Kim)
Change management	Some of us just aren't equipped for that kind of change. I did what I could, but a lot of the older people here can't use computers very well to begin with so I felt their pain. (Kim)
Training	I really wish training had been more focused on. I [understand] why they segmented the [workshops]... but we were really unprepared for how slow everything would become in the end ... and our training really didn't prepare us for everything... The training sessions we had [involved] a lot of "perfect world" scenarios, but that's not really how the real day-to-day business works. (Kim)
Job attitudes Project setbacks Project fatigue	It was a messy thing for a while and I still think people don't quite trust the system with all of the problems we had with it earlier... Everyone was tired, and I think people just wanted to get back to their old jobs... people were tired and fed up... Slowly I think people are starting to work with it more, but there is a lot of distrust there still. (Chris)

The process was repeated by searching for relationships between each first-order theme and organizing them into second-order themes as suggested by Biddle et al. (2001). The first- and second-order themes were determined by the number of times the theme or subtheme revealed itself within the data. There were eight over-arching,

second-order themes observed in the experiences from this study, including (a) impact on job enrichment, (b) project and group goal attainment, (c) choice, voice, and involvement, (d) resource adequacy, (e) personal risk, (f) workplace transparency, (g) resource improvement, and (h) situational characteristics. Table 3 outlines the In Vivo codes, first-order themes, and second-order themes that emerged from the data.

Table 3

*In Vivo Codes, First-order, and Second-order Themes*

Brief, Illustrative Comments from Interviews	First-Order Themes (In Vivo Codes)	Second-Order Themes (Axial Codes)
<ul style="list-style-type: none"> <li>• Controls are really tight now</li> <li>• Cog in the big machine</li> <li>• Don't have much pull anymore</li> </ul>	Job autonomy	
<ul style="list-style-type: none"> <li>• Now chained to a desk all day</li> <li>• All of our roles shifted</li> <li>• My job got a lot more stressful</li> <li>• I feel more like an order entry clerk</li> <li>• My job got a lot faster</li> </ul>	Changes to task variety and challenge	Impact on job enrichment
<ul style="list-style-type: none"> <li>• Was really messy</li> <li>• Wasn't a real direction</li> <li>• How are we winging so many things</li> <li>• Have to fake parts of it</li> <li>• Needed a strong project manager</li> </ul>	Project leadership	Project and group goal attainment
<ul style="list-style-type: none"> <li>• Process mapping</li> <li>• No real process in place</li> <li>• Wild West show</li> <li>• Been kind of a roller coaster</li> <li>• People were very segmented</li> </ul>	Project planning	

(continued)

Table 3 (continued)

*In Vivo Codes, First-order, and Second-order Themes*

Brief, Illustrative Comments from Interviews	First-Order Themes (In Vivo Codes)	Second-Order Themes (Axial Codes)
<ul style="list-style-type: none"> <li>• Wasn't my call</li> <li>• Why did we do this</li> <li>• I didn't pick this</li> <li>• Who came up with this plan</li> <li>• What do we need, what do we want</li> </ul>	Decision-making input	Choice, voice, and involvement
<ul style="list-style-type: none"> <li>• I was pretty hands-off</li> <li>• Get everyone on board</li> <li>• Some involvement</li> <li>• We were heard</li> <li>• Kept in the loop</li> </ul>	Participation	
<ul style="list-style-type: none"> <li>• Disrupts the core business from functioning</li> <li>• Make sure we don't fall apart</li> <li>• Draw more lines to pull in people</li> <li>• Basically doing two jobs</li> </ul>	Operational disruptions	
<ul style="list-style-type: none"> <li>• Constantly see these issues</li> <li>• Don't hold your breath on getting this fixed</li> <li>• Having to put projects on hold</li> </ul>	Material disruptions	
<ul style="list-style-type: none"> <li>• [My manager] has been pretty absent</li> <li>• Saw my boss a lot less</li> <li>• Can't have my entire team doing all of this</li> <li>• Fend for ourselves</li> <li>• Pretty big capacity issues</li> <li>• They are understaffed</li> <li>• Need another person in your corner</li> <li>• We are overall [too] busy</li> <li>• Drain on resources</li> <li>• Pulled in many different directions</li> </ul>	Resource availability	Resource adequacy

(continued)

Table 3 (continued)

*In Vivo Codes, First-order, and Second-order Themes*

Brief, Illustrative Comments from Interviews	First-Order Themes (In Vivo Codes)	Second-Order Themes (Axial Codes)
<ul style="list-style-type: none"> <li>• Had to work late</li> <li>• All hands on deck</li> <li>• Made people feel bad about taking vacation</li> <li>• Put in extra time or hours</li> <li>• Can only do so much in a day</li> <li>• A lot of wasted time</li> </ul>	Time constraints	Personal and time commitments
<ul style="list-style-type: none"> <li>• Had to cancel PTO</li> <li>• Bleeds into your personal life</li> <li>• Easy to have a short temper or less patience at home</li> <li>• Less time with the family</li> </ul>		
<ul style="list-style-type: none"> <li>• Why are we doing this?</li> <li>• Always unclear</li> <li>• What is going on?</li> <li>• Didn't get what the point was</li> <li>• Why the decisions that were made</li> <li>• Super-secret project</li> <li>• Heard through the grapevine</li> </ul>	Clarity of decision-making	
<ul style="list-style-type: none"> <li>• Keep us in the loop</li> <li>• Decided on behind closed doors</li> <li>• People felt that something was going on</li> <li>• We just needed more information</li> <li>• We never hear why</li> <li>• No visibility to it</li> <li>• Wouldn't hear from them for months</li> <li>• Gung-ho about for a week</li> <li>• Out of sight, out of mind</li> <li>• Not a lot of follow up</li> <li>• Telling me two different things</li> </ul>		Communication

(continued)

Table 3 (continued)

*In Vivo Codes, First-order, and Second-order Themes*

Brief, Illustrative Comments from Interviews	First-Order Themes (In Vivo Codes)	Second-Order Themes (Axial Codes)
<ul style="list-style-type: none"> <li>• Caught us off guard</li> <li>• [We were] not as far as we had hoped</li> <li>• Weren't aware of the intricacies</li> <li>• Scrap a lot of what they had promised</li> <li>• Did not [know] we'd be doing this for years</li> </ul>	Alignment of expectations	Information and decision transparency
<ul style="list-style-type: none"> <li>• Aren't equipped for that kind of change</li> <li>• Getting used to different ways of thinking</li> <li>• Think more holistic</li> <li>• Being comfortable with challenging things</li> </ul>	Change management	
<ul style="list-style-type: none"> <li>• Didn't have much training</li> <li>• No clue what we were doing</li> <li>• "Perfect World" scenarios</li> <li>• Came down to knowing what's what</li> <li>• We all forgot a lot</li> <li>• Targeted and timely training</li> </ul>	Training	Learning and development
<ul style="list-style-type: none"> <li>• Just have to deal with it</li> <li>• Morale suffered</li> <li>• It was kind of toxic at times.</li> <li>• Feeling helpless</li> <li>• Wasn't a good time</li> <li>• A lot of distrust there still</li> <li>• Left a negative impression</li> <li>• A lot to soak in</li> </ul>	Job attitudes	Timelines and project delays
<ul style="list-style-type: none"> <li>• Project was stalled</li> <li>• Had to start over</li> <li>• Figure out the mess</li> <li>• Restart the project</li> <li>• No go-live date</li> </ul>	Project setbacks	

(continued)

Table 3 (continued)

