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THE ROLE OF I.T LEADERSHIP IN MERGERS AND ACQUISITIONS: LESSONS FROM CIO INVOLVEMENT

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Abstract: Business mergers and acquisitions have evolved significantly over the past century, with corporations adopting more structured methodologies for these practices. The 1980s marked a pivotal era where a surge in mergers and acquisitions reshaped the business landscape, profoundly impacting organizations. This transformation emphasized the importance of effectively integrating organizational assets, particularly data and information, to enhance overall company value and operational benefits. The utilization of complex software and systems became essential in managing these critical assets, as modern corporations recognized the equivalence of data and information to their physical assets, encompassing processes and trade secrets. This paper delves into the historical evolution of merger methodologies and their relevance in the 1980s and subsequent years. It explores the shift towards data and information as essential components of corporate value and assesses the critical role of software and systems in managing these assets.

Keywords: Mergers and Acquisitions, Organizational Assets, Data Integration, Business Evolution, Software Management

1. Introduction and Background

Since the early days of trading, business mergers and acquisitions have been an established form of business practice and have been implemented in a variety of ways; however, over the course of the past century, corporations became more structured in their merger methodologies.

In the 1980s, a vast number of corporate mergers and acquisitions occurred that affected the existence of organizations at the time, and have continued to do so in subsequent years (Briscoe, 1993). In the 1980s, scholars and business owners began to identify the crucial need to properly integrate organizational assets, such as data and information, to increase company assets, value, and benefits, managing and operating these assets using complicated software and systems. Modern corporations consider data and information on cash flow, which contain the processes and trade secrets of the organization, equally important to their physical assets (Robbins & Stylianou, 1999).

New challenges accompanied modern corporate mergers in technology and information systems (IS). These challenges include identifying the management skill set necessary to complete the merger, remembering to include IT in ex-ante (before the acquisition transaction) planning to allow IT teams to accomplish an effective technology due-diligence process, and avoiding potential loss of business. Technology teams need specific, essential management skills to help achieve proper consolidation of IS and to operate effectively while an

integration project is in motion. For example, companies must manage an integration to focus on all the data and useful and pertinent information that serves the strategic purpose of the merger, in addition to using the same data and infrastructure to conduct day-to-day operations in both entities. However, several areas of information technology (IT) are concentrated or associated with poor performance ex-post (after the acquisition transaction). Today's organizational systems maximize integration benefits only if the interdependency and corporate leaders clear identify business relations of these systems. This dissertation will explore (a) a literature review, (b) the mixed-method research approach, (c) data analysis, and (d) implications (research barriers), and findings analysis. I provide an overview of the mergers and acquisitions process (M&As) and IT M&As.

The main purpose of a merger is to achieve appropriate objectives and dynamic opportunities for the organizations involved; however, a chance persists that problems will develop during the process (Stylianou, Jeffries, & Robbins, 1996). Certain problems can arise during the merger process (Stylianou et al., 1996). These include issues with communication among teams and the failure to identify the management skills that would help improve communication and properly control and govern procedures to handle the integration stage.

Therefore, I aimed to understand the nature of two specific areas of concern that commonly surface during the merger process: the nature of the involvement of the CIO in the ex-ante planning and the quest to retain key personnel through the course of the integration. The mergers under primary study, through interviews and surveys, are located in Saudi Arabia, either the company's home base or the participating branch, yet most of the companies serve an international clientele.

The patterns and waves of M&A activity have long been a subject of research (Andrade, Mitchell & Stafford, 2001; Huang, Ling, Yang & Zhao, 2012; Schweiger, 2002; Vielba & Vielba, 2006). Andrade et al. (2001) found a strong correlation between the pattern of M&A activity in each decade and the industry in which the activity took place, and found one driving factor that generally drives each wave of activity. A prominent factor in the last score of years has been industry-related deregulation (i.e., the telecommunications industry, financial institutions industry, U.S. auto industry, airline industry, etc.; Andrade et al., 2001; Matthews, 2013; Ovtchinnikov, 2011). Each wave also coincides with a surge of activity in the economy, meaning that a great deal more M&A activity happens in a healthy economy than in a recession, and vice-versa: a healthy M&A market is generally a sign of a growing or recovering economy (Huang et al., 2012; Matthews, 2013; Vielba & Vielba, 2006). A more recent analysis of mergers of the past decade found them to include major industries each ridding themselves of smaller or less profitable businesses in favor larger ones, as major businesses roll over the smaller ones (Vielba & Vielba, 2006).

1.1 Statement of the Problem

The process of integrating IS can be critical to the success of corporate mergers (Wijnhoven, Spil, Stegwee, & Tjang A Fa, 2006).). Factors that can support or influence the integration of IS include management skills and attributes in technology units (Stylianou et al., 1996). Questions that can be asked include, Why should the focus be on the phenomena of mergers and acquisitions in the area of IS consolidation? Is this phenomena impacted by technology consolidation? Is IS considered a major element for success or failure in merger activity, due to the value in business continuity and information? For the present analysis, market data and knowledge repositories on mergers are readily available online for researchers to review and discern their record of accomplishment or failure.

However, addressing the specific engagements on how to handle IS issues of merger technology consolidation, which could create a sense of disconnection with senior management, needs to be evaluated personally.

The majority of existing information covers quantitative data, such as financial statements and merger performance evaluation, available for some companies. Yet, that information lacks sufficient qualitative data to understand how IS are handled in the M&A process, resulting in a lack of clarity from quantitative studies on M&As. Integration team leaders should have qualitative research skills, because data collection in a cultural audit demands excellent interviewing and observational skills, where this collected information is to be analyzed and compared against the collected data (Tetenbaum, 1999). Therefore, analyzing qualitative aspects and methods of analysis will be a main part at this research. By achieving an effective quality of qualitative data, I provided a better understanding of necessary IS integration management skills for successful mergers, contributing valuable assessment of what is needed to consider, prior to amerger technology integration. The overall analysis of any corporate merger decision should involve IT due diligence, which adds value to technology expectations in the transition stage, and includes the retention of key personnel from both companies involved in the M&A (see Appendix A: IT Due
Diligence checklist).

1.2 Hypotheses

Two trends emerged in the initial research phase: M&A activity that includes the chief information officer (CIO) or other IT manager in ex-ante planning has a greater chance of success, and a primary concern for all acquiring companies, particularly those seeking to acquire the target company's IT, make one of their main objectives the retention of key employees (Lajoux, 2006; Roehl-Anderson, 2013; Vielba & Vielba, 2006). These trends revealed areas for potential research and allowed the formation of two hypotheses as areas lacking in the existing research. First, having the CIO or other IT managing head (here referenced simply as the CIO) involved in ex-ante due-diligence planning promotes success (Lajoux, 2006; Roehl-Anderson, 2013; Vielba & Vielba, 2006). However, what is less researched is if *not* having that individual involved in ex-ante due diligence guarantees failure. This research puts forth the following hypothesis: In M&A projects, involving the CIO or other key IT staff in the ex-ante due-diligence process aligns with successful IT integration.

To clarify, this hypothesis does not suggest that success is guaranteed by involving the CIO in the ex-ante due-diligence process; rather, that doing so increases the chances for success. Second, incentives are generally rewarded with loyalty in retaining key IT staff; however, incidents must have accrued when these incentives failed to work or the company did not offer them early enough or to the right employees. As a result, vital information left the organization when those employees left. The second hypothesis put forth by this research is, retaining key IT staff promotes the successful accomplishment of technology integrations objectives by the targeted deadlines. The precise extent to which these staff members affect the integration process was explored in this decision; the retention of key staff is highly desirable, promoting success.

To summarize the two hypotheses:

1. In M&A projects, involving the CIO or other key IT staff in the ex-ante duediligence process aligns with successful IT integration.
2. In M&A projects, retaining key IT staff aligns with successful technology integration by targeted objectives.

1.3 Definitions

To properly discuss M&As, takeovers, IT, IS, and CIOs, it is necessary to properly define the terms. The *Reuters Glossary of International Financial and Economic Terms* (1982) defines merger as the umbrella term under which acquisition and takeover fall; it is the "fusion of two companies or, sometimes, an acquisition or takeover of one company by another" (p. 81). Lajoux (2006), in contrast, defined merger as a type of acquisition, where the acquisition is the transfer of ownership and merger is "a [specific type of] transfer of ownership in which one entity legally disappears into the other" or as "any acquisition consummated with a plan for integration of significant resources, operations, and/or technology" (p. 4). Stewart, Wingate, and Smith (1963) defined a merger as "an acquisition that takes place with the agreement of the board of acquired company" and a takeover as a "direct bid to the shareholders of the other company, although the board of directors may oppose the bid" (p. or para ##).

Jones (1982) distinguished between terms, defining a merger as a "marriage of two companies, usually of roughly the same size with an inherent willingness to cooperate," whereas a takeover is "a series of transactions whereby control is achieved over the assets of a company" (p. or para ##). Bengtsson (1992) determined that most organizations use these terms interchangeably with very loose definitions and are most likely to use the definition that is best suited to the image they wish to project.

Roehl-Anderson (2013) defined due diligence as the process of "getting the necessary information up front" (p. 24). The Center for Chemical Process Safety (CCPS, 2010), defined due diligence more elaborately as an "investigation or assessment of a business or of certain assets … to evaluate the assets, liabilities, and potential liabilities of a business" (p. 54). The term "due diligence" typically refers to voluntary investigations. It is vital that the acquiring company perform thorough due diligence on the target organization prior to negotiations, which is the typical form of due diligence performed. However, it is also beneficial to perform due diligence on the company's own assets prior to putting them on the market (CCPS, 2010).

The terms IT and IS are also used interchangeably virtually universally to define the same tools that are being used. In practice, IT is defined as the methodologies (i.e., system controls, system design and analysis, storage and retrieving of information from that storage, data conversion, and programming/coding), processes, and tools and all associated equipment necessary to complete these activities: collecting, interpreting, and presenting information. Broadly defined, IT can also incorporate office automation, telecommunications, and multimedia.

In contrast, IS comprises a much broader scope of methods of information, being a combination of IT, as well as such simple means as a pen and paper and includes any means by which information (raw data), is input, stored, transmitted, and distributed between parties, including telecommunications, computers, microelectronics, even simple calculators. IS also includes the skilled personnel who input, interpret, and extract the necessary information in the needed formats (Andrade & Stafford, 2011). Despite distinct differences between the two terms, most businesses use them as virtually the same term and title their departments under IS or IT, with virtually no consideration to the actual term's translation (Carrillo, 1998; Vielba & Vielba, 2006).

The technology used for information management, as well as the information itself, is considered a primary asset and a major strategic concern for most organizations (Carrillo, 1998). Walton (1989) developed a triangle that emphasized the importance of IT, putting IT strategy on the same level as overall business strategy and organization strategy, highlighting its significance. IT and business strategy should be developed and advanced simultaneously, as they each depend on the other

(Carrillo, 1998).

1.4 Defining Success and Failure

Defining the success or failure of a merger is a complex task, due to the number of variables involved (Roehl-Anderson, 2013). The easiest way to measure the success or failure of a merger is to determine whether shareholder value increased; yet this information is merely a tiny window into the M&A vista (Roehl-Anderson, 2013). Although successful mergers should ideally increase shareholder value, not all do; and some mergers considered failures offer short-term gains. Success depends on when the evaluators study the numbers and which criteria they used. Many mergers fail to achieve the goal for which they were justified. One study (Roehl-Anderson, 2013) found that approximately 60% of mergers failed to achieve the strategic objectives the company stated as their goals in the desired timeframe. Another study found that in excess of "50 percent of acquisitions have fallen short of premerger expectations" (Fairfield, 1992, p. 23). Companies achieved anticipated synergies in less than 30% of mergers and productivity for the first 4 to 8 months often falls below 50% after the close of the merger. However, 77% of mergers fail to earn back the cost of capital. Additionally, nearly half of company executives leave in the first year, and 75% by the third year. These figures highlight the riskiness of the M&A undertaking while providing several means by which to measure success (Roehl-Anderson, 2013).

One aspect of M&A outcomes that must remain at the forefront is that not all mergers are undertaken to improve stockholder value, at least in the short-term. One example comes from the technology market, specifically an interview with a former retail channel manager at a major U.S. manufacturer of central processing units. The interviewee was willing to discuss the company's acquisitions on the record anonymously. The company acquired numerous smaller companies through the 1980s and 1990s.

Market analysts viewed these acquisitions as failures because the products the target companies sold were quickly removed from the market and the companies themselves were dissolved. However, the acquiring—predator—company was able to retain the intellectual property, which was the reason for the acquisition, and that technology is still used today, making the mergers a success, even though the public viewed them as failures. Internal knowledge is imperative when determining the success or failure of a merger.

To properly and correctly measure the success (and failure) of a merger or acquisition, one must first fully identify and understand the motivations behind the transaction. Although the standard simplistic measurement of evaluating shareholder value can be used for many mergers, complex motivations and outcomes often require the consideration of multiple factors that may not directly relate to shareholder value or even to earnings. Four variables determine whether a merger was a success (Jones, 1982):

1. Cash flow
2. Growth or expansion of customer base
3. Revenue
4. Shareholder value

Finances can be evaluated in the short term (6 months or less from the time of the merger), intermediately (6 to 12 months after the merger), or long term (more than a year after the merger), but when making comparisons, one must be consistent across the business transactions being compared and studied. To properly evaluate the value a merger has added or subtracted from the acquirer, it is optimal to study the results in the short and long term (Harrison & Farrell, 2008).

1.5 Addressing the Hypotheses Questions

1.5.1 Research Space

The resources used to obtain the answers to the research questions included the following:

1. M&A consulting firms
2. Recently merged companies
3. The LinkedIn social technology tool
4. Technology information-services providers
5. Journal and newspaper articles
6. Company records, statements, and public financial information 7. Company histories and statistics

1.5.2 Mixed Methodologies

The primary methods of analyzing collected data for this study included the use of a mixed methodology in which sociotechnical and historical methods were used to support each other in accepting or rejecting the hypotheses.

1.5.2.1 Quantitative

Evaluation through analysis and manipulation of the statistics provided Secondary data analysis Sampling

1.5.2.2 Qualitative

Documentation Conceptualization, coding, and categorizing Examining relationships and displaying data Authenticating conclusions Reflexivity Assigning a value to or associating a value with the qualitative data allows for some quantitative analysis of qualitative data. The values are assigned in one of four ways: o Nominal o Ordinal o Interval o Ratio Can be analyzed directly by coding qualitative data with quantitative values

Theories Used and How the Research was Grounded

The two theories used in this study are the two methods of research that were used to collect, analyze, and interpret the findings; several reasons exists for using two methods of research: historical and sociotechnical. The use of the historical research method is based on the following set of axioms:

A vast expanse of knowledge is available to inform this study.

That knowledge will enable me to examine more than the immediate time period.

Trends are revealed through the study of different time periods.

The sociotechnical research methods relate to the following:

The merger is not just of technology but also culture and the social aspect of an organization; a clear clash of either will cause the merger to fail.

Allow for analysis of the current time period.

If a trend is revealed through past research and confirmed by current research, researchers can make future predictions.

1.5.3 Knowledge Gained

The new knowledge from this study confirmed the necessity of having the CIO involved in ex-ante due diligence. The outcome also initiated the investigation as to the effect of not retaining key IT personnel and explored the value of doing so. Outcomes showed the benefit of setting more realistic or effective goals and expectations for the entire M&A project by not focusing singularly on business value. In other words, better expectations equals better execution.

Backup Plan

In several possible scenarios this study might have failed to significantly prove or disprove the hypotheses; by preparing for these scenarios, the study was less likely to fail. Worst-case scenarios arose with the total absence

of information: no applicable or appropriate case studies in historical research, no company willing to be surveyed or personnel interviewed, and a total failure to extract information from any of the planned sources.

In this instance, if the study had failed to yield the necessary responses, the secondary research plan was to move into an action-research mode. In other words, I would have assessed the supervision or observation of an active M & A to monitor how it performs, also using the other means of gathering information on the companies such as historical research, and if possible, conduct brief surveys and interviews of the current, incomplete M&As. Such information would not have been as thorough as analyzing a completed M&A, as it would be impossible to determine how many objectives were met by a specified date, or completed altogether, when the merger is still in process. This plan basically required the use of existing data and monitoring one or more active M&A processes as well as monitoring news outlets— television, journals, and newspapers—in addition to other academic research that explores the M&A space of knowledge, though not necessarily these hypotheses. As a sufficient amount of data was gathered, it was unnecessary to implement this plan.

2. Review of the Literature

2.1 Introduction

Much literature and research exists on M&As, examining it from almost every angle, particularly with regard to what is arguably its greatest weakness: ex-post integration; however, the literature covering the subject from the perspective of IT is much more limited. Even so, several recent studies on IS described how companies are integrated together ex-post. This review begins with an overview of the subject, and then progresses by addressing M & As at large before narrowing the focus to IT and the study directive of this research.

The following basic statement has been proven to be true by a multitude of studies, from a wide variety of sources: integration is arguably the most vital piece of

M&As, and the one that carries the most mistakes and causes the most failed mergers (Alaranta & Henningsson, 2008; Andrade et al., 2001; Angelo, 2013; Lajoux, 2006;

McKiernan & Merali, 1995; Mehta & Hirshheim, 2004; Schweiger, 2002; van de Vliet, 1997; Vielba & Vielba, 2006). Each author assigns a different direct culprit to M&A failures, ranging from culture clash (Bellingham, 2010; Daniel & Metcalf, 2007; Olie, 1990; R. A. Weber, 2003) to IT integration (Vielba & Vielba, 2006), yet each agrees that the integration process itself will make or break the M&A process.

Integration is "arguably … the most important phase of the whole M&A process [which is] action oriented and requires a strong delivery focus" (Vielba & Vielba, 2006, p. 145). The aspect of the M&A process that has been researched most in recent years has been its association with IT and how IT affects and is affected by a merger and the subsequent integration (Earl, 1996; Galpin & Herndon, 2007; McKiernan & Merali, 1995; Robbins & Stylianou, 1999; Roehl-Anderson, 2010, 2013; Vielba & Vielba, 2006; Wijnhoven et al., 2006). This small sampling of the mountainous research conducted in this field in the past 20 years yielded trends: first, the absence of effective involvement of IT, the CIO, in the earliest stages of the M&A process is among the numerous reasons given for failure (Vielba & Vielba, 2006); second, locking in, recruiting or rerecruiting key talent with necessary skills essential for the company's merged future is always a priority and a chief concern, being an action item in most instances where incentives to stay are usually rewarded with loyalty (Earl, 1996; Galpin & Herndon, 2007; Roehl-Anderson, 2013; Schweiger, 2002; Vielba & Vielba, 2006; Whitaker, 2012).

2.2 Mergers and Acquisitions

The literature revealed a wide variety of results and a number of trends in the questionable successes and overall results of M&As. For example, 50% of acquiring companies report results between neutral and very poor (van de Vliet, 1997). In addition, an often-cited study by Violano found that 80% of mergers destroy the value of the acquiring, predator company (as cited in Baker & Niederman, 2014; McKiernan & Merali, 1995). Research at Brown University found that in excess of 50% of M & As, particularly mentioning acquisitions, fell severely short of ex-ante expectations (Fairfield, 1992).

In contrast, anecdotal sources indicated that a full 70% of acquisitions, again making the distinction between merger or acquisition rather than just a general transaction (M&A), failed to meet the ex-ante expectations of the acquiring company, and more than 50% were total failures, by any measurement (Linder, as cited in Earl, 1996). Between 50 and 60% of acquisitions made by organizations were divested at a later date, often at a loss (Earl, 1996). A large majority, between 33 and 60%, of acquisitions ended in divestiture (McKiernan & Merali, 1995). In addition, return on equity in units acquired and market share often faltered ex-post M&A (Earl, 1996).

The majority of studies on M&A activity found that mergers do tend to create shareholder value; however, the preponderance of those gains temporarily accrued to the target organization (Andrade et al., 2001). The evidence of gains or losses experienced by acquiring organizations were more unpredictable, unreliable, and often indistinguishable from zero, although this is not a definitive statement, as each merger is unique. "Thus, it is difficult to claim that acquiring firm shareholders are losers in merger transactions, but they clearly are not big winners like the target firm shareholders" (Andrade et al., 2001, p. 112).

