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Financial Performance Outcomes Following System Replacement in the Insurance Industry

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This is to certify that the doctoral study by

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2015

Abstract

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MBA, Central Michigan University, 2003

BS, Central Michigan University, 2000

Doctoral Study Submitted in Partial Fulfillment

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Abstract

Enterprise system replacement projects within the property and casualty insurance industry are costly, high-risk undertakings that carry a significant risk of project failure. The decision to replace policy administration systems for companies with over $250 million in direct written premium is a multimillion dollar investment for corporate strategic decision makers. This study examined the financial impact of enterprise policy administration system replacement in the property and casualty insurance industry by comparing financial performance results for companies that performed policy administration system replacements with those that did not. Insurance industry financial results for the years 2009 through 2014 were used for the analysis and examined in a quantitative quasi-experimental study using repeated measures MANOVA with 6 levels for US companies with over $250 million in 2009 direct written premiums. This analysis showed that enterprise system replacement was not financially significant for revenue growth or operational efficiency. This finding suggests that system replacement should not be used as a financial growth strategy for organizations, although other justifications for system replacement may make replacement beneficial. Additional research is recommended to determine whether financial performance gains seen in 2014 for companies performing system replacements carry into future years, or whether particular companies with positive performance results following system replacement employed strategies that could be generalized across the industry. This study promotes positive social change by informing sound financial decision making and investment by insurance companies, thereby improving their financial health and stability.

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Dedication

I dedicate this doctoral study to my family, whose support, encouragement, and lively sense of competition has helped me see this journey through to completion. I offer a special feeling of gratitude to my grandfather, William Hartwig, whose generous spirit, hard work, contributions to his community, and kindness to family and friends has inspired me and helped shape the values I hold. He demonstrated that it is possible to overcome hardships and loss, work hard, and succeed in life without sacrificing a loving relationship with family and the time to enjoy nature's beauty and bounty. Without the foundation of his example, I would not be the person I am today.

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Finally, I give special thanks to my wife, Selena, for her support, and for the gift of our wonderful son, Brenden. My wife is a shining example that it is possible to complete a doctorate while working, and inspired me to achieve this dream. Our son and I are lucky to have such an amazing person in our lives to brighten our days and help us make our dreams a reality.

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Section 1: Foundation of the Study

Information Systems play a key role in managing the processes, orders, products, and sales in a variety of industries. Enterprise Resource Planning (ERP) systems, Customer Relationship Management (CRM), and Policy Administration Systems (PAS) share common traits in that they are all foundational systems used to manage business processes, communicate between departments and customers, and integrate the operations of the organizations that use these systems. The high failure rate of system replacment projects has led to extensive studies focusing on success factors, improving implementations through leadership and planning, and how to manage large projects (Dezdar & Ainin, 2011; Engelstättera & Sarbua, 2013; Josiassen, Assaf, & Cvelbar, 2014; Nafeeseh & Al-Mudimigh, 2011; Peslak, 2012). However, few studies have focused on the benefits that organizations obtain following the implementation of these core business systems, or on assessing the value that the business systems bring to the organizations that undertake the costs and risks of implementing system replacement projects (Fryling, 2010).

Several recent studies have suggested that insurance companies will generate benefits, such as improved profitability or increased premium, by implementing new technology solutions, leveraging enterprise risk management, and implementing corporate governance practices (Altuntas, Berry-Stölzle, & Hoyt, 2011; Boubakri, 2011; Odoyo & Nyangosi, 2011). The theory that system replacement can result in benefits to the organization was not supported by empirical evidence in these studies, but aligns with

the ideas presented in technologist theory. This study develops the themes examined by Altuntas, Berry-Stolzle, & Hoyt (2011), Boubakri (2011), and Odoyo & Nyangosi (2011). It is specifically designed to provide managers with new insight into the outcomes of system replacement by examining the relationship of policy administration system replacement in the insurance industry with organizational financial performance.

Background of the Problem

Stakeholders face a range of challenges when deciding to replace enterprise information systems. Aging systems that have been in use for many years, or decades, within an organization are referred to as legacy systems. Legacy Information Technology (IT) systems are inflexible and costly to maintain, sometimes requiring as much as 90% of an organization's IT budget to support, leaving little room for innovation (Quartel, Steen, & Lankhorst, 2012). Replacement challenges for these systems include decisions around the value of undertaking the system replacement as opposed to the costs, and evaluating the business case for system replacement (Bielavitz, 2012). Large system replacement projects can also require years of effort and a substantial portion of an organization's resources to execute, requiring project alignment with corporate strategic goals (Meskendahl, 2010). The expense and effort involved in system replacement has lead to a number of studies focusing on various aspects of system implementation and success factors for project delivery.

Enterprise projects, including Enterprise Resource Planning (ERP) replacements, Policy Administration Systems (PAS), and Customer Resource Management (CRM)

solutions, are often expensive and prone to failure (Ahearne, 2012; Kim, Park, Dubinsky, & Chaiy, 2012; Nafeeseh & Al-Mudimigh, 2011). Several studies have focused on methods of prioritizing portfolios including the balanced scorecard, business case evaluation, and stage-gate practices to evaluate project performance and selection on an on-going basis (Barringer & Gressock, 2008; Kaplan & Norton, 1996; Nafeeseh & Al-Mudimigh, 2011). Fryling (2010) identified a research gap in outcome assessment findings related to benefit realization for large system replacement projects. Nafeeseh and Al-Mudimigh (2011) further noted that then-recent studies into benefits as a result of system implementation have focused on qualitative measures of success rather than the financial benefits realized as an outcome of system implementation. By conducting a quantitative analysis of financial data using a sample of US based insurance carriers, I identified that a positive financial impact did not exist as an outcome of performing system replacement projects in the insurance industry.

This study was designed to produce information for use by enterprise managers in strategic planning, allowing them to better assess the value of undertaking system replacement projects and improve the accuracy of cost benefit analysis in portfolio decision-making. In addition, improved understanding of postimplementation benefits could lead to improvements in multicriteria decisions making (MCDM) models for analysis during the business case and project initiation phases of system replacement initiatives.

Problem Statement

The implementation of system replacement projects such as ERP, PAS, and CRM systems have a significant impact on companies due to their cost and high risk of project failure; in addition, they often fail to deliver a sustainable competitive advantage (Ahearne, 2012; Kim, Park, Dubinsky, & Chaiy, 2012; Nafeeseh & Al-Mudimigh, 2011). Projects to replace the information systems of an organization can carry costs in the millions of dollars and experience failure ranging from 50–75%, jeopardizing large investments and incurring portfolio opportunity costs (Peslak, 2012; Yang, 2012). The general business problem is that companies continue to need to replace information management systems more than a decade old to address high maintenance costs, enable modern products and processes, and improve efficiency and performance; this requires the businesses to take on initiatives with high costs and high risks of failure that do not necessarily correlate to benefits (Josiassen, Assaf, & Cvelbar, 2014; Quartel, Steen, & Lankhorst, 2012). The specific business problem is that some property and casualty insurance carriers have limited information about the effects of system replacement on benefits to financial performance measures (Bielavitz, 2012; Gutierrez & Magnusson, 2013; Lacerda, Ensslin, & Ensslin, 2011).

Purpose Statement

The purpose of this quantitative, quasi-experimental repeated measures study is to examine the effect of PAS replacement projects on financial benefit realization for property and casualty insurers with over $250 million in annual premiums in North

America. Multiple studies have demonstrated conflicting findings on whether system replacement results in improved firm performance (Coltman, Devinney, & Midgley, 2011; Huang, Quaddus, Rowe, & Lai, 2011; Johnson, Clark, & Barczak, 2012; Nafeeseh & Al-Mudimigh, 2011).

This study examined a population consisting of companies with annual direct written premiums greater than $250 million, a threshold based on the written premium market size approach used by Altuntas et al. (2011). The population was appropriate for this study because these organizations have the financial capacity to implement large commercial software policy administration system replacements.

The independent variables in this repeated measures study with six levels are the measurement times, with one pretest measurement, followed by measurements two through six at annual intervals following implementation. The dependent variables measured at each period include earned premium, loss ratio, combined ratio, direct written premium, and cost ratio.

Social responsibility leads to increased competitiveness and results in performance improvements and an increased standard of living (Popescu & Crenicean, 2013). This study was designed to promote positive social change by generating increased competitiveness and efficiency in the United States insurance industry. Identifying and optimizing the use of organizational resources related to system implementation as part of the strategic planning of an organization will help organization evaluate their competitive options and improve strategic decision making. Based on the

comments from Popescu and Cenician (2013), performance improvements can help organizations thrive, which would lead to the ability to give back to their communities both in financial contributions and social contributions.

Nature of the Study

The intent of this quantitative study was to investigate the effect of IS replacement on corporate financial performance in the property and casualty industry in North America. Stoica and Brouse (2013) argued that stakeholders have no common definition for success and deem a project as successful when they perceive it as successful. Jugdev and Mathur (2012) correlated success with competitive advantage, however, Mignerat and Rivard (2012) defined success as completing projects on schedule and on budget. Due to the lack of consensus on success criteria, demonstrated by the conflicting positions of Jugdev and Mathur (2012), Mignerat and Rivard (2012), and Stoica and Brouse (2012), I did not measure the actual cost of IS replacement or the effectiveness of project management during the execution of system replacement. Instead, I performed a quantitative analysis of the post implementation financial performance of the organization in comparison to pre-implementation performance and industry baselines to determine if a statistically significant change in performance is observed following IS implementation. Mir and Pinnington (2014) performed a similar study correlating project management behaviors with project success using a quantitative analysis.

The study was conducted as a quantitative quasi-experiment using a six level repeated measures approach. Quantitative research represents a common methodology for academic analysis of system implementation (Venkatesh, Brown, & Bala, 2013). I selected the quantitative method to address the shortage of empirical data supporting benefit realization due to system implementation as described by Fryling (2010). Quantitative studies often generate results that are more objective and generalizable than qualitative studies (Lund, 2012); as a result, I deemed a quantitative study more suitable for my goal of facilitating managers assessments of the financial impact of system implementation on financial performance and assisting in strategic decision-making.

Empirical studies have been used successfully to measure enterprise success and innovation (Lambert & Davidson, 2013). A rigorous approach to methodology supports the use of quantitative inquiry for the testing of causal relationships (Donaldson, Qiu, & Luo, 2013). By conducting a quantitative quasi-experimental study using a mixed model repeated measures M-ANOVA, I was able to perform an analysis of the quasi-experimental group that has performed system replacement at the same time as analyzing the financial performance of the population group, which has not performed a system replacement. With this approach, I was able to identify that a statistically significant relationship does not exist between financial performance and system replacement.

Research Question

Financial performance serves as a measure of organization health, success, and longevity. When organizations undertake sigificant capital projects such as constructing

new plants or facilities, implementing major software platforms, or developing new products, the cost of the development undertaking is compared to potential outcomes and other strategic opportunities (Bielavitz, 2012). However, a significant research gap exists in the literature on enterprise software implementation at insurance orgnizations. The primary research question, "To what extent, if any, is there a statistically significant financial benefit effect from performing enterprise system replacement projects?" was designed to address this research gap.

Hypotheses

The following hypothesis was tested in this study to better understand the relationship between system replacement and financial performance.

$H1_0$: There is no significant change in financial performance for US property and casualty insurers with over $250 million in annual direct written premium as an outcome of performing an enterprise system replacement.

$H1_a$: There is a significant change in financial performance for US property and casualty insurers with over $250 million in annual direct written premium as an outcome of performing an enterprise system replacement.

Theoretical Framework

Technologist theory argues that innovation and competitive advantage is driven by investment in information and communications technology (Engelstättera & Sarbua, 2013). The technologist approach was first developed by Pavitt in 1984 and later expanded upon to become the predominant approach to understanding innovation in

technology and communication (Gallouj & Savona, 2009). Customization of enterprise systems leads to greater innovation regardless of company size, structure, or competitive position (Engelstättera & Sarbua, 2013). The ability to link enterprise system investment to performance was tested in the CRM implementation space by Josiassen, Assaf, and Cvelbar (2014). The researchers supported the technologist approach with their conclusion that investment in enterprise systems generates a competitive advantage. Josiassen et al. (2014) identified a gap in previous research due to the focus on cross-sectional research instead of longitudinal research when assessing firm performance as a result of implementations. My study helps to address the gap identified by Josiassen et al. (2014) by analyzing multiyear financial performance results to determine financial significance.

A suitable theory for quantitative research should be testable, generalizable, and predictable (Gay & Weaver, 2011). The research question aligns with a postpositivist worldview and uses a deterministic approach in which causes lead to outcomes. The postpositivist worldview falls within the hypothetico-deduction tradition of quantitative research (Gay & Weaver, 2011). Empirical results are valuable for establishing the link between firm success measured by financial performance and business model implementation (Lambert & Davidson, 2013).

Limited research is available on postimplementation benefit realization (Fryling, 2010). I followed up on Fryling's (2010) research by basing my research on the framework of Kaplan and Norton's (1996) demonstrated use of the balanced scorecard

for project selection, which assesses financial performance as a key criteria for project success. My research helps to address the limited research available on postimplementation benefit realization identified by Fryling (2010). Bielivitz (2012) also demonstrated the use of a scoring framework using financial assessment as a component to improve business outcomes. Scoring frameworks help to evaulate projects for selection as part of the strategic process, but these frameworks are based on assumptions that the projects will result in a certain defined benefit or return on investment as part of their scoring. In the case of enterprise system replacement projects, previous research does not establish a financial benefit that can be used to populate these scoring frameworks.