*In Vivo Codes, First-order, and Second-order Themes*

Brief, Illustrative Comments from Interviews	First-Order Themes (In Vivo Codes)	Second-Order Themes (Axial Codes)
<ul style="list-style-type: none"> <li>• Just not engaged anymore</li> <li>• Hard to keep the momentum up</li> <li>• Does weigh on people over time</li> <li>• A definite shift in attitudes</li> <li>• People were just checked out</li> <li>• Detrimental to [our] work ethic and attitude</li> </ul>	Project fatigue	Timelines and project delays

**Impact on Job Enrichment**

The first theme was formed from commonalities across interviews regarding the effect of change in participants' jobs during their implementation. Two sub-themes were observed from the participants' interviews, including areas of job autonomy, which is the ability of people to think and operate independently in their jobs, and changes to task variety and challenge, which are changes in job attributes resulting from shifts in roles and responsibilities. Kim felt that she was restricted in her ability to perform her job due to tightened controls within the new system following the project implementation. She felt like a "cog in the machine," and that her job had become more transactional. She now had less time to form relationships and communicate with her suppliers; the relationship-building aspect of her job that she once enjoyed has been reduced which has negatively affected her satisfaction. Sean indicated his job has become more fast-paced, while Chris described how his warehouse staff felt anxious about having to use their ERP system and technology for their daily tasks, which resulted in slowing their performance. Jenny suggested that many of MetFab's employees shared anxieties about not having a

clear understanding of their roles and responsibilities during the implementation, while her job shifted from being a business development analyst to more of an IT systems analyst, which she found unappealing.

### **Project and Group Goal Attainment**

Project leadership and planning were significant concepts contributing to the theme of project and group goal attainment. This theme refers to how well the project itself had been handled and managed, and how this affected the ability for employees to meet project and team goals. Chris expressed frustration with his leadership team for conducting readiness testing too early into their project, and for the frequent changes in testing and training dates without any explanation as to why. Jenny felt the implementation project was unorganized and lacked process consistency. She often had to attend meetings and discussions without a clear agenda or objective in mind, which negatively affected her attitude and trust in management. Miles described the challenges he faced with project leadership early in their project: people were siloed and working towards different objectives. He felt that there was a level of tension and frustration that this created among people and that this feeling seemed to spread to other employees and departments. One participant (Sean) believed that his project was well-coordinated, and believed this is what made his project successful.

### **Choice, Voice, and Involvement**

The theme of desiring input and involvement in the projects and decision-making was very clear across each interview. Two categories formed from the interview comments include decision-making input and participation. Chris said he felt frustrated on many occasions that decisions were made without his input or expertise regarding his

warehouse personnel and processes. He often questioned who made those decisions, and why he was not included in those conversations. Jenny expressed confusion as to why MetFab agreed to implement SAP without the input of department leaders, and how some employees were angry for not having a say in that decision. Miles discussed a situation in which, without his knowledge, his company moved in the opposite direction concerning a plan that had been agreed upon and had been involved in developing. In terms of participation, Sean discussed the importance of his involvement in discussions and processes to clean up their data and restructure their accounts, and how this ensured that their requirements would be met when they migrated to SAP. Kim discussed the anxiety she felt due to not being directly involved in ensuring her team's needs were addressed during the process mapping initiatives. Miles discussed how he would often encounter times of intense involvement in conversations and decision-making, and then long periods of hearing nothing. It affected him in terms of feeling valued; it led him to question if his time and resources had been wasted, or whether anything of value had been made out of that data.

### **Resource Adequacy**

The theme of the disrupting effect felt on day-to-day operations, improvement initiatives, and resource availability was strong across the interviews. Kim described having to work long hours and nights after ABC Electronics went live to keep up with the daily workload. Their attitudes were negatively affected by the resulting reduction in productivity for their group. Chris, with the additional workload of project training responsibilities, felt like he was working two jobs and eventually started actively looking for another job. The impact he felt the project was having on his daily operations was

negative, and that no one was “jumping into [his] seat to do his job for him while [he] is off training.” Miles described the frustration he felt about having to put projects and improvement initiatives on hold due to the priority given to the implementation project. He found it difficult to get people and resources to help him manage his increased job demands. This had a negative impact on his job satisfaction because he continued to see areas that needed improvement and attention, but had little time or opportunity to address them. Jenny felt overwhelmed by the need to balance her project responsibilities with her everyday workload, resulting in her feeling that her work attitude had suffered substantially. Kim and Sean both described their managers being less available due to the time required of them on the implementation teams. Kim associated this with a feeling of loss in terms of not having someone to go to or having “someone in [her] corner,” and felt her team lost some cohesiveness as a result. Sean’s team had to put in extra hours to cover the responsibilities that his manager and controller were not able to handle, and further reported they remain understaffed in his department.

### **Personal and Time Commitments**

All interviewees described how the stress from the implementation impacted their work and personal lives. Chris described being “pulled in many different directions” and how this was particularly draining on him. Kim, Chris, and Sean described the need to work additional hours to make up for those committed to the implementation project. Kim had to commit long hours to compensate for productivity losses, and Chris had to balance both his daily tasks and his training responsibilities. Jenny also described the stress she endured from time commitments needed for the project, and how this stress bled into her personal life. She had to rearrange her responsibilities when she took time

off and was subject to a “no vacation” policy. Miles described how project stresses affected him personally; he described how it was “easy to have a short temper or less patience at home.” Kim mentioned how her manager personally felt stress from the implementation project due to the increased time demands decreasing his time with his family.

### **Information and Decision Transparency**

Clarity of decision-making, communication, and the alignment of expectations were three first-order themes that were generated from the In Vivo codes, which constituted a broader theme of workplace transparency, reflecting people’s feelings as to whether the core or management teams in charge of the projects were being open and direct. In terms of communication, Kim had feelings of anxiety as she frequently did not know what was going on with the project that related to her department. She also voiced frustration about not being able to communicate her team’s needs to her satisfaction. Chris described his management team as being inadequate and inconsistent with communication regarding the status of the project and how this negatively affected people’s attitudes towards the project. Conversely, Sean felt he was in regular communication with his managers about the project status and felt ChemCo’s executive team did an exceptional job at keeping people engaged and focused on the reasons for undertaking the project. Chris felt the lack of communication about the project made people question whether "something else was going on" and raised suspicions that they might be acquired by another company. Jenny felt that politics was part of why MetFab decided to choose SAP and that their management team had unrealistic expectations of what their reporting requirements would entail. Miles expressed his frustration at feeling

"out of touch" with the current status of the project, adding that people similarly viewed the project negatively due to a lack of communication. Kim, not having previously experienced an ERP implementation, voiced her frustrations with not knowing the project would take so long to complete, or that it would rely so heavily on efforts from all departments.

### **Learning and Development**

Comments on the impact of training and the ability to change were common across interviews and contribute to a broader theme of resource improvement. Kim described how the training she received was too generic and not specific enough to address the nuances and special circumstances often encountered at ABC Electronics. In general, she felt that training was far too minimal for the scope of the project, and this negatively affected her confidence in her ability to do her job well once they went live. Chris discussed his initial training as being too minimal and too early into the project, which led him to forget much of what had been taught. Subsequent training had been adequate, yet he felt that his workload prevented him from taking on the additional training responsibilities that had been expected of him. Jenny was given minimal training in their new system and discussed the alienating effect this had on her, as she had to "take it into her own hands" to seek system training; this had a negative effect on her feelings of confidence in her management team. Miles also described the lack of training he received as contributing to dissatisfaction at work. He observed other departments providing training to their staff in the form of work instructions while he had to teach himself, which led him to feel "forgotten about." Conversely, Sean's team had a large

number of training sessions and videos at their disposal, which he feels added to their ability to be successful when implementing SAP.