Through the course of research on 96 companies and organizations, Kalra (2013) found that, on average, the result of mergers is the destruction of value, confirming the reports of Andrade et al. (2001), McKiernan and Merali (1995), and van de Vliet (1997), among others. Kalra's (2013) research, supported by Moeller, Schlingemann, and Stulz (2005), found that the destruction of a company's value was "irrespective of their pattern over a long period of time and the destruction is relatively greater in the case of unrelated mergers" (para ##). Moeller et al. (2005) analyzed the mergers that occurred during two previous merger waves and found that, even when taking the initial earnings of target-company stockholders into account, the overall net impact for the period between 1998 and 2001 was a drop in net value of $134 billion. Bekier, Bogardus, and Oldham (2001) found that a Southern Methodist University study examining the results of 193 mergers between 1990 and 1997, each with a net worth of $100 million or higher, found that "revenue growth was fairly elusive" (para ##).

In the first quarter ex-post announcement, merely 36% of targeted companies maintained their revenue stream. By the third quarter, a meager 11% averted a slowdown of business revenue or sales and the median lag held at 12% (Bekier et al., 2001). This lag and the related slowdown of business had three direct causes: (a) The target business continued to underperform; (b) customers were unsettled; and (c) staff was distracted (Bekier et al., 2001). Bekier et al.'s (2001) research also studied what might have been by examining a merged entity comprising two businesses, each with healthy growth going into the merger. Researchers compared the merged company's actual results with a conservative estimate of what each business could have been expected to earn in their respective markets; they found that sales fell short of the projections of the separate entities. In all, 42% of acquirers lost ground in their relative market (Bekier et al., 2001).

Thousands or even tens of thousands of M&As occurred in the last decade, rising and falling with the economy. The number of transactions in the United States peaked in 2007, when the government pushed the financial sector

into merger after merger, and the value of the mergers stayed on par with the volume (this comparison fluctuated year to year; however, in 2007, they were in sync; Institute of Mergers, Acquisitions and Alliances, 2014). The 10 "biggest deals" in 2013 included mergers from around the globe. Number 10 on this list was in the semiconductor industry, an industry that is no longer growing and markets are shrinking. The to and Number 3 manufacturers, Applied Materials and Tokyo Electron merged to form one larger corporation that hoped to weather the market contraction. The value of the merger was $10 billion. Analysts believed this merger signaled increased numbers of mergers in this industry, as the mature market squeezed profits (Burrows, 2013).

Spectra Energy Partners joined master limited partnerships, announcing it was acquiring assets from Spectra Energy Corp, turning it into "one of the largest, feebased [master limited partnerships] in the country" (Burrows, 2013, para ##). The $9.8 billion deal was expected to generate earnings of 9% for the acquirer until 2015. The merger of American Airlines with U.S. Airwaves made headlines all over the world, particularly in the United States, creating the world's largest airline. Considering the size of the merged entity, with an anticipated purchase price of $11 billion, this merger now allows the combined airline to compete in the "consolidation crazy" airline industry (Burrows, 2013, para ##). The healthcare industry has also seen a massive number of consolidations and mergers, but the $13 billion union between Thermo Fisher Scientific and Life Technologies, the former a manufacturer of home-care devices, the latter a genetic-sequencing laboratory, is the largest.

The acquisition of Virgin Media by Liberty Global for $16 billion is allowing the new, larger company to compete more effectively against the top broadcasting company in the UK, and their joint market share is up 17% since the deal closed (Burrows, 2013).One shocking merger was the union of bitter rivals Publicis and Omnicom, as a "merger of equals" for $17 billion, diminishing the Big 4 advertising giants down to three (Burrows, 2013). General Electric (GE) also sold off NBCUniversal to Comcast for $17 billion, which pundits believe will be a better fit for a cable company than a conglomerate like GE, but it is too soon to determine if this was ultimately a good move (Burrows, 2013).

The publicly traded company Dell went private as the firm's founder, M. Dell, bought out shareholders for a massive $25 billion (Burrows, 2013). One of the largest two mergers of 2013 were Berkshire Hathaway purchasing H. J. Heinz with the help of a partner in private equity. The deal's value was $23 billion and when the deal was announced, it was anticipated to presage a "banner year" in 2013 for mergers and acquisitions; however, this anticipation did not pan out. The largest merger of 2013 was the $130 billion deal Verizon made to buy out Vodafone's stake in Verizon. Vodafone is arguably the largest telecommunications company in the world, and Verizon was hoping to regain and retain its own property. The forecast for this purchase looked promising for Verizon stockholders as, even though the market is no longer growing by leaps and bounds, Verizon itself remains strongly profitable (Burrows, 2013).

In the most costly hostile takeover of all time, as well as the most costly merger of all time, at $202.8 billion, all in shares, Vodafone acquired Mannesmann in 2000 (Holiday, 2012; "Vodafone Seals Mannesmann Deal," 2000). Although this was technically a merger, because the deal was sealed mere days before the hostile takeover was finalized reveals this merger to be more of a hostile takeover than an agreeable merger, with the deal being struck merely to gain a slightly increased value for shareholders ("Vodafone Seals Mannesmann Merger," 2000). Motivations for this merger included Vodafone's desire for Mannesmann's market share as well as the projected and expected synergy savings of more than $730 million (Hopner & Jackson, 2001; "Vodafone Seals Mannesmann Merger," 2000). The merger was not expected to have a great impact on staffing, as there was little

overlap in business practice or market share. The merger turns Vodafone into the largest telecommunications company in the world ("Vodafone Seals Mannesmann Merger," 2000). This merger resulted in the dissolution of the conglomerate Mannesmann, as all manufacturing-related operations were divested (Holiday, 2012).

2.2.1 Successful Mergers

Although many believe far more failed mergers exist than successful ones, Rogers of the Revenue Group believed that the figures are reversed and this perception is due to the increased press coverage of failed mergers and not an actual increase in volume (as cited in Y. Weber, Oberg, & Tarba, 2014).

Although no survey or analysis counts or tracks every merger, particularly the thousands of small ones, other sources concur with the belief that up to 75% of mergers fail to live up to ex-ante expectations (Bragg, 2001; CCPS, 2010; RoehlAnderson, 2013). However, analysts consider numerous major mergers successful in a variety of fields and sizes (see Appendix B: Table B1). The four mergers highlighted in the appendix are Sallie Mae with the USA Group (2000); Exxon and Mobil (1999); Walt Disney Studios with Pixar (2006); and InBev with Anheuser-Busch (2008). These mergers have at least two distinctive features that helped to lead them to success:

Focus on culture: Culture integration is the primary failing point of most mergers (Bellingham, 2010; Daniel & Metcalf, 2007; Duckers, 2002; Greengard, 1997; Sinkin & Putney, 2014). Concentrating effort to effectively blend various corporate cultures eases the way toward integration and provides comfort for any target company's employees who fear their culture will simply be discarded (Bellingham, 2014; Duckers, 2002). Although blending of two cultures is more time consuming, knowing that they are not being asked to give up everything they are used to encourages employee loyalty (Bellingham, 2014; Duckers, 2002; Roehl-Anderson, 2013). In addition, as shown in the examples in Table B1, some organizations left their new acquisition in place without making major changes.

During the Anheuser-Busch/InBev merger, the St. Louis home base of Anheuser-Busch simply became the North American headquarters for the merged international company. In doing so, Anheuser-Busch became a fundamental part of the largest brewer in the world. Blending cultures offers the least resentment but because it is the most time consuming, and therefore the most costly, the question for the acquiring company becomes, How important is it to keep the target's staff? Considering this question, Disney left Pixar alone in their home in Emeryville, California ex-post merger rather than force cultural changes on them that would have come by forcing Pixar to merge with Disney's Burbank headquarters. This was because Pixar's staff was its most valuable asset and Disney did not want to derail their loyalty or creativity (DePamphilis, 2009). By focusing on Pixar's culture, the merged company was able to retain vital talent (Walker & Price, 2000).

Thorough Due Diligence: Due diligence is the most important premerger step because during this phase the acquiring company evaluates the target's data quickly and efficiently, analyzing for value and viability (Schweiger, 2002).

During due diligence, the acquiring company ascertains bargaining information for the present and potential for the future (Galpin & Herndon, 2007). Recently companies customarily performed analysis beyond the three bottom-line departments: legal, financial, and commercial. Due diligence is not an optional process and should be performed by each department; it is especially important for IT and human resources (Andrade et al., 2001; Baker & Niederman, 2014; Roehl-Anderson, 2013; Vielba & Vielba, 2006; Whitaker, 2012). As due diligence slowly expands throughout the business with each new merger, the business world has become increasingly aware of its importance in the world of IT. The main focus of IT due diligence is to obtain a complete understanding of

the target's infrastructure: its technology, processes, and people. This process enables the acquiring company to ascertain the capabilities of the target, affording the opportunity to assess any potential integration problems, synergies, or costs based on their own IT strategy and the business goals and strategy of their parent company (Vielba & Vielba, 2006). Appendix A reveals just one example of a due diligence checklist for IT (RoehlAnderson, 2013, pp. 212–213).

2.2.2 Failed Mergers

Researchers can draw on an even larger variety and quantity of highly publicized merger failures; even disastrous unions that ultimately cost shareholders millions of dollars. In 2009, CNBC Online published the "Top 10 Best (and Worst) Mergers of All Time"; seven of these mergers were failures, and three were classified as "Utter Failures." Appendix B, Table B2 reveals some of the more publicized failed mergers, all of which occurred in the last half century, including the union of New

York Central rail line and Pennsylvania Railroad (1968); Daimler Benz and Chrysler (1998); Mattel and The Learning Company (1999); and Sears and K-Mart (2005). Table B3 highlights the most egregious utter failures during the same period, namely the disaster of Quaker and Snapple (1994); the money drain of AOL and Time Warner (2001); and the financially devastating Sprint and Nextel (2005) mergers.

Two studies, conducted 3 years apart, analyzed the total success or failure rate of European mergers (Voigt, 2009). The first study, conducted by Bain & Company in 2004 found that shareholder value was neutrally or negatively affected by a full 70% of mergers. In 2007, the Hay Group and the Sorbonne's results revealed that an even greater percentage of mergers—90%—failed in their quest to reach their financial goals.

Analysts identified multiple possible causes for poor company performance postmerger. Two major previously discussed factors can promote success if done correctly: company culture and due diligence. If the company fails in either of these two areas, either through lack of forethought, planning, or sheer merger naïveté and inexperience, it can cost the company millions.

The most common problem with mergers, and one that has a direct impact on the success or failure of the venture, is the integration process. Widely stated, integration is the most likely cause of merger failure. Further in this literature review, I present the integration process in greater detail; however, it is relevant to mention here as a main cause of merger failure. One of the highly underrated factors in assessing success and failure is efficiency (Jones, 1982). It is quite difficult to take accurate measurements after a merger because so many job duties will have changed. Management's focus on price rather than the strategic fit of the acquisition can negatively affect the results of the transaction and postmerger synergies (McKiernan & Merali, 1995).

Trends in poor postmerger performance include incongruent objectives between managers and shareholders; "short-termism," which entails capturing and extracting the target's value immediately through measures such as tax benefits or stripping company assets instead of creating value; and a divergence between objectives of predator company or organization and target company or organization. Although some mergers create synergy between the two companies, frequently through the reallocation of company resources or gains in efficiency in the way the company uses assets, these synergies are oftentimes the result of "piecemeal rather than systematic, ex-post activity" (McKiernan & Merali, 1995, p. 54). Several common causes and trends of merger failure follow:

1. The top two causes of merger failure were identified previously as promoters of success when they are done correctly. When management falls short of performing the proper (and thorough) due diligence in each department in the company, particularly IT, or fails to consider the importance of integrating culture and offer it

the necessary attention, then the merger is bound to fail (Barnett, 2012; Bellingham, 2010; Daniel & Metcalf, 2007; Roehl-Anderson, 2010, 2013; Sinkin & Putney, 2012).

2. Managers who are unskillful are incapable of properly identifying the changes that must occur and implementing those changes. As this problem becomes increasingly apparent, predator companies have started to assess this quality in the managers of the companies they target (Jones, 1982).
3. Companies do not develop corporate and strategic plans for the target or acquired company. These plans help emphasize the attractiveness of growing the company through acquisition (Jones, 1982).
4. Focus purely on revenue and not cultural changes or proper implementation of the necessary integration plan can cause failure (Bekier et al., 2001).
5. Failure may accrue from inadequately planning postmerger changes (Jones, 1982).
6. Inadequate or poor strategic "fit" between the two companies in size, structure, products, or markets of the organization can cause failure (Jones, 1982).
7. Managers who are unfamiliar with the newly acquired company's structure, products, or markets may cause failure (Jones, 1982).
8. Paying an exorbitant price for the target that diminishes shareholder value and takes a great length of time to achieve revenue or have the new asset pay for itself may cause failure (Jones, 1982).
9. Organizational structure incompatibility as well as incompatible management styles and conflicting personalities may cause failure (Bellingham, 2010; Jones, 1982; Voigt, 2009). "These aspects (people and organization) are often ignored and can be critical factors in defining whether a merger was successful or not" (Sharkey, 2006, p. 44–45).
10. Failure can accrue from underestimating the cost and resources needed to make the necessary postmerger changes as well as underestimating the sheer volume of changes necessary (Jones, 1982).
11. Failure or delays may result from difficulty in achieving and realizing the anticipated synergy (Jones, 1982).
12. Clash of priorities between the two newly merged management teams can cause failure (Voigt, 2009).
13. Defining the new organization's IS and a general reluctance to identify and define IS and IT early enough in the process may cause failure. IT/IS can play either a reactive or proactive role in M&As (McKiernan & Merali, 1995).

One or a combination of factors can mitigate successful postmerger performance, resulting in merger failure.

2.2.3 Motivation for and Benefits of Growing a Company Through Merger

The motivation for growing a company through M&As vary by case and depend on management and shareholder priorities and goals. However, basic tenets remain relatively constant. Motivations listed below may be mixed to drive mergers forward (Andrade et al., 2001; Carrillo, 1998; Galpin & Herndon, 2007; Jorgensen & Jorgensen, 2010; Kalra, 2013; Minority Business Development Agency, n.d.; Schreiner & Angelo,1995; Voigt, 2009; R. A. Weber, 2003):

1. Boosting profits
2. Building resources
3. Cutting costs
4. Strengthening finances
5. Acquiring valuable resources (i.e., patents, technology, intellectual property, etc.)

6. Growing quickly/accelerating natural growth
7. Reaching more customers or wider markets
8. Diversifying product
9. Reducing competition
10. Obtaining skilled staff or a particular talent group, if steps are taken ex-ante to keep them ex-post
11. Merging two or more weaker or underperforming companies to form one stronger company
12. Gaining competitive advantage

2.2.4 Types of Mergers

Five basic types of mergers depend on company and shareholder goals and the strategic alignment of the businesses involved: conglomerate, horizontal, vertical, product-extension, and market-extension mergers (Minority Business Development Agency, n.d). Each type of merger has a specific objective and strategic goal:

Conglomerate merger: In mergers between businesses involved in completely unrelated business activities, each line of business in the merged company will continue to face the same competition in each of its markets. One of the world's largest conglomerates is GE and its financial arm, GE Capital, created through a series of mergers.

Horizontal merger: Two companies being merged operate in the same industry. Prior to the merger, the two organizations were likely competitors, leaving fewer firms or businesses in the market. A recent example of this type of merger is the Office Depot and Office Max merger.

Vertical merger: Two or more companies offer parts for the same finished good merge or two businesses that operate at separate levels of the good's supply line merge to consolidate costs. One example is the merger of AMD computer processor merging with ATI, a maker of graphics cards, as both go into the finished piece, a computer.

Product-extension mergers: Two organizations that operate and sell products that are similar in nature and occupy the same market join forces. An example from the technology field is Intel's recent merger or acquisition of McAfee Anti-virus. They are in the same market and relate to the same home or business computer.

Market-extension mergers: Two businesses that deal in the same goods but in completely different markets seek to widen their client base. A prime example is found in telecommunications, the merger of SBC, Pacific Telesis, and AT&T. The last one has the name that survived but was created through mergers.

2.2.5 Integration and Integration Strategy

Without successful integration of an implementation plan, planning will often cause problems. Managers responsible for implementing the plan may not be the ones who designed or orchestrated it, nor do they take part in preacquisition discussions or planning sessions (McKiernan & Merali, 1995). Four distinct types of acquisition integration strategies are absorption, symbiosis, preservation, and holding (Baker & Niederman, 2013; McKiernan & Merali, 1995). The two that pose the greatest challenge for ex-post IT/IS integration are absorption and symbiosis (McKiernan & Merali, 1995) because in both models, strategic interdependence is high (Baker & Niederman, 2013; McKiernan & Merali,1995). IT/IS becomes proactive during the M&A process when it creates "opportunities for gaining competitive advantage. It is a facilitator of organizational integration" (McKiernan & Merali, 1995, p. 4).

Figure 1 (McKiernan & Merali, 1995, p. 56) shows where each type of acquisition strategy fits in strategic interdependence and organizational autonomy. Diagrams of samples of these, found in Appendix C, are simplified in Figure 1.

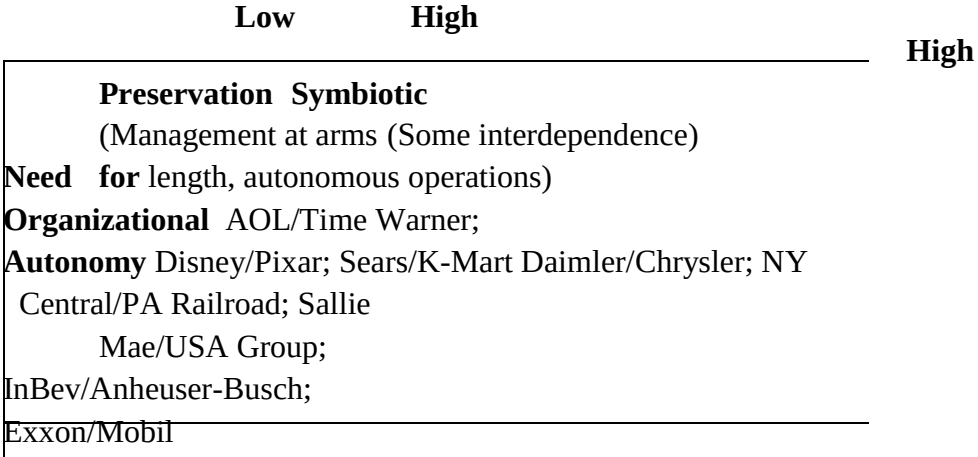

Figure 1. **Acquisition strategies.**

Note. Adapted from "Integrating Information Systems After a Merger, by P. McKiernan & Y. Merali, 1995, *Long Range Planning*, *28*(4), 4–62. doi:10.1016/00246301(95)00027-G

1. *Absorption*: The greatest rationalization is cost cutting through synergy. The target company is completely "absorbed" into the predator company. This is the model that generally includes the most layoffs and most dramatic shift in culture (Baker & Niederman, 2013).

Of the 11 mergers provided in detail in Appendix B, three fit this category, and all three were failures; two of them utter failures: Mattel with The Learning Company (failure; Doan, 2000; "Top 10 Best & Worst," 2009; Tuck School of Business at Dartmouth, 2000); Sprint and Nextel (utter failure; CNN/Money, 2004; Dumon, n.d.; "Top 10 Best & Worst," 2009); and Quaker's acquisition of Snapple (utter failure; Dumon, n.d.; "Top 10 Best & Worst," 2009; "Tuck School of Business at Dartmouth, 1996).