When organizations recognize the lack of data in calculating a return on investment for system replacement they may turn to a related theory, and apply resource based theory to the alignment of organizational resources in terms of personnel and capital (Ndofor, Sirmon, and He, 2011). Ndofor et al. (2011) studied the allocation of scarce resources for optimal use within organizations, and found that concentrating technical resources on activities that differentiate an organization from competitors is critical to superior performance. Though the research from Ndofor et al. was focused on the health industry, the need for differentiation may help explain system replacement project adoption in the insurance industry. The risk of system replacement projects is in contrast to principles of risk aversion common to the insurance industry as cited by Ho,

Lai, and Lee (2013) in a study on risk taking in the insurance industry board level decisions.

Chua, and Singh (2011) demonstrated contradictions found in using Behavior Control Theory to manage successful Information System projects through the Project Portfolio Management Office and the use of indirect leaders in an organization. Resource based theory and behavior control theory argue that innovation and system implementation are factors leading to organizational success as measured by financial performance. Additional project success factors and justifications were established by Nafeeseh and Al-Mudimigh (2011) and confirmed by Turner and Zolin (2012), who identified increasing the financial value of the organization as a common organizational success factor for stakeholders.

I used analyses of financial results for organizations that have completed system implementations and those that have not to make comparisons over time, allowing me to expand on the previous research using a quantitative, deductive, approach and identifying that a positive and statistically significant financial outcome was not supported by the data. The deductive approach to testing a theory, where the theory specifies the type of data collected in order to demonstrate empirical evidence, aligns with the quantitative nature of the study (Gay & Weaver, 2012).

Definition of Terms

The definition of terms will introduce commonly used terminology specific to the insurance industry or to enterprise system replacement that will be found throughout this

study and the associated literature review. The definitions below are industry standard terms, and are used verbatim from the industry governing body, the National Association of Insurance Commissioners.

Combined Ratio: "An indication of the profitability of an insurance company, calculated by adding the loss and expense ratios" (Glossary of Insurance Terms, 2014).

Earned Premium: "A portion of an insured person's prepaid premium allocated to the company's loss experience, expenses, and profit, year-to-date" (Glossary of Insurance Terms, 2014).

Direct Written Premium: "The total premiums received by an insurance company without any adjustments for the ceding of any portion of these premiums to the Reinsurer" (Glossary of Insurance Terms, 2014).

Expense Ratio: "The percentage of premium income used to attain and service policies. Derived by subtracting related expenses from incurred losses and dividing by written premiums" (Glossary of Insurance Terms, 2014).

Loss Ratio: "A percentage of incurred losses to earned premium" (Glossary of Insurance Terms, 2014).

National Association of Insurance Commissioners (NAIC):. "The U.S. insurance standard-setting and regulatory support organization. It was created and is governed by the chief insurance regulators from the 50 states, the District of Columbia, and five U.S. territories. Through the NAIC, state insurance regulators establish standards and best practices, conduct peer review, and coordinate their regulatory oversight. NAIC staff

supports these efforts and represents the collective views of state regulators domestically and internationally. NAIC members, together with the central resources of the NAIC, form the national system of state-based insurance regulation in the U.S." (National Association of Insurance Commissioners, 2014).

Policy: "A written contract ratifying the legality of an insurance agreement" (Glossary of Insurance Terms, 2014).

Property and Casualty (P&C): "A type of insurance offered to businesses and individuals representative of personal liability and property insurance coverages" (Glossary of Insurance Terms, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

This study was based on the assumption that the financial and organizational data reported to state bureaus of insurance and collected through the SNL reporting database is accurately stated, as required by state and federal law. Annual Statements, State Insurance Bureau report filings, and the data retrieved from those filings portray the financial health of the insurance companies accurately and is a reliable source of financial data. The SNL databases that reproduce and aggregate the state data for federal and research usage do so faithfully and are audited for compliance.

Additionally, I assumed that P&C Insurance Carriers with over $250 million in annual direct written premium have the fiscal capacity to execute policy administration system replacement using commercial vendors for Policy Administration Software. Press

Releases and Sales notifications provide evidence of the organizations that have performed system replacements with each vendor, and provide a starting point for the selection of the experimental subject group.

Limitations

The study was not a true experiment in that the subject organizations were selected from US P&C carriers specifically for having completed a system replacement, and do not represent a random pool of subjects. Because the study is not a true experiment, it is possible that the sample of companies performing a system replacement represents a biased portion of the population either due to factors resulting in the system replacement, such as already underperforming the market.

External market factors such as shifts in customer buying power, demographic influences, and recessionary impact may have financial impact on the results of the study due to the overall timeframe of data collection for this study. The longer the timeframe of the study, the more likely external market forces are to have an impact on the financial results of the population, masking or offsetting the results of a single event such as a system replacement.

The population for the research is limited to Property and Casualty insurance carriers in North America with over $250 million in annual direct written premiums. The selection criteria may have omitted organizations in other regions or of smaller size that have performed system replacement projects with different financial results. Findings of this study may not be generalizable to other industries or other geographic regions.

Delimitations

The study is limited in scope to only organizations identified as having completed a Policy Administration Replacement project between 2008 and 2009, and research data collected for those organizations in the year immediately preceding the system implementation and five years following the implementation. However, due to the nature of the data available on the insurance industry, all organizations in the population will be included in the baseline insurance industry data for comparison purposes.

Organizations were excluded from the analysis if they have financial performance in their combined ratio, loss ratio, or expense ratio of more than three standard deviations from the population norm for two years, indicating there is an aberration in the underlying data. This method is consistent with r-bar control chart methods for outlier identification (Pyzdek, 2009).

Significance of the Study

The significance of the study addresses how the study seeks to contribute to business practice by providing actionable research leading to more effective business process. In addition, the study sought to develop potential for social change in order to provide lasting benefits that not only provide a business benefit but also have a lasting impact by contributing to the improvement of community and society.

Contribution to Business Practice

This study provided statistical data indicating whether financial benefits exist as an outcome of system replacement. This information could aid decision makers in

understanding the impact of system replacement decisions on corporate profitability, and assist in strategic planning by providing the necessary information to make informed decisions and reduce risk. The impact on the insurance industry could be significant due to governmental restrictions regarding risk, investment, and financial performance.

Implications for Social Change

Potential impact to social change could be realized through this study by enabling organizations to continue steady and sustainable growth with reduced risk. Insurance organizations provide services that reduce risk for their customers by distributing that risk across a broader geographic or demographic pool of participants. By improving the stability and growth of these organizations they could be better positioned to serve their communities, employees, and customers.

A Review of the Professional and Academic Literature

Factors relating to the financial impact of enterprise project implementation as part of a larger portfolio management alignment with organizational strategy include strategic decision-making and prioritization methods such as the use of financial results in project selection and evaluation. Additionally, stakeholder management, ongoing portfolio measurement, benefit evaluation methodologies and scorecards, measuring project success have a bearing on the evaluation and use of financial data to understand enterprise system replacement results. I performed further analysis of how technologist theory is supported through the contributions of leadership and change management on

decision-making, which look to leverage the benefits of innovation and technological implementation in order to generate a sustained competitive advantage.

I conducted a review of current literature to provide the framework for this study, identifying findings supporting the need for further study around the financial outcomes of enterprise system replacement projects, particularly in the insurance industry. The literature review is organized as follows: a) organizational strategic decision-making, b) the relationship between stakeholder management and ongoing portfolio decision-making, c) methods used for evaluating project benefits and for creating a scoring framework for project evaluation, d) how leadership and change management impacts success and the ability to deliver enterprise projects, e) mitigating risk, f) measuring project success, g) the impact of project failure, h) the similarity of enterprise projects, and i) the insurance industry and risk management.

The literature review was conducted using peer-reviewed journal articles retrieved from online research databases including ABI/INFORM, EBSCOhost, Emerald, Google Scholar, ProQuest, SAGE, and ScienceDirect. English-language and English-translated works were used for all source material. Most journal articles retrieved fall into the 2011 through 2014 period, though older works are used to provide a historical context for key concepts and the theoretical framework for the study.

Organizational Strategic Decision Making

Project portfolio management involves the definition of criteria for project evaluation and selection, the assessment of potential projects within the organizational

pipeline, and engaging the right decision makers for project selection (Pennypacker & Retna, 2009). Deciding which projects most closely aligned with organizational mission and vision is a key component of strategic decision-making, and part of the strategic planning process that aligns with the evaluation of the market forces that shape strategy (Porter, 2008). The value of IT systems is directly correlated with how closely the systems align with business goals (Quartel, Steen, & Lankhorst, 2012). The valuation of current enterprise systems leads to strategic decisions on whether to continue investing in legacy systems, extend/improve existing technology, or make replacements in order to remain competitive in the marketplace (Quartel, Steen, & Lankhorst, 2012).

Organizations utilize projects to implement strategic goals and objectives, however, changing measurement methods and lack of consistent approaches between executives and project management prevents a consistent measurement of benefit realization in organizations (Young, Young, Jordan, & O'Connor, 2012). Pennypacker and Retna's (2009) work on the identification of the correct stakeholders for project decision making was extended by Unger, Gemunden, and Aubry (2012), who performed a quantitative analysis of 278 PMO offices and identified three distinct roles engaged in portfolio management: controlling, coordinating and assisting, and controlling and coordinating. The use of these roles in portfolio management have a positive statistical impact on portfolio performance (Unger, Gemunden, & Aubry, 2012). Unger, Gemunden, and Aubry (2012) argue that a gap exists in the current literature for the differentiation between traditional PMO management activities and portfolio

management activities, and that their research indicates two distinct needs that the standard PMO office does not support. Meskendahl's (2010) work addressed some of the concerns listed by Unger, Gemunden, and Aubry (2012) by establishing a framework which can be used to fit portfolio management into the strategic decision-making of the organization.

The increasing complexity of large project based organizations have contributed to the establishment of multiple interdependent PMO organizations within a single company (Muller, Gluckler, & Aubry, 2013). The interaction between varying PMO organizations with different levels of acocuntability and stakeholder responsibility adds complexity to PMO responsibilities. Effectively managing portfolio responsibilities and fostering innovation will benefit from increasing the partnering aspect of PMO relationships rather than acting in a controlling or subordinating capacity (Muller, Gluckler, & Aubry, 2013). The effective management of the strategic portfolio in large organizations enables orgnaizations to conduct learning activities that impact varying cultural units within the organization and contribute to organizational change (Aubry, Müller, & Gluckler, 2011).

Bielavitz (2012) takes a similar approach to Meskendahl's (2010) work and focuses on the evaluation and selection process through a case study at Oregon State University to evaluate a project/program prioritization. The tool created by Bielavitz (2012) contained measures for supporting strategic goals, organizational priorities, and was weighted for importance, resource needs, and time. Bielavitz (2012) demonstrated

improved understanding of scope, schedule, and resource prioritization and improved project selection decision-making. These findings support the weighting methodology presented by Morris & Pinto (2007). The weighting system is similar to that used by Lacerda, Ensslin, & Ensslin (2011), though more generalized across projects than evaluation of a specific field, which was a limitation of the Lacerda, Ensslin, & Ensslin (2011) study.

Alternatively, Vidal et al (2011) performed a case study using a project complexity evaluation tool as a project selection criteria. Project complexity can be used outside the framework of any given project execution methodology as an evaluation criteria for stakeholders due to the link between project complexity and project success (Vidal, Marle, & Bocquet, 2011). One of the benefits of such a tool is ease of use, however, the tool lacks the ability to represent complex relationships used in business case models like those proposed by Bielavitz (2012) and Lacerda, Ensslin, & Ensslin (2011).

While acknowledging the ease of use benefits of single measure evaluation tools, I believe that the case study performed by Cao and Hoffman (2011) at Honeywell which indicated that single measure performance assessment failed in 75% of projects is more representative of the complexity of strategic decision-making. Cross-project learning using additional measures of complexity and benchmarking current projects resulted in tangible performance improvements on a sample of future projects (Cao & Hoffman, 2011). A multidimensional evaluation using a project performance measurement system

(PPMS) helps managers to evaluate and make decisions related to project execution, and provides the analysis tools needed to understand where a project is at, and what outcomes decisions might have for an organization (Marques, Gourc, & Lauras, 2011).

Executive sponsors act as key leaders in the successful delivery of projects, however, current research is limited on what key behaviors lead to the most successful sponsors (Kloppenborg, Tesch, & Manolis, 2014). Fourteen behaviors across the project lifecycle significantly impact success, including that the sponsor behaviors key to success change throughout the lifecycle of the project (Kloppenborg, Tesch, & Manolis, 2014).

Stakeholder Management and Ongoing Portfolio Decision-Making

Key stakeholders within the organization are responsible for decision-making on the projects included within the organizational portfolio (Unger, Gemunden, & Aubry, 2012). Certain roles within the organization at the leadership level have the ability to influence portfolio direction, and the management of the portfolio through the Project Portfolio Management Office as indicated by Unger, Gemunden, and Aubry (2012) uses the portfolio management control role to interact with leadership decision makers in the organization to manage portfolio projects on an on-going basis.