### **Timelines and Project Delays**

The last theme centered on how the impact of situational characteristics such as project challenges and attitudes influenced peoples' engagement and satisfaction. Three categories emerged from the interviews: job attitudes, project setbacks, and project fatigue. Job attitudes include people's emotional reactions to the project. Chris discussed how the morale of employees had deteriorated during the suspension of the project, and during the ensuing attempts to get the project back on track with their new vendor. He described the negative attitudes that arose from scrapping their initial work and how "starting over" caused peoples' attitudes to be negative. Kim described how employee attitudes were "kind of toxic" after go-live. She described how the added workload and reduced productivity had a negative impact on people's attitudes in her department, which most likely contributed to the resignation of one of her co-workers. Jenny described the concerns she had about how her team and the rest of the company would react to the changes resulting from moving systems; some of the company's departments had not used their prior ERP system and had little exposure to their new system. She found her attitude shifting as a result of the lack of guidance and support from the core team about their expectations, and the lack of resources and the ability for her to complete her tasks. Miles discussed the negative attitude he had resulting from having to put numerous projects on hold due to resource constraints, and how his inability to address those issues weighed on him over time. Chris felt exhausted by his

increased workload and external demands and said it was difficult to keep up the momentum for his work.

### **Summary**

Chapter 4 presented narratives of five people that shared the same phenomena of experiencing an ERP implementation project. Although each experience details very situational and company-specific scenarios, it is interesting to note the similarities and contrasts between each participant's story. A variety of codes and themes emerged from the experiences that helped to identify and categorize important themes.

A noteworthy observation involves the frequency with which participants expressed critical, negative comments about their experiences as opposed to positive comments. Feelings of stress and confusion were common throughout each experience and many shared frustrations about how the implementation project changed their workload and job responsibilities. In addition, participants felt a loss of confidence in the ability of their management to lead the project effectively. There were also frequent references to the desire for more information and understanding, while many felt that there was a lack of opportunity to provide input and receive support. Despite their expressed frustrations and criticisms, the participants also displayed persistence, tenacity, and resistance. Each remains employed at and committed to their organization in the aftermath of what was for most, a disappointing and sub-optimal implementation process. Chapter 5 outlines recommendations that could help organizations avoid or minimize some of the common implementation pitfalls described by the participants, and perhaps take fuller advantage of the persistence and commitment to succeed that they demonstrated.

## Chapter 5: Discussion

The objective of this research was to gain a broader understanding of the experiences people have when their companies undertake an ERP implementation, while at the same time trying to provide insight into areas related to employee retention and satisfaction that organizations should be mindful of during the process. This chapter presents a summary of the common themes in the participants' stories while discussing the research questions in the inclusion of five sections: (a) interpretations of the findings, (b) implications and recommendations, (c) limitations of the study, (d) recommendations for future research, and (e) summary and conclusions.

### Interpretation of the Findings

Data collection and synthesis of the themes presented in this research were achieved through narrative inquiry, a qualitative study of experiences of a phenomenon as told through stories (Clandinin, 2016), and phenomenological research, a research perspective of lived experience. These methodologies were used to identify words, patterns, and themes that existed in participant experiences with their involvement in, or impact from, an ERP system implementation. From the five interviews conducted, there were a variety of shared experiences and themes across each story:

- Participants expressed the ways in which role autonomy and job enrichment affected their job satisfaction and engagement with their employer.
- Participants expressed the importance of establishing and following an organized project plan and the resulting implications on goal attainment, confidence, and trust in management and the implementation team.

- Participants expressed how their feelings of motivation, engagement, and trust were influenced by having input, choice, and involvement with decisions, planning, and process mapping.
- Participants discussed the effects that operational disruptions, material disruptions, and resource availability had on their attitudes and engagement.
- Participants expressed the impact of the project on time, resources, capacity, and their personal lives.
- Participants discussed how expectations, access to information, communication, and transparency influenced their feelings of confidence in management and job satisfaction.
- Participants demonstrated how training and change management activities influenced goal attainment, motivation, and self-confidence.
- Participants expressed how project attitudes, setbacks, and fatigue influenced employee engagement and satisfaction.

Although four out of the five participants had predominantly negative perceptions, reactions, and criticisms of their ERP implementation project, the most striking contrast in participants' experiences was interview 2 with Sean at ChemCo. Sean's experience with the migration of his company to SAP was relatively positive and the project was generally well-received by employees. Exploring the uniqueness of his story, while comparing and contrasting with the other narratives, helps to support and demonstrate the significance of the second-order themes revealed in the data analysis. Overall, a significant number of the identified first-order and second-order themes had a direct or indirect effect on the job satisfaction of participants. The following sections highlight the

importance of these themes within the framework of the literature while relating the results to the models reviewed.

**Job enrichment and satisfaction.** Participants interviewed reported that some degree of change in their jobs, tasks, roles, and responsibilities occurred during their ERP implementation, while many experienced negative reactions to that change. Macey and Schneider (2008) describe job tasks as a key precursor of the state of engagement and believe it critical to overall psychological state engagement. They also describe the perceived importance of an employee's job and tasks as being a predictor of employee engagement, highlighting the importance of meaningful and challenging work. Kim stated how this concept had affected her when describing that, following the implementation project, she felt further limited in her ability to perform her job and make decisions due to tighter controls within the new system. She described feeling like a "cog in the machine," and that her work had become more transactional. Cummings and Worley (2015), Deci and Ryan (1975), and Hackman and Oldham (1976) each emphasized the importance of autonomy to an employee's job satisfaction, arguing that the ability of employees to approach a task using their own discretion decreases repetition and the sense of alienation that routine can cause. The levels of disengagement felt in the participant experiences are understandable given these scholars' emphasis on the importance of autonomy.

Robinson et al. (2004) stated that employees who have a firm understanding of their jobs, career paths, and had a personal development plan were more likely to be satisfied in their jobs than those who did not. Jenny recalled that many of MetFab's employees shared anxieties about not having a clear understanding of their roles and

responsibilities during the implementation, while her job shifted from being a business development analyst to more of an IT systems analyst, which she found unappealing. She also described the disengagement she had experienced when she was assigned reporting responsibilities during the project, and how she felt the expectations were unclear and that she had not been given the tools to fulfill them. The argument, therefore, is that the changes to job roles, responsibilities, and autonomy introduced by the implementation project disrupted employees' fundamental understanding of their job requirements, and reasonably explains the shift in commitment and attitudes that occurred in participants' experiences.

It is also reasonable to assume that participants' perceived job importance subsequently shifted as well. As personal and material resource theory describes how constraints on an employee's abilities or opportunities to achieve their work goals are demotivating (Katzell & Thompson, 1990), this also helps to explain the challenges faced by the participants when their levels of job responsibilities changed. Chris described the experience he had with added work responsibilities that led him to start looking for another job, stating, "It just got to the point that I couldn't take it anymore. It was too much with too little." Sean's story was similar in that regard, having indicated that his job had become increasingly fast-paced following the implementation and that his department was now understaffed due to increased workload. Harter et al. (2002) argue that these types of challenges play a large role in predicting employee engagement, while Jones et al. (2011) found influences on reduced employee motivation and satisfaction during ERP implementations specifically around task reorganization and increased job functions. This is further supported by Morris and Venkatesh's study (2010) which

found that the implementation of ERP systems weakened the degree to which skill variety, autonomy, and feedback were felt by employees, had a direct impact on job satisfaction. Collectively, these results seem to demonstrate the significant causal effect that changes in job tasks, roles, responsibility, and autonomy can have on engagement, motivation, and satisfaction.