2. *Symbiotic*: In this model, managers evaluate each process, program, and procedure and keep the best of each company practice, procedure, or method: the "best of breed" approach (Baker & Niederman, 2013; McKiernan & Merali, 1995). Symbiotic mergers are the most difficult to achieve, have the highest value added, are the most time consuming, and take the longest to see results, but also result in far less employee resentment than the absorption model and generally result in a stronger unified business, once integration is complete (Baker & Niederman, 2013). Of the 11 previously mentioned mergers, six fall into this category, with a mix of successful and failed mergers. AOL/Time Warner (utter failure; Dumon, n.d.; Frost, 2013; "Top 10 Best & Worst," 2009); Daimler Benz/Chrysler (failure; Dumon, n. d.; "Top 10 Best &

Worst," 2009); Sallie Mae/USA Group (success; C. V. Brown, Clancy, & Scholer, 2003);
Anheuser-Busch/InBev (success; L. Brown, 2013; de la Merced, 2008); New York/Pennsylvania Railroad (failure; Dumon, n.d.; Salvato, 2006; "Top 10 Best &Worst," 2009); and Exxon/Mobil (success; "Top 10 Best & Worst," 2009). Sometimes, staff resentment arises from IT's inability to merge two incompatible systems, forcing one company into the other's system, generally choosing the one that involves the least manual data entry of customer information, and therefore offers the lowest margin for error (Johnston & Yetton, 1996).

3. *Preservation*: Two companies involved in the transaction remain autonomous and continue to operate as normal, coexisting with each other. They are independent of each other in the daily operation and coexist under the same parent company. Of the two sample mergers that fall into this strategy, one was successful and one was a failure. Disney Studios, upon its acquisition of Pixar, did not want to derail the success or creativity of Pixar by forcing them into company changes so they left Pixar in their original location in Emeryville, CA (DePamphilis, 2009; Gallagher, n. d.; "Top 10 Best & Worst," 2009).

Although the Sears and Kmart owner formed Sears Holdings as the umbrella group under which both stores operated, each store itself was left on its own to operate daily business (Bhatnagar, 2004; Clifford, 2010; Macke, 2014; "Top 10 Best & Worst," 2009).

4. *Holding*: The ultimate sign of a failed merger, a "held" merger occurs when the parent company, or the acquirer, simply "holds" the acquisition, making no changes, until it can be sold or divested, when market conditions are right.

Three of the mergers discussed above ended in divestiture, including Daimler Benz and Chrysler, Mattel and The Learning Company, and Quaker and Snapple ("Top 10 Best & Worst," 2009). The acquisitions were divested to prevent them from further draining the parent company. Other times holding merges occur when a business purchases another business that is in trouble and either splits it into profitable elements or pieces or holds it until market conditions change and the holding company can turn a profit (Jones, 1982).

2.3 Information Technology (IT)

2.3.1 IT-Decided Case Studies

When contemplating the literature on M&A, one must seek a little deeper to find studies regarding the involvement of and impact on IT; however, case studies exist of successes, failures, and lessons learned from one acquisition to the next. The primary failing in IT-related failures is the absence of IT due diligence.

2.3.1.1 Successes. IT mergers can be effective (C. V. Brown et al., 2003). The basis of Sallie Mae's approach in merging with USA Group was the following philosophy, "When two merged companies must quickly integrate their business operations, a critical first step is putting the IT leadership in place" (C. V. Brown et al., 2003, p. 17). One primary reasons Sallie Mae targeted USA Group was because of the latter's IT department performance. Sallie Mae did not have a CIO at the time of the merger and had high turnover in the position in the prior years. The CIO of USA Group had a 20-year tenure in the position and their IT department was much stronger than Sallie Mae's. Because Sallie Mae was still finalizing the IT integration of two earlier acquisitions, Nellie Mae and Student Loan Funding Resources, Sallie Mae knew about the necessity of early IT involvement. They planned to lay off hundreds of the combined 1,100 IT employees and needed to rationalize, transition, or retire approximately 500 software, hardware, and networking technologies.

After the acquisition transaction took place, July 31, 2000, Sallie Mae followed a much more aggressive integration plan than experts recommended because the company wanted customer-facing programs to be fully

integrated prior to the annual busy season in June 2001. Thanks to the solid IT at USA group, and the accompanying CIO, Sallie Mae was able to accomplish this objective primarily because of early, active involvement of IT and retaining the IT support staff best equipped to manage the remaining technologies (C. V. Brown et al., 2003).

In one merger, a parent company (P1) purchased a competitor (S1) to strengthen its position in the market (Roehl-Anderson, 2013). P1 anticipated achieving $100 million in synergy savings annually with Day 1 full integration set a mere 90-days ex-post, compared to the usual 120. The aggressive objective was possible because of the extensive planning done by IT while completing the duediligence process. Not only had the company mapped out all necessary IT-integration strategies and identified actual and potential issues, it had also assigned "clean teams to get a head start on planning and execution" prior to finalizing the deal (RoehlAnderson, 2013, p. 489). The outcome of the merger includes technology upgrades on time with minimal costs and full integration achieved in a mere 8 months, rather than the typical 18 generally required for a merger of similar scale. The merger succeeded for two main reasons: extensive due diligence and planning, and IT and business operations staff collaborated to reach desired objectives (Roehl-Anderson, 2013).

In the merger of two large insurance companies (P2 and S2) each built by numerous prior acquisitions none of which had been fully integrated, sincere integration concerns and challenges arose. In addition, the completion of the merger was delayed due to a "prolonged regulatory approval process" (Roehl-Anderson, 2013, p. 490). Aware of the potential for problems with integration, P2 involved IT early and the CIO conducted a complete IT due-diligence process, as well as extensive planning. Once the merger was approved and the integration moved forward, the CIO aimed to achieve $75 million in total synergy savings and remained involved throughout the entire integration process. The actual final savings exceeded $189 million and Day 1 remained issue free (Roehl-Anderson, 2013).

2.3.1.2 Failures. A U.S.-French group in oil field services (P3) entered the semiconductor market by purchasing a leading U.S. company (S3). Analysts believed the merger would be a great success; however, P3 failed to involve IT ex-ante and only brought the department in after announcing the merger. The price of this late involvement was very high: 30 months ex-post, full IT integration still had not been achieved. A large part of the blame for the failure of the merger was assigned to IT due to delaying IT's involvement until the merger closed, inadequate planning, and deadlines that were too aggressive. Senior managers did not understand how vital IT was to the successful integration of the merger.

If managers had involved IT at the outset, they would have avoided the resulting loss of staff, personnel, and public confidence in the larger merged company, due to the IT fall-out (Vielba & Vielba, 2006).

In a merger between a global manufacturer (P4) that was trying to integrate an acquisition of a division of another global conglomerate (S4), P4 did not involve IT ex-ante and did not complete IT due diligence. Again, IT was not brought in until the transaction was closed and announced. Results of the subsequent integration attempt included severe IT repercussions, including (a) IT-related costs of the process surpassed due-diligence expectation by more than $100 million; (b) After the transition from one location or system to another, substantial operational problems arose as a result of IT issues; and (c) P4 was forced to extend the transition-services agreement because P4 was not ready to function independently (Roehl-Anderson, 2013).

2.3.1.3 Lesson learned. A well-known company in the UK (P5) is a leader in the chemical market and aimed to expand its European production facilities. An equally well-known conglomerate in Spain was searching for a

buyer for some of its noncore businesses. S5 was part of that conglomerate and its parent company determined that S5 was not an essential core business so they opted to put it on the market. Because S5 was a competitor of P5, P5's CIO conducted a *quick* IT assessment after the announcement of the merger. Due to the decentralized nature of P5's business structure, synergies between the two companies were minimal. Neither P5 nor the CIO had any European acquisition experience so they were unfamiliar with its scale and difficulty. P5's CIO tasked S5 with implementing installation and integrating their own software upgrade.

Due to the absence of IT resources available on S5's staff, they outsourced the project to a small "boutique" subcontractor, a local software company (Vielba & Vielba, 2006). The CIO quickly regretted this decision when the project was 6 months behind schedule. The financial director in charge of the integration made decisions that caused delays and the CIO was not fluent enough in Spanish to discuss or negotiate Spanish business rules. The CIO realized extra help was necessary. In London, P5 recruited a Spanish manager who quickly got a complete grasp of the issues and resolved them. The integration was completed within 6 months (Vielba & Vielba, 2006).

P5 wanted to continue to expand into Europe and made the decision to purchase another company (S6) in Italy. The second acquisition was very similar in nature to the first one and the parent company of S6 was also a large chemical group that was quite well-known. Again, P5's decentralized structure offered limited synergy possibilities. As with the Spanish acquisition of S5, P5 lets S6's local management handle the integration; however, they assigned the same consultant that had helped with the prior acquisition. The integration went much more smoothly thanks to the manager's previous experience in managing mergers (Vielba & Vielba, 2006). Companies should learn continuously from each experience they have with the M&A process (Galpin & Herndon, 2008).

The risks of short-term thinking are highlighted in a further example from P5. The company's original approach during their first set of foreign acquisitions was to allow target companies to change very little in their organization and P5 granted them a great deal of autonomy, allowing them to have their own systems. The result was a vast array of incompatible systems unique to each location that each needed to be maintained by its own staff of IT specialists, resulting in extraordinarily high IT costs.

After years of fruitless efforts to get these systems to "talk" to each other, P5 decided to alter its strategy and move toward a standardized system. This decision was based on the company's realization that the array of disparate systems was costing the company a great deal of money in lost income because the systems lacked the flexibility to effectively service customers. Also, accompanying IT costs were extremely high; considerably higher than comparable companies in the chemical field (Vielba & Vielba, 2006).

"One of the strongest themes to emerge from the [case studies] is the importance … of [the] early involvement [of IT] in the M&A process" (Vielba & Vielba, 2006, p. 109). The absence of IT due diligence is a major factor, but even if IT due diligence was completed, companies need to be thorough to accrue value in subsequent integrations (Roehl-Anderson, 2013, Vielba & Vielba, 2006). "Efficiently and quickly gathering and analyzing useful information about a target as early as possible, but prior to the closing, is essential to the integration process," particularly with regard to technology and culture (Schweiger, 2002, p. 46). If IT is not considered to be a central part of the merger, the CIO or representative is frequently not invited to participate in due diligence, its planning, or estimation.

The potential negative outcomes of not involving IT early includes "unrealistically high expected benefits from IT consolidation, or … unrealistic expectations of how quickly IT can respond to support the plan" for marketing,

human resources, the supply chain, manufacturing, finance, and so on, which is even more harmful as it becomes widespread through the organization (Roehl-Anderson, 2013, p. 314).

No case studies highlighted the results of not bringing in vital IT staff or what happens when rerecruitment fails. However, the merger of Disney and Pixar reveals how important certain technology staff is in mergers. The value of Pixar was largely based on its staff, or an "intangible value" (DePamphilis, 2009). Many experts thought Disney paid too much for Pixar, at $7.4 billion, particularly when considering the lack of assets on the Pixar side; however, one of the requirements of the negotiated deal was that all Pixar employees sign a 2-year contract with the company, enabling Disney to lock in the intangible value that Pixar presented (DePamphilis, 2009). This process highlighted the steps that can be taken when staff are identified early as important assets.

2.3.2 IT Integration

The success or failure of a merger largely depends on the implementation of the integration plan (Fairfield, 1992). "Putting two large companies together effectively is one of the business world's greatest challenges" (Fairfield, 1992, p. 26). Integrating post-M&A is the most complicated part of the entire merger process, and a smooth integration can make the union a marked success; in contrast, a poorly executed integration can turn the venture into a dismal failure.

Of all the pieces of the organization that need to be integrated, the management of IT integration is by far the most complex in systems, staff, and hardware (Chang, Chang, & Wang, 2014). Integration capabilities and processes must be identified and put into place prior to striking the deal (Galpin & Herndon, 2008). Businesses face challenges when confronting the task of integrating IS, impacting company culture, emphasizing culture clashes, and influencing the company's work routine (Chang et al., 2014). Successful integration of IS during and after an M&A depends on identifying critical functions and using the pre-M&A knowledge of both organizations. Standardization is not always the optimal solution; at times, maintaining the uniqueness of each individual company may prove beneficial because it lowers the resistance and anxiety of the current IT team. In spite of its essential role in a business, managers often overlook IT or underestimate IT in the integration process (Chang et al., 2014; Tanriverdi & Uysal, 2011). Key steps to promote successful integration include the following:

Completing a thorough due-diligence process Beginning planning the integration process prior to the deal closing Employing strategies for recruitment and retention to keep the most talented staff Comparing and integrating company cultures Beginning each action item on the integration plan in the first 12-months of the merger (Galpin & Herndon, 2008).

Businesses with higher degrees of cross-business IT integration capabilities tend to have higher than average operating performance postmerger over time. This conclusions lies on five dimensions (Tanriverdi & Uysal, 2011): (a) IT data and applications (including best practices, product design, and employee skills and expertise); (b) IT strategy-making processes; (c) IT vendor-management processes; (d) IT human-resources-management processes; and (e) IT infrastructure (Chang et al., 2014; Tanriverdi & Uysal, 2011).

In certain industries and circumstances, the full integration of IT is the only option, and incompatibilities complicate that effort, leading to operational difficulties (Chang et al., 2014).

Difficulties in system integration may accrue as staff members often interpret the new systems in incorrect ways, supervisors sometimes lack relevant experiences, or the functions of the new system do not fit the enterprise's needs (Chang et al., 2014). Experienced consultants must design and explore new functions or interfaces. Technical capabilities of the IT department of each company play a vital role in the integration of IS. The CIO

and management staff must consider these capabilities when planning the integration process. "The integration of IS is critical to the success of the M&A processes" (Chang et al., 2014, p. or para ##).

If the size of the system increases by integrating two systems, the complexity and potential for problems grows exponentially (Fairfield, 1992). When contemplating the M&A process, companies must remember it is an end-to-end process and must be managed as such (Galpin & Herndon, 2008). "Integration is a competency set with specific skills that must be built throughout the organization" (Galpin & Herndon, 2008, p. 10). According to Johnston and Yetton (1996), "Systems integration was one of [the] interdependent 'building blocks' in … overall integration" (p. 199). One of the first steps in the M&A process—a key factor organizations need to attend to and one of the primary reasons the CIO should be involved from the start—is to determine whether the information-management systems used by each company are compatible. If they are, multiple integration options are open to them; if they are incompatible, dismantling one system and putting that information into the other is the only option (Johnston & Yetton, 1996).

The general recommendation in merging two incompatible systems is to use the absorption model. Adopting the best-of-breed model under those conditions would be complex, risky, and expensive (Johnston & Yetton, 1996). Even when best of breed is the objective, system incompatibilities may lead to conflicts that appear to be "an end in itself rather than a means to an end" (Johnston & Yetton, 1996, p. 199). Even if multiple systems are internally congruent, they are often incompatible with outside systems, making integration challenging, and oftentimes, impossible. In this instance, when best of breed is mandatory, companies must create an entirely new system that joins the two systems, which is very costly in staff hours and down time, is inefficient, and carries marked risk. Generally more effective, companies can put time and money into improving one of the existing systems, allowing it to support the additional responsibility and data (Johnston & Yetton, 1996).

Although fully integrating IT may seem an ideal solution, each merger is unique. The decision to merge should be based on the specific companies involved. Allowing the current information-management system to remain may be more efficient and effective; then companies do not need to move immediately to merge them. If, however, the organization will show substantial gains by merging IS, then a plan should be carefully put into place (Fairfield, 1992).

2.3.3 Strategy

Strategy can be viewed as a cycle, similar to fashion (Vielba & Vielba, 2006). As an example, when the market turns downward, all businesses generally have a singular focus and a singular objective—survival—rendering business strategy unfashionable. Although businesses may view survival as its own strategy, it is strictly short term; when companies contemplate a business strategy, managers usually look to the long-term horizon (Vielba & Vielba, 2006). When the market becomes strong again, strategy again becomes fashionable, as many companies turn toward expansion. For M&As, lack of a clear IT strategy, articulated with the business strategy, increases the risks associated with IT. … One of the first business questions for the CIO contemplating an M&A project to ask is: does the company have a long-term business strategy? The second question is: does the business have an IT strategy? The third question is: are the two aligned?" (Vielba & Vielba, 2006, p. 45)

Decisions about integration and merger are based on business and IT strategy. Being able to answer "yes" to each of these questions reduces the risks related to merger integration as well as providing a base from which to start the project (Vielba & Vielba, 2006). A company's chosen strategy determines which organizational structure to

use. “Thus structure follows strategy” and implementation also follows strategy, advancing alongside structure to fit into the new, merged organization (Johnston & Yetton, 1996, p. or para ##).

Different IT strategies can lead to severe integration problems, particularly if one is value-added technology focused, where ideas are “allowed to grow because of unconstrained demand for service” and one is cost and efficiency focused: a team that was “advanced at measuring their costs and [understanding] what the dollar was giving them” (Johnston & Yetton, 1996, p. 197). This leads to different motivations, management, and development of IT innovations.

A business-oriented, centralized IT team strongly conflicts with a technologyfocused, decentralized team. Combining them can lead to issues in integrating technology and the staff (Johnston & Yetton, 1996).

Figure 2 demonstrates the necessity for all three strategies of a business to work together. Figure 3 partitions the IT strategy even further, into IS, IT, and information-management strategies: the what, how, and who of IT. When contemplating the merger of two businesses, the goal is always to become a stronger unified entity than either business was on its own. “This additional strength may arise from the addition of products, services, geographical coverage, intellectual property, or simply capacity … placing a value on this additional strength is an important part of the M&A process” (Paulson & Huber, 2001, p. ##). Businesses have two basic motivations to purchase another company—strategic or financial:. “Those motivated by simple financial analysis returns and those motivated by the need to add capabilities or even to create a business entity that … is stronger than the two individual companies were on their own” (Paulson & Huber, 2001, p. 31).

Although numbers should not be the sole driver or motivating factor in making the decision to move forward with an M&A, how the strategic factors and specific strategic benefits can be translated into positive revenue and cash flow does need to be considered. Whether the benefits are seen 2 years out or 10, capturing and quantifying strategic benefits must be attempted if not achieved (Schweiger, 2002).

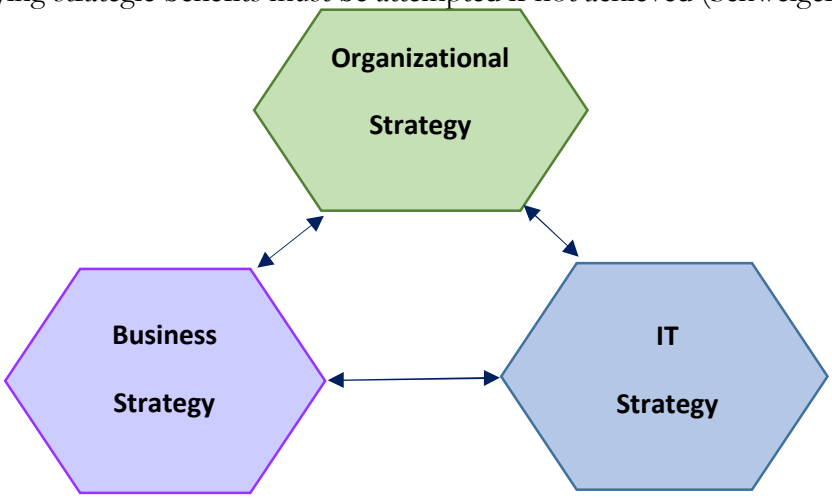

Figure 2: **Strategic triangle**

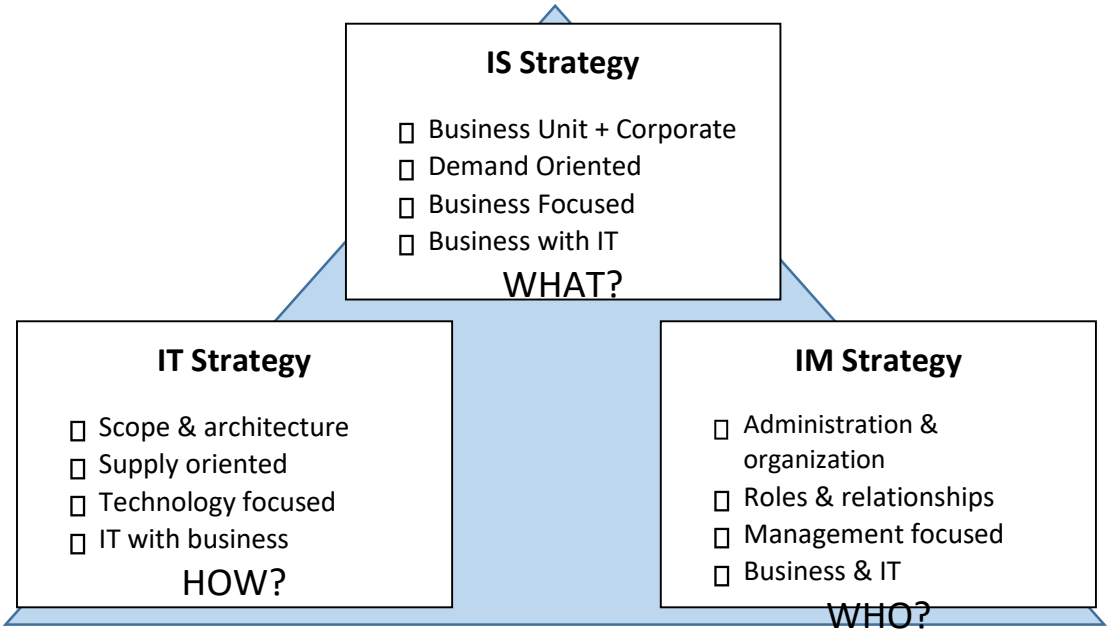

Figure 3: **The information strategy triangle.**

Note. From "Information Management: The Organizational Dimension, by M. J. Earl (Ed.)., 1996, New York, NY: Oxford University Press, p. 487.