Developing a rigorous decision-making model, such as one based on the balanced scorecard or project evaluation criteria assists decision makers in portfolio selection (Teller, Unger, Kock, & Gemunden, 2012). Formalization of management enables stakeholders to evaluate complex relationships between projects and visualize the impact of project decisions in a complex portfolio (Teller, Unger, Kock, & Gemunden, 2012).

However, the formalization of stakeholder management and portfolio decision-making can result in stagnation and the inability of the portfolio to innovate or encourage flexible decision-making (Gutierrez & Magnusson, 2013). The benefits may outweigh the potential downsides, as maintaining a strong stakeholder relationship based on structured communication where the stakeholders are key advocates for the project is critical to success (Bourne, 2011). Bourne (2011) found that a structured stakeholder management format improved the ability of project managers to build credibility and understand the needs of stakeholders.

Gutierrez and Magnusson (2013) conducted follow-on research based on previous findings that more flexible decision-making can lead to greater creativity and potential for break-through projects and innovation. Their research was qualitative based on decision makers interviewed at three large manufacturing organizations, and found that informal decision-making, instead of formal processes delegitimizes efforts, and can lead to confusion about priority and destabilitization of resource allocation, undermining the benefits of more flexible decision-making in the eyes of the stakeholders (Gutierrez & Magnusson, 2013). This is important because it is a real-world example of the forces that influence organizations to maintain a rigid approach, even when acknowledging that a more informal approach may lead to greater potential benefits.

Killen (2013) performed research demonstrating improved results in decision-making using visual network diagrams of project interdependencies for project portfolio selection over lists and tables identifying the interdependencies. Killen (2013) also

indicated adequate time was needed for decision makers to process the information and make an informed decision. While Killen (2013) used a classroom based experiment to identify decision-making success in optimizing the portfolio, the findings were significant in that decision makers were more likely to make errors in non-visual portfolio selection.

Petit (2012) conducted a retrospective study of two portfolios to identify causes for uncertainty, and made potential recommendations for improvements. Uncertainty was divided into two categories, foreseen and unforeseen. The foreseen uncertainties could develop sensing mechanisms to handle technical issues, market issues, and regulation. Unforeseen (unknown/unknowns) create delivery risk and have no specific sensing mechanisms (Petit, 2012). Portfolios had a fixed budget at both organizations, even though project budgets may be adjustable. Petit (2012) recommends the ongoing monitoring of projects being as important as project selection for portfolio management.

Lacerda , Ensslin and Ensslin (2011) conducted a mixed method study into frameworks to aid in the portfolio management process. Criteria for measuring and sorting projects to help stakeholders make portfolio decisions (Lacerda, Ensslin, & Ensslin, 2011). However, the study was limited in the criteria method Lacerda et al. (2011) applied relies on using weighting measures to make decisions between projects of a similar nature, rather than looking at projects that may come from competing business units and have very different value propositions or success criteria. Overall methodology

and steps for selection/prioritization process supports Wiley portfolio management model demonstrated by Morris and Pinto (2007).

Soh, Chua, and Singh (2011) conducted a case study on a long term Information System project. Soh, Chua, & Singh's (2011) research contradicted Behavior Control Theory, in that they found instead of a single controller creating and aligning various stakeholders, that multiple controllers exist within the project/program structure and impact the outcomes of the initiative on enterprise systems. The researchers also found that subordinate controllers interact across stakeholder groups, requiring the support of the principle controller in order to facilitate success. While Soh et al.'s (2011) research supports the organizational structure approach of senior leadership, to program management, to project manager, the single case study does not demonstrate whether this model is supported consistently in IS projects, or if a single controller model would be more effective for some organizations when implementing enterprise systems.

A critical element of stakeholder management when considering the potential to engage the organization in enterprise projects as a portion of the portfolio is the ability to cancel projects. Project cancellation is often a difficult decision for stakeholders because they feel the need to achieve the results of the effort and cost already spent on the project (Lewis, 2012). In addition, stakeholders may feel that some of their legitimacy and standing within the organization is associated with those projects they have been supporting (Gutierrez & Magnusson, 2013). Project cancellation can also lead to demoralization of the team members engaged in the project, and a loss of innovation in

the organization and requires careful communication and management (Moenkeymeyer, 2011). Given these considerations, making the decision to undertake an enterprise project which will involve freeing up a large portion of the portfolio requires the organization to be willing to undertake project cancellation as a portion of the stakeholder management and portfolio management strategy.

Methods Used for Evaluating Project Benefits and Creating a Scoring Framework

A variety of approaches can be taken to measure project benefits for inclusion in the portfolio and develop scoring models for project comparison. Among these are the model of the balanced scorecard as proposed by Kaplan and Norton (1996). The balanced scorecard takes a broader view of success than purely financial criteria and includes elements of process development, service, and individual growth and learning opportunities (Kaplan & Norton, 1996). The Strategy Management Group (2013) provides additional background on the balanced scorecard model by showing how the model can be integrated into portfolio selection (Strategy Management Group Company, 2013). Though the balanced scorecard has been in use for nearly 20 years, the tool remains largely unknown to smaller businesses (Giannopoulos, Holt, Khansalar, and Cleanthous, 2013). In more established organizations, Naro and Travaille (2011) demonstrated the benefit of the balanced scorecard as a tool for strategic project selection. The balanced scorecard enabled the studied European industrial organizations to facilitate continual questioning of emerging strategies and initiatives (Naro & Travaille, 2011).

It is important however, for an organization to realize potential limitations of the balanced scorecard approach. The NHS study performed by Chang (2007) indicated that managers can take advantage of the balanced scorecard methodology to push or justify pet projects that do not benefit the overall mission and strategy of the organization because they provide strong scoring on one or two of the balanced scorecard measures (Chang, 2007).

Goncalves (2009) used a literature review of the balanced scorecard methodology and strategic planning approaches to propose a model for basing strategic planning decisions on the use of the balanced scorecard. The review covered the fundamental theories of Kaplan and Norton, Juran, and Miller, but did not in any way contribute to new research or conclusions, and in fact does not radically propose any different use for strategic planning than the tenets that Kaplan and Norton established in the early 90's.

Hutchins and Muller (2012) address the problem of creative projects that lead to innovation dying on the vine due to the stage-gates process's procedural limitations. Hutchins and Muller (2012) propose a series of four principles for adjusting the stage-gate process: (a) Make assumptions explicit – test and adjust. (b) Allow for divergence – explore new possibilities. (c) Build the project plan to the opportunity. (d) evaluate projects according to metrics and learning objectives. While Hutchins and Muller (2012) provide a limited amount of literature to support their position from prior research, they use a number of excellent real-world examples of successful and failed innovation. Examples included where stage gating was mis-used or rightly used to benefit the

organization including repurposing of the design proposal for Boeing's sonic cruiser to meet a need for economic travel over speed in response to consumer demand.

The researchers Naro and Travaille (2011), used a case study involving the creation of balanced scorecards at two organizations, and then observed the utilization of the balanced scorecard at those two organizations. Because of the interaction with the research subjects, Naro and Travaille's (2011) research is classified as emergent and based on the constructivist approach. The researchers found that while the organizations initially implemented the balanced scorecard and used it for strategic decisions in the first year, both had ceased using it as a monitoring and selection device a year later, calling into question the value of the balanced scorecard each company had established. Companies still used some aspects of the BSC, but indicated that small and medium enterprises have difficulty in dedicating the needed resources to maintaining this level of tooling (Naro and Travaille, 2011).

Leveraging the information collected to enable stakeholders to improve decision-making on project execution is improved through the use of a Project Management Information System (Caniels & Bakens, 2012). Caniels & Bakens (2012) found that using structured decision-making tools leads to improved results and optimizes the use of scarce resources.

According to Yaghootkar and Gil (2012), the focus on schedule driven project management can result in a pattern of stealing resource, in the parlance of robbing Peter to pay Paul, which reduces organizational efficiency and performance. This finding is key

as many organizations set project success criteria based on schedule completion, but then resource management creates unattainable success criteria. Yaghootkar and Gil (2012) also mathematically modeled the cascading impact on downstream projects based on priority and resource constraints to predict impact to schedules throughout the portfolio.

Additionally, Devine, Kloppenburg, and O'Clock (2010) suggested that projects should be evaluated and measured through concrete objectives in each phase of the project's life similar to how an organization is measured. Devine et al. (2010) also suggest approval reports be created at each stage-gate approval. Devine et al. (2010) state that project success is multidimensional and should not be based solely on financial or schedule measures, but should also take into account customer focus, development, and internal process needs. The development of the BSC can also help with communicating the project success. For large and complex projects this would be especially important, as the complexity of these projects and the shifting nature of requirements and the unknown-unknowns often makes schedule and budget management challenging. The balanced scorecard approach might provide a more objective means of measuring performance against criteria beyond the financial criteria.

Rompho (2011) conducted a qualitative interview study with a Small Enterprise to identify causes of failure in implementing the balanced scorecard. Rompho's (2011) interviews discovered that the primary reason for scorecard implementation failure in the small enterprise analyzed was shifting strategy. This finding coincides with similar

research on project prioritization and schedule driven management that indicates changing priorities and shifting resources prevent success of the portfolio as a whole.

Nafeeseh and Al-Mudimigh (2011) constructed a business case model for justifying ERP investment in the face of high project failure rates. A combination of literature survey and interviews with implementation consulting firms such as PwC established a framework for a detailed business case that supports benefit realization (Nafeeseh & Al-Mudimigh, 2011). The approach used by Nafeeseh and Al-Mudimigh (2011) follows a defined portfolio management methodology looking for research and information gathering in order to complete portfolio selection, and supports the evaluation process described by Morris and Pinto (2009). However, the business case here focuses on a more detailed structure needed to support a significant initiative that will represent a significant portion of a portfolio, rather than the distribution of like elements in multiple business cases for evaluation between competing proposals.

Seddon, Calvert, and Yang (2010) proposed long- and short-term models for measuring factors impacting organizational benefits across multiple projects. They conducted a qualitative review of 126 customer presentations related to SAP to identify six common factors, which the companies shared as important for benefit realization. These common factors were used in coordination with portfolio and program selection criteria and represent key success factors that organization should include in measuring organizational benefits. Seddon's (2010) work shares similar findings to Lacerda (2011)

in factors that assist in selection such as process optimization and functional fit, which are similar to selection criteria for portfolio management.

A number of models, such as those presented by Caniels & Bakens (2012) or Yaghootkar (2012) address the cost and risk aspects of strategic portfolio management. However, as pointed out by Quartel, Steen, & Lankhorst (2012), little research is currently available that provides models for measuring the benefit of enterprise applications. Quartel, Steen, & Lankhorst (2012) performed a study on an insurance company where they modeled the as-is and to-be value using a cost benefit analysis model derived from enterprise architecture tools. Measurement of business value can be decomposed into valuation of importance and effectiveness taking into account costs, risks, and benefits of the portfolio as a whole to achieve improved decision-making (Quartel, Steen, & Lankhorst, 2012).

Impact of Leadership and Change Management on Success

Because enterprise projects represent a significant investment in time, money, and resources for an organization, achieving project success requires measuring the project on more than just financial performance (Devine, Kloppenburg, & O'Clock, 2010). Achieving the broader measures of success in terms of personnel development, stakeholder satisfaction, and process innovation requires an organization to identify critical success factors (Trkman, 2010). Trkman (2010) identifies several critical success factors and especially focuses on the needs for an organization to embrace change, offer flexibility, and empower employees. Several researchers, as indicated below, support the

notion that strong leadership skills correlate directly with project success, and will help an organization realize strategic goals (Nixon, Harrington, & Parker, 2012; Muller & Turner, 2010; Vathsala Wickramasinghe, 2010). Nixon, Harrington, and Parker (2012) go on to say time, budget, and quality are not sufficient measures of project success, and that leadership performance in meeting stakeholder expectations is a key criteria that should be included in understanding project success.

Muller and Turner (2010) conducted a 400 response qualitative study on leadership competency correlation with project success using regression and ANOVA analysis of survey responses. The study uses previous work in Emotional Intelligence and Managerial Intelligence as its foundation, and found a link between project success and the attitudes demonstrated by project managers. Business results - those beyond project success, were determined both by the attitude of the project managers and their emotional intelligence (EQ) (Muller & Turner, 2010). These findings support the development of project management as a leadership skill-set, not merely a technical skill-set in scheduling and balancing.

The findings of Muller and Turner (2010) align with Nixon, Harrington, and Parker's (2012) study by demonstrating a correlation between leadership and success. Nixon et al.'s (2012) research conducted a meta-review of previous leadership research and indicated that multiple leadership methodologies are needed at different times during project execution. The need to adapt leadership styles to different individuals and situations is further supported by the *8 dimensions of leadership* (Sugerman, Scullard, &

Wilhelm, 2011). Sugerman, Scullard, & Wilhelm, (2011) identify a range of leadership traits required to interact with different team members and useful in different project situations. These same concepts are found in leadership training such as DiSC training or the Hermann Brain model of thinking.