**Goal attainment and satisfaction.** Participants in this study all described some level of impact from the extent to which the project was coordinated and managed, with four out of five associating negative experiences with the subject. This speaks to the broader scope at which the role of group or project goal attainment interacts with individual employee satisfaction. Participants shared stories of disorganization and inefficiency, wasted or poorly-timed events, lack of confidence in the project plan and processes, and lack of clear direction and team goal expectations. The implications of these experiences reflect on engagement in terms of clarity of work, which fortifies an employee's understanding of their job, their goals, and career advancement opportunities. Katzell & Thompson (1990) stated the goals of employees' work should be specific, clear, attractive, attractive, difficult, but attainable; and "feedback or knowledge of results of goal attainment is useful for maintaining the motivational force of goals" (p. 149). Related to this, employees working in a team or collaborative environment will have greater personal engagement and motivation when team goals are effectively communicated and project execution processes clearly defined (Macey & Schneider, 2008). This is also supported by group and norm theory (Katzell & Thompson, 1990), which states that people are more motivated to perform well when their workgroup facilitates the success of group goals and objectives.

Collectively, this helps explain the demotivation and disengagement that some participants experienced during their projects, as these misalignments would naturally reduce employees' comprehension of their roles and team goals, thereby effectively reducing their confidence in those plans. This idea is embodied, in particular, in Jenny's story, when she expressed that her project felt unorganized, often requiring her to attend meetings without a clear agenda or purpose in mind, and often getting off track or into topics other than what the meeting was called for. She expressed how this had a negative effect on her feelings of trust and confidence in her management team. Similarly, Kim, Chris, and Miles expressed similar concerns with how their projects had been managed. Sean, conversely, believed that his project was well-coordinated, and attributed the success of his project to that characteristic. We can then understand how and why the participants' motivation was effected by this idea during each project. Personal and material resource theory states that conditions that enhance goal attainment aid in positive motivation (Katzell & Thompson, 1990), and group and norm theory states that people are more motivated to perform well when their workgroup facilitates the success of group goals and objectives. Consequently, the absence of these variables in the experiences of most participants is likely to have led to their demotivation in many respects.

**Choice, voice, and involvement.** A significant theme that surfaced during participant interviews involved the importance placed on having choice, input, and involvement in the implementation project and related decision-making. Four out of five participants interviewed expressed negative feelings toward the topic, which had implications in a variety of areas affecting their satisfaction. Kim, Chris, Jenny, and Miles all discussed how they felt they could not engage in discussions about their needs

and the future states of their departments, contributing to feelings of doubt, anxiety, and frustration. Sean, conversely, felt adequately involved with the project and decision-making, which gave him a feeling of reassurance that they would be successful with their new system.

ERP implementations frequently involve some form of job redesign to better align processes with system functionality (Huang et al., 2004). Hackman and Oldham (1980) proposed in their job characteristics model that work redesign is best achieved when interpersonal relationships and decision-making processes are managed, inclusive, and transparent. This view is echoed in the framework of employee engagement by Macey and Schneider (2008), which suggests that the restructuring of work resulting from significant organizational changes may create overwhelming challenges for some employees leading to lower job satisfaction. Many participants shared that they felt disconnected from opportunities to provide feedback or engage in decision-making, and their reactions are understandable given the changing nature of their work during the implementation. Hackman and Oldham (1980) also noted that a great deal of decision-making and coordination may be required during the job redesign process; problems may arise due to insufficient knowledge, expertise, and input about how to handle new and expanded work responsibilities, and prior work experiences for employees may have given them little opportunity to exercise or improve their skills. Hackman and Oldham (1980) have advocated engaging employees in dialogue, decision-making, and training to adapt to their new roles, which could have substantial benefits in terms of efficiency, attitudes, and social climate.

The reactions shared by the participants are similar to research conducted by Xia, Zhang, and Zhao (2016) in which they conducted a study on the effects of participation in decision-making on job satisfaction. The results showed that the involvement of employees in decision-making had a positive influence on their job satisfaction and that the effect was strengthened by communication and transparency. Similar findings were reported by Katzell and Thompson (1990), who found that improving systems to include employees in communication and decision-making frequently resulted in improved trust, performance, and attitudes; and generally had stronger effects than did more limited changes. Harter et al. (2002) argued that company environments may play a large role in predicting employee engagement along with company processes, role challenges, company values, work-life balance, information availability and transparency, rewards and recognition, and the hierarchical structure of management. The reactions of the participants are also understandable given the potential for ERP implementations to affect the facets of an employee's job description. Lack of input or agreement on a set of job descriptions, agreed upon earlier by both parties, may cause feelings of mistrust and disengagement (Hackman & Oldham, 1980).

**Resource adequacy and satisfaction.** One of the exogenous theories of work motivation, as defined by Katzell and Thompson (1990), is personal and material resource theory. This theory describes how constraints on an employee's abilities or opportunities to achieve their work goals are demotivating. Resources, in the form of personal resources, material resources, and social resources, have a direct and significant impact on the perceived level of intrinsic and extrinsic rewards, and thus have an indirect effect on the morale and engagement of employees. All participants described various

ways in which operational disruptions, material disruptions, and availability of resources affected their satisfaction. Chris, an illuminating example of this theme, began actively looking for another job due to the combination of additional job responsibilities and staffing shortages. Miles also described the demotivating nature that resource constraints had on his ability to execute projects and improvement initiatives. McAllister et al. (2016) suggested that employees' perceived degree of resource adequacy leads to their perception that they have the means needed to perform their work successfully. This can range from feeling they possess adequate time and tools to complete their assigned tasks, to having the freedom to step away when they feel overwhelmed. Their perceptions of resource adequacy are therefore likely to either strengthen or weaken their development and feelings of intrinsic motivation. Deci and Ryan (2002) also suggested that these types of environmental factors can negatively affect the motivation and well-being of employees. "Threats, deadlines, directives, pressured evaluations, and imposed goals have been found to diminish individuals' intrinsic motivation" (Deci & Ryan, 2000, p. 70). Given that many participants expressed feelings of demotivation and dissatisfaction with the lack of perceived availability of resources, the results appear to reinforce the validity of the argument that resource adequacy has a significant impact on employee motivation and their subsequent job satisfaction.

**Personal and time commitments.** All of the participants described their experiences with the ERP implementation in terms of increased time commitments and impact on their personal lives. Kim, Chris, and Sean described the need to work additional hours to make up for those committed to the implementation project. Kim had to commit long hours to compensate for productivity losses, and Chris had to balance

both his daily tasks and his training responsibilities. Jenny also described the stress she experienced from time commitments needed for the project. Miles and Jenny discussed how work stresses interfered with their personal lives.

The participants' reactions seem to reflect the findings of the McAllister et al. (2016) study on perceived resource adequacy and its impact on job satisfaction. They stated that environmental factors such as increased time commitments, capacity, and imposed goals diminish individuals' intrinsic motivation. These kinds of environmental factors obstruct employees' perceived availability of resources because they threaten the three psychological needs as outlined by self-determination theory: autonomy, competence, and relatedness (Deci & Ryan, 2000). The job characteristics model (Hackman et al., 1976) argued that the time demands that a job imposes on employees may be significant stressors. Job stress often results from a lack of autonomy (Katzell & Thompson, 1990). Low work complexity can lead to a feeling of boredom for intrinsically-oriented employees, and high work complexity can lead to feelings of exhaustion, anxiety, and stress (Deci & Ryan, 2000). The job characteristics model (Hackman et al., 1976) and job strain model (Karasek, 1979) argue that the intensity of stress caused by time constraints on employees is associated with repetitiveness, lack of autonomy, and disengagement in the workplace. Particularly, the job strain model stated that employees experience higher levels of mental stress when work demands and time constraints are considerably heavy. Job demands may not in themselves be harmful, but they contribute to mental stress when combined with a lack of decision-making autonomy and discretion. Employees may feel overwhelmed by new job demands as they are required to perform tasks beyond their capacity or within the time limit required,

eventually leading to fatigue and disengagement (Karasek, 1979). Such considerations help to explain the reactions experienced by participants during their implementation projects. Increased workloads, limited resources, and tight timelines most likely contributed to their reports of feeling overwhelmed and anxious.