"The business landscape is lined with many M&As that made conceptual sense, 'were made in heaven,' and delivered no value" (Schweiger, 2002). When the finance and figures fail to add up, the most responsible and disciplined managers will simply walk away from the deal. However, some managers, board members or directors may still believe that there are "compelling strategic reasons" to proceed with the deal anyway. Although rare, this situation does occur on occasion. For most successful mergers, the numbers need to add up to achieve the maximum benefits from the M&A and achieve the basic objectives of the deal (Schweiger, 2002). An ABN AMBRO executive commented, "We have a rule on the Executive Committee. … When someone says 'strategic,' the rest of us say, 'too expensive'" (as cited in Schweiger, 2002, p. 30).

2.3.4 Dimensions of IT of Concern

Extensive dimensions or aspects of IT are of concern during the due-diligence and integration phases. One example of a due-diligence checklist is shown in Appendix A, providing one sample of the extent of concerns that IT needs to manage during this phase of an M&A. The 10 major issues that IT must address are listed below in decreasing order of importance or prevalence:

1. Incompatible technology
2. Untested technology
3. Interface problems
4. Scalability
5. Data migration
6. Lack of standard systems
7. In-sourcing versus outsourcing
8. Centralized versus decentralized systems

9. In-house versus package
10. Small versus big company (Vielba & Vielba, 2006, p. 57)

Appendix A reveals the steps necessary to address these issues; however, several common mistakes persist in many mergers, and nearly all mergers with inexperienced merger teams or mergers that do not include the IT department early enough suffer from these mistakes (Barnett, 2012).

Existing IT staffs are not necessarily expert in their own systems and environment, nor are they eagerly awaiting the opportunity to help. According to M&A expert Barnett (2012), assumptions about existing staff are frequent mistakes that can have costly side effects. Although predator-company IT departments are often heavily leveraged, many times, IT departments inherited the informationmanagement system and IS operation that they support; staff and were merely tasked with keeping it running. Managers must assess their knowledge rather than making assumptions (Barnett, 2012).

Another common mistake occurs when companies or IT departments try to use the merger integration to begin using and implementing new company-wide or department-wide technology (Barnett, 2012).

When IT departments move forward with this change, the system almost always needs to be changed back to the one the predator company previously used. "When transitioning a functioning business operation into [another] company the rule of thumb is to keep everything working, period" (Barnett, 2012, p. or para ##). Managers should wait for another opportunity to try out new technology. A third common mistake is severely underestimating the amount of work involved in the transition. Because nothing is being built, IT groups may overlook or underestimate the sheer volume of work involved with an integration, believing it to be "no big deal.". Numerous jobs, contracts, tests, tasks, and nuances need to be planned and accounted for; IT staff may get lost in the confusion. Companies should "set timing expectations … UPFRONT" (Barnett, 2012, p. or para ##). The main mistake businesses, managers, boards, and CIOs make is not drawing IT in during the duediligence process. IT staff integration allows for a smoother transition, and aids in allowing the organization to know what is needed right from the beginning: IT needs to get involved to fully understand what the "IT story is" (Barnett, 2012, p. or para ##).

Top Underresearched, Often Mentioned

2.3.5 CIO Involvement in Due Diligence

Multiple studies have shown the importance and difficulties of bringing the business and staff in line postmerger. Many researchers failed to realize that a uniform train of thought or uniform integration process will fail more often than it succeeds. Each business, business decision, and organizational union is unique (Chang et al., 2014). The position of director or manager of the IT department first appeared in corporate organizational charts in the early 1980s and the title of CIO came just a few years later (Earl, 1996). Due to the difficulty of aligning and integrating IT departments and technology, successful integration can be a cause for celebration whereas a failed integration is the company's worst ordeal (Beason, 2001). The necessity of having IT and the CIO involved early in the process is clear throughout the literature. The CIO is responsible for ensuring the business strategy and IT strategy remain aligned, that they are parallel, and they do not conflict with each other (Beason, 2001).

A meager 24% of organizations include the CIO or other IT manager in premerger planning and an alarming number of IT leaders discover their company is going into a merger from the press rather than their own organization (Chang et al., 2014).

CIOs, or "wizards of technology," should reign during a merger or acquisition because technology is a relatively new and ever-changing part of a business; successful integration of IT is still mysterious and difficult to quantify (Beason, 2001, p. 53). "The rewards from system integration for the business strategy have the potential to make or break balance sheets" (Beason, 2001, p. 53). Planning any integration in great detail is the key factor in success, and these plans need to include the CIO (Beason, 2001). "The involvement of the CIO throughout the integration process is critical" regardless of the particular role the CIO plays (Vielba & Vielba, 2006, p. 159).

The CIO needs to be involved early. It is absolutely vital that the CIO completes the due-diligence process to determine whether the two different companies' systems are compatible. In some instances, IS/IT integration does not align with the business integration, and this may relate directly to the absence of the participation by the CIO in the due-diligence process. The process must precede implementation, execution, and integration of the merger, leading to a much slower implementation altogether. One survey respondent in the Baker and Niederman (2014) study described,

On the higher level, yes, there were inventories that were made of the assets, whether they were resources in terms of hardware, software, and human … employees that is … so there was some high level of assessments that were done and then when we got really into doing the transition into assimilating into the acquiring company's platform … largely to compensate for lack of in-depth due diligence.

Once the integration plans were ready, then integration continued apace until completed, with many decisions made ad-hoc along the way. (p. 119) as the merger moves forward, the necessity for a thorough due-diligence process, completed by the CIO, becomes even more important. (Baker & Niederman, 2013; Bandukwalla, Krumkachev, Nolen, & Sharma, 2008).

2.3.6 Retaining Key IT Staff

Many researchers outlined the importance of retaining or rerecruiting key IT staff during and after a merger and made recommendations on how to do so (Alaranta, 2005; Andrade et al., 2001; Angelo, 2013; Badrtalei & Bates, 2007; McKiernan & Merali, 1995; Roehl-Anderson, 2010, 2013; Vielba & Vielba, 2006). However, no available studies investigated the extent to which these enticements worked or what happens to the business when they fail to retain key IT staff members and the knowledge and skills that leave with them.

The human element ultimately decides the success or failure of a merger (Beason, 2001). Among the factors to consider are the merging and integration of two distinct cultures and the retention of key IT staff and skills (Beason, 2001; Bellingham, 2010; Daniel & Metcalf, 2007). To retain employees, managers should (a) identify key groups or employees the company should retain; (b) develop an understanding of employees' basic foundational motivators; and (c) design a plan of action that addresses their motivators and inspires them to remain (P. Pritchett, Robinson, & Clarkson, 1997). This task should be undertaken with the same rigor the company would use to recruit new, vital staff (P. Pritchett et al., 1997).

2.4 Future Research

As section 2.4 highlights, some research exists in these areas already; however, studies fell short of answering the questions posed in the hypotheses. One key area that remains underresearched for M&As is the exact role of the CIO in the duediligence process. Despite compelling evidence that the CIO should be involved early, and additional evidence demonstrates the necessity of an IT due-diligence process, the connection between these two aspects of IT remain underdeveloped (Galpin & Herndon, 2007; Vielba & Vielba, 2006).

Second, no studies indicated what happens when a company or organization is unable to retain key talent, skills, or information postmerger, or at least through the integration. These factors give rise to the following research questions:

A. What are the short- and long-term implications for not involving CIO in ex-ante due diligence? It is known that if IT is not involved in integration planning ex-ante, the strong likelihood exists that IT integration will fail or at least be severely delayed; however, this phenomenon has not been studied for the CIO role specifically.

B. What happens when key IT staff with vital knowledge and skills are not retained? This research aimed to accomplish the following:

1. Understand the consequences of not involving the CIO early enough or not retaining key IT staff through the integration.
2. Identify a reason an organization would choose this research strategy.
3. Justify taking both of these steps to improve chances of successful integration.

Researchers identified clear trends in the last few decades, with clear successes and failures that rose and fell with the market. Although their research has placed a dollar value on M&A transactions, they do not and cannot illustrate the value of the mergers that have succeeded or the cost of those that failed. As technology becomes increasingly advanced, and companies rely on technology more and more heavily, the importance of bringing IT into the M&A process early will become increasingly vital; the extant literature showed compelling reasons for this need (McKiernan & Merali, 1995; Vielba & Vielba, 2006).

3. Methodology

The dissertation was designed to validate the stated hypotheses. I included data covering studied companies' size and a broader analysis of company mergers, including midsized and large companies. I conducted interviews and had surveys completed. I analyzed both by coding the multiple-choice questions and those that were more open ended. To examine the study participants' opinions, I conducted an in-depth interview to obtain relevant data. The study entailed embedded qualitative research with a mixed-methodology approach. The majority of data gathered represents the qualitative perspective. The information provided identified companies involved in mergers and aided in the research. Data analysis and planning addressed the following:

Merger status, statistics and details.

Relevant company statistics.

Key IT staff retention data and statistics.

CIO involvement status and timeframe.

In addition to risking uncertainty in achieving a successful merger for two or more firms when they are consolidating, this study addressed and highlighted the importance of considering IS and IT in the ex-ante planning and decision-making stage by involving the CIO to complete IT due diligence. I also analyzed how vital it is to retain key staff to reach merger goals and achieve objectives on time.

3.1 Research Design

The research approach best used to analyze the gathered data for this study was the mixed research methodology (see Table 1). This methodology blends qualitative and quantitative data and research methods to form one complete picture that will effectively analyze the hypotheses proposed in section 1.2. Qualitative and quantitative research each have strengths and limitations. The mixed-methods approach combines the strengths of each to "develop a stronger understanding of the research … question (and … overcome the limitations of each)"

(Creswell, 2014, p. 215). This form of research also uses primary and secondary sources for each type of data. The two primary forms of research I used for this study are sociotechnical research methodology to collect data through interviews and surveys and historical research to collect data through prior research or gathered information. The geographical area of the study was Saudi Arabia.

Table 1: ***Mixed Research Methodology***

Research type	Secondary Sources	Primary Sources
Quantitative data	Numerical data collected for other people's purposes Historical research data Merger statistics, cash flow, company values, and success/failure rates	Numerical data created by doing research in the specified business area Data from original, unaltered sources Sociotechnical research via surveys Company financial statements
Qualitative Data	Information published for other people's purposes, "News" Historical research, articles Case studies, industry and merger histories	Verbal or written data collected for that singular purpose Data from original, unaltered sources Sociotechnical research via interviews and surveys

Table 1 highlights where each of these forms of research and their corresponding data falls in the larger scheme of mixed methodology. The table provides a brief definition of quantitative and qualitative data as well as primary and secondary sources. More information on the two research methodologies follows (see Figure D1 in Appendix D).

Research data covered the studied companies' sizes and structures, a clear definition of their policies, practices, and standards, and a broader analysis of company mergers, including midsized and large companies. I disseminated surveys and analyzed them by coding multiple-choice questions. Moreover, I analyzed questions that were open ended, examining study participants' opinions, through coding. I conducted in-depth interviews to obtain relevant data from each company. The information provided identified companies involved and aided in proving or disproving the proposed hypotheses. Therefore, data analysis and planning covered the following:

Merger status, statistics and details.

Relevant company information.

Key IT-staff retention data and status.

CIO involvement stage and status.

This study addressed and highlighted the importance of considering IS and IT in the ex-ante planning and decision-making stage by involving the CIO to complete IT due diligence. I also analyzed if retaining key staff is vital to reaching merger goals and achieving objectives on time.

3.1.1 Methods of Measurement

I main used embedded qualitative data gathered through a sociotechnical methodology as the mode of measurement to answer the questions and address the hypotheses. The first hypothesis was, "In M&A projects, involving the CIO or other key IT staff in the ex-ante due-diligence process aligns with successful IT integration." Several questions emerged:

1. How important was IT to the merger?
2. Did the company have a CIO at the time of the merger?
3. Was the CIO involved in the ex-ante IT due-diligence process?
4. How many stated objectives were not met on time?
5. Out of how many total objectives?
6. What was the primary cause of failure or success?

The first three questions can be answered quite simply; however, last three questions are more complex. Although Questions 4 and 5 require answers that are a single figure, they are difficult for participants to determine. For Questions 4, 5, and 6, the information is not likely to be of public record and must come from an internal source in the companies being examined.

The second hypothesis was, "In M&A projects, retaining key IT staff aligns with successful technology integration by targeted objectives." This hypothesis is more complicated and addresses a deeper issue than whether a merger was a success or failure. Additional questions this hypothesis raises include the following (additional questions can be found in the questionnaire in Appendix E):

1. Was key IT staff retained?
2. Why were they retained?
3. Were there difficulties in achieving objectives?
4. What was the cause of the difficulties?
5. Were they directly due to absent IT staff?

The questions raised by the two proposed hypotheses were addressed through two forms of research: sociotechnical research and historical research methodologies, outlined below.

3.1.2 Sociotechnical Research Methodology

Originally coined by World War II-era researchers, the term sociotechnical is defined as a combination of social (people in an organization) and technology (Sirianni, 1995). This form of research signifies the correlative relationship between the social and technical components of a company or organization (Aehnelt, Ebert, Beham, Lindstaedt & Paschen, 2008). The basis of this nomenclature is that optimizing either technology or social culture alone is detrimental to the whole; rather, the only way to optimize the unit is to work with both systems in tandem (Upadhyaya & Mallik, 2013). The pioneering philosophy behind sociotechnical methodology relies on analyzing the unit or society as a whole instead of the individual (Whitworth & de Moor, 2009). In addition, the technology in sociotechnical does not necessarily refer to hard electronics or even any kind of material technology; rather, it references the larger scheme of structure and knowledge that is interrelated (Aehnelt et al., 2008), incorporating the social structure, people, and organizational structure (Sawyer & Jarrahi, 2013).

For this study, I used the sociotechnological research methodology to collect primary data such as analyzing the IT staff as a unit and the success of the company merger as a whole, which are essential elements of the analysis and research. Although this study also examined the individual participation of the CIO and individual key staff,

a major part of the focus was key IT staff as a group, rather than the individual staff member. The structure is important because of the various levels of the IT staff and their relationship with the merger, as well as their position in the company and the way they were brought into the planning stages of the mergers that are under study.

The interviews that used the sociotechnical research methodology were used to collect qualitative and quantitative data, though mostly the former, and the data were founded on validating the hypotheses by addressing the measurement issues and questions outlined in 3.1.1. The survey primarily collected qualitative data as well, although there are quantitative components to it. Survey questions appear in Appendix E. Sociotechnical research was the primary source of data, with historical research adding the collected history of the organizations, analyzed as case studies, and the collected documentation for individual interviewees in separate companies surveyed and the one company that was studied more closely with multiple interviews.

3.1.3 Historical Research Methodology

In addition to offering facts in secondary and some primary sources, historical research offers a unique value to any research in that it provides a history to the study that cannot be found in personal research. "Historical research offers perspectives on phenomena that are unavailable by any other methodological means" (Mason & McKenney, 1997, p. 307). Case studies from previous research can be used to support and, at times, validate the current research if the results are similar, or provide a backdrop for a counterargument if the results are different (Mason & McKenney, 1997). Historical research also allows researchers to determine where information is missing from available data or topics that have been underresearched, to know what needs to be studied in greater depth. Primary sources are always the preferred form of data collection, so when they are available, they should be utilized. However, legitimate secondary sources may also be used, as well as scholarly work and work by professionals in the designated field (Lipscomb, 2014).

The historical research conducted for this study aimed to develop case studies on IT involvement in mergers, the success and failure rate of said mergers, the value behind the mergers, and the history of the companies in the primary case study. When considering secondary sources, "Historians should adhere to a rigorous code of professional practice if they are to avoid all kinds of careless mistakes that bring their professional integrity into question" (Lipscomb, 2014, para 1). As I collected, studied, analyzed, and wrote about the research, a central tenet was that the value of the research lies in its accuracy, and in that sense, using a primary source whenever possible was of the utmost concern.

When collecting company financial data, it was important to find actual financial statements from the company in the case study, rather than articles about their finances. This type of research provides the important backdrop for, in this case, merger histories, purchase price, and other statistics and quantitative facts. It also provides qualitative information including whether IT was involved in the merger, the companies' ex-ante planning history, and whether the CIO was involved in ex-ante due diligence. To date, no information described retention statistics for IT staff or whether key IT staff affected merger success or failure.

3.2 Mixed Methodology

I adopted the case-study-analysis approach and mixed it with both highlighted methodologies. The study implementation was grounded on the variables outlined in Table 2 and the following:

1. Select medium to large-sized organization: 50+ employees.

2. Select three to five companies that experienced a merger or an acquisition transaction, with a minimum three companies to authenticate this study.

Based on the above variables, the research-setting structure would incorporate the following:

Interview employees in each company Provide survey questionnaires to each merged organization

Conduct historical research and historical case studies for comparison and conclusion purposes.

Table 2: ***Planned Research***

	Case study	Survey & interviews of companies other
Units	3–5 Organizations	15–30 Surveys
Method	Interview	Online survey/paper
Data type	Qualitative	Qualitative + Quantitative
Data source	M&A firms	E-mail distribution
Source type	Medium to large sized	Executives & IT

Note. IT = information technology.

3.3 Setting

This study was conducted exploring existing or completed M&A projects with companies based primarily in Saudi Arabia, practicing globally. The various forms of research had their own method of usage and setting:

Historical research: The setting or environment does not apply to this methodology as this takes place on the researchers' time and in their environment

Sociotechnical: The setting or environment does not apply to the survey as employees can complete these on their own time in their own setting; for interviews, the setting information below is applicable: interviews for the sociotechnical/interorganizational aspect of the research and required actual personto-person contact achieve a design process aimed at analyzing the joint optimization of merged organization subsystems. Well-developed organizational systems normally maximize performance when the interdependency of their existing subsystems is explicitly recognized, and premerger IT assessments were in place to identify the integration road map.

In addition, the study also evaluated some historical data and similar completed projects.The study was structured and designed to elicit the necessary information, then introduced to selected merged companies and their employees who had experienced an integration of technology through merger. The goal was to cultivate their experiences and feedback regarding such projects. The setup began with high-level interviews to understand the magnitude of the situation and understand how to direct the detailed sociotechnical interviews, based on participants' initial input. Therefore, study success depended on participants' engagement, and by explaining benefits of such a study to them, to gain their attention and participation. Based on the above variables, the research setting structure follows:

Interviews with various levels of employees in selected companies Survey questionnaires of three to five separate merged organizations. Historical research and historical case studies

3.4 Study Participants

The study required a minimum number of participants to validate research findings and relate them to actual market setup.

The study focused on one specific geographic location of the Arabian Peninsula, primarily global companies based in Saudi Arabia. I gathered data from the following participants in the data-collection stage, constituting interviews with the following employees:

Chief executive officer, Chief operating officer, or CIO who had participated in at least one merger or acquisition

1–2 managers who had participated in at least one merger or acquisition

In addition to the in-person interviews, survey questionnaires to be sent to the following:

Employees at different companies involved in different mergers.

Various members and experienced consultants in the field. I expected to identify 20 to 40 potential participants. expected a 33% response rate.