Yang, Huang, and Wu (2011) demonstrated a significant correlation between leadership style, teamwork, and project success. Project managers who adopt transformational leadership may demonstrate improved communication and team cohesiveness (Yang, Huang, & Wua, 2011). The findings support increased project success in schedule, budget, and satisfaction as outcomes of improved leadership (Yang, Huang, & Wua, 2011).

Conflicting opinions exist in the literature regarding organizational transformation in the context of complex adaptive systems and sustainable change (Westley, Tjornbo, Schultz, Olsson, Folke, Crona, (2013). Various prior researchers have identified both that top-down leadership models are ineffective, and the need for active individual leadership throughout the initiative for system transformations to be successful (Westley, et al., 2013). Westley et al. (2013) propose that these individual actors, sometimes referred to as change agents, organizational entrepreneurs, or transformative leaders need to be viewed in a different model than the traditional leadership model, and should be viewed as a part of achieving an objective instead of a leader-follower relationship.

Motivation and engagement of the team also play significant roles in project success (Drury-Grogan, 2014). Stare (2012) found that compensation based rewards on

large projects were signifcantly related to improved project success, and resulted in team members demonstrating additional accountability and ownership of the project.

Westley et al. also proposed that the ability of the change agents or leaders to impact the outcome of transformational initiatives is dependent on the social context and lifecycle phase of the transformation and the greater organization. Organizations who are performing very well with established practices are less likely to adapt readily to change than those that are feeling immediate and painful need to implement change. It is important to note that these measures of success in the perception of the project from an organizational point of view stress the human learning and customer focus of the implemented project, rather than the financial or schedule adherence of the project. These findings support the position maintained by Yaghootkar and Gil (2012) that a schedule driven focus does not accurately assess the success of projects within the portfolio.

Mitigating Risk

Successful delivery of enterprise projects also requires the ability of the organization to accept and manage risk as part of undertaking innovative solutions to enterprise problems (Bakker, Boonstra, & Wortmann, 2010). Risk management should be applied throughout the development lifecycle, and leads to improved management decision-making (Tohidi, 2011). The downside of risk management practices as presented by Tohidi, (2011) is that they encourage organizations to avoid risk taking, and can stifle innovation.

Mitigating these risks while undertaking enterprise replacement projects as a portion of the portfolio can be done through engaging external 3rd parties and consulting firms to help facilitate the enterprise project (Tsai, Shaw, Fan, Liu, Lee, & Chen, 2011). Tsai et. al (2011) performed an empirical assessment of the results of over 4300 ERP implementations and identified a significant relationship between service quality and project management. Their findings supported increased organizational satisfaction when the organizations used implementation consultants to augment the organization during the implementation of enterprise projects.

Additional frameworks for managing risk can be implemented in an innovation environment as demonstrated by Wang, Lin, and Huang (2010). A risk management framework for an R&D environment is designed to foster innovation, and leverages the core concepts of the balanced scorecard method to establish performance measurement guidelines for projects (Wang, Lin, & Huang, 2010). By leveraging external assistance, management frameworks, and monitoring ongoing performance, organizations can undertake significant change efforts and bring the necessary leadership to see these efforts through to success as part of the enterprise portfolio.

Measuring Project Success

One of the potential causes identified in literature for the high rate of project failure is the lack of consistency of measurement for project success (Stoica, 2013). Traditional measures of project success include delivery on time, on budget, and within scope (Drury-Grogan, 2014). Meta-analysis of recent literature demonstrates that no

consistent definition for success exists between senior stakeholders, the project team, and potential customers (Davis, 2014). Executive success criteria tend to focus on delivery of business value and the ability of large projects to align with strategic initiatives, while the project team members and customers remain more focused on measures of time and budget (Davis, 2014). The differing views of success along with the lack of consistency demonstrated in measurement may in part account for the high failure rate reported in project execution.

However, Drury-Grogan (2014) also takes the alternative view and argues that Agile projects can measure success based on team member satisfaction, functionality, schedule, and quality. Additionally, team empowerment and organizational culture plays an important role in project success within Agile teams (Sheffield & Lemetayer, 2013). Agile project management approaches and iterative design are useful in complex projects with uncertain solutions but known goals (Wysocki, 2014). As indicated by Eweje, Turner, and Müller (2012) enterprise projects are large and complex initiatives that have high risk and uncertain requirements. Based on complexity and degree of uncertainty these projects would be candidates for an Agile adaptive approach, and could potentially benefit from Agile measures of success cited by Drury-Grogan (2014). A system thinking approach applied to Agile projects in which the project manager takes a less rigid approach to structure leads to higher success rates in Agile delivery (Kapsali, 2011). Kapsali's (2011) work, however, is limited in that a case study approach was used in

which no measurements of success are offered asside from the perception of success within the organization.

Technology adoption and innovation have been previously linked to firm performance as competitive advantages (Plewa, Troshani, Francis, & Rampersad, 2012). The theory of technology acceptance (TAM) links the usefullness and ease of use of systems to the adoption of the technology according to Plewa et al. (2012). The inference drawn by Plewa et al. (2012) is that acceptance and adoption of a new technology is congruent with project success. Kapsali's (2011) work does demonstrate that multiple management approaches can be used in innovation projects to increase the perception of success among stakeholders.

In order to foster technology adoption and implementation, project portfolio management contributes to success by making better long term strategic decisions and increasing the organization's learning ability (Killen & Hunt, 2013). One of the current failings in many organization's ability to develop a mature project portfolio management structure is the failure to conduct post implementation project reviews far enough after the project to truly recognize the strategic and financial impact of the project (Killen & Hunt, 2013). However, Killen and Hunt (2012) also recognized the danger of the success trap, in that an organization that measures success in its portfolio and processes can repeat those processes at the expense of continuing to learn and innovate, which is a path that leads to stagnation. A lack of facilitation and knowledge sharing skills among project managers and the PMO further jeapordizes project success (Pemsel & Wiewiora,

2013). One of the roles of the PMO is to contribute to knowledge sharing and lessons-learned activities regarding project execution, which plays a critical role in large strategic initiatives. Even though organizations understand the importance of knowledge sharing and the broker role the PMO plays, tacit knowledge sharing skills are lacking project managers which also impacts project success (Pemsel & Wiewiora, 2013). The position that project teams play a key role in dismminating learning and knowledge throughout the organization as a part of project success is bolstered by the research of Bartsch, V., Ebers, M., and Maurer, I. (2013). In a quantitative study of more than 200 projects from 144 engineering firms, Bartsch et al. (2013) found projects with learning outcomes as a goal were more likely to contribute to technology adoption in their parent organizations, because large prject teams have access to disparate resources and can leverage social capital to encourage adoption.

The countervailing oppinion to the measurement of project success based on financial metrics is one of correlating relationship value to project success (Voss & Kock, 2013). In the relationship model of success, alignment to strategy, performance during execution, and team synergies are considered elements of a successful project. Voss and Kock (2013) acknowledge however that business success, as opposed to project success, is measured by sales and market performance based on standard measures.

Despite all of the research on management strategy and the measurement of project success, no significant improvement has been made in recent decades to the project implementation success rate (Asad Mir & Pinnington, 2014). Quantitative bi-

variate correlation and regression analysis demonstrated project management has a statistically significant impact on project success, and is supported by leadership and stakeholder engagement (Asad Mir & Pinnington, 2014). While demonstrating improved success rates due to project management and leadership involvement, Asad Mir and Pinnington's (2014) research was limited due to a small sample size and generalizations across all project types, which may not correlate specifically to results in system replacement. Many organizations have a gap in their project success analysis framework in limited information collection postproject realization (Todorović, Petrović, Mihić, Obradović, & Bushuyev, 2014). Todorovic et al. (2014) conducted a quantitative analysis of project managers in Europe and found that identification of success factors and measures during execution of the project is significant in measuring success after project implementation. In addition, the finding that many organizations are unable to measure success due to a lack of consistent data following implementation supports my proposal for additional research into post implementation performance measurement.

Impact of Project Failure

While significant research has been performed on factors that can contribute to project success, including developing leadership skills and emotional intelligence such as the analysis performed by Gonzales (2012), limited research has been conducted on the impact of project failure on organizations and team members. In this section I examined the human and capital costs of project failure, and the resulting organizational pressures created by failure.

Organizations have limited resources to devote to all phases of project and portfolio management from ideation through to execution (Heising, 2012). Project failure has detrimental impact to the organization not only in terms of revenue spent on the failed project, but also the opportunity cost of projects that were unable to move forward due to resource constraints caused by the failed project. In addition to the financial outlay, project failure may lead to a human cost in terms of employee dissatisfaction, confusion, and feelings of failure at a task or individual level (Moenkeymeyer, 2011). The advent of project failures on large or innovation projects can increase the difficulty in implementing future innovative projects (Moenkeymeyer, 2011).

Similarity of Enterprise Projects

Large software implementation projects in the CRM, ERP, and PAS subject areas demonstrate failure rates in excess of 50% when measured for on time, on budget, and on-scope delivery (Peslak, 2012; Yang, 2012). The ERP industry is valued at $24.5 billion in 2012 according to Columbus (2013a), and the CRM industry is projected to reach $36.5 billion by 2017, while worldwide enterprise software spending is expected by Gartner as cited in Columbus (2013b) to reach $304 billion in 2013. Losses due to failed projects in these areas could account for over $150 billion in spending on failed implementations, based on the failure rates cited by Peslak (2012), Yang (2012) and Meskendahl (2010).

Additional studies focused on how to successfully deliver ERP and CRM solutions within organizations (Dezdar & Ainin, 2011; Tsai, Shaw, Fan, Liu, Lee, & Chen, 2011; Vathsala Wickramasinghe, 2010). However, limited business sector specific information currently exists on the benefits of enterprise system implementation (Engelstättera & Sarbua, 2013). In a study of 336 communication and technology firms in the European marketplace, customization of enterprise systems was found to lead to greater innovation regardless of company size, structure, or competitive position (Engelstättera & Sarbua, 2013). Engelstattera & Sarbua's (2013) findings support the position of Lambert and Davidson (2013) that a business model supporting innovation leads to firm success and aligns with improved financial performance.

The ability to link enterprise system investment to performance was tested in the CRM implementation space by Josiassen, Assaf, and Cvelbar (2014) to determine whether greater CRM investments resulted in better firm performance. The authors used the stochastic frontier (SF) method to analyze technical efficiency and found that while certain attributes of CRM implementation including increased communication and improved responsiveness did possitively effect firm performance, a statistically significant link could not be established between higher CRM investment and improved performance (Josiassen, Assaf, & Cvelbar, 2014). The goal of enterprise CRM projects is to enhance business performance, and businesses require an objective scale to assess results (Wu & Lu, 2012). Seventy three percent of large orgnaizations have implemented customer management (CRM) programs based on the belief that customer data

management will lead to competitive advantage (Verhoef & Lemon, 2013). Findings associating a positive impact from CRM implementation through relationship management on financial performance indicated a statistically significant finding on 560 subject organizations in the hotel industry (Wu & Lu, 2012). While in the hotel industry, the management of relationships with individual customers is performed through a CRM system, in the insurance industry, a similar function is performed by the PAS which is used to maintain policy information for insurance agents and insurance policy holders (Illyas, 2012).

Synopsis of Failure and Success in ERP and CRM Implementation Projects

Implementations of enterprise software solutions are complex and costly projects. CRM projects fail to achieve the business case in terms of return on investment 55% to 75% of the time (Maklan, Knox, & Peppard, 2011). A key driver of the failure to deliver return on investment is a lack of ongoing investment in leveraging the new system capabilities following the implementation by changing business processes or developing resources to use new capabilities according to Maklan, Knox & Peppard (2011).

Insurance Industry and Risk Management

The US Property and Casualty (P&C) insurance industry is a highly regulated industry, and annual financial performance data is filed with state bureaus of insurance in all states where an insurance carrier performs business (NAIC Model Laws, Regulations and Guidelines: Annual financial reporting model regulation., 2014). Financial regulatory information includes key financial metrics which can be used to perform cross

company comparisons including measures of the total dollars of insurance premium the company writes in a year, the total dollars in claims related losses, operating expenses, and the ratios of earnings to losses and earnings to expenses (Doumpos, Gaganis, & Pasiouras, 2012). Regulatory requirements to file this information consistently, and audited by the state Bureaus of Insurance help ensure the reliability of the financial data provided by the organizations. The annual reports filed with each state are referred to as Yellow Book reports for each insurance provider within the P&C insurance industry and the state offices of insurance (National Association of Insurance Commissioners (NAIC), 2014). In addition to the avaiability of this information through the state offices of insurance, the annual reports are collated in database format and made available through SNL financial's Peer Analytics Insurance Statutory Financials Database using the certified financial information provided in the state filing documents (SNL Financial LC, 2014). The availability of highly regulated and normalized data, both for a target population and for a large control group would allow for multiyear trend analysis prior to and post system implementation examining revenue growth and costs in a detailed fashion that was identified as a gap in prior research (Fryling, 2010; Nafeeseh & Al-Mudimigh, 2011).