The impact on the personal lives of participants includes the consequences of time constraints, but also elements of work-life balance. Numerous studies (Anitha, 2014; Felicity, 2013; Harrington, 2007; Konrad & Mangel, 2000) have found that work-life balance affects employee engagement and performance. The argument can also be made that there is a causal relationship between time constraints and the work-life balance of the employee. Many participants reacted negatively to the effect that the implementation project had on their personal lives, and the resulting disengagement is understandable in light of these findings. Such findings seem to illustrate the significant impact that time commitments and stresses on employees' personal lives can have on engagement and motivation.

**Information and decision transparency.** All participants addressed the extent to which access to information, quality and frequency of communication, and transparency had an effect on their experiences throughout the implementation project. Kim, Chris, Jenny, and Miles had relatively poor experiences with this topic, while Sean indicated that he generally felt he was kept informed about the progress and milestones of the project. These experiences echo the research carried out by Sejit and Crim (2006), which established job clarity as a significant driver of employee engagement, as people “want to understand the vision that senior leadership has for the organization, and the goals that leaders or departmental heads have for the division, unit, or team” (p. 4).

Clarity of work fortifies an employee's understanding of their work, their goals, and career advancement opportunities. The feelings of unease, anxiety, and uncertainty conveyed by participants are understandable given the lack of clear guidance and perspective into the project by management. For example, in consideration of Sean's experience of having had a high level of communication and feedback about the implementation project, his level of work clarity was therefore satisfied, as was his understanding of the project, tasks, and goals. Xia et al. (2016) conducted a study that similarly found that decision-making transparency and information adequacy in companies had a significant effect on employee trust in management, satisfaction, and organizational commitment. They recommend that companies exercise open and abundant communication practices to increase the availability of information, while at the same time reducing ambiguity and animosity resulting from a lack of such factors. Participant responses also resonate with the research conducted by Robinson et al. (2004), who argued that employees who have a firm understanding of their jobs, goals, and career paths were more likely to be satisfied and have high engagement levels. Likewise, goal theory, which is an exogenous theory, suggests that the goals of employees' work should be specific, clear, attractive, difficult, but attainable (Katzell & Thompson, 1990). Feedback or knowledge of information about goal attainment is highly useful for "maintaining their motivational force" (p. 149). Collectively, these studies illustrate the importance that employees place on feeling informed, included, and aware of project milestones and objectives. Since the participants often felt that information was limited or unavailable, the resulting negative reactions are understandable.

**Learning and development.** Hackman and Oldham (1980) discussed the importance of job training in work design, stating that “training is a very popular device for attempting to improve the motivation and productivity of employees” (p. 19). The theme of preparation and capacity for change was prominent throughout each interview. Kim described how the training she received was too generic and not specific enough to address the nuances and special circumstances often encountered at her company. In general, she felt that training was far too high-level for the scope of the project, and this negatively affected her confidence in her ability to do her job well once they went live. Chris discussed his initial training as being too minimal and conducted too early in the project, which caused him to forget much of what had been learned. Jenny was given minimal training in the new system and discussed the alienating effect this had on her, as she had to “take it into her own hands” to seek system training; this had a negative effect on her feelings of confidence in her management team. Miles also described the lack of training he had received as contributing to his dissatisfaction at work.

Several models can be used to explain the reactions of the participants. Referring again to personal and material resource theory, Katzell and Thompson (1990) suggest that limitations on an employee’s ability to achieve their work goals are demotivating. Training is one such activity that can facilitate goal attainment, while lack of training or preparation to perform new tasks can lead to apathy or learned helplessness. They argue that by increasing the emphasis on training and employee readiness, there will be clear and recognizable benefits to resource improvement and overall employee self-confidence. It is interesting, however, that companies still struggle to carry out training programs consistently and effectively. Hackman and Oldham (1980) state that training programs

are often offered when there is little need for them, or are specifically eliminated in situations where they could have been most used. Chris coincidentally described his company's training as too minimal and conducted too early in the project timeline, frustrating him because it led him to forget much of what had been learned.

Jones et al. (2011) supported this notion in a related study, which found evidence that more rigorous initial training leads to a quicker turn-around time for recovery. Since there will likely be a period of increased stress and decreased productivity after go-live, their study found that the initial dip in productivity and sales was in companies that had a more rigorous training program for employees. Such factors may further contribute to the degree of felt organizational culture, as described by Robinson et al. (2004), who explained that training opportunities may drive employees' perception that their leadership team cares about their well-being and that they are valued. Since many models suggest that organizational culture is an important driver of employee engagement (Aktar & Pangil, 2018), training may likely be the key to setting the tone for engagement (Harter et al., 2002).

**Timelines and project delays.** There were situations in which participants faced project setbacks and challenges that affected their commitment and attitudes towards their jobs. Chris discussed how employees' morale deteriorated during the suspension of the project and described the negative attitudes that arose as a result of scrapping their initial work, and how "starting over" caused people's attitudes to be negative. Kim described how employee attitudes were "kind of toxic" after go-live due to the added workload and reduced productivity. Jenny and Miles both discussed the negative attitudes they had due to a lack of resources and the ability to complete their tasks.

Collectively, these reactions seem to demonstrate the effect that endogenous factors have on job motivation and resulting satisfaction.

Endogenous theories are those that deal with process-related or mediating variables that can indirectly influence motivation on the basis of changes in exogenous variables (Katzell & Thompson, 1990). Such endogenous elements are more difficult to control because they are ultimately the product or consequence of the antecedent exogenous factors. Expectations and attitudes are two examples that are indirectly responsive to modification (Katzell & Thompson, 1990). Attitude theory, for example, suggests that people who have positive attitudes toward their jobs and companies will be more highly motivated to remain in and perform their jobs. An important facet of attitude theory is that people are also likely to inherit the attitudes and behaviors of their team members.

For example, Chris explained how project setbacks and increased workloads affected his attitude and motivation for looking for another job. Deci and Ryan (1975) argued that if a person performs an act that is “inconsistent with one of their internal states (e.g., an attitude, a feeling, a motive) he will experience dissonance and be motivated to reduce that dissonance” (p. 164). Chris was faced with an increasing workload and added responsibility that contributed to a less-favorable attitude and decreased satisfaction, making him less motivated to remain in his current role. His desire to seek other employment was understandable given the need to reduce the dissonance he felt. He also explained how the morale of employees deteriorated when the implementation project was halted and how the resulting attitudes instilled in employees were contagious and long-lasting.

Project delays and setbacks are understandably demotivating for employees, however, they may also represent what Lee and Mitchell (1994) refer to as a “shock.” They define shock as “some sort of event, which we call a shock to the system, that causes the person to pause and think about the meaning or implication of the event in relation to his or her job” (p. 60). They proposed that a large facet of turnover comes from a shock event and that the concept relates to the instinctual “fight or flight” response, which may contribute to the idea that leaving their job is an option to consider. Holtom et al. (2005) argued that companies can help manage negative reactions and turnover from shock events by reducing the dissatisfaction that develops from a lack of communication and transparency.

### **Implications and Recommendations**

This research underscores how and why human factors should be recognized as being equally, if not more, critical to the success of ERP implementations. The eight second-order themes presented in the research were identified and associated with characteristics that influence job satisfaction, motivation, engagement, and morale. The following section provides recommendations to leadership and consultants to help avoid negative impacts on motivation and job satisfaction for employees. The recommendations – and the theme each addresses – are summarized in Table 4.