The total number of interviews was planned to be at least eight. The total number of questioners was planned to be at least 15.

The study is limited in its scope and was not expected to reach saturation point. However, I expected to study enough cases and obtain sufficient data to provide answers to the research hypotheses.

3.5 Data Collection

As previously mentioned, I carried out multiple interviews in a single merged organization's chief information officer, chief executive officer, and IT manager for the case study. I expected the interviews with each participant to last approximately 20 to 30 minutes. I designed the interview questions and format based on the survey questionnaire (see Appendix E). The interviews focused on identifying barriers, determining the validity of the hypotheses, discerning what factors contribute greatly to project failure, and how putting a new framework in place could aid in properly evaluating premerger decisions.

Located companies agreed to take part in the interviews or surveys. In addition, documentation and financial figures validated the case study and provided necessary data. The requested data included the following:

Financial statements and profit reports for each company before the merger and the merged company after (this information is normally available online) o Balance sheets o Cash-flow statements o Income statements o Sales reports Stock prices of each company at the various stages Negotiated transaction costs of the merger

3.6 Data Analysis

I entered the collected interview data into Atlas.ti software and the survey data into SPSS for data analysis. This study built on the mixed-research methodology, using quantitative and qualitative data from historical mergers and acquisition projects as well as that provided or located for the companies under study. This information was used in this mixed study to support the intended framework, theory requirements, and hypotheses by providing raw data of merger statistics and growth values in addition to more detailed and personalized information. In this instance, interview and survey results primarily provided qualitative data; however, data included in the back-up documentation provided quantitative data, used to support and clarify the qualitative research.

Therefore, the study analysis used a mixed approach, providing good conceptualization of qualitative data analysis, structured with qualitative data and supported by quantitative data. I conducted quantitative and qualitative data analysis separately (Table 3 highlights the steps taken for each type of data), "as well as … mixing [quantitative and qualitative] data concurrently and sequentially in a single project or a multiphase project" (Creswell & Clark, 2011, p. 212; see Appendix D). Because I queried a realistic situation, driven from an actual causation, I was able to use a flexible design and mixed analysis-style aimed at supporting the proposed hypotheses.

In qualitative and quantitative research, analysis must include preparing the data, exploring the data, analyzing the data, conducting the data analysis, interpreting the results, and validating the data and results (Creswell & Clark, 2011). During quantitative research, these steps arise linearly, whereas in qualitative research these steps unfold iteratively and simultaneously (Creswell & Clark, 2011).

I collected data from the various components identified in the data-collection section, and initiated analysis to evaluate the validity of the research hypotheses.

Table 3: ***Steps in Data Analysis***

Quantitative data-analysis procedures	General procedures in data analysis	Qualitative data-analysis procedures
Code data by assigning numeric values Prepare the data for analysis using SPSS and Atlas.ti Clean the database Recode or compute new variables for computer analysis	Preparing the data for analysis	Organize documents and visual data Transcribe text Prepare the data for analysis with Atlas.ti
Visually inspect data Conduct descriptive analyses Check for trends and distributions	Exploring the data	Read through the data Wright memoranda Develop qualitative codebook
Choose an appropriate statistical test Analyze the data to answer the research question or test hypotheses Use SPSS to analyze data.	Analyzing the data	Code the data Assign labels to codes Group codes into themes (or categories) Interrelate themes (or categories) or abstract to smaller sets of themes Use Atlas.ti to analyze data

Note. Adapted from *Designing and Conducting Mixed Methods Research,* by J. W. Creswell & V. L. Plano Clark, 2011, Thousand Oaks, CA: Sage.

3.7 Evaluation and Research Questions

This study was designed to test two hypotheses, proposed in section 1.2:

1. In M&A projects, involving the CIO or other key IT staff in the ex-ante duediligence process aligns with successful IT integration.
2. In M&A projects, retaining key IT staff aligns with successful technology integration by targeted objectives.

Evaluation of the hypotheses depended on determining if the merger for each company studied was a success or failure, according to the criteria set forth in section 1.4. These criteria depend heavily on the qualitative and quantitative primary and secondary data drawn from company history, interviews, and surveys. No single factor can determine success or failure as the outcome depends on the companies' stated goals. For the organizations found during historical research, the data depended on what is available in the literature; however, for the companies under primary study, these questions were part of the interview and survey data-collection process. Questions determined if the merger was a success or a failure, evaluated in conjunction with the answers to the other questions outlined in section 3.1.1 and provided in more detail in Appendix E. Combined, I evaluated these answers using qualitative and quantitative means to determine the validity of the hypotheses and form an ultimate conclusion. Appendix F gives more detail as to the means and methods of analysis.

4. Results and Findings

The aim of this research project was to ascertain the importance of involving the CIO in ex-ante planning, specifically due diligence, and how the CIO's involvement translated into a successful merger. In addition, the second goal of this study was to find out the effect of key IT staff leaving before integration or knowledge transfer. The field-research portion of this study captured eight interviews and 17 surveys. Business leaders from Saudi Arabia provided all input, yet the companies were mainly global. Figures 4 and 5 illustrate Saudi Arabian and global M&A activity from 1991 through projected 2015.

Figure 4. Saudi Arabian M&A activity.

Note. From "Acquisitions and Alliances (IMAA) Analysis," by Thomson Reuters, 2015.

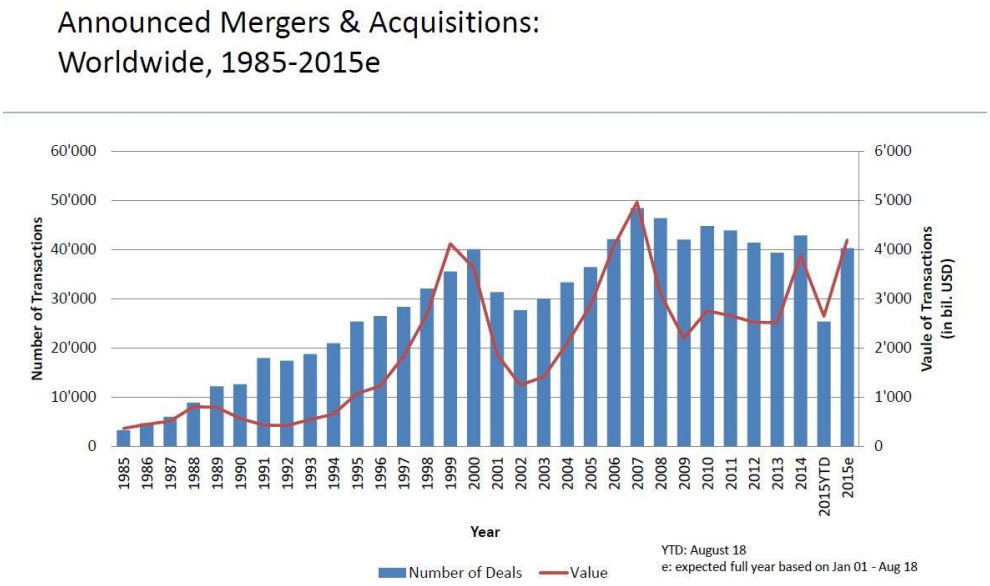

Figure 5. Global M&A activity.

Note. From "Acquisitions and Alliances (IMAA) Analysis," by Thomson Reuters, 2015.

4.1 Practiced Methodology

The research methodology used to complete the study varied slightly from what was previously proposed; although the methodology was embedded in qualitative data, it remained mixed. First, no financial data were available on any interviewed company with the exception of the single case-study company; however, detailed information was available for this company, which allowed examination of their financial performance before and after at least two mergers. Second, participants completed fewer interviews and surveys than anticipated. (See Appendix G for an outline of the basic interview questions). The major difference in the methodology was that, rather than interviewing several people from each company, I interviewed a single individual for most companies. Again, the exception was the primary case study, where I interviewed four employees. All interviewees were business leaders who experienced at least one M&A, often more than one, and some participants had experience with multiple companies. Although I interviewed fewer individuals than anticipated, the interviews were quite rich in information on the M&A process and provided previously unknown insight or clarification on existing research.

4.2 Interview Data

The companies in which I interviewed executives were primarily global in nature and the participating entity was the Saudi Arabian home base or branch of the business. For the case studied, identified below, Table 4 outlines the details of the interviewees while maintaining their confidentiality:

Table 4: ***Interview Participant Details***

Code	Title	Company line of work	Location/market	Notes
Subject B	CEO	Major bank	Saudi Arabia; Global	
Subject C	Head of investment	Major investment bank	Saudi Arabia; Global	

	banking			
Subject D	VP of enterprise sales	Large ICT corporation	Saudi Arabia; Global	Case study: Predator
Subject E	CEO	Recruiting company	Saudi Arabia	
Subject F	CEO	Asset-management company	Saudi Arabia	
Subject G*	VP of products development & management	Large ICT corporation	Saudi Arabia; Global	Case study: Predator
	Technical consulting manager (previous position)	Internet service provider	Saudi Arabia; Middle East	Case study: Target
Subject H	CEO	Privately held multibusiness group	Saudi Arabia; Middle East	Case study: Target
Subject I	Planning & development director (previous position)	Large ICT corporation	Saudi Arabia; Global	Case study: Predator

Note. * Subject G interviewed twice he was part of acquired organization then became part of the acquiring firm; ICT = information and communication technology; CEO = Chief executive officer; VP = vice president.

4.3 Themes Found In Research

I identified several themes from the research that tie into the hypotheses as well as IT and M&As in general. Emergent themes included the value and importance of IT in a merger, the trend of success versus failure, the CIO's involvement in the M&A, and the value of key staff and the trend that accompanies them. I describe each theme in more detail below. Analysis was based on survey data from 17 respondents and interview data from eight respondents. Table 4 provides general demographic information from the quantitative study, whereas while Table H1 in Appendix H demonstrates the frequency of each qualitative column heading subject co-occurrence with the row's subject. Tables G1 and G2 in Appendix G provide additional frequency data for the two research hypotheses from the surveys.

Table 5 displays the frequency counts for selected demographic variables. Of respondents, 13 answered that their organization was a party in an acquisition (76.4%), whereas two were part of either a merger or takeover (23.6%). About half the participants (52.9%) reported that the merger had taken place at least 2 years ago. Organizations involved were part of a diverse group of industries, including food manufacturing and retail, investment and financial services, legal services, oil and gas, and recruiting, with IT services as the most frequent with four (23.5%).

Table 5: ***Frequency Counts for Selected Survey Demographic Variables (N = 17)***

Variable Category	*n*	%
1. Your organization was a party in a/an		
Acquisition	13	76.4
Merger	2	11.8
Takeover	2	11.8
2. How long has it been since the merger?		
< 6 months	3	17.6
6–12 months	2	11.8
12–24 months	3	17.6
> 24 months	9	52.9
	table continu es	
33. Whatline of business was your com	pany in b	efore the merger?
Food manufacturing & packaging.	1	5.9
HR & IT services	1	5.9
Investment & financial services	3	17.6
IT	1	5.9
IT & telecom	1	5.9
IT services	1	5.9
Legal services. law	1	5.9
Oil & gas upstream	1	5.9
Recruiting agency	1	5.9
Restaurant franchise	1	5.9
Telecom	3	17.6
Training	1	5.9
Training & consultation	1	5.9
34. What line of business is your company in now?		
Food manufacturing & retail	1	5.9
Fully integrated ICT provider	1	5.9
HR & IT services	1	5.9
Investment & financial services	3	17.6
IT & telecom services	2	11.8
IT services	2	11.8

Legal services. law	1	5.9
Oil & gas up & down stream	1	5.9
Recruiting agency	1	5.9
Restaurant franchise	1	5.9
Telecom	1	5.9
Training	1	5.9
Training & consultation	1	5.9

Note. HR = human resources; IT = information technology; ICT = information and communications technology.

4.3.1 Importance of IT

One trend that emerged repeatedly throughout this research was the growing importance of IT in mergers and acquisitions. Of the 17 people surveyed, 15 stated that the importance of IT was high, whereas two or 11.8% rated it as moderately important. When asked the perception of IT in their organization at the time of the merger, six (35.3%) respondents stated that IT was integral to their business and another six (35.3%) said IT was a key business partner. Four (23.5%) individuals stated that IT was merely a back-office activity and a single (5.9%) respondent classified IT as an afterthought. When asked the same question after the merger, nine (52.9%) respondents stated that IT was integral to the business and five (29.4%) stated it was a key business partner. Those who stated it was a back-office activity dropped to one (5.9%) and two (11.8%) stated IT was an afterthought. Figures 6 and 7 highlight the changes before and after the merger.

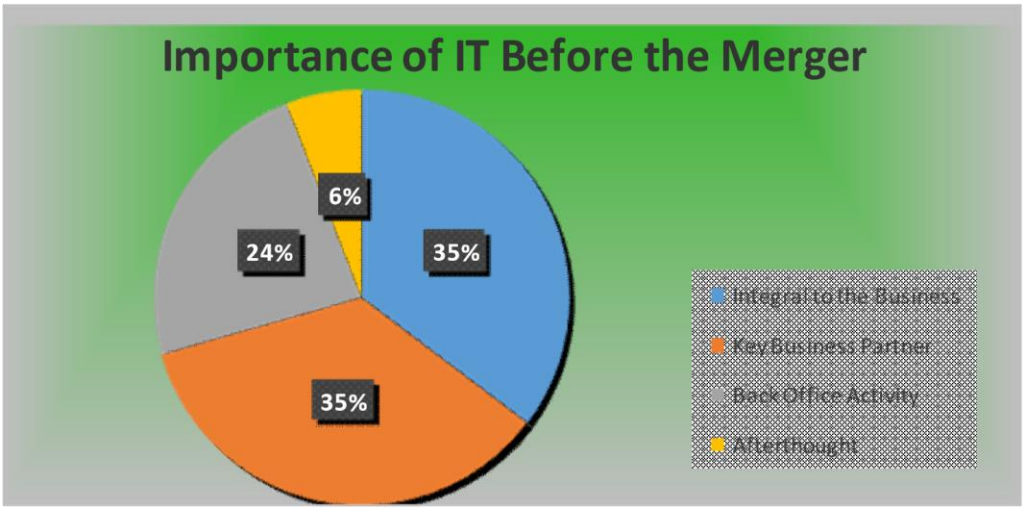

Figure 6: **Importance of IT before the merger.**

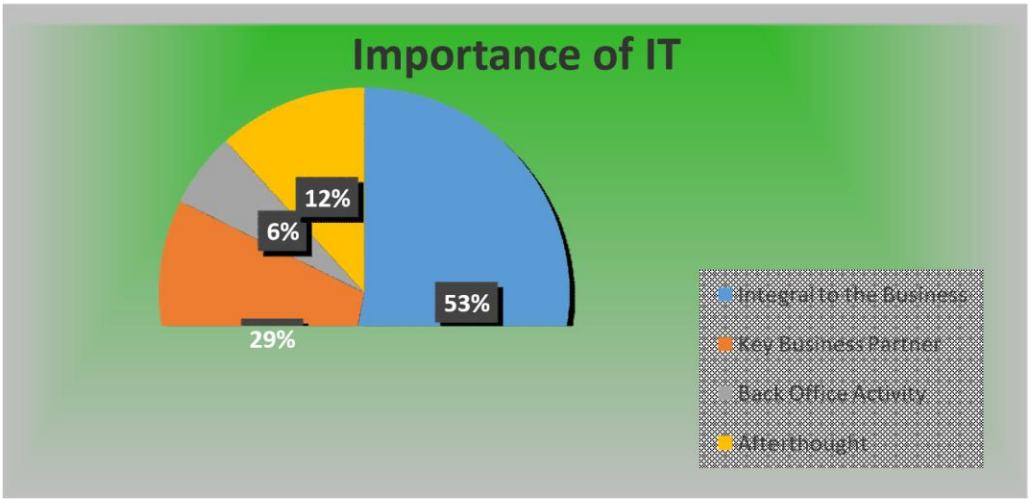

Figure 7: **Importance of IT after the merger.**

Further research revealed that nine executives interviewed believed IT was important in mergers and acquisitions. After inputting the information to Atlas.ti, I identified 95 references to the importance of IT in M&As. Participant A, from a U.S. company not included in the analysis, claimed IT was not "hugely significant," simultaneously saying that a mature infrastructure made all the difference in their merger. Participant B stated that "IT is very important in terms of the data provided to the M&A team" and that having a proper IT setup is "very important, crucial." Participant C stipulated that the importance of IT "really depends on the industry," whereas Participant D stated that "the main role of IT … is facilitating a lot of information." Participant E acknowledged IT's importance but clarified that "IT does not make the company succeed"; that the company's business plan does. Participant F was more emphatic about the importance of IT, claiming that the company "consider[s itself] a technology bank as opposed to the brick and mortar bank, so everything [they] looked at is about technology" and that IT was "hugely important." Participant G classified IT as a critical factor and a "primary thing within the merger." Participant H agreed that "technology is crucially important" in large part due to their company's size, and that it took "seven months to coach the board" to the direction and type of merger they sought. Participant I stated directly that "IT and technology is very important, critical, in the telecom M&A." All participants believed

IT was important. I sought to discern how much of a role IT played in M&As However, when asked what percentage of the M&A concerned IT or technology, answers varied, as Figure 8 demonstrates.

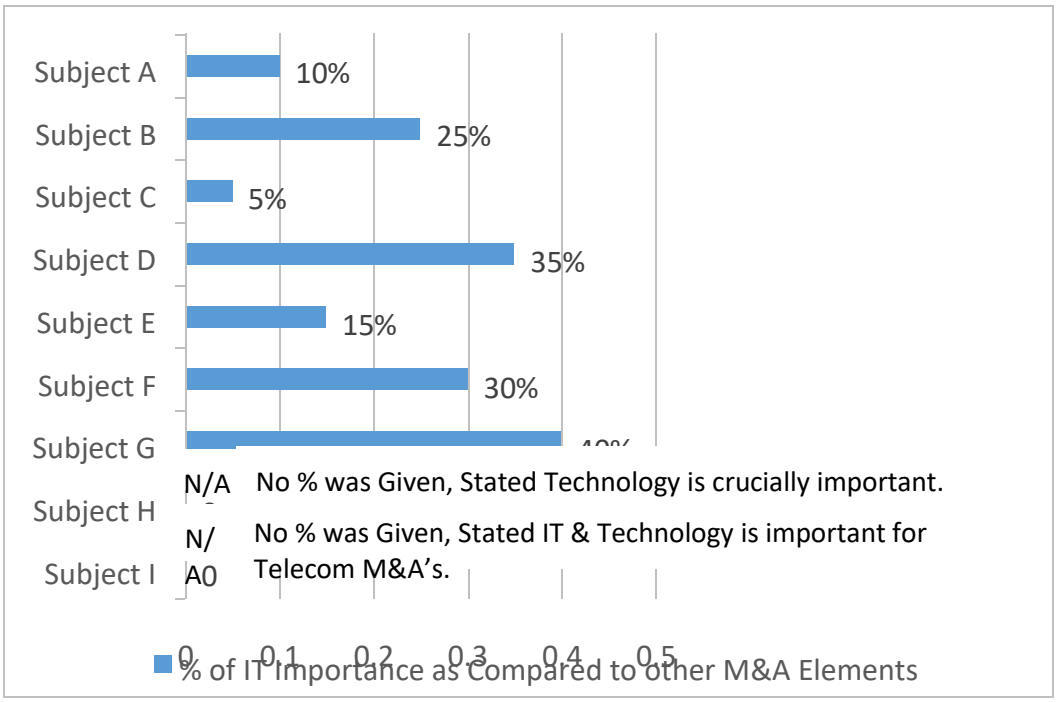

Figure 8: **Percentage of IT importance.**

4.3.2 Merger Success and Failure

One emergent theme was the success rate of the mergers. Of the 17 companies studied, 10 respondents classified their merger as an unqualified success; four stated they were moderately successful, two respondents said it was too soon to tell, and one labeled their merger as a "success after massive loss," so in the immediate aftermath of the merger, it was a failure. Of all the mergers and acquisitions studied, participants classified no mergers as failures. In addition, 88.2% stated that their company value increased whereas only one claimed it decreased. Participants said their company value increased now, implying that it took some time to see the increase. Of those 17 M&As, a marked 94.1% (16) met the stated objectives; merely one (5.9%) did not.