Risk behavior and tolerance is especially important in this sector due to the high financial losses possible from natural disasters (Ho, Lai, & Lee, 2013). Mutual insurers are less risk tolerant than stock-issuing insurance providers (Ho, Lai, & Lee, 2013). Insurance boards make all important decisions on investment, underwriting, and leverage

risk policy. Ho, Lai, and Lee (2013) measured risk taking behavior in 252 insurance providers, and found that insurers are risk averse financially due to a need to preserve capital against catastrophic losses. The high failure rate of system replacement projects along with the high financial burden of implementations (Eweje, Turner, & Müller, 2012), even if they have large strategic value, leads to the question of how insurance organizations overcome risk aversion in order to implement capital intensive projects.

Implementation of risk management structures plays a critical role in the insurance industry (Altuntas, Berry-stölzle, & Hoyt, 2011). A quantitative study of 114 insurers in the German marketplace with over $40 million euros a year in direct written premium, 95% of the companies in the market with this premium size, revealed that nearly 100% had implemented a risk identification process by 2009, up from only 21% in 1999 (Altuntas, Berry-stölzle, & Hoyt, 2011). However, the majority of the companies used a qualitative assessment for strategic risk, 94%, while over 92% used a quantitative approach to measuring investment risk (Altuntas, Berry-stölzle, & Hoyt, 2011). The use of qualitative rather than quantitative data to assess strategic risk indicates a need for further quantitative benefit data, as indicated by Shao and Muller, (2011) who postulated after completing a qualitative assessment of strategic project success factors that further quantitative research was needed following implementation in order to measure the impact of system implementation on business results.

Transition and Summary

Project success contributes directly to the attainment of strategic goals for organizations. The complexity, cost, and risk of large enterprise system replacements, along with the high rate of project failure experienced in project performance data compounds the concern of organizations over the need to implement system replacement projects. In addition, a lack of clarity exists around the success factors by which organizations will measure project teams and project execution between varying stakeholder groups. Further research into post implementation outcomes helps provide additional data on the financial value of system replacement and allows stakeholders to improve strategic decision-making with quantitative evidence regarding the efficacy of system replacement as a tool for financial benefits.

Section 2: The Project

In this study, I examined the impact of policy administration system replacement on the financial performance of property and casualty insurance firms in North America. Despite a high rate of project failure, organizations have continued to undertake large enterprise system replacement initiatives (Maklan, Knox, & Peppard, 2011). U.S. firms invest large ammounts of capital in these initiatives despite limited documentation of the benefits of enterprise system replacement (Engelstättera & Sarbua, 2013). This section contains discussions of a) my role as the researcher, b) the research method and design used for this study, c) data collection, d) the population and sampling, and e) ethical considerations for this study.

Purpose Statement

The purpose of this quantitative quasi-experimental repeated measures study was to examine the effect of PAS replacement projects on financial benefit realization for property and casualty insurers with over $250 million in annual premium in North America. Several studies have produced conflicting findings on whether system replacement results in improved firm performance (Coltman, Devinney, & Midgley, 2011; Huang, Quaddus, Rowe, & Lai, 2011; Johnson, Clark, & Barczak, 2012; Nafeeseh & Al-Mudimigh, 2011). This study was designed to provide a quantitative answer to the conflicting findings observed in previous research by examining the financial results over the five following years post implementation on the population of the U.S. insurance industry with annual direct written premiums greater than $250 million as measured

using the written premium market size approach used by Altuntas et al. (2011). This population was appropriate for this study because these organizations have the financial capacity to implement large commercial software policy administration system replacements.

The independent variables in this six-level, repeated measures study were the measurement times: one pretest measurement and five measurements at annual intervals following implementation. The dependent variables measured at each period included earned premium, loss ratio, combined ratio, direct written premium, and cost ratio.

This study was designed to promote positive social change by generating information that could be used to increase competitiveness and efficiency in the insurance industry. Social responsibility leads to increased competitiveness and results in performance improvements and an increased standard of living (Popescu & Crenicean, 2013). This study was designed to promote positive social change by generating increased competitiveness and efficiency in the United States insurance industry. Identifying and optimizing the use of organizational resources related to system implementation as part of the strategic planning of an organization will help organization evaluate their competitive options and improve strategic decision making. Based on the comments from Popescu and Cenician (2013), performance improvements can help organizations thrive, which would lead to the ability to give back to their communities both in financial contributions and social contributions.

Role of the Researcher

For this quantitative research study, I played an active role in the collection, analysis, and interpretation of insurance industry financial data. State bureaus of insurance in the United States require annual financial submissions from all insurers licensed to do business within that state, including the variables of direct written premium, losses, combined ratio, expense ratio, and loss ratio (NAIC Model Laws, Regulations and Guidelines, 2014). This enabled me to select industry data from secondary sources consisting of regulatory financial data submitted for government use, in accordance with state insurance bureau reporting requirements. I also performed statistical analysis on the research data using the Statistical Package for the Social Sciences (SPSS) quantitative research tool.

The topic of study and data collected are related to financial performance of organizations in the insurance industry following system implementation. Over the past four years, I have been engaged in the leadership of a policy administration replacement project within the property and casualty insurance industry from the business case development through implementation. In addition, I have spent the past 10 years in a project management capacity and serving as the manager for a multilocation Project Management Office (PMO) using both on-shore and off-shore resources. I used secondary source data filed by insurance companies with state insurance bureaus according to US government reporting regulations so as to prevent my experience in the

insurance industry and project management from negatively impacting the validity of this study.

Participants

My research was conducted using existing data from state and federal financial reporting requirements for the U.S. insurance industry. No direct research participants were required in order to collect this research data. I used a purposive sampling approach for the quasi-experimental group, identifying only those organizations that have completed a system replacement during the study period. The control group utilized data from all companies with over $250 million in annual direct written premium located in the United States.

Research Method and Design

This study used a quantitative quasi-experiment to analyze the financial impact of enterprise system implementation in the P&C Insurance industry in North America. The research method and design were selected to align with the problem statement, purpose, and research question. The method and design met an existing business need for additional research identified and supported throughout the literature review.

Method

The intent of this quantitative study was to investigate the effect of Information System (IS) replacement on corporate financial performance in the property and casualty industry in North America. Stoica and Brouse (2013) argued that stakeholders have no common definition for success and deem a project as successful when they perceive it as

successful. Jugdev and Mathur (2012) correlated success with competitive advantage, however, Mignerat and Rivard (2012) defined success as completing projects on schedule and on budget. The conflicting definitions of success demonstrate a lack of consensus on project success criteria based on project execution. In addition, these studies demonstrate extensive work on measuring execution, but display a gap in addressing post-implementation performance.

Due to the lack of consensus on success criteria, I did not measure the actual cost of IS replacement or the effectiveness of project management during the execution of system replacement. Instead, I performed a quantitative analysis of the postimplementation financial performance of the organization in comparison to preimplementation performance and industry baselines using a repeated measures analysis with six levels to determine if a statistically significant change in performance is detected following IS implementation. Mir and Pinnington (2014) performed a similar study correlating project management behaviors with project success using a quantitative analysis. Quantitative research represents a common methodology for academic analysis of system implementation (Venkatesh, Brown, & Bala, 2013). In addition to the lack of quantitative evidence demonstrating the financial benefit of system replacement in the insurance industry, the previous application of quantitative research to system implementation and project success makes my approach a logical extension of previous work addressing a gap within the insurance industry.

The quantitative approach was selected for this study because quantitative studies are considered more objective and generalizable than qualitative studies (Lund, 2012). My goal was to look across an entire industry sector and examine whether a type of system replacement can be demonstrated to have a repeatable financial impact across the industry. A quantitative study enables managers to assess the impact of that system implementation on financial performance in an empirical manner, and understand whether those results would be translatable to their own enterprise and strategic decisions. Empirical studies have been used successfully to measure enterprise success and innovation (Lambert & Davidson, 2013). A rigorous approach to methodology supports the use of quantitative inquiry for the testing of causal relationships (Donaldson, Qiu, & Luo, 2013). Additionally, quantitative research methods provide the author with the ability to examine more than just the statistical significance of findings by helping the reader understand the potential impact of the findings on the body of research (Seddon & Sheepers, 2012)

While qualitative research offers benefits in understanding the behaviors and traits of a small group, a qualitative study would not have provided me with the data to make broad based recommendations about the postimplementation impact of system replacement on organizations throughout the industry. As my results indicated, a few organizations did experience growth and profitability results that outstripped the industry, but others fell well short of industry norms. A qualitative study looking at only a few of those results could have reached different conclusions and recommendations that have

the potential to not provide decision-makers with a broad basis of information for planning purposes.

Recent qualitative research on the effects of leadership on project success recommended additional quantitative research to improve the triangulation and correlation of project success information with qualitative research (Gonzalez, 2012). The use of leadership qualitative phenominological interviews for large program implementations provided insight into success factors. Managers believe that business results and stakeholder satisfaction were the most critical components of a successful implementation, and suggested that further quantitative research could be used to measure the business impact following project implementation (Shao & Muller, 2011).

Research Design

The study used a quantitative quasi experiment with a repeated measures approach with six levels looking at both the quasi-experimental group, and the financial performance of the industry through the use of a multivariate analysis of variance (MANOVA). The quantitative method was selected to address the shortage of empirical data supporting benefit realization due to system implementation as cited by Fryling (2010). By conducting a quantitative quasi-experimental study using the population of organizations that have not performed system replacements as a comparison point for organizations that have completed system replacements, I was able to identify whether a statistically significant relationship exists between financial performance and system replacement. The comparison of the quasi-experimental group that has performed the

system replacement to the performance of the population controlled for variance among the dependent variables that occurs within the population at large. The lack of randomization in the pretest posttest experimental group can contribute to threats to validity due to outside circumstances creating population differentiation in the quasiexperiment group (Neuman, 2011). However, in some circumstances there is no posibility of randomizing the quasi-expirimental group without being unable to isolate on the research condition (Neuman, 2011).

Further quantitative research to understand how portfolio success constructs align with stakeholder expectations was needed (Heising, 2012). Figure 1 demonstrates a model of quasi-experimental method for quantitative research based on the template provided by Campbell and Stanley (2010). This model calls for two test groups, one of which is a control group, and one of which is the quasi experiemental group containing the event effect which is measured.

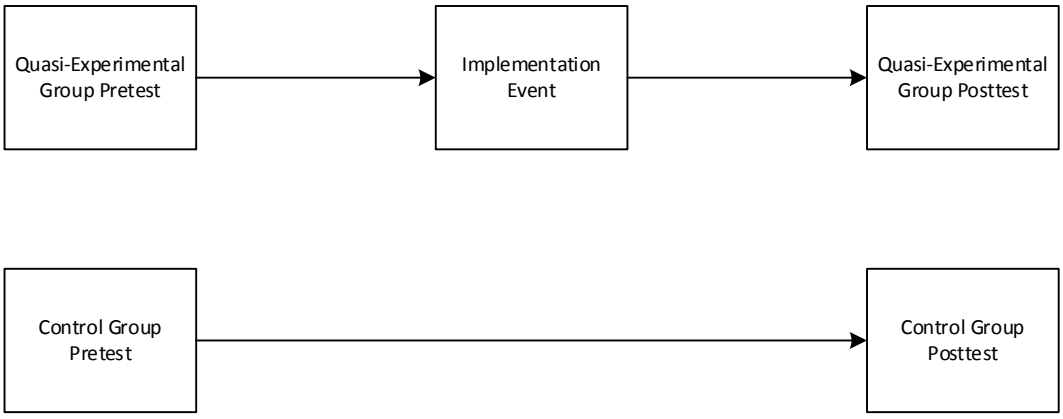

Figure 1. A flowchart illustrating the pretest/posttest/control design showing the quasi-experimental group and the control group without the implementation condition.

Data was collected for US based property and casualty insurance companies with implementations occurring between 2008 and 2009 based on press release documents announcing system implementation. In order to correct for variability to timing due to implementation of the sample group, the dependent variables of loss ratio, cost ratio, combined ratio, and the year over year percentage change in written premium will consider the year of implementation to be year zero. The five years following the policy system implementation are identified as year 1 through year 5.

I examined each individual company in the quasi-experimental group for internal performance changes in year over year performance between the five years prior to the implementation and the five years following implementation using a MANOVA for each subject pre- and posttest data set across the four dependent variables.

I then calculated the correlation coefficient using the Pearson product-moment coefficient of correlation as a measurement of the strength of the relationship between system implementation and the financial performance variables. Additional correlation analysis including the state in which the organization is located and whether the company performs both commercial and personal property underwriting or only one segment of property and casualty underwriting was also examined to identify potential confounding variables that might affect study results.