Table 4

*Recommendations for Improving ERP Implementations*

Recommendation	2 <sup>nd</sup> Order Theme
1. Recognize that ERP transformations re-design jobs, and proactively maintain or add elements to jobs that are intrinsically motivating.	• Job Enrichment
2. Ensure that excellent project management skills are practiced throughout the implementation process.	• Project and Group Goal Attainment
3. Provide mechanisms for employees to participate with, and provide input on, the project and related decisions.	• Choice, Voice, and Involvement
4. Ensure employees continue to have access to adequate personal, material, and social resources as the implementation process inevitably increases their workload. Closely monitor indicators of employee burn-out and disengagement.	• Resource Adequacy • Personal and Time Commitments
5. Regularly practice good, honest, and transparent communication to and interaction with those whose jobs will be affected. Communicate openly and frequently about project status, objectives, and milestones; and provide good explanations when objectives or milestones are revised.	• Choice, Voice, and Involvement • Information and Decision Transparency • Timelines and Project Delays
6. Provide training to practice and learn the new skills and routines an ERP implementation requires. Ensure learning and development activities are tailored (vs. generic), relevant, and timely.	• Learning and Development

**Job enrichment and job design.** Changes in job autonomy and task variety are likely to occur in some manner during an ERP implementation (Hedman & Borell, 2003),

and it is very clear that the majority of interview comments, reactions, and dissatisfactions shared by participants related to aspects of their jobs that changed, which reduced their intrinsic motivation, and thus their engagement and job satisfaction. There is a large body of evidence available (Deci & Ryan, 1975; Macey & Schneider, 2008) that suggests that dissatisfaction may result from a change in a person's work activities that diminishes, decreases, or constricts the key variables that contribute to their intrinsic motivation. For example, Kim explained how the implementation resulted in her having less decision-making authority, less input, discretion, and task variety. Cummings and Worley (2015) suggested that technological systems such as ERP systems may limit job enrichment opportunities by constraining the number of ways in which jobs can be carried out.

The first recommendation that addresses the theme of job enrichment is that leaders be mindful of the implicit job redesign that takes place during ERP implementations and actively and intentionally redesign jobs during this time so as to maximize the chance that the way people work will excite their intrinsic motivation. It is unlikely that an employee's job will remain unchanged throughout an implementation, and it is unlikely that each employee will be able to participate in every choice and decision. Leadership can, however, maintain a dialogue with employees to encourage them to remain open-minded and to communicate with their managers about their work, satisfaction, and how their jobs might change. Doing so may help reduce the amount of anxiety experienced and improve the sense that employees feel valued, supported, and informed.

Strategies can be taken, such as vertical loading, to supplement these changes. Vertical loading is a job design methodology that aims to decrease the gap between performing a job and controlling it (Cummings & Worley, 2015) while enriching employees' experiences with what they do. A vertically-loaded job has responsibilities and controls that were formerly reserved for management. Vertical loading is arguably the most important principle of job design, and as a result, autonomy is generally increased. This could include combining tasks, putting employees in direct contact with their customers or suppliers to gain feedback and understanding, and giving them more responsibility. Job responsibilities will shift irrespective of leadership's participation in their redesign; therefore, the recommendation is to engage proactively in this change. This strategy should lead to a greater sense of personal accountability and responsibility for job results.

**Project management skills and methodology.** Successful implementation of an ERP system depends heavily on strong and consistent project management principles, and failure to understand the fundamentals of project management will have a negative impact on the implementation and user experience (Rajan & Baral, 2018). All participants expressed the importance of having and following an organized project plan and the resulting impact on the achievement of goals, confidence, and trust in the management and implementation team. The effect of insufficient project planning was clearly felt in participants' interviews. It contributed to feelings of disorganization, inefficiency, lack of trust in the project plan and processes, and lack of clear direction and team goal expectations. The implications of these experiences reflect on employees' engagement in terms of clarity of work, their goals, and career advancement

opportunities. This principle often applies interpersonally as well, since employees working in a team or collaborative environment will have higher levels of engagement and commitment when team priorities are clearly articulated through project management processes and goals (Macey & Schneider, 2008). Therefore, excellent project management skills are recommended during an ERP implementation to enhance satisfaction and engagement pertaining to the theme of project and group goal attainment. This should include the establishment of clear objectives, careful attention to the implications of when and how employees are involved, diligent monitoring of the progress of the project, and commitment to project timelines, communication, and methodology on the part of both leadership and the consultants.

**Employee feedback and participation.** Participants expressed how their feelings of motivation, engagement, and trust were effected by having input, choice, and involvement with decisions, planning, and process mapping. Macey and Schneider (2008) stated that feeling involved in one's job, including areas of task engagement and job commitment, is generally considered to be an important facet of the psychological state of engagement. Employees have a higher level of satisfaction with their job and greater levels of organizational commitment if they believe they are able to participate in decisions and plans that affect them (Xia et al., 2016). Furthermore, strategies for involving employees in management, such as providing information to employees, soliciting feedback, and involving employees in decision-making are also effective techniques that help employees experience higher meaningfulness, self-determination, and competence at work (Seijit & Crim, 2006). The third recommendation, therefore, is to provide opportunities for people to engage with, and provide input on, the project and

related decisions in meaningful ways to better satisfy the feeling of having been involved. This recommendation addresses the theme of choice, voice, and involvement generated from the interviews, and can be accomplished by identifying the heaviest end-users by functional area and organizing them into collaborative groups with which core team members can engage to gain input and feedback on decisions and processes. This level of involvement may not be as extensive as those on the core team, but it will allow employees to feel they were able to provide input on key decisions that will ultimately have an impact on their future job tasks and responsibilities.

**Access to resources and time commitments.** There is ample evidence that indicates insufficient resources can negatively affect employees' job satisfaction (Deci & Ryan, 2000; 2002; Katzell & Thompson, 1990; McAllister et al., 2016). All participants discussed the impact of operational disruption, material disruption, and availability of resources on their attitudes and engagement. Resource adequacy reflects the availability of appropriate support structures and sufficient staffing to enable employees to accomplish their work (Katzell & Thompson, 1990). Personal resources may be in the form of training and professional development initiatives; material resources may be in the form of providing technology and equipment to aid in the execution of tasks; and human resources may be in the form of ensuring that team capacity, learning, and effectiveness remain a priority. Employees' perceptions of the work environment are particularly important to turnover (Katzell & Thompson, 1990) and provide insight into where leadership could focus to improve their retention strategies. It is therefore paramount for leadership to be aware of the added workloads and obligations associated with the activities of the project. The fourth recommendation is to ensure that the impact

of the project on daily operations is kept to a minimum by continuing to provide employees access to the same level of personal, material, and human resources as they did prior to the project, while closely monitoring indicators of employee burn-out and disengagement. This recommendation encompasses both the themes of resource adequacy concerns and personal and time commitments as they are intrinsically related.

Leadership should be aware of the potential need to increase staffing prior to go-live to address future-state departmental processes and reduced efficiency. Jones et al. (2011) stated that companies should expect a substantial increase in work intensity and difficulty after go-live as issues get ironed out and people become more accustomed to the technology. Having resources trained and ready will better equip companies to be effective throughout the project, rather than creating burn-out for existing employees who are trying to achieve the same levels of performance they had with their old system.

Vacation “blackout” policies should be carefully considered as they are likely to have a harmful effect on employees’ perception of the organizational culture, which is characterized as the set of beliefs, values, and behaviors shared by employees that enhance the quality and presence of employee engagement (Robinson et al., 2004). In particular, factors that make employees feel valued and believe that their leadership cares about their health and well-being are clear antecedents to employee engagement (Harter et al., 2002). A potential tug-of-war over resources can occur when employees are needed for project planning and process discussions while everyday activities and operations are expected to continue. The option, therefore, is to devote internal resources to the project while at the same time increasing staff levels to backfill their work tasks, or to depend on contractors and consultants in an increased capacity to handle project tasks

and responsibilities. Although economic constraints are a consideration in implementing any form of a new technology system, the unseen social costs of implementation should be considered and integrated into budgeting and planning discussions.