4.3.3 Foundational Survey Findings Pertaining to Both Hypotheses

Table 6 delineates the survey data that answers or addresses both hypotheses. The questions in this table pertain to and are imperative in providing part of the answers to the research questions raised in each hypothesis. These questions highlight how many companies performed well overall and how many failed to do so, the overall success of the mergers, and how the interviewees valued IT.

Table 6: ***Instrumental to Both Hypotheses***

	Qty.	%	Out of
1. How many companies classified IT as a high importance item?	15	88.2	17
2. How many mergers were considered successful?	9	52.9	17
3. How many interviewees believe their company's value ultimately increased after the merger?	16	94.1	17

4. How many companies achieved the objectives of the merger?	16	94.1	17
5. Of those that did not meet their objectives, how many had IT as the obstacle in this failure?	1	100.0	1
6. How many mergers were completed on schedule?	6	35.3	17
7. How many mergers that fell behind schedule were completed within 12 months?	10	90.9	11
8. Of these delayed integrations, how many companies label IT as the cause of the delay?	10	90.9	11

Table 7 addresses the first hypothesis: In M&A projects, involving the CIO or other key IT staff in the ex-ante due-diligence process aligns with successful IT integration. One of the most pertinent key findings is that only one company that did not have a CIO who completed an IT due-diligence process, implying that this role is important and a driving force in instigating the completion of this step. This outcome also highlights when the surveyed executives were brought into the planning and implementation phase. Table 8 shows how these results address both hypotheses.

Table 7: ***Hypothesis 1: CIO Involvement in Due Diligence***

	Qty.	%	Out of
1. How many companies did not have a CIO involved with due diligence?	7	41.2%	17
2. How many companies failed to do IT due diligence ex-ante?	8	47.1%	17
3. How many companies did not have a CIO during the merger?	5	29.1%	17
4. How many companies without CIO did not do IT due diligence?	4	80.0%	5
5. Was the CIO involved with due diligence?	10	83.3%	12
6. How many interviewees was notified ex-ante?	14	82.4%	17
7. How many interviewees were brought into planning ex-ante?	9	52.9%	17
8. How many interviewees were brought into planning after due diligence?	1	5.9%	17
9. How many interviewees were brought into planning during due diligence?	5	29.1%	17
10. How many interviewees were brought in during implementation?	2	11.8%	17

Note. IT = information technology; CIO = chief information officer

Table 8: Interpretation of Results

	Mergers category /total	CIO did do due diligence	CIO did not do due diligence	Key IT staff retained (%)	Did not retain key IT staff* (%)	CIO did not complete due diligence
Successful mergers	10/17	9	1	47.1	11.8	**2**
Failed mergers	1/17	0	1	5.9	0.0	**1**
Moderately successful mergers	4/17	1	3	5.9	17.6	**3**
Too early to tell	2/17	2	0	11.8	0.0	**1**
Met merger objectives	16/17	12	4	70.6	23.5	**6**
Did not meet merger objectives	1/17	0	1	0.0	5.9	**1**
Mergers completed on schedule	6/17	6	0	23.5	11.8	**1**
Mergers not completed on schedule	11/17	6	5	47.1	17.6	**6**
Key staff stayed through integration	12/17	9	3	N/A	N/A	**4**
Key staff left prior to integration	5/17	3	2	N/A	N/A	**3**

Note. *Did not retain key IT staff through integration; CIO = chief information officer; IT = information technology.

Table 8 translates and compares the results of the data from Tables 6, 7, and 9; from one question to another, allowing for greater depth and a well-rounded interpretation. Each darker gray column specifically addresses one of each of the hypotheses: the middle column is for the first hypothesis and the first darker column to the right is for the second one. The question regarding the CIO is split because some companies had a CIO but did not involve this individual in the due-diligence process in two instances.

Of the seven mergers that did not have a CIO involved in due diligence, 57.1% were either failures or only moderately successful, yet 85.7% met merger objectives; another 85.7% of those seven mergers were behind schedule, accounting for 54.5% of the mergers that were completed behind schedule.

Although nearly half (45.5%) of the mergers that were not completed on schedule had a CIO, it is telling that only one of the mergers without a CIO involved in due diligence was completed on schedule. The single merger that failed to meet its objectives did not have a CIO involved and had key IT staff leave prior to merger integration. It

is unclear which factor, if either, had the strongest impact on this failing, and the merger overall was classified as one that was moderately successful.

Table 9 specifically addresses the second hypothesis: In M&A projects, retaining key IT staff aligns with successful technology integration by targeted objectives. The table indicates how many IT staff were retained, offered benefits, and accepted benefits. Those who were offered benefits but did not accept them left five companies prior to integration (see Table 8), although six companies answered the follow-up questions as though they had lost employees. Every company where employees left prior to integration completion suffered from delays in the merger process and each took steps to prevent a similar occurrence in the future, choosing to use documentation as their means of preventing information from leaving the company prior to knowledge transfer.

Table 9: ***Hypothesis 2: Retention of Key IT Staff***

	Qty.	%	Out of
1. How many companies retained less than 10% of their IT staff?	4	23.5	17
2. How many companies retained more than 90% of their IT staff?	6	35.3	17
3. How many companies offered retention benefits to less than 10% of their IT staff?	6	35.3	17
4. How many companies offered retention benefits to more than 90% of their IT staff?	0	0.0	17
5. How many companies' IT staff accepted less than 10% of offered retention benefits?	3	17.6	17
6. How many companies' IT staff accepted more than 90% of offered retention benefits?	7	41.2	17
7. How many employees that left stayed through integration?	12	70.9	17
8. Of those that left prior to integration, how many completed knowledge/skills transfer before leaving?	5	100.0	5
9. How many companies used documentation to supplement information from employees that left?	6	35.3	17
10. How many merger integrations were delayed due to lost employees?	6	35.3	17
11. How many of these companies took steps to prevent loss of information in the future?	6	100.0	6

Note. IT = information technology.

4.3.4 Hypothesis 1: CIO and IT Involvement in Due Diligence

In M&A projects, involving a CIO or other key IT staff in the ex-ante duediligence process aligns with successful IT integration.

This hypothesis raises the question; did the company have a CIO? Of the 17 companies, 12, or 70.6%, had a CIO at the time of the merger. Of those, 10, 58.8%, stated the CIO was involved in due diligence. Although the success

rate is mentioned above, of 17 transactions, only six were completed on time. Of the 11 that were delayed in meeting objectives, only two (22.2%) stated that the obstacle was IT. However, more in-depth questions revealed that although these individuals did not believe IT was an obstacle in not meeting M&A objectives, 10 (83.3%) believed strongly that IT was the cause of the delay in meeting objectives, a delay of up to 8 months. Of those, six (60.0%) responded that the delay was due to integration planning and four (40.0%) to misalignment. All participants held managerial or executive-level positions, yet 17.6% (3) of them were not notified about the merger until after the acquisition transaction took place. The vast majority were involved in premerger planning, so they were notified early in the process (see Figures 9 and 10).

4.3.5 Hypothesis 2: Retention of Key Staff

In M&A projects, retaining key IT staff aligns with successful technology integration by targeted objectives. The perceived importance of IT in an organization was discussed above. One key factor was the retention of employees and IT staff. Figures 11–13 partition the retention of IT staff, benefits offered, and how many accepted them.

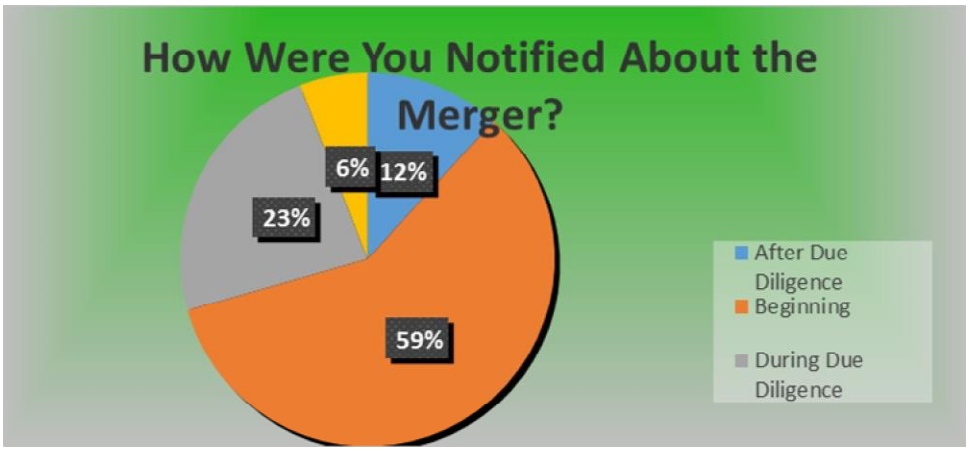

Figure 9: How executives were notified about the merger.

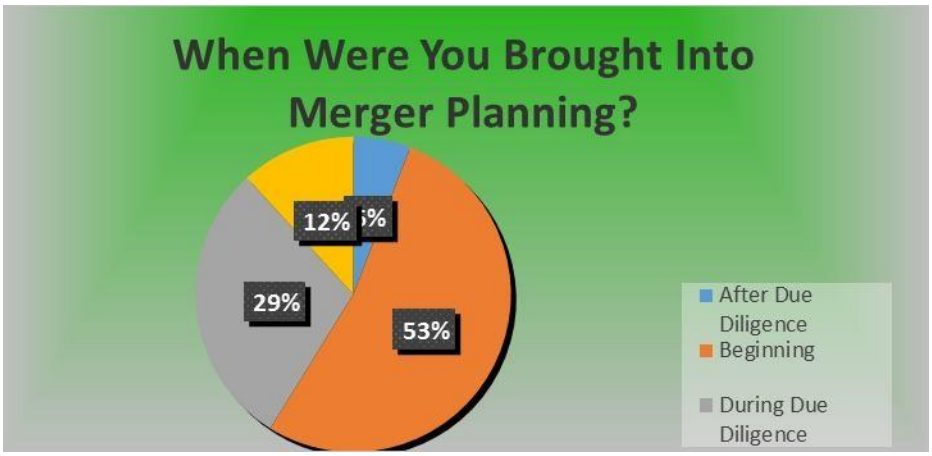

Figure 10: Timeline for merger planning.

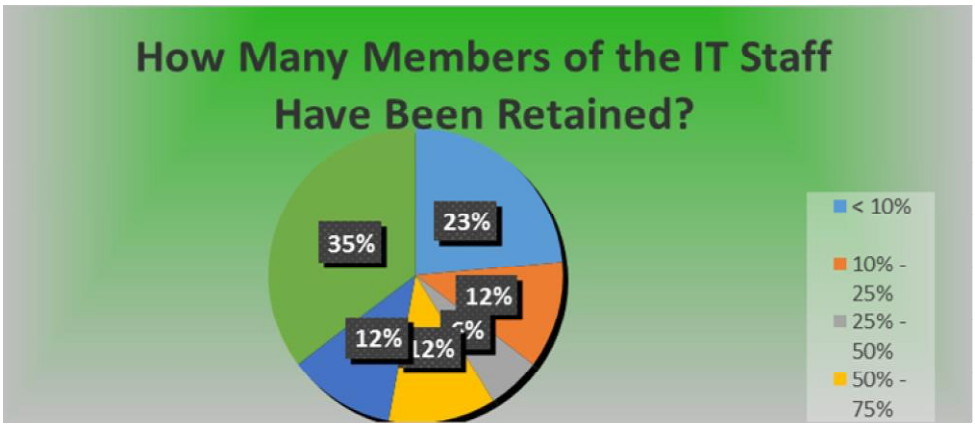

Figure 11: Staff retention.

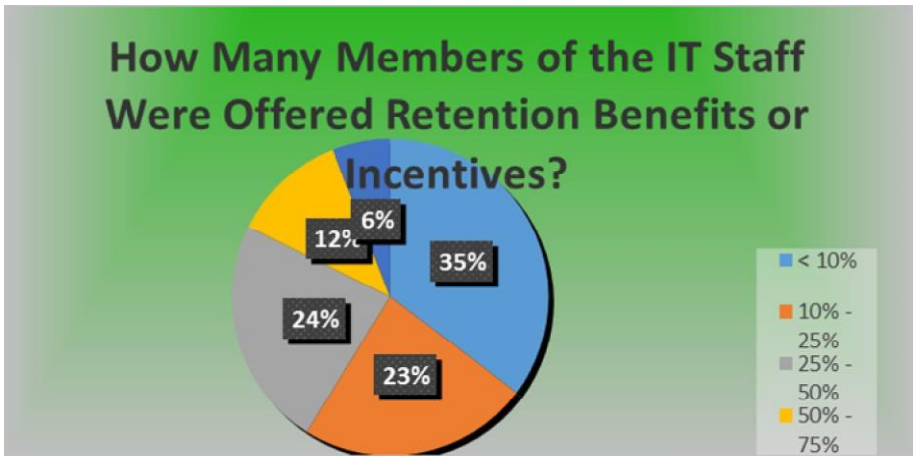

Figure 12: Count of those offered incentives.

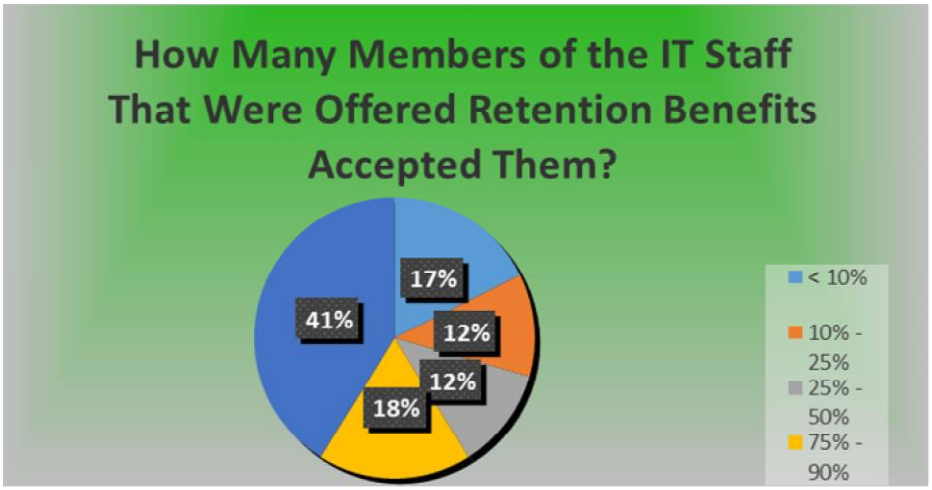

Figure 13: Count of those accepting benefits.

Of the companies involved, 70.6% (12) stated their IT staff stayed through integration, and of the five companies whose IT staff did not stay through integration, all five completed knowledge and skills transfers prior to

employees leaving; companies used documentation to fill the gap in six of the organizations. However, five companies said IT staff leaving delayed or set back the integration process between 2 and 4 months. Seven companies responded affirmatively information or skills were missing.

Three company representatives stated that information was missing and three stated that skills were missing. Six said nothing was missing, and 42.9% each (3 each) took steps to prevent a repeat occurrence, either retaining key staff or obtaining thirdparty help.

4.4 Case Study

The case study examined one of the large information and communications technology corporations in the world, based in Saudi Arabia with locations around the world. The company underwent a series of mergers and acquisitions from 2007 through 2013, continuing through today. The company is ever-changing, expanding markets and product lines as it swallows up competition while joining forces with similar companies in other markets. The company began as a telecom company but has grown and expanded its services, now offering a much wider range of technological services. This research included interviews with three company executives from the acquiring or predator company and two executives from the acquired or target organization, the quarter- and year-end financial statements provided by the company to the public, and published articles in the public forum. The company also acquired a variety of share percentages in similar companies in other global markets to reach a wider client base. All numbers in the financial statements are in thousands unless specified and as the company home base is located in Saudi Arabia, the figures are in Saudi Riyals. The company's stated goals, taken from their annual report, as well as the current company status, are summed in the following statement:

[The Company] has worked with the highest determination, through the transformation process very much like a journey. With the aim to drastically transform the capabilities of the Company's human resources and consequently improve the quality of the way of thinking and working, and the culture prevalent in the Company. This has a positive effect on the work system and the financial and institutional performance and promises a better future.

Details on the company's activity are outlined in the sections that follow. When interviewing company employees, interviews centered on the impact of IT on M&As.

Participant I stated, "IT and technology is very important in the telecom M&A. … We are talking big amounts. So, the potential of these investments depends heavily on the sustainability of … technology." The participant emphasized that in the telecom industry, it was absolutely vital to know the status of the target company's technology to ascertain if it is obsolete, current, needs upgrading or replacing, or if it brings anything to the negotiations. These interviews tied closely with the increase in company size, a feat accomplished through mergers, acquisitions, buyouts, and purchased percentages of other companies to gain ownership benefits.

4.4.1 Company Overview and Finishing Latest Fiscal Year

The Company, classified as a "Saudi joint stock company," was founded in April 1998, as this segment of government-managed services was transferred to an outside entity; upon its founding, it was 100% owned until the Saudi Arabian government, the Kingdom of Saudi Arabia, sold 30% of its shares to the public stock market on September 9, 2002. The basic services offered by the Company are widespread but concentrated in the telecom industry. The Company spent the next 15 years making acquisitions of similar entities in other markets. The Company is part of a Group of businesses that owns shares in each member company, purchased through a variety of acquisitions beginning shortly after the Company was founded and continuing through today.

Participant I explained that in the companies where current staff is retained, the reason for their retention is because "they have a better knowledge of the company, the market, and they have experience they have gained through … the years." Many times, if the Company does not acquire a majority stake in a company, they have no dealings with staffing unless issues are raised to the level of the Board of Directors. In the Company, the boards in the various countries sit, on average, three times annually to "talk about the requirements next year and how they can cooperate, whether they go and negotiate together with the vendors," allow for better deals and more savings in all areas.

As of December 31, 2014, the most recent complete fiscal year, the company had a net income of SR 12,163,421,000, increasing by SR 1,715,129,000, or an increase of 16.42%, over 2013.

Dividends paid in 2014 were 38.21% higher than 2013 due to company growth, an increase in earnings per share, and a dramatic rise in the number outstanding shares due to expansion and growth. The Company has business interests and offers services in Kuwait, Bahrain, India, Malaysia, Turkey, Indonesia, and South Africa.

4.4.2 Successful M&A

Participant D stated that IT was "100% … the start should be technical partly because that's really what you're buying. … You're buying the technology and the ability to use that technology." IT is absolutely vital to their organization, providing the foundation of their business. The rationale for the merger in question was two pronged: they wanted to add to their core business by purchasing a company that specialized in system integration (the target company was a regional Internet service provider) and they wanted to "make that a better vehicle to serve our business, especially in the enterprise segments and in between."

Interviews for this merger included three executives from the predator company and two from the target company. Four of these individuals are still with the organization today. They had a CIO and completed an IT due-diligence process, retaining the necessary personnel. This company shows that the success rate may be higher than previously believed and that the predator company's value is not destroyed when it makes an acquisition, but actually grows.

The biggest challenge in the merger Participant D discussed was the two companies' product lines, which were quite similar and addressed the same market. Company executives asked themselves, "how do you not destroy value between the two entities?" The second biggest challenge was the culture clash they faced when the companies actually merged as the companies had a very big culture gap. Participant D specified that the transaction was in the same market, Saudi Arabia, and occurred in a similar timeframe as the 2007 M&As listed in Table 10, but the specific one discussed involved a company acquired and operated as a separate entity until this past year, when the companies merged and began to operate as a single company. After the mergers in 2007, the company's quarterly performance demonstrated the changes shown in Table 10:

Table 10: Financials Involving 2007 Mergers and Acquisitions

	Premergers 12/31/2006	During mergers 12/31/2007	Postmergers 06/30/2008
Total assets	46,121,773	68,811,246	103,191,755
Total liabilities	11,967,434	32,919,364	59,577,222
Total shareholders' equity	34,154,339	35,876,253	38,245,483

Total operating revenue	33,785,889	34,457,571	21,605,169
Net income	12,798,902	12,021,733	6,869,151

Note. Saudi Riyals in thousands; From company financial statements.