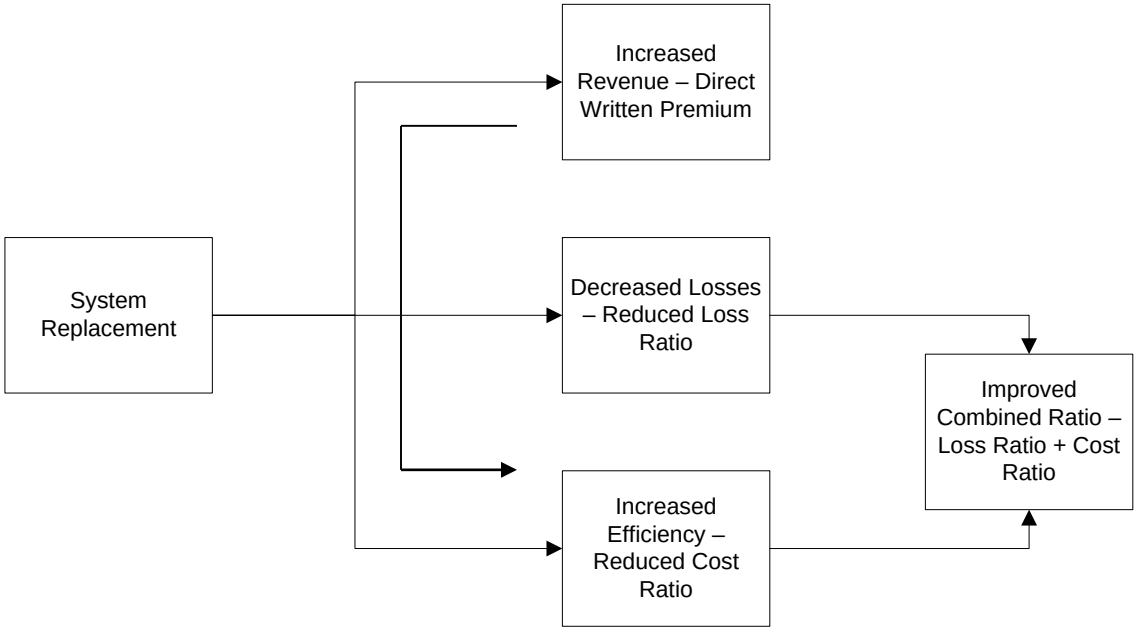

Figure 2. A flowchart showing the impact of system replacement on dependent variables.

I also used factor analysis to examine the interaction between the dependent variables to identify whether un-observed, latent, variables have a measurable impact on the observed, manifest, variables. As demonstrated in figure 2, the combined ratio can be expected to require structural equation modeling to control for latent variables due to the derived nature of the variable and the interrelationship of the revenue and cost ratio.

Factor analysis allowed me to test whether the variables I have selected align to the independent variable believed to be causing the impact (Neuman, 2011). The factors were extracted from the correlation matrix to determine the amount of variation in the model each factor accounts for (Neuman, 2011). I considered variables with a load of .3 to .6 as worth considering for inclusion as factors in the model, with variables weighted over .6 as unambiguous variables and automatically included based on correlation matrix

results using an orthogonal solution approach in SPSS. For purposes of the variable analysis I included measures of corporate location, year of implementation, and product offerings in addition to the core dependent variables discussed previously in order to eliminate potential confounding variables from the study.

Population and Sampling

The population of property and casualty insurance carriers in the United States with over $250 million in annual direct written premium in 2009 consisted of 761 organizations (SNL Financial LC, 2014). The direct written premium value of $250 million was selected based on financial capacity to implement a large policy system implementation using commercially available software. Property and Casualty insurers with over $250 million in direct written premium are considered mid-market size and larger within the insurance industry. By limiting the population to insurers within the United States, the population is limited to those organizations conforming to US financial reporting requirements.

While large system implementation costs can vary, and mega-project thresholds change from industry to industry, they share characteristics of requiring multiple years to complete and having a cost significant enough to cause financial harm to the parent company if the project fails (Shao & Muller, 2011). In the insurance industry, population can be stratified into various bands based on premium, or revenue, in order to group companies with similar characteristics for research purposes (Altuntas, Berry-stölzle, & Hoyt, 2011).

The sample selected for the study was based on a purposive sample of organizations that have performed a system replacement as a subset from the population of insurance companies with annual direct written premium in excess of $250 million. I used press releases issued by policy administration system vendors, indicating that the organization has purchased and implemented system replacement software. The purposive sampling strategy is more appropriate for this study than alternative methods of sampling due to the nature of the quasi experiment and the need to isolate on only those companies that have met the criteria of completing a policy administration system replacement. In cases where a probability sample approach is not feasible, due to cost, availability, or nature of the experiment a non-probability sampling technique is then used, such as convenience, purposive, sequential, or theoretical (Neuman, 2011).

The sampling method ensured a sample of appropriate size. A sample size of at least 39 companies was identified from within a period working backwards from 2009 in order to generate a large enough sample for statistically comparative purposes. The sample size for the quasi-experimental group was limited due to the small number of insurers from the approximately 761 in the population that implement system replacement projects in any one given year based on the review of available press releases. The sampling period allows a sufficient experimental group to establish a population with system implementation for comparison to the population without system implementation. The relevant postimplementation data was collected for the period from

2008 to 2014. The selection criteria for the quasiexperiment is consistent with the financial performance characteristics and population that is the focus of the study.

I conducted a priori power analysis using G Power 3.1 to determine appropriate sample size. A large sized effect (*ES* = .35), with power = .80, calculated for MANOVA with two groups and six measurement levels tested at a $p = .05$ would indicate significance. Priori power analysis is appropriate for sample size calculation using multiple predictors (Russo, 2011). The power analysis indicated that a sample size of 24 is needed to achieve a power of .80 given these parameters. The critical F value for a sample size of 24 and a large effect size of .35 is 2.77.

Due to the two-year period not resulting in sufficient sample size, the number of years used as implementation dates in the study was increased. The preference was to use data from the most recent years for implementation date while still permitting tracking of financial performance for the following five years. Based on the criteria of capturing post implementation results for the most recent five years, 2008 and 2009 were used. However, insufficient subjects were found in these years and I extended the study back to 2007 to ensure at least 24 companies were identified that have performed system replacement implementations.

Ethical Research

Ethical research frameworks form an important part of social science research. Within the context of Information System (IS) decision-making and research, the stakeholder theory and social contract theory contribute to the formulation of an ethical

framework for research (Bose, 2012). Stakeholder theory dictates that managers should resolve ethical conflicts without violating any of the rights of the research stakeholders or participants (Bose, 2012). Social contract theory takes the position that managers, leaders, or researchers have an obligation to increase social welfare above what it would be without their involvement (Bose, 2012).

The potential for biased responses exists when researchers interact with participants, and can result in inadvertently miss-recording or representing data, or influencing the responses of the participants (Miyazaki & Taylor, 2008). However, due to the fact that my research will not involve the use of participants for interviews or observational research, and will rely on previously submitted data, I do not have any ability to influence or bias the results of the data submitted by the subject organizations. In addition, I will seek to use the existing financial ratios, and reported data for the subject research companies exactly without performing data translation or transformation, further reducing the opportunity for miss-representing or miss-recording data.

In addition, my employer did not perform a system replacement during this period and would not be included in the quasi-experimental group being studied, limiting any potential researcher bias based on findings. While my employer would exist in the population sample, the data will be coded and will be one of approximately 800 organizations meeting the selection criteria for the control group, resulting in no direct use of employer data for analysis purposes.

Since the data has already been submitted as a matter of public record to the insurance commissioners of all states where US property and casualty insurers issue policies, no consent form is required from these companies. I will obtain consent to use and access the SNL and NAIC databases and statistical information in writing prior to conducting my research. Consent will include the ability to download, analyze, store, and report on findings in the data submitted by US insurers. The request for consent to access research data, and the approvals for research data access will be presented in the appendix as supplemental materials. All raw data will be stored for five years following the completion of my research on removable storage media and cloud storage backup in order to preserve the data for any further validation or verification of my research.

Due to the fact that the data used is pre-existing data, companies will not be enabled to opt out of the data analysis or collection process. As no participatory consent is required for data collection from the insurance companies included in the study, no incentives will be used in order to collect data. I may have to purchase student access to the SNL and NAIC databases in order to access the data, and will be responsible for the purchase of this data access if required.

In addition, throughout the analysis and discussion of the various quasi-experimental companies analyzed in the research, I will substitute coded names for the organizations, and no real names of the organizations will be used. By using substitute names for organizations, I will preserve the anonymity of the organizations in the

competitive marketplace as their individual results relate to profitability following system implementation.

Data Collection

Instruments

No research instrument is required to complete data collection for this study, since the study will rely on existing government data. The data is submitted to the state government via the bureaus of insurance in annual financial filing statements by each insurer licensed to perform business in that state. All of the data is reviewed and subject to audit by the state bureaus of insurance.

For purposes of this study I will use the following independent variables: (a) policy implementation, a yes/no variable to indicate whether an organization has performed a policy administration system replacement. (b) year, the year in which the policy administration replacement was performed. (c) insurance products offered, the principle classifications according to government filing classifications for the insurance products each company provides. The dependent variables examined for relationship to the independent variables will include: (a) direct written premium, a measure of the financial value of the insurance policies sold in a given year; (b) cost ratio, a measure of the efficiency of the organization determined by assessing the expenses the organization incurs in comparison with written premium; (c) loss ratio, a measure of the cost to the organization of insurance claims against the revenue generated through written premium; (d) combined ratio, a measure of the sum of the loss ratio and cost ratio that indicates

whether an organization is generating more revenue than costs incurred through expenses and claims.

In addition to the government data assessing the organizational performance, an internet search will be performed of press releases for the commercially available policy administration systems. The press release information will be used to identify the quasi-experimental group performing the system replacement. A similar strategy for identifying organizations implementing enterprise systems was used by Engelstättera and Sarbua (2013) in a European study on implementation outcomes for CRM.

All research data will be maintained by me, and will be available upon request.

Validity and Reliability

Insurance industry data is collected annually due to state and federal regulatory requirements in the United States (NAIC Model Laws, 2014). I will utilize the secondary data source of SNL Financial, which collates the annual insurance industry financial statements submitted to state and federal insurance bureaus for research and competitive analytical purposes (SNL Financial LC, 2014). All data is audited and SNL offers a financial incentive to any researcher reporting an error or inconsistency in the data between the SNL insurance industry statutory financial database and the original records submitted by the insurance carriers to the state bureaus of insurance (SNL Financial LC, 2014). The use of the collated database will make it possible for my research to compare the baseline results of the entire population meeting the minimum premium financial threshold with the result of the specific quasi-experimental group.

In addition, since no interviews or data manipulation of results will be performed by me, individual bias or data coding interpretation will have no impact on results. No direct contact will be made with organizations listed in the study, relying entirely on aggregated financial results submitted to reporting agencies. The use of existing data eliminates any potential for subject bias in an interview process when discussing corporate performance, success, or financial results with a peer in the insurance industry, further supporting the validity of the study results.

Data Collection Technique

Data collection is often the most costly and time intensive portion of research (Dunn, Arslanian-Engoren, DeKoekkoek, Jadack, & Scott, 2015). However, the use of secondary source data typically requires less time and cost, and reduces risk to participants (Dunn, Arslanian-Engoren, DeKoekkoek, Jadack, & Scott, 2015). Open access to public or government data provides policy makers with the ability to address complex problems (Janssen, Charalabidis, & Zuiderwijk, 2012). It is important to note however, that secondary databases have limitations in accuracy and potential for data quality concerns that the researcher should be aware of and address (Kostev & Rathmann, 2013). With the caveat in mind that there is a potential for data quality issues, I believe the benefits of the use of secondary data from government insurance industry regulatory filings outweights the risk. The use of a large pool of existing data provides me with the opportunity to measure financial performance over a long period comparing both the industry performance as a whole and the performance of the quasi-experiemental group.

Such as study conducted independently would take at least six years to complete, and require a significant financial investment. In addition, this approach will protect the anonymity of the organizations in the research outcomes as each organization will be given an identifier number once it has been selected as a member of the quasi-experimental group. For these reasons, the use of government data as a secondary source is preferable to using primary data because it allows a broader base for the research and allows me to greatly reduce the time and expense of data collection.

Other approaches to data collection, including survey methods and interviews were considered, however, these are likely to result in lower response rates and levels of accuracy and introduce an increased chance of reporting bias (Neuman, 2011). Considering the variety of data collection means and research approaches available in order to assess financial impact, the use of secondary data in an industry where all financial results must be reported annually makes sense in providing a wide range of data that can be associated with a system implementation event as reported via press release.

Data collection will use the SNL Financial Peer Analytics database of Insurance industry statutory financial data (SNL Financial LC, 2014). The database is a copy of the NAIC maintained state insurance regulatory data, available for academic research. I will access the database via secure connection using the login and password supplied by SNL Financial for research purposes, following receipt of permission for data collection and analysis. Queries will be used to filter the data to property and casualty insurers in the United States, with over $250 million in annual direct written premium. I will retrieve a

downloaded Microsoft Excel file containing the data for each calendar year through the period from 2008 to 2014. My research will focus on companies performing system implementations from 2008 to 2009, and the financial performance of those organizations in the five years prior to the implementation and the five years following the implementation. The 2008 to 2009 period allows for the trending of performance data in the five years following 2009, providing the most current results available to my research.

Data collection in the Microsoft Excel downloads for each year will include the following: (a) the name of the organization, (b) the direct written premium of the organization for the year, (c) the earned premium for the year, (d) the cost ratio, (e) the loss ratio, (f) the combined ratio for the year, (g) the state in which the company is located/headquartered, (h) which principle market segments the company operates in. Data will be combined and stored in a master document with a column indicating year added to each worksheet, and all data collated into one master list.