**Information and decision transparency.** Sternad and Bobek (2013) conducted a study that found that employees throughout the ERP implementation timeline viewed communication as having a high impact on system acceptance as it aided in minimizing user resistance. In addition, research by Woo and Maertz (2012) showed that information adequacy about company policies, objectives, and strategies was a significant predictor of both job satisfaction and perceptions of the work environment. Participants discussed how the feelings of trust in management and job satisfaction were effected by expectations, access to information, communication, and transparency. They also expressed how project attitudes, challenges, and fatigue affected their (and their co-workers') morale and engagement. Because these are all exogenous reactions and are more difficult to control as a company, the key message for leadership is to reduce questions of "why."

Implementation projects are a difficult, stressful, and important undertaking, and there is a clear need to ensure proper communication and transparency in order to create a level of shared understanding. The fifth recommendation for leadership, therefore, is to participate regularly in good, honest, and transparent communication and interaction with those whose jobs will be affected. Communicate openly and frequently about project status, objectives, and milestones; and provide good explanations when objectives or milestones are revised. Project delays and challenges are an unfortunate, unwelcome event, but it is important to be mindful of the impact on employee attitudes and keep

them informed and engaged. The less opportunity there is for employees to question why an event occurred or what the implications would be for them personally, the greater the opportunity there is to maintain engagement and momentum. In particular, core team members should be encouraged to represent the project in a positive, optimistic light. Katzell and Thompson (1990) maintained that people are likely to inherit the attitudes and behaviors of other group members. Employees will naturally turn to core team members for insights into what is going on, and whether they seem negative, frustrated, or stressed. This is not to suggest that leadership should be untruthful about what is going on; information can be presented in a positive, albeit honest, manner.

Leadership should also understand that such transparency needs to be tailored one way for people who work primarily in the main office and another for those who work remotely or in satellite offices. Different groups of people in different sites do not have the same level of information at their fingertips, and while providing an abundance of content may prove to be a useful strategy for some, it could easily become overwhelming for others and subsequently ignored. The recommendation, therefore, emphasizes the need to tailor the message to the specific needs of the employee audience.

Communication should be conducted in a direct and understandable manner and communication events should solicit input and feedback from employees. Macey and Schneider (2008) argued that trust is central to the network of antecedent conditions for engagement, and that engaged employees need to make the information presented to them personally meaningful, an objective that can be accomplished through dialogue and feedback about that information. This recommendation addresses three themes generated

from the interviews: choice, voice, and involvement, information and decision transparency, and timelines and project delays.

**Learning and development.** Training and change management practices affect goal attainment, motivation, and self-confidence. Since these variables are important drivers of job satisfaction, the absence of these practices may contribute to the motivation for turnover. Numerous studies highlight the importance of having a timely and systematic training program in place for employees to develop the skills needed to adopt and operate the new ERP system (Chaturvedi, 2005; Jones et al., 2011; Léger et al., 2014; Madu & Kuei, 2004; Saatçioğlu, 2009). A collection of additional studies highlight the importance of training in relation to job satisfaction and motivation (Hackman & Oldham, 1980; Harter et al., 2002; Katzell & Thompson, 1990; Robinson et al., 2004). Katzell and Thompson (1990) proposed that training is a vital tool that increases an employee's self-confidence in their abilities to do their job, thereby increasing their work motivation. Many participants expressed their desire for more rigorous and real-world training sessions, moreover, they placed a high value on training with their own data, and conducting training when it would be most impactful and relevant. The final recommendation, to address the theme of learning and development, is that training should be thorough, timely, and should encourage employees to think more critically, rather than simply memorizing procedural steps. Clearly, the sooner leadership can establish development activities such as training to help employees accelerate through the learning curve, the sooner employees, teams, and companies as a whole are likely to recognize the potential benefits of the ERP system.

### **Limitations of the Study**

The research conducted for this study was intended as a step towards promoting a deeper understanding of how ERP transformations affect end-users. The study is not without its limitations. In terms of the research design, the choice to use a narrative inquiry approach with only five individuals limits the generalizability of the results to a broader spectrum of employees.

Another limitation was the participants' demographics and industry. As discussed in Chapter 3, participant qualifications were intentionally limited to those working in small to medium-sized businesses in the greater Minneapolis/St. Paul area. Three of the five participants interviewed were employed by companies that reside in the manufacturing sector. The participant's experiences may not represent the experiences of employees in other geographic locations, or other industries.

Limitations around the ERP systems described during the participant interviews are also present as implementations of Epicor, SAP, and Microsoft Dynamics were the only software systems encountered. Although the implications of the interviews and themes appear to be broad enough to extend to implementations having involved other systems, the experiences may not be applicable to other platforms as a result.

### **Recommendations for Future Research**

The insight gained from the ERP implementation experiences of participants offers a number of opportunities and recommendations for future research to further understand the effects of ERP implementations on employees.

First, future research could focus on specific departments or groups of people within a company during an ERP implementation, and how their job satisfaction

compares with the experiences of others, especially those less directly involved with technology. Sean's experience with the ERP implementation was rather unique in that he was relatively satisfied with the project in comparison to the other participants who had more negative reactions. It would be worth investigating this difference to evaluate whether his company simply excelled at managing the technological and behavioral risk factors during their implementation, or whether there were any fundamental characteristics of his profession that would inherently prepare him better for this project. Sean was the only participant that came from an accounting background, and it may be possible that such a profession is more accustomed to technology, and thus better equipped to handle implementation projects. Since ERP systems were initially developed for accounting purposes (Jacobs, 2007), it is plausible that, since the profession has functioned exclusively inside software for a number of years, accounting staff may not generally expect a great deal of variation in their duties moving from system to system in comparison with others in different functions or professions. Furthermore, there may be value in researching a larger sample of participants who had positive experiences with ERP implementations. As this study revealed many shortcomings experienced by participants with their implementation projects, at least some of the recommendations made in this study could be reinforced by a study of people who had positive experiences.

Second, while many models help to explain the causes, effects, and impacts of employee satisfaction, there are few models available that incorporate a technology-related framework when addressing organizational change activities. Future research may, therefore, demonstrate that some models are more appropriate for technology projects than others. This study, in particular, focused primarily on exogenous

contributors to work motivation, engagement, and satisfaction and was used as the primary framework for interpretation. While exploring the theme of project setbacks and resulting attitudes, the responses were much more polarizing and the emotions were much more apparent. The topic of endogenous reactions and attitudes to ERP implementations may benefit from further exploration as they indirectly affect motivation and are more difficult to control.

Third, this study specifically targeted employees working in small to medium-sized businesses, and it is recommended that this research be extended to those working in larger organizations (over 500 employees). It may prove valuable to learn whether the themes explored in this study are similar to those of larger companies, or whether there are entirely different themes that occur in larger companies that were not present in this study.

Fourth, several participants discussed the heavy involvement and absences felt by their superiors and colleagues on the implementation team. Since this group was also omitted from this study, including or specifically targeting these employees (i.e., managers) may offer a different perspective on this topic. Specifically, it would be beneficial to understand the obstacles that leaders encounter that might prevent them from better addressing employee concerns. In addition, it may be useful to understand how ERP implementation projects influence leadership and organizational structures themselves.

Finally, this research centered primarily on the perspective of internal employees. It may prove enlightening to consider the greater downstream consequences of

companies going through ERP implementations, such as the customer experience, vendor experience, etc.