When asked how important Participant G considered IT in the merger, the respondent stated, "It is a primary thing within the merger because what we are acquiring is IT systems. … The real asset is the IT systems." Yet, despite the high value of IT in the merger, and that it was a "primary thing," Participant G valued IT as 40% of the importance of the merger. Like earlier mergers, the Company had a CIO in this merger who participated in the due-diligence process, one of the primary questions stemming from Hypothesis 1.

4.4.3 Failed M&A

The purchase of a company, a telecom company, was officially finalized in 2011. The details of this acquisition are outlined in Table 11. One cause of merger failure, according to Participant H, was that they "underestimated the time and effort it would take … to do … 100 percent technical due diligence and [they] were very much overcome by the commercial aspect. So [they] had to move faster than what was planned." Participant H believed this segment of the failure was due to the absence of specialized IT staff in the due-diligence process. According to Participant H, this was one "of the main reasons of the failures in achieving the targets on … time." In addition, they were only able to retain four members of the IT staff, thanks to their incentive and compensation plan. They were unable to retain more of the IT staff because the merger required the IT staff to move to a different country; many felt uncomfortable doing so.

Table 11: ***Financials Involving 2011 Mergers and Acquisitions***

	Premerger 12/31/2010	During merger 12/31/2011	Postmerger 12/31/2012
Total assets	110,708,804	112,180,819	82,505,000
Total liabilities	57,241,077	58,614,422	31,319,779
Total shareholders' equity	53,467,727	53,566,397	51,337,128
Gross profit	30,337,398	31,448,639	25,261,703
Net income	9,440,372	7,670,123	7,275,959

Note. Saudi Riyals in thousands; from company financial statements.

According to Participant I, the most important part of IT due diligence is to ascertain the level of synergy between the two organizations and determine if the companies are using the same or compatible technologies. Aligned with colleagues, Participant I described technology as the "backbone of the transaction." The percentage of focus on technology depends largely on the type of acquisition, between 15 and 25%. Unlike most other organizations and interviewees, who use the terms interchangeably, Participant I differentiated between IT personnel and technology personnel, stating that due diligence did not involve IT but four divisions of networking: planning, designing, implementation, and operation and maintenance: technology was involved in due diligence, not IT.

According to Participant I:

Underestimating the input of the technological team is a disaster. We tried that before. It was unintentionally one of our investments in Asia, we involved IT, but we didn't involve the right people and this caused huge losses.

We suffered from this mistake for years and we lost a golden opportunity to capture market share and turn this company into a profitable one.

Participant I emphasized that site visits are an essential part of the duediligence process. Another primary reason this merger failed was because the Company had issues with regulators and the technical specifications of cell towers being compatible with their existing systems. Ultimately, failure to check cell-tower compatibility and regulators "regulations due diligence" caused the merger to fail.

This merger failed to produce value for the company and was later divested, selling for $835 +/- million, whereas it was evaluated at $1 billion by the Saudi French Investment Bank. The fact that the Company sold it or divested from it below value is a major indication of the failure of the overall venture.

5. Discussion

5.1 Introduction and Summary of Key Findings

The key findings from this research included the absence of a distinct correlation between due diligence and success, as well as the overwhelming number of M&As that finished behind schedule. Interviews and surveys were conducted with global companies based in Saudi Arabia or employees of the Saudi Arabian location of a global entity; what effect location may have on the results is unknown. This research included study of 13 acquisitions, two mergers, and two takeovers completed between less than 6 months ago and more than 24 months ago, with 52.9% falling into the latter category and 17.6% in the former. Most companies worked in a single field; however, the study included three premerger telecom and investment companies and three and financial-services companies, comprising 17.6% each. Other fields included food manufacturing and packaging, legal services, and training and consultation. Postmerger, the number of telecom companies dropped to one, investment and financial services remained at three, and IT, IT services, and telecom services numbered two each (growing by one each).

5.2 Literature That Concurred With These Findings

The primary literature that concurred with these findings specifically related to Hypothesis 2; analysis confirmed a concentrated effort among merging companies to retain valued employees. Limited literature concerns the effect of retaining key IT staff, but does suggest that most companies make a distinct effort to retain key staff members, and that these staff members were retained through incentives offered by the company; even if these incentives did not include long-term employment or retention, staff generally rewarded them with loyalty (Roehl-Anderson, 2013). Most (58.8%) companies experienced a retention rate of greater than 50%, and the bulk of those (41.2% of the total), demonstrated a loyalty of greater than 90%.

No studies described what happens when knowledge and skills transfers are not completed; thus, it is unclear whether having five of the studied mergers suffer from key staff loss is a high, low, or average number. Significant results supported the concept that IT is a critical component of any M&A. Although IT due diligence was not always performed and did not appear to affect the outcome, Vielba and Vielba (2006) and Roehl-Anderson (2013) emphasized the importance of IT in an organization and the complexities involved in merging two separate companies' IT systems. In practice, although most research participants acknowledged the importance of IT (see section 4.3.1 above), non-IT-oriented organizations did not appear to make a special effort in managing the merger of their IT systems.

5.3 Literature That Did Not Concur With These Findings

One major conflict emerged with the literature: the success rate. Van de Vliet (1997) and Brown University agreed that 50% of acquiring companies reported results that were neutral to very poor (Fairfield, 1992). A study by

Violano found that 80% of acquisitions create destruction for the value of the predator company in 80% of mergers (as cited in Baker & Niederman, 2014; McKiernan & Merali, 1995). Of mergers, 70% were classified as failing to meet ex-ante expectations and 50% were outright failures. More than 75% of employees accepted incentives to stay and the vast majority of companies whose employees did leave had delays in completing integration; however, the sample size is too small to conclude that definitively. A copy of the survey is in Appendix E. I designed this survey and complementary interviews to answer the research questions and provide supporting data to evaluate the success or failure of the mergers in question using sociotechnical research. In addition, historical research provided the literature and interview-supplied case study and supporting data to validate the primary research. This research shed some light on this understudied aspect of IT in the M&A environment, its related strategies and the employees who make it possible.

5.4 Conclusions and Implications

Because I studied companies in Saudi Arabia, it is unclear if the organizations' global position played a part in their IT implementation, merger, or development; yet it is clear that the success rate of the mergers studied in the literature did not coincide with what was found in the field research.

The importance of IT was highlighted and realized in the literature and in practice, with 15 of 17 participants rating IT as highly important, yet no connection emerged between a merger's success rate and IT due diligence. In addition, 11 of the 17 mergers were not completed on schedule, yet in only five cases key IT staff failed to stay through integration and the delays were not in all these organizations. Preliminarily, no link emerged between staff retention and merger integration being completed on time. However, all five mergers where key staff left prior to integration fell behind schedule.

The two hypotheses put forth at the beginning of this research follow:

1. In M&A projects, involving CIO or other key IT staff in the ex-ante due-diligence process aligns with successful IT integration.
2. In M&A projects, retaining key IT staff aligns with successful technology integration by targeted objectives.

This research supported both hypotheses, but the sample size is too small to be the final word on the issue; yet, results are strongly suggestive of a correlation between not involving the CIO in due diligence and failure or delay, as illustrated by the case study. This study is less conclusive in determining the effect of key staff leaving prior to integration. However, results tend to support a conclusion that verifies the truth of these statements. Even organizations that did not complete an IT due-diligence process met their ex-ante objectives, with 16 of 17 meeting their objectives. In addition, key staff were important to retain, with 58.8% of the studied organizations offering retention benefits to more than 75% of their IT staff. Although this outcome supports the hypothesis, no definitive conclusions can be drawn from it. One factor that repeatedly presented was that 83.3% of organizations that had staff leave prior to complete integration stated it caused delays with integration but did not prevent them from meeting their objectives.

5.5 Recommendations for Future Research

Extensive research described the success and failure rate of M&As and a growing body of research has emerged on IT involvement and behavior during mergers. Less researched is the specific role of the CIO in IT due diligence, what effect IT due diligence has on the M&A process, and the exact role of the CIO in these situations.

It is quite clear that, as an executive, the CIO is important, but is a CIO necessary for a successful merger? This question can be answered by examining more corporations.

In addition, virtually no research has examined the role of key IT staff—their incentives, benefits, retention rates, and impact—on mergers. These remain uncharted territory, ripe for research. Projects that examine the role of key staff should take a wider, more global view and not limit study to a particular country or industry. Reaching saturation will prove problematic, as that would require so much information, but if the research supports or conflicts with these findings, researchers could begin to form a foundation for information in this field.

5.6 Final Summary

The outcome of this embedded qualitative research will allow organizational systems to maximize integration benefits only if the interdependency of these systems is clearly identified. The hypotheses and subsequent research questions presented in this paper investigated the involvement of IT in the success or failure of a merger: specifically, the CIO in ex-ante due diligence and if participation affects success rates; and retention of key IT staff and what affect failing to retain these employees has on the success rate. Prior to this study, researchers have only slightly researched the problems posed in these hypotheses, with little data available on Hypothesis 1 and little or no data available on Hypothesis 2.

Abundant literature exists on mergers, acquisitions, and takeovers, available from a wide variety of sources. A satisfying amount of literature has been published on IT involvement in M&A activity, and particularly how vital it is to have IT involved ex-ante. The degree to which IT should be involved has not specifically been studied in the literature found to date, which aligns with the hypothesis that the CIO should be involved in ex-ante due diligence. This research is somewhat conclusive with regard to the importance of the CIO's role in due-diligence planning, and although it can be argued that CIO participation is a positive activity, this study has limited information to support that concept due to the small number of participants. This preliminary conclusion is supported by the case study and the M&A activity completed without involving the CIO in the due-diligence process.

The involvement of key staff had been studied in a more limited way, with information available on the methods used for retention but no actual statistics on retention and if retention affected the outcome of the merger or the merger's timeline. Inevitable delays will be caused by companies losing necessary skills or information, or that the company will be otherwise negatively affected, perhaps including the complete failure of the merger.

In a personal correspondence from the collections manager at Herman Miller Workplace Resources, formerly of La Mirada, CA, to a former employee (2002), the company admits that letting go of the employee at the time of their merger (between Westfall Interior Resources and Herman Miller), was a mistake and begs the employee to return on the grounds that the employee was the only one who had been able to collect any money from the company's largest client, zeroing an eight-year-old $4 million collection account. The letter admits that the company had been unable to collect any funds from the client because the system the employee designed that enabled the two companies' billing systems to speak to each other was knowledge only the employee had.

The ultimate impact of this failure is unknown, however, the company was no longer operating in the same location, and had shrunk from three locations to one small office at the time of the letter. (This information is from the employee and not from the company, so the impact on the company is not specifically known, and therein lies the downside of using this type of information.) Again, the results of the study are not 100% conclusive, yet it appears that more than 75% of employees accepted incentives and the vast majority of

companies whose employees did leave had delays in completing integration. However, the sample size is too small to be definitive.

A copy of the survey is in Appendix E. I designed this survey and complementary interviews to answer the research questions and provide supporting data to evaluate the success or failure of the mergers in question using sociotechnical research. In addition, historical research provided the literature and case study supporting data to validate the primary research. This research shed some light on this understudied aspect of IT in the M&A environment, its related strategies, and the employees who make it possible. These data-collection methods—surveys, interviews, and the case study—support the initial hypothesis.

Although not definitive due to the small sample size, results clearly suggest that the hypotheses were correct, providing greater support for Hypothesis 1 than for Hypothesis 2 because of lack of foundation for the second. However, for Hypothesis 2, this was merely the first step in research and bears follow up.

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Appendix A. IT Due Diligence Checklist

IT Area Checklist Item

Applications

Enterprise applications o ERP (enterprise resource planning) o Finance and accounting o CRM (customer relationship manager) o SCM (supply chain management) o BI (business intelligence) o ECM (enterprise content management) o BPM (business process management) o PLM (product lifecycle management) o HRMS (human resource management system) Specialized applications (industry specific) o Proprietary o Open source Office productivity applications o Email and calendaring o Collaboration software o Office and personal productivity Hardware o Mainframes o Servers o Storage o End-user devices (e.g., desktops/laptops, phones, personal digital assistants [PDAs]) Network and telecom o Data o Voice o Mobile service

table continues

Infrastructure

Infrastructure software

o Operating systems

o Application development

o Middleware

o Data management

o Storage management

o Security systems

o IT operations

o Compliance Organization

Databases Size and structure IT Area Checklist Item

Capabilities

Tenure

Training (IT staff & end users)

Outsourcing

Staff location

Compensation

Suppliers/ vendor management (hardware, software, &

services) Vendor viability

Licenses o Terms and conditions o Transfer or relicensing fees

Contract termination fees

IT Culture

History

Governance

Mission

Innovation

Adaptability

Compensation structure

Communication

table continues

IT Operations

IT operating and capital budgets

Security and risk management

Disaster recovery and business continuity

IT service portfolio (including the associated service-level agreements

[SLAs])

Current and planned project portfolio

Help desk

Desk side services

Regulatory compliance

Data center facilities

Appendix B. M&A Samples

Table B1: Successful Mergers

Date Acquirer Target Price Merger details

1 June 2000 Sallie Mae USA Group $770 M4 Met IT and system integration goal ahead of schedule; Became the dominant leader in education finance. Sallie Mae's parent company, SLM Holding Corporation, is renaming itself USA Education Inc. 5

2 1999 Exxon Mobil $81 B6 Agreed to join forces and form one unified company – Exxon Mobil became the largest company in the world at this time and remains second largest today, behind only Wal-Mart. It also had the highest corporate earnings of any other company in every fiscal quarter in 2008.7

3 Jan 25 2006 Walt Disney Studios Pixar $7.4 B8 The contract between Disney and Pixar expired shortly after the release of Cars. Under the contact, Disney released and promoted the movies that Pixar made and shared in the profits. Once the contract expired, Disney wanted to go into immediate negotiations to lock in Pixar's creative talent.9 Although some scholars10 argue that the benefits of this deal only apply to Disney and that Pixar was less prosperous, most agree that the union was of great value to both parties, with Pixar benefitting from Disney's marketing and strategies and Disney benefitting from the sharing of creative talent between the two companies.11

4 July 2008 InBev Anheuser-Busch $52 B12 This all-cash deal transferred ownership of the classic American beer to Belgium. Part of the deal was the retention of the name "AnheuserBusch" so the merged company's name is Anheuser-Busch InBev. This merger created the largest brewer in the world and Bud Lite continues to be America's best-selling beer. Rather than closing the St. Louis headquarters of Anheuser-Busch, Anheuser-Busch InBev decided to retain the location as its North American headquarters and St. Louis now services both the US and Canada.13

Table B2: Failed Mergers 1 1968 New York Central Pennsylvania N/A Bankruptcy

Railroad

A fervent desire to turnaround the declining railroad business pushed the centuries-old bitter rivalry between these two railroad lines together to form the 6th largest corporation in America at this time. Yet, despite the initial merger, the continued decline in business led the company to merge with three additional railroad lines, the New York New Haven and Hartford Railroad, less than 12 months later, and ultimately filed for bankruptcy just two years after the original merger

4 C. V. Brown, Clancy, & Scholer, 2003.

5 C. V. Brown et al., 2003.

6 "Top 10 Best & Worst," 2009.

7 "Top 10 Best & Worst," 2009.

8 DePamphilis, 2009.

9 DePamphilis, 2009; Gallagher, n.d.; "Top 10 Best & Worst," 2009.

10 Patterson, 2013.

11 DePamphilis, 2009; Gallagher, n.d.; "Top 10 Best & Worst," 2009.

12 L. Brown, 2013; de la Merced, 2008.

13 L. Brown, 2013; de la Merced, 2008.

as the continued decline in railroad business due to the growth of airlines and trucks that commandeered a great deal of railroad traffic. This exemplifies the adage spouted by various business gurus regarding merging poorly functioning businesses: Sometimes, two sinking ships just makes a faster sinking ship. When it filed for bankruptcy in 1970, Penn Central Railroad became the largest corporation to ever file for that protection

2 1998 Daimler Benz Chrysler $37 B Divesture18

The initial merger was advanced because Daimler Benz was looking to create a "trans-Atlantic car-making powerhouse" that may dominate the automobile markets but instead sold the business at a $30 billion loss nine years later, selling it to a restructuring firm for $7 billion in 2007. The main issue according to employees of Chrysler, who left en masse after the merger, was the vast difference in culture between the middle-class Chrysler and the high-end Daimler Benz line. Although culture is often ignored in the due diligence phase, it is the number one reason for a failed integration. Unlike the cultural and staff integration, the IT integration was well thought out and planned in detail by the CIO of the newly merged DaimlerChrysler, Susan Unger.

3 1999 Mattel The Learning $3.6 Divesture

Company B

Although some of the literature does not classify this specifically as an utter failure, the facts of the merger may. Mattel purchased The Learning Company, which was on the verge of bankruptcy, in order to gain entrance into the learning software market. Within the next year, The Learning Company reported losses of $206 million, causing Mattel's bottom line to plummet right alongside it, creating a business-wide loss of $88 million. By 2000, Mattel was suffering losses of $1.5 million per day and a continually falling stock price. Less than two years after the purchase, Mattel sold off its acquisition but not before being forced to lay off ten percent of its workforce to cut costs. The third post-merger earnings statement that revealed their dismal earnings forced Mattel's CEO Jill Barad, one of only three female CEOs of Fortune 500 companies, to resign.

4 2005 Sears Kmart $11 B28 In A Downward "Death-

Spiral"

Purchased together by Eddie Lambert as two, separate failing businesses, they became the unified Sears Holdings and created the third-largest retailer in the country, but sales have continued to decline. Although many felt that the chain was not focusing enough attention on its solid brand name product lines – Craftsman and Kenmore – in January, 2014, Sears Holdings released sales that revealed losses in these areas as well, casting doubt that a concentration on these lines of business will boost up faltering sales After owning the businesses for a mere two years, and with the combined Sears Holdings only accelerating the decline of the two separate entities, Lambert was named "America's Worst CEO."

5 1994 Quaker Snapple $1.7 B Divesture

In spite of criticism that Quaker paid $1 billion too much for Snapple, the company purchased the "new kid on the block" and, along with Gatorade, formed the Quaker Beverage Division in 1994 At this time, Snapple and Gatorade comprised a full third of Quaker's revenue. The problem with Snapple arose from the marketing of the new product. Snapple has succeeded in becoming popular by being marketed to and sold in small, independent markets and stores and Quaker wanted to bring Snapple with them into the supermarket and the beverage was unable to hold its own. In addition, Coca-Cola and Pepsi began selling comparable and competing products, causing Snapple's sales to drop significantly. In addition to marketing challenges, there was a significant culture

clash, proving once again that if management fails to focus its attention on employees, the company pays the price After the sale, two of the three Snapple founders left the company, leaving one to manage the product and properly educate the new owners regarding their new acquisition. Half of Snapple's sales division as well as half of the executives in its headquarters were forced out. In addition, Quaker learned an unexpected fact regarding Snapple production – that it would often take weeks to complete a manufacturing process rather than days. In an effort to streamline this process, Quaker bought out a full third of Snapple's bottlers. A mere 27 months after acquiring Snapple, Quaker sold the product line to a holding company for $300 million. That is a loss of $1.6 million each day Quaker owned the product.

6 2001 AOL Time Warner $164 B / Corporate divorce

$165 B

At the second most costly merger in history, the union of AOL and Time Warner is the highest profile, highest cost failure of all time. Both successful in their own markets, Time Warner is the largest entertainment and media company in the world while AOL was among the first companies to offer in-home internet through their dial-up service. When the two companies first joined forces, hopes were high, viewing the union as an ideal merger and the "best of both worlds," electronic and print. Due to AOL's market capitalization, owners of AOL became owners of 55% of the merged company while Time Warner owners were limited to the remaining 45% in spite of the fact that Time Warner offered more assets and revenue Although the merger was viewed as a union of equals and structured so that each company was equal in the new business entity that they formed together, AOL Time Warner, the expected synergies were never realized, and a large portion of this issue was directly related to the two companies' different cultures that management found difficult to merge together. AOL had hoped to use Time Warner to move into the cable internet market; however, they stuck resolutely to dial-up while Time Warner marketed its own Roadrunner online service. Just one year after the merger, the drop off of sales for AOL became so significant that it reported the largest ever losses for a business in a single year - $99 million as a "goodwill write-off." The defensive nature of Time Warner – with each employee protecting their own territory – made the merger of cultures very complicated. In May of 2009, Time Warner (having dropped AOL from its name already due to outside – and inside – pressure) announced that this corporate marriage had dissolved.