In order to identify which organizations have performed system replacements in the 2008 to 2009 period I will conduct a internet search for published press releases and announcements from policy administration system providers. Use of search terms to identify data sets is a standard practice in subject selection for research purposes (Grimmer & Stewart, 2013). The press releases will serve as proof of purchase, or proof of implementation, indicating that the organization has performed a system replacement in the desired period. I recognize that this is a potential weakness in the study, in that

reported purchase and implementation does not necessarily capture all system replacement events. For example, an organization could use an internally developed policy administration system which would not be captured via this method. However, the selection criteria of using organizations with over $250 million in annual direct written premium limits the likelihood of internally developed solutions as these organizations are large enough to leverage commercially available enterprise software solutions.

The resulting press releases will be stored and saved as supplemental materials, and an index of companies found in the search of press releases will be created. Each of these companies will be assigned a reference ID that has no relationship to the actual name of the organization in order to preserve the anonymity of the organization during analysis and discussion of the research.

In the master data list, I will select and copy the data for each of the identified organizations that performed a system replacement, and copy all years of data for those organizations into an additional worksheet for analysis. The names of all of the companies on the secondary worksheet will be replaced with the reference IDs, and will require the use of the reference matrix in order to decode. The reference matrix will be stored in a separate, encrypted, and password protected file in order to prevent unauthorized access to the research data.

Data will be maintained in a master copy on my electronic device and in a secondary backup copy of the electronic record. The excel data files will be encrypted and password protected. Files containing raw data will be retained for five years

following publication of the study, and subsequently will be subject to deletion. Deletion will overwrite the raw data on both my electronic device and the digital backup.

Data Analysis Technique

Data analysis for this quantitative study will focus on the use of statistical testing for significance to address the primary research question. Is there a statistically significant financial benefit from performing enterprise system replacement projects?

Hypotheses

The hypothesis will be tested in this study to better understand the relationship between system replacement and financial performance.

$H1_0$: There is no significant relationship between performing a system replacement and financial performance.

$H1_a$: There is a significant relationship between performing a system replacement and financial performance.

The collected data will consist of two primary groups or data sets. The first data set will contain the data from all companies within the North American Property and Casualty Insurance industry with a direct written premium of over $250 Million in the reported fiscal year 2009, representing the entirety of the population analyzed in the study. The insurance industry can be stratified into bands based on written premium for research purposes to differentiate large from small insurance carriers (Altuntas, Berry-stölzle, & Hoyt, 2011). The second data set will be a subset of the first data set, containing only the data on those companies identified via press release as having

implemented a policy administration system replacement between 2008 and 2009. For both sets of data I will perform quantitative analysis calculations within SPSS.

Statistical analysis will take place in a series of steps to address the principle research question regarding the statistical significance of policy administration system replacement to firm financial performance. Analysis will begin with conducting basic descriptive statistics on both the population and the quasi-experimental data sets. Outliers based on loss ratios, cost ratios, or the combined ratio will be identified through comparison of financial results for the dependent variables to the standard deviation of the group. Outliers of more than three standard deviations for more than two of the five years in the data set will be removed to prevent skewing the data set in further analysis. The selection criteria for outlier identification aligns with Pyzdek's (2009) seminal work on statistical analysis of data sets for Six Sigma analysis.

Following descriptive statistic analysis, further analysis using multivariate analysis of variance (MANOVA) will be conducted. The MANOVA is a common approach to analysis where multiple dependent variables are present (Tonidandel & LeBreton, 2013). The MANOVA approach however can be limited in its ability to discriminate between the effects of multiple dependent variables where the correlation between variables influences the significance of the results (Tonidandel & LeBreton, 2013).

The MANOVA will be conducted in six levels, with the first level being the year prior to implementation, and each of the following five years being a subsequent level,

enabling the analysis of variance over time as a result of system implementation. In addition, the dependent variables will be aligned in two groups. The first group will consist of the dependent variables earned premium and direct written premium, which have a positive relationship, i.e. the larger the earned premium and direct written premium, the more profitable the organization. The second group of variables will consist of the loss ratio, expense ratio, and combined ratio, which have a negative relationship. The lower these ratios the more profitable the organization.

In order to address the potential limitations of findings with the MANOVA, I will conduct further follow-up analysis. In order to address the interaction of multiple data terms, a traditional approach would be to leverage structural equation modeling with a least squares approach to identify statistically significant financial changes in performance between the quasi-experimental group and the population. A similar method was used by García-Morales, Jiménez-Barrionuevo, and Gutiérrez-Gutiérrez (2012) in their analysis of the influence of leadership on organizational performance. A data driven approach to confounder identification through inclusion of potential confounding variables in the study is recommended to reduce misspecification of the exposure criteria (Vansteelandt, Bekaert, & Claeskens, 2012). However, recent research by Tonidandel and LeBreton (2013) recommends a relative importance weighting approach derived from multiple regression analysis. Using the relative weight approach the contribution of each dependent variable to the overall effect is measured, while at the same time accounting for the correlation between the dependent variables (Tonidandel &

LeBreton, 2013). The importance weights as a follow-up to the MANOVA can be interpreted as measures of effect size, signifying the importance of each dependent variable (Tonidandel & LeBreton, 2013). A common interpretation of effect size is to compare the effect to the magnitude of the departure from the null hypothesis (Preacher & Kelley, 2011).

In addition, presystem replacement and postsystem replacement will be analyzed within the quasi-experimental subject group in order to identify changes in performance correlating to the implementation date. The mixed model repeated measures analysis serves to identify statistically significant variation in response to the effect incident (Campbell & Stanley, 2010; Durantes, Li, Peters, & Richardson, 2013). Due to the presence of confounding variables and covariate variables in the study, the use of regression analysis alone would be insufficient to demonstrate specificity of the effect. Regression analysis was used to identify a causal relationship between implementation success and perceived organizational performance (Akça1, Esen, & Özer, 2013). While this approach served to analyze similar performance measures to my DSP, Akcal, Esen and Ozer (2013) did not account for the correlation effect of the dependent variables. Other studies have addressed this limitation through the use of structural equation modelling in addition to the regression test in order to assess the impact of confounding variables (Vansteelandt, Bekaert, & Claeskens, 2012; Camisón & Villar-López, 2012; García-Morales, Jiménez-Barrionuevo, & Gutiérrez-Gutiérrez, 2012).

Results will be presented in a format consistent with APA standards for quantitative research and will be represented in chart format, highlighting those results which indicate statistical significance with a value of $p < .01$.

Reliability and Validity

The following section discusses the reliability and validity of this doctoral study.

Reliability

Reliability is comprised of the stability of data across time and across groups (Neuman, 2011). The research instruments used to collect the data can affect reliability, as can the individuals performing the measurement, or different occasions for the same experiment being conducted (Drost, 2011). The use of existing data through a government controlled secondary source limits the ability of the researcher to impact data reliability through instrumentation, since no direct observational instrumentation is used in conducting the research. In this case the research data consists of publicly filed financial and performance data used within the insurance industry and captured in government records.

Measurement of reliability in quantitative research centers around whether the variables used in the research are consistent in definition and measurement throughout the research (Ihantola & Kihn, 2011). Since the variables I propose using will consist of government data, in a format that has been defined and measured for over 100 years by the National Association of Insurance Commissioners, the definitions are well known and consistently used in the insurance industry. Having clear standard instructions and

avoiding ambiguity of terms is key to the developing a high degree of reliability in the study (Ihantola & Kihn, 2011).

Secondly, because of the encompassing nature of the data I will be able to examine the performance of all members of the population, preventing any variation across groups. A split-half test for reliability could be used to assess the reliability of the test population by using the correlation of the two half-measures to obtain a reliability coefficient for the entire data set (Drost, 2011). A reliability of .70 or higher will be a sufficient measure of reliability for testing of a hypothesis (Drost, 2011).

Insurance industry data is collected annually due to state and federal regulatory requirements in the United States (NAIC Model Laws, Regulations and Guidelines: Annual financial reporting model regulation., 2014). I will utilize the secondary data source of SNL Financial, which collates the annual insurance industry financial statements submitted to state and federal insurance bureaus for research and competitive analytical purposes (SNL Financial LC, 2014). All data is audited and SNL offers a financial incentive to any researcher reporting an error or inconsistency in the data between the SNL insurance industry statutory financial database and the original records submitted by the insurance carriers to the state bureaus of insurance (SNL Financial LC, 2014). In addition, it would be possible to perform an independent audit of a particular organization's financial results by comparing the NAIC filing statements to the results obtained from the database to demonstrate inter-rater reliability (Drost, 2011).

The use of the collated database will make it possible for my research to compare the baseline results of the entire population meeting the minimum premium financial threshold with the result of the specific quasi-experimental group. In addition, longer test runs exhibit greater reliability as consistency of the data over time can be established (Drost, 2011). In the case of my study, using a two year period to identify system implementation effect, and the five years following the effect date for the quasi-experimental subjects provides a seven year period for the study, increasing study reliability.

Validity

Internal validity is representative of the ability to reach conclusions regarding causal relationships based on research design and experimental techniques, in other words, is the researcher measuring what was intended to be measured (Drost, 2011). Researchers must be able to address threats to internal and external validity (Drost, 2011). In addition to testing the model for fit, the researcher must establish the validity of the model in a whole mechanism viewpoint (Russo, 2011). Russo (2014) goes on to say a study will be statistically valid if statements about covariation can be made with reasonable confidence, internally valid if a causal relation is confirmed within the specific population at hand, constructively valid if alternative constructs for cause- and effect-variables deliver consistent results, and externally valid if the results can be generalized to other populations.

While my study proposes the use of a quasi-experiment instead of a true experiment, and does contain some risk to validity, several factors mitigate risks to internal validity. Internal validity should be the primary concern in social science practice oriented research because the focus of practice oriented research is primarily on applying the solution or practice developed to answeer a business problem in the same population (Bleijenbergh, Korzilius, & Verschuren, 2011). Risks to maturation, testing, instrumentation, mortality, and selection maturation are limited in the case of my proposed study, because this study will rely on government data collected from all property and casualty insurers in North America following the NAIC standards.

The quasi-experimental design I propose uses a comparative interrupted time series (CITS) to collect data and examine in comparison to a control group. The use of the CITS study methodology is superior to the interrupted time series by providing a baseline without the effect treatment in order to aid in isolating causality (Clair, Cook, & Hallberg, 2014). The repeated measures analysis using a MANOVA approach of the time series data will allow me to assess variance across multiple related dependent variables.

Internal validity risks due to history and selection do exist within this study. The study takes place over a long period of time, using data collected in the year prior to system implementation and the five years following system implementation in order to identify trend behaviors. The period of time concerned is lengthy enough for organizations to implement other significant changes that could influence financial performance (Neuman, 2011). However, by comparing to the population as a whole and

to individual quasi-experimental member performance before and after the implementation event I will potentially be able to identify performance influences that occur over time impacting the industry as a whole (Clair, Cook, & Hallberg, 2014). In order to control for risks of history I will need to look for covariation in the control group as well as the quasi-experimental group occurring in the same period indicative of a confounding variable impacting both groups (Clair, Cook, & Hallberg, 2014).

To limit the type 1 risk to the study that could be increased by performing a six level MANOVA analysis on five variables, I will group the variables. Loss Ratio, Cost Ratio, and Combined Ratio all improve based on an inverse relationship, the lower the ratio the better the financial performance. Earned premium and Direct Written Premium are both measures of the dollar value of policies offered, and have a positive relationship as financial measures, the greater the earned or written premium the better the results. For purposes of limiting the type 1 error, I will divide my study into two groups of variables, one containing the Earned Premium and Direct Written Premium, and the other containing the Loss Ratio, Cost Ratio, and Combined Ratio.

Data selection also poses a validity risk, as those organizations performing system replacements may already represent a biased sample that does not have equivalent performance to the rest of the population. By using basic descriptive statistics to compare the performance of the quasi-experimental group to the population prior to the system implementation event I was able to identify that the quasi-experimental subject group closely aligns with the performance of the population as a whole. In addition,

practice research should focused on verifiability, comprehensibility of the research, and take a holism approach to the results leveraging a system theory approach in order to understand how the components of the system being studied relate to the whole and the full impacts of the business decision or outcome reached (Bleijenbergh, Korzilius, & Verschuren, 2011). Due to the nature of my research examining the entirety of the North American insurance carrier population with over $250 million in written premium, I will be able to take a wholistic view of the data as suggested by Bleinenbergh, Korzilius, and Verschuren (2011) to consider wether my findings are applicable and comprehensible in terms of behaviors within the industry being studied. Russo (2014) supports this idea by arguing validity is about more than just the statistical analysis, but also about whether the story of the causation and how it fits with congruent and back ground knowledge makes sense to the researcher and the reader.

In addition, the measurement of external validity involves establishing how generalizable the results are over settings and times (Drost, 2011). In this case, my study will apply specifically to US property and casualty insurers with over $250 million per year in direct written premium. Extrapolation beyond this population cannot be established without additional research demonstrating similar findings in other related populations. In a practice-based approach though, the goal of the social science research is to develop a practical model to address a problem rather than to generate a theory attempting to generalize for all organizations (Bleijenbergh, Korzilius, & Verschuren,

2011). In this case, the limited application to the insurance industry is acceptable, as the research will seek only to develop a model applicable to this population.