### **Summary and Conclusions**

There are clear correlations, as discussed, between employee satisfaction and turnover (Holtom et al., 2005; Katzell & Thompson, 1990; Macey & Schneider, 2008; Maertz & Campion, 2004; Mahan et al., 2018; Woo & Maertz, 2012). Stress contributes to feelings of dissatisfaction, dissatisfaction contributes to intent to leave and turnover, and turnover is costly (Cascio, 2006; Jones et al. 2011; Maertz & Campion, 2004; Mahan et al., 2018; Woo & Maertz, 2012). Excessive turnover creates an expensive, dysfunctional event for a company, but improving its management can yield considerable cost savings and potential competitive advantage (Cascio, 2006; Hausknecht, 2017; Mahan et al., 2018). The purpose of this study was to explore the experiences of employees undergoing an ERP implementation and to identify areas of improvement that leaders can address in order to support and enhance the job satisfaction of employees during the implementation process. Existing literature on the topic has largely focused on ERP implementation risk factors and barriers to success, but very little research has been conducted regarding the employees themselves or their experience with satisfaction with or resistance to ERP transformations throughout the implementation process.

Narrative inquiry was used to generate themes based on the participant's experiences, and participants were targeted because they were under-represented in these types of studies. Many of the participants had particularly negative perceptions, reactions, and criticisms of their ERP implementation project which had negative implications for their job satisfaction. The major themes revealed in this study included

(a) Impact on job enrichment, (b) Project and group goal attainment, (c) Choice, voice, and involvement, (d) Resource adequacy, (e) Personal and time commitments, (f) Information and decision transparency, (g) Learning and development, and (h) Timelines and project delays. The findings from this study add to the scant literature that has examined the impact of ERP implementations on people (Jones et al., 2011; Saatçioğlu, 2009; Sternad & Bobek, 2013), and helps fill the gap in the literature by illuminating how highly complex ERP implementations can be and how far-reaching the human consequences are. In addition, these findings extend the literature by providing recommendations and actions companies can take to ensure employees feel informed, supported, and engaged throughout the implementation process.

Throughout this study, I reflected on my own experiences with ERP implementations, from both the viewpoints of a client and that of the implementer. I profoundly resonated with the experiences of the participants in this study, and many of the heartaches and challenges they endured are aspects I continue to encounter in projects today. Companies do not frequently implement ERP systems, and many of the lessons learned from the completion of such projects are often forgotten since they are not quickly or continually repeated. As a result, consultants have the opportunity to incorporate human factors as a key element in the execution of these projects. It is my hope that these findings will provide leaders with this insight, encourage discussion, and provide tools to better prepare them for the effects that ERP implications can have on employees.

Although ERP systems are one of many technical tools used in business, the most significant risk factors identified from this research were not about the software itself, but

the people and job satisfaction issues related to technological change and stress on an organization. The findings from this study should not be interpreted to suggest that companies should avoid implementing an ERP system simply because employees may be dissatisfied. Rather, the findings should encourage companies to implement ERP transformations in a holistic manner through the recommendations that were presented. Technology plays a vital role in today's organizations and will most certainly continue to do so going forward. The importance of the human experience with that technology is paramount.

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## Appendix A: Interview Questions

1. Please tell me about yourself.
  - What is your job title and role within your company?
  - How many years have you worked for your company?
  - What kind of background and experience did you have prior to joining your current company?
2. Tell me about the reasoning behind your company's decision to migrate to a new ERP system.
  - What did the ERP system selection process look like?
  - How does the ERP system fit the needs of your business?
3. Have you ever been part of or experienced an ERP implementation prior to this?
  - If so, please tell me briefly about that experience.
4. How would you describe your role throughout your ERP implementation?
5. How are IT systems or technological infrastructure changes traditionally or typically introduced in your company?
6. What was your experience with the impact to your own job with the software itself and implementation project as a whole?
7. Tell me about the training and support that you got throughout the implementation project.
  - Is there anything that your company might have done differently or better?
8. Tell me about how you think other people perceived and responded to the ERP implementation project.
9. What impact did the ERP implementation have on your professional or personal life?
  - If the participant describes negative impacts, ask what they company might have done differently or better?
10. What were some of the challenges experienced throughout the project?
  - What could the company have done differently?
11. What went really well? What do you think the company did to make sure these things worked so well?
12. What was your experience with the post-implementation phase of the project? How was this different from pre-implementation?

13. What are your overall perceptions of the ERP system? Would you say that the users are happy with it?
14. Is there anything else you might like to share about the ERP implementation process and its impact that we've not discussed?

## Appendix B: Demographic Information

1. What is your age?
2. What is the highest degree or level of schooling you have achieved?
  - a. Less than a high school diploma
  - b. High school degree or equivalent
  - c. Bachelor's degree (e.g. BA, BS)
  - d. Master's degree (e.g. MA, MS, Med)
  - e. Doctorate (e.g. PhD, EdD)
  - f. Other \_\_\_\_\_
3. Which of the following categories best describes your employment status at your company?
  - a. Part-time (working 1-39 hours per week)
  - b. Full-time (working 40 or more hours per week)
  - c. Prefer not to say
4. Which of the following ERP systems have you used in your career, past or present? (Choose all that apply)
  - a. SAP
  - b. Oracle
  - c. Microsoft Dynamics (AX, NAV, GP, CRM, SL, RMS, 365)
  - d. Epicor
  - e. Infor
  - f. Lawson
  - g. Sage
  - h. I've never used an ERP system
  - i. Other \_\_\_\_\_
5. What role does technology play in your everyday work life?
  - a. Technology does not play a major role in my daily activities.
  - b. I use technology occasionally during the day.
  - c. Technology is a critical component in my daily activities.
6. What would you say is your comfort level with technology in general?
  - a. Very comfortable – I have a high familiarity and comfort with technology.
  - b. Comfortable – I am a skilled user but there's a lot I don't know.
  - c. Somewhat comfortable – I can do the basics but anything more can be intimidating.

- d. Not comfortable – I'm not comfortable with technology or have limited exposure to it.

### **Appendix C: Research Participation Email Request**

Dear [Participant],

I am asking for your participation in a research project of mine, which will assist me in the completion of my Doctorate of Organizational Development and Change (EdD) degree at the University of St. Thomas. My research surrounds the subject of Enterprise Resource Planning system (ERP) implementations. The understanding of the experiences employees have throughout an ERP implementation and what factors may be present that positively or negatively influence employee satisfaction specifically is the focal point.

The purpose of this research study is to examine how human-level attributes or considerations may be accounted for during a software migration which is more commonly thought of as a process and technology project – lessening cost, stress, and risk for a company as a result.

The research study includes signing an informed consent form and participating in a 60-90 minute interview, which can either take place in-person or virtually. You will be asked to review, sign, and date an informed consent form prior to participating.

The interviews will be [In person] with me and will occur at [Date], [Time], and [Location] most convenient to you, or [virtually/over the phone] to accommodate your schedule, afford privacy, and limit interruptions.

For your convenience, I have attached a copy of the consent form for your review.

Your participation in this research study will make a positive contribution and may assist employees in other companies in addressing these factors when implementing ERP.

Through sharing these experiences, other companies may be better informed about how

to successfully accommodate employees' needs to meet challenges they may face during these types of projects.

Your responses will be kept confidential and will only be used for the purpose of this research. Information obtained in this study will remain confidential, pseudonyms will be used on any transcripts, and will remain in my possession. Results will be reported as "themes" and no individual's names or organization will be identified with any specific comment.

Please respond to this email, at your earliest convenience (preferably within 5 work days) to let me know if you agree to participate in my research study. If you agree, please provide the following information:

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location/Virtually: \_\_\_\_\_

Also, provide a signed consent form prior to the interview. If you have questions you wish to discuss, I will also have blank consent forms with me at the time of the interviews.

Thank you in advance for your assistance.

Andy Lawton-Thesing  
EdD Candidate  
Phone: (xxx) xxx-xxxx  
Email:

Attachment