7 2005 Sprint Nextel $36 B Only one surviving member

It was viewed as a merger of equals and created the third largest telecommunications company. While both Sprint and Nextel offered cellular phone services, they each had a specific market base: Sprint made an impact in private cell use with the service options and phones while Nextel had growing popularity in business due in large part to the "press-andtalk" feature of their phones: they worked like a traditional walkie-talkie, but with a much broader range. It was hoped that each business would be able to expand into the other's

customer base by cross-selling; however, this dream was never realized. The newly merged company was named Sprint Nextel Communications and each tried to capitalize on the other's products and offerings. Some analysts did not feel that these companies fit well together and that the union was headed for trouble from the outset. One of the first signs of trouble started immediately upon closure of the merger when Nextel executives began exiting

the company in droves, claiming the differences in culture as the cause. The national economic downturn did not help as customers expected more for less. Sprint also had a well-known reputation for terrible customer service, which cost them customers as well. In addition to the culture clash was a mixed marketing issue as each entity marketed individually instead of united, with Sprint's marketing "Sprint: together with Nextel" while Nextel's branding reads "Nextel with Sprint." In each case, the name of the "other" company is in small letters by comparison to the one being marketed. The merger also suffered from the problem of incompatible technology and conflicting and contradictory networks, making integration extremely challenging and at times, impossible. This caused even more issues and dissention among personnel as each company guarded their territory, and this incompatibility haunted the limited integration they were able to complete, leaving each company more or less in place as is. In 2008, the company wrote off $30 billion in goodwill (a form of business losses) and its stock was labeled "junk." This action, the write off of $30 billion, reduced Nextel's value by 80%. In 2012, Sprint announced the end of the Nextel "chirp" by closing down the Nextel network and moving all of Nextel's customers over to Sprint – ideally. Unfortunately, while the customers are forced to leave Nextel, only about half are staying with Sprint (228,000 out of 455,000 customers).66 Overall, Sprint has written off the vast majority of the value of the purchase price of Nextel and is not even retaining the majority of its customers.

Appendix C. M&A Ex-Ante Timeline

68 "Finfortec.com, 2011.

Note. From Winning With an IT M&A Playbook, by A. T. Kearney. Retrieved from https://www

.atkearney.com/mergers-acquisitions/ideas-insights/featured-article//asset_publisher

/4rTTGHNzeaaK/content/winning-with-an-it-m-a-playbook/10192Appendix D.

Data Analysis and Interpretation

Triangulation

Triangulation

Collect Data

Data

Figure D1. Models for multimethodological research. Appendix E. Questionnaire For

Employees In Merger-Involved Companies

1. Your organization was a party in a/an:

a. Acquisition b. Merger c. Takeover

2. How long has it been since the merger?

a. < 6 months c. 12–24 months

b. 6–12 months d. > 24 months

3. What was the role and perception of IT in your organization at the time of the merger?

a. IT is integral to c. IT is merely a

the business back-office activity

b. IT is a key d. IT is an

business partner afterthought

4. What is the role and perception of IT in your organization today?70

a. IT is integral to c. IT is merely a the business back-office activity

b. IT is a key d. IT is an

business partner afterthought

5. Given your involvement in the mergers and acquisitions process, how important is

IT to a successful transition?70

a. High b. Moderate c. Low

6. Did your organization have a CIO at the time of the merger?

a. Yes b. No

7. Did your organization complete an IT due diligence prior to the merger?

a. Yes b. No

8. Was the CIO involved in that process?

a. Yes b. No

9. How many employees did your company have before the merger?

a. Fewer than 100 d. Between 1500 and 2500

b. Between 100 and e. More than 2500

500

c. Between 500 and

1500

10. How many employees does your company have after the merger?

a. Fewer than 100 d. Between 1500 and 2500

b. Between 100 and e. More than 2500

500

c. Between 500 and

1500

11. How many original company employees have been retained?

a. < 10% d. Between and 75% 50%

b. Between and 25% 10% e. Between and 90% 75%

c. Between 25% f. > 90%

and 50%

12. How many members of the IT staff have been retained?

g. < 10% j. Between and 75% 50%

h. Between and 25% 10% k. Between and 90% 75%

i. Between 25% l. > 90%

and 50%

13. How many members of the IT staff were offered retention benefits or incentives?

Value: _____

a. < 10% of the total number of company employees

b. Between and 25% 10% e. Between and 90% 75%

c. Between and 50% 25% f. > 90%

d. Between 50%

and 75%

14. How many members of the IT staff that were offered retention incentives accepted them?

Value: _____

a. < 10% accepted them d. Between and 75% 50%

b. Between 10% and 25% e. Between and 90% 75%

c. Between 25%

and 50%

15. Why were these employees valuable? f. > 90%

a. Skills c. Both

b. Knowledge

d.

_____

_____

16. How many members of the IT staff were retained due to special skills? _____

17. How many members of the IT staff were retained due to knowledge?_____

18. For what other reasons was IT staff retained?

_____

_____

_____

19. How many of these employees are still with the company:

Value: _____

a. < 10% of total company employees d. Between and 75% 50%

b. Between 10% and 25% e. Between and 90% 75%

c. Between 25% f. > 90%

and 50%

20. For the employees that left, did they…

a. Stay through

integration?

1. Yes 2. No

b. For those that answered yes, skip to question 22. For those that answered no, please continue…

c. Complete knowledge / skills transfer first?

1. Yes 2. No

21. For those that answered yes, skip to question 22. For those that answered no, please continue…

If the "valued" employees left prior to integration completion and knowledge or skills transfer…

a. How did the company manage to fill the gap(s) left?

_____ _____

_____

_____

b. Did it delay or set back the integration process?

1. Yes 2. No

c. If yes, by how much?_____ days / months

d. Is there still valuable information/skills missing?

1. Yes (circle as

appropriate)

Information Skills

Other_____

2. No

e. What steps have you taken, if any, to prevent this from happening again in the

future?_____

_____

22. What is the most popular skill the company offered incentives for?_____

_____ _____

23. What is the most popular form of knowledge the company offered incentives for?_____

_____

_____

24. Do you view the merger as a success or a failure or is it too early to tell?_____

25. Do you believe the company value increased or

decreased?_____

26. How long did the merger integration

take?_____

27. Did you achieve the objectives of the merger?

a. Yes 2. No

a. If not, was IT an obstacle in this failure?

1. Yes 2. No

b. If so, in what

way?_____ _____

28. Was the merger completed on schedule?

1. Yes 2. No

a. If not, how far behind was it?

_____

_____

b. If not, was IT a primary cause in this delay?

1. Yes 2. No

c. If so, in what

way?_____ _____

29. What is your position in the company?_____

30. How were you notified about the

merger?_____

31. Were you notified before or after the acquisition transaction took place?_____

32. When were you brought into merger

planning?_____

33. What line of business was your company in before the merger?_____

34. What line of business is your company in now? Did it

change?_____

Appendix F. Mixed Methods Research Designs

Table F1

Steps and Decisions in Mixed Methods Data Analysis by Design

Types of mixed methods design	Type of methods analysis	mixed data Data analysis steps in the design	Data-analysis decisions
Convergent design compare r esults	Merging data analysis to	1. Collect the qualitative and quantitative data concurrently.	
		2. Independently analyze the quantitative data quantitatively and the qualitative data qualitatively using analytic approaches best suited to the quantitative and qualitative research questions.	
		3. Specify the dimensions by which to compare the results from the two databases.	
		4. Specify what information will be compared across the dimensions.	
		5. Complete refined quantitative and/or qualitative analyses to produce the needed comparison information.	
Types of mixed methods design	Type of mixed methods analysis	mixed data Data analysis steps in the design	Data-analysis decisions
		6. Represent the comparison.	Decide how the two data sets will be compared (e.g., dimensions, information).
		7. Interpret how the results answer the qualitative, quantitative, and mixed methods questions. Decide how to represent or present the combined analysis. Decide if further analysis is needed.	

table continues

Convergent design	Merging data analysis through data transformation (example of quantifying qualitative data)		
		1. Collect the qualitative and quantitative data concurrently.	

2. Independently analyze the quantitative data quantitatively and the qualitative data qualitatively using analytic approaches best suited to the quantitative and qualitative research questions.

3. Define a quantified variable based on the qualitative results, and develop a rubric for scoring the qualitative results. Decide how to quantify the qualitative data (i.e., scoring, rubric).

4. Systematically score the qualitative results to determine the quantified value.

5. Analyze the quantitative data, including quantified variables, quantitatively using analytic approaches best suited to the mixed methods research question. Decide on the statistics to use in relating the data sets.

two Explanatory design Connected data analysis to explain results

1. Collect the quantitative data.

2. Analyze the quantitative data quantitatively using analytic approaches best suited to the research question.

3. Design the qualitative strand based on the quantitative results. Decide participants what to follow up with and what results need to be explained.

4. Collect the qualitative data.

5. Analyze the qualitative data qualitatively using analytic methods best suited to the qualitative and mixed methods research questions.

6. Interpret how the connected results answer Decide how the qualitative results

Types of mixed Type of mixed

methods methods data Data analysis steps in the Data-analysis

design analysis design decisions

the quantitative, qualitative, and mixed methods questions. xplain the quantitative results.

table continues

Exploratory design Connected

analysis generalize findings data to

1. Collect the qualitative data.

2. Analyze the qualitative data qualitatively using analytic approaches best suited to the qualitative research question.

3. Design the quantitative strand based on the qualitative results. Decide what data can be used in the quantitative follow up.

4. Develop and pilot test the new instrument (or the new intervention treatment). Decide how best to assess the psychometric quality of the

5. Collect the quantitative data.

6. Analyze the quantitative data quantitatively using analytic approaches best suited to the quantitative and mixed methods research questions. instrument.

7. Interpret how the connected results answer the qualitative, Decide how the quantitative results build or expand on

quantitative, and mixed methods questions. the qualitative findings.

Embedded

design Merged connected analysis depending whether design concurrent sequential or data

on the is or 1. Analyze the primary data set to answer the primary research questions.

2. Analyze the secondary data (qualitative and quantitative) where it is embedded within the primary design by merging or connecting using the steps involved in the convergent explanatory, or explanatory designs.

Decide how to use the secondary data results.

3. Interpret how the primary and secondary results answer the qualitative, quantitative, and mixed methods Decide when the secondary data should be incorporated into the primary data set

questions. Decide how the secondary data support or augment the primary data.

table continues

Transformative design Merged connected analysis depending whether design or data

on the is 1. Analyze

quantitative qualitative data merging or concussing the steps involved in convergent, the and by ting
Decide on the analyses that will best provide evidence for the transformative lens.

Decide the data

Types of mixed Type of mixed

methods methods data Data analysis steps in the Data-analysis

design analysis design decisions

concurrent sequential or explanatory, or exploratory designs. analysis decisions identified for the corresponding

merging or connecting data analysis procedures outlined for the explanatory,

exploratory, or convergent designs.

2. Interpret how the results answer the quantitative, qualitative, and mixed methods questions. Decide to what extent the results uncover inequities and call for change.

Multiphase design Merged connected or data 1. Analyze the data for each project in the overall program.
Decide on the applicability of merged and connected data analysis or some combination for each phase in the project.

analysis for each phase or project in the multiphase design

2. Employ strategies for merged and connected analysis as the timing of the project dictates. Decide on how to best combine the data analysis from all projects in the study to address a common research objective.

3. Interpret how the results answer the Decide to what extent the results

project's research advance the questions and contribute program objective.

to the overall objective.

Appendix G. Quantitative Output from Surveys

Table G1

Frequency Counts for Selected Variables Pertaining to Research Hypothesis 1 (N = 17)

Variab

le Category n %

6. Did your organization have a Chief Information Officer at the time of the merger?

Yes 12 70.6

No 5 29.4

7. Did your organization complete an IT due diligence prior to the merger?

Yes 9 52.9

No 8 47.1

8. Was the CIO involved in that process?

Yes 10 58.8

No 7 41.2

24. Do you view the merger as a success or a failure or is it too early to tell?

Moderate 4 23.5

Success 10 58.9

Success after massive loss 1 5.9

Too Early to tell 2

25. Do you believe the company value increased or decreased? 11.8

Decreased 1 5.9

Increased 15 88.2

increased now 1

26. Length of merger integration in monthsa 5.9

4 1 5.9

9 2 11.8

12 6 35.3

13 1 5.9

14 1 5.9

Variab

le Category n %

15 1 5.9

24 5

27. Did you achieve the objectives of the merger? 29.4

Yes 16 94.1

No 1 5.9

27a. If not, was IT an obstacle in this failure? (n = 9) table continues

Yes 2 22.2

No

27b. If so, in what way? (n = 6) 7 77.8

Complete integration 4 66.7

IT strong enabler 1 16.7

Legacy systems integration

28. Was the merger completed on schedule? 1 16.7

Yes 6 35.3

No

28a. Number of months behind (n = 15) b 11 64.7

0 4 26.7

1 1 6.7

2 2 13.3

3 2 13.3

4 3 20.0

6 1 6.7

7 1 6.7

8 1

28b. If not, was IT a primary cause in this delay? (n = 12) 6.7

Yes 10 83.3

No 2

28c. If so, in what way? (n = 10) 16.7

Integration planning 6 60.0

Misalignment 4 40.0

29. What is your position in the company? table continues

Business development & marketing 1 5.9

Variab

le Category n %

executive

Chief executive officer 3 17.6

Chief financial officer 1 5.9

Chief information officer 1 5.9

Cofounder 1 5.9

Director 2 11.8

Director of IT 1 5.9

Director of telecom industry services 1 5.9

Manager business development 1 5.9

Senior business consultant 1 5.9

Senior vice president 1 5.9

Vice president of business development 2 11.8

Vice president of sales enterprise 30. How were you notified about the merger? 1 5.9

After due diligence 2 11.8

Beginning 10 58.8

During due diligence 4 23.5

Implementation 1 5.9

31. Were you notified before or after the acquisition transaction to ok place?

After 3 17.6

Before 14

32. When were you brought into merger planning? 82.4

After due diligence 1 5.9

Beginning 9 52.9

During due diligence 5 29.4

Implementation 2 11.8

a b

Length of time: Mdn = 12 months; Months behind: Mdn = 3 months. Table G2

Frequency Counts for Selected Variables Pertaining to Research Hypothesis 2 (N = 17)

Variab

le Category n %

a. What was the role and perception of IT in your organization at the time of the merger?

Business unit 10 58.8

Not existing 2 11.8

Variab

le Category n %

Outsourced 2 11.8

Support unit 3 17.6

3b. What was the role and perception of IT in your organization at the time of the merger?

IT is integral to the business 6 35.3

IT is a key business partner 6 35.3

IT is merely a back-office activity 4 23.5

IT is an afterthought 1 5.9

4. What is the role and perception of IT in your organization today?

IT is integral to the business 9 52.9 IT is a key business partner 5 29.4 IT is merely back-office 1 5.9

IT is an afterthought 2 11.8

5. Given your involvement in the mergers and acquisitions process, how important is IT to a successful transition?

High 15 88.2

Moderate 2 11.8

9. How many employees did your company have before the merger?c

Fewer than 100 4 23.5 Between 100 and 500 3 17.6 Between 1,500 and 2,500 2 11.8

More than 2,500 8 47.1

10. How many employees does your company have after the merger?

Fewer than 100 1 5.9

Between 100 and 500	6	35.3
Between 500 and 1,500	1	5.9
More than 2,500	9	52.9

table continues

11.	How many original company employees have been retained?d		
< 10%	1	5.9	
Between 10% and 25%	1	5.9	
Between 25% and 50%	3	17.6	
Between 50% and 75%	4	23.5	
Between 75% and 90%	3	17.6	
Variab			
le	Category	n	%
> 90%	5		
12. How many members of the IT staff have been retained?e			29.4
< 10%	4	23.5	
Between 10% and 25%	2	11.8	
Between 25% and 50%	1	5.9	
Between 50% and 75%	2	11.8	
Between 75% and 90%	2	11.8	
> 90%	6	35.3	
13.	How many members of the IT staff were offered retention benefits or incentives?		
< 10%	6	35.3	
Between 10% and 25%	4	23.5	

Between 25% and 50% 4 23.5

Between 50% and 75% 2 11.8

Between 75% and 90% 1 5.9

14. How many members of the IT staff that were offered retention incentives accepted them?f

< 10% 3 17.6

Between 10% and 25% 2 11.8

Between 25% and 50% 2 11.8

Between 75% and 90% 3 17.6

> 90%

15. Why were these employees valuable? 7 41.2

Knowledge 1 5.9

Both skills and knowledge 16 94.1

16–17. More members of IT staff were retained for skills or knowledge?

Skills 8 47.1

Both skills and knowledge equally 6 35.3

Knowledge 3 17.6

19. How many of these employees are still with the company?g table continues

< 10% 2 11.8

Between 10% and 25% 1 5.9

Between 25% and 50% 2 11.8

Variab

le Category n %

Between 50% and 75% 5 29.4

Between 75% and 90% 3 17.6

> 90% 4

20a. Stay through integration? 23.5

Yes 12 70.6

No 5

20c. Complete knowledge skills/transfer first? (n = 5) 29.4

Yes 5 100.0

21a. How did the company manage to fill the gap(s) left? (n = 6)

Existing Documentation 6

21b. Did it delay or set back the Integration process? (n = 6) 100.0

Yes 5 83.3

No

21c. Amount of delay in months (n = 6) 1 16.7

2 3 50.0

3 1 16.7

4

21d1. Valuable information missing (n = 7) 2 33.3

No 4 57.1

Yes

21d2. Valuable skills missing (n = 7) 3 42.9

No 4 23.5

Yes

21d3 Valuable other missing (n = 7) 3 17.6

No

21d4. Nothing missing (n = 7) 7 100.0

No 6 85.7

Yes 1 14.3

table continues

21e. What steps have you taken, if any, to prevent this from happening again in the future? (n = 7)

Nothing 1 14.3

Retain key staff 3 42.9

Third-party help 3 42.9

Variab

le Category n %

22. What is the most popular skill the company offered incentives for?

Business systems/operations

Business systems/operations and 8 47.1

technical development skills 1 5.9

Technical development skills 4 23.5

Management skills

Management skills and business 2 11.8

systems/operations 1 5.9

N/A 1 5.9

23. What is the most popular form of knowledge the company offered incentives for?

Business systems/operations

Business systems/operations/ technical 8 47.1

development skills 1 5.9

Technical development skills 7 41.2

Management skills 1 5.9

c d

Employees before merger: Mdn = 2,000; Percentage of employees retained: Mdn = 62.50%; e Percentage still with the company: Mdn = 62.50%; f Percentage offered retention incentives: Mdn = 82.50%.

Appendix H. Qualitative Output from Atlas.ti

Table

Frequency of Co-Occurring Participants in Interviews H1

Did they diligen CIO?	Global ce	have a ce trend	IT	& due diligen	IT due diligen ce	Case study	Totals
Absence of staff	0	2	0	0	4	1	7
Absence of key staff	0	1	0	0	1	0	2
Benefits of M&A	1	9	2	0	7	0	19
Case study	0	1	0	0	2	N/A	3
Causes of difficulties	0	13	7	1	11	1	33
Cultural issues	1	9	6	0	6	1	23
Did they have a CIO?	N/A	6	0	0	6	0	12
Do differently next time?	0	4	1	0	4	1	10

Due diligence	6	N/A	2	1	41	1	51	
Global trend	0	2	N/A	0	1	0	3	
Integration	1	14	3	1	7	1	27	
IT & due diligence	0	1	0	N/A	0	0	1	
IT due diligence	6	41	1	0	N/A	2	50	
IT importance	4	24	3	1	40	1	73	
IT percentage	2	4	1	0	5	0	12	
Objectives not met	0	7	4	0	4	0	15	
Primary difficulties	0	12	7	0	10	1	30	
Reasons for success	1	7	0	0	6	0	14	
Retention of key staff	1	9	0	0	8	3	21	
Strategy of merger	4	51	11	0	42	5	113	
Success or failure	0	10	1	0	8	0	19	
Technology	2	31	6	0	40	2	81	

Note. CIO = Chief Information Officer; M&A = merger and acquisition.