Transition and Summary

In Section 2 I asserted that this study will require no direct participants, due to basing the research on existing government data as a reliable secondary data source. I also discussed the role of the researcher, the research method and design, and population and sampling. In my proposed research, I will perform a quantitative quasiexperiment to analyze the causal relationship between policy administration system implementation and financial performance for insurance carriers with over $250 million in direct written premium in the United States. I also examined the ethical considerations that would be present in this research, and discussed proposed mitigations for ethical concerns relating to the research.

Data collection, and data analysis for the proposal included a discussion of the data collection source, the process for collecting and storing the data, organization, and variables that will be investigated. Data analysis also considered the statistical tools, models, and theories including the use of structural equation modeling and regression analysis, that can be used to analyze the relationship between the implementation event and financial performance. Finally, I restated my hypothesis from Section 1 that system implementation has a statistically significant impact on financial performance in the US insurance industry. Based on the proposed hypothesis, data collection, and data analysis techniques I considered the reliability and validity of the research.

In Section 3, I will present an overview of the study, followed by presentation of the results, data, and findings. I will also discuss the potential application of the findings by leaders and stakeholders within the US insurance industry, and opportunities for future research. In addition, I will discuss potential opportunities for this research to contribute to social change and reflect on the relevance and impact of this research to my journey as a scholar practitioner.

Section 3: Application to Professional Practice and Implications for Change

The purpose of this quantitative quasi-experimental repeated measures study was to examine the effect of PAS replacement projects on financial benefit realization for property and casualty insurers with over $250 million in annual premium in the United States. The population studied consisted of companies with annual direct written premiums greater than $250 million, as determined by written premiums. I collected corporate financial data from the SNL Peer Analytics (SNL Financial LC, 2014), financial database of annually filed financial information provided by insurers to U.S. state commissioners of insurance.

The independent variables in this repeated measures study with six levels were the measurement times, with one pretest measurement, followed by measurements two through six at annual intervals following implementation. The dependent variables measured at each period were earned premium, loss ratio, combined ratio, direct written premium, and cost ratio. The results of this study will aid corporate strategic leaders in assessing the impact of replacing their policy administration systems on firm performance.

The research question for this study investigated whether system replacement in the insrurance industry has a statistically significant financial impact on firm performance. Financial performance serves as a measure of organization health, success, and longevity. The primary research question was crafted to address a lack of available research to inform insurance organizations seeking to undertake enterprise software

implementations. This question was: To what extent, if any, is there a statistically significant financial benefit effect from performing enterprise system replacement projects? The hypothesis for this study was that a significant relationship would exist between system replacement and firm performance, measured using earned premium, loss ratio, combined ratio, direct written premium, and cost ratio.

After completing the quantitative analysis, I found no significant relationship between policy administration system implementation and financial performance based upon analysis of the dependent variables of combined ratio, loss ratio, expense ratio, earned premium, and direct written premium and system replacement implementations in years 2007, 2008, 2009. The lack of a significant relationship caused me to reject the alternative hypothesis, that performing a legacy system replacement in the US insurance industry would have a positive financial impact on organizations with more than $250 million in annual direct written premium.

This section includes the results of my M-ANOVA analysis of 180 U.S. property and casualty insurance carriers with over $250 million in annual direct written premium. I have included a detailed presentation of my findings relating to the lack of significance linking system replacement with financial benefits, and the application of my findings to professional practice including the implications for leaders in the insurance industry conducting strategic project selection and evaluating potential system replacment. Implications for social change were documented based on on the findings and a recommendation that preserving organization stability and reliable growth is better for

social change than the unpredictable financial results of system replacement. I also documented recommendations for action, and recommendations for further study. In addition I have included reflections on my research and a summary and conclussion of findings.

Overview of Study

My study focused on understanding the postimplementation effect on financial results of system replacement in the U.S. property and casualty insurance industry for companies with over $250 million in annual direct written premium. The high cost and limited flexibility of legacy IT systems can be a driving factor in system replacement, however limited information is available through other recent studies that would help decision-makers understand the postimplementation financial results their organizations could expect (Fryling, 2010; Quartel, Steen, & Lankhorst, 2012). When evaluating the decision to replace a legacy system, leaders are challenged with quantifying the value of undertaking the system replacement as opposed to the costs, through the use of a measurable framework (Bielavitz, 2012). In addition, in the insurance industry the lengthy policy and financial lifecycle results in the impact of these system replacement projects potentially taking several years to reach the financial records. The book of business is migrated from the legacy system to the new system during the policy renewal cycle, and then waits for the following year to show the written premium realized on the company ledger. This lengthy duration of benefit realization aligns with the statement

from Meskendahl (2010) that large projects require years of effort and significant resources to execute, requiring long-term alignment with strategic goals.

My research benefits decision-makers by providing key information that helps to fill in the benefit projections used in methods of prioritizing portfolios including the balanced scorecard, business case evaluation, and stage-gate practices to evaluate project performance and selection (Kaplan & Norton, 1996; Barringer & Gressock, 2008; Nafeeseh & Al-Mudimigh, 2011). My research also provides a generalizable and objective result as opposed to the recent research into benefits as a result of system implementation that have focused on qualitative measures for organizational outcomes (Nafeeseh & Al-Mudimigh, 2011).

The results of my study are applicable for use by enterprise managers in strategic planning to better assess the value of undertaking system replacement projects in order to improve the accuracy of cost benefit analysis in portfolio decision-making. In addition, improved understanding of postimplementation benefits could lead to improvements in multicriteria decisions making (MCDM) models for analysis during the business case and project initiation phases of system replacement initiatives.

Presentation of the Findings

Research Question and Hypothesis Conclusion

Is there a statistically significant financial benefit effect from performing enterprise system replacement projects in the U.S. insurance industry?

$H1_0$: There is no significant change in financial performance for US property and casualty insurers with over $250 million in annual direct written premium as an outcome of performing an enterprise system replacement.

$H1_a$: There is a significant change in financial performance for US property and casualty insurers with over $250 million in annual direct written premium as an outcome of performing an enterprise system replacement.

Analysis of the research question and hypothesis using M-ANOVA lead me to accept the null hypothesis. There was no evidence supporting a financial significant impact due to system replacement on the five dependent variables I examined during the five years following system implementation.

Descriptive Statistics

My initial descriptive statistics of the full data set of 180 insurance carriers in North America with a written premium greater than $250 million in 2009 revealed outliers in the data set that created a large results gap. This gap was due to these companies separating their revenues and expenses into separate legal entities. In these cases, the company can be found under multiple parent/child names in the SNL Peer Analytics database. I removed the organizations not reporting a combined ratio that fell into this category from the analysis and reran the basic descriptive statistics. Following this removal, I looked for any organizations that operated for two or more consecutive

years beyond three standards deviations in comparison to the performance for the industry combined ratio.

Performance consistently outside of three standard deviations represents a process out of control using M-Bar control charts, and is indicative of anomalies in the control and measurement process (Pyzdek, 2009). Conducting this preliminary analysis enabled me to assess these outliers, but did not rely on an assumption of normality for the financial performance data. An additional four organizations were removed due to combined ratios more than three standard deviations above the mean for multiple consecutive years. Following the initial round of data cleanup, I ran descriptive statistics again, examined adjusted data distribution, and found that while two outliers remained outside of 3 standard deviations, they were anomalies limited to a single year not consecutive years. The remaining data set consisted of 157 companies with greater than $250 million in direct written premiums in 2009, as described in Table 1. When I examined the remaining years for missing data, the total available data set dropped to 149 companies.

Table 1

Data Set for 2009 Property and Casualty Insurers over $250 Million in DWP

	Valid		Missing		Total	
Measure	*n*	%	*n*	%	*n*	%
Combined Ratio 2009 Y (%)	157	98.7%	2	1.3%	159	100.0%
Expense Ratio 2009 Y (%)	157	98.7%	2	1.3%	159	100.0%
Loss Ratio 2009 Y (%)	157	98.7%	2	1.3%	159	100.0%

Table 2

Descriptive Statistics for 2009 Data Set

Measure	Descriptive		Statistic	*SE*
Combined Ratio 2009 Y (%)	Mean		99.91	.912
	95% Confidence Interval for	Lower Bound	98.11	
	Mean	Upper Bound	101.71	
	Median		100.60	
	Variance		130.655	
	Std. Deviation		11.430	
	Minimum		67	
	Maximum		139	
	Kurtosis		1.857	.385
Expense Ratio 2009 Y (%)	Mean		30.37	.670
	95% Confidence Interval for	Lower Bound	29.04	
	Mean	Upper Bound	31.69	
	Median		30.82	
	Variance		70.570	
	Std. Deviation		8.401	
	Minimum		2	
	Maximum		58	
	Kurtosis		1.805	.385
Loss Ratio 2009 Y (%)	Mean		55.98	1.103
	95% Confidence Interval for	Lower Bound	53.80	
	Mean	Upper Bound	58.16	
	Median		56.14	
	Variance		191.056	
	Std. Deviation		13.822	
	Minimum		13	
	Maximum		95	
	Kurtosis		1.241	.385

In addition, I looked at the distribution of the data as demonstrated in Figure 3 to determine if any additional outliers should be removed from the data set. The figure showed a normally distributed population, and I was able to proceed with my analysis.

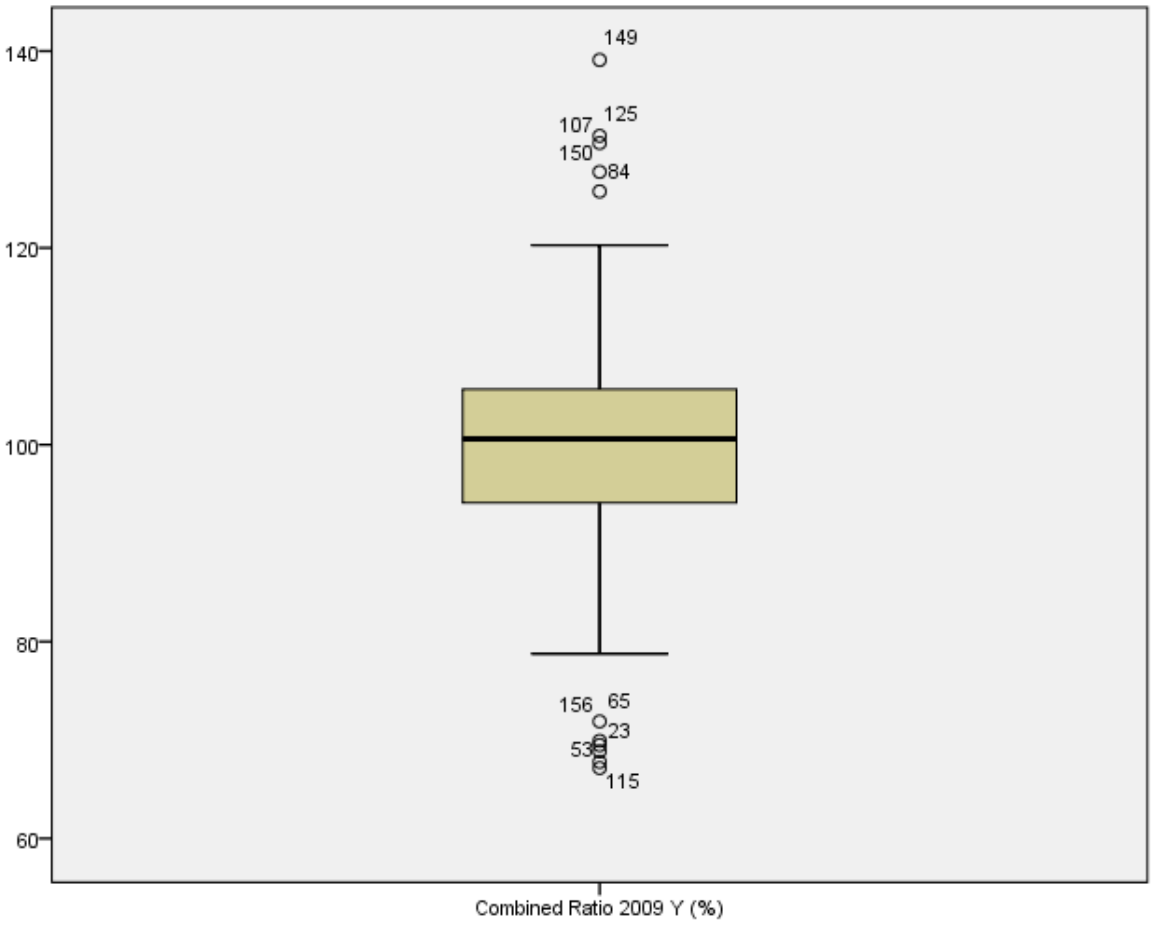

Figure 3. Distribution of combined ratios for 2009 with outliers removed. This figure was generated prior to removing data for years 2010 through 2014 where reporting was incomplete. The results showed a normal distribution of data across the property and casualty industry in companies over $250 million in direct written premium.

Test Results

To identify the quasi-experimental group from within this population, I ran a series of Internet search queries for press releases and filing statements to identify

"Policy Administration System" and "implementation" in 2009. My search identified 51 companies with implementations in 2009. Of these, however, only 18 met the research criteria of companies over $250 million in written premium in 2009. At this point, as per my research design, I expanded my search to include 2008 implementations and identified an additional 13 organizations with 2008 implementations, three of which met the research criteria. This resulted in a quasi-experimental subject group of 24 companies for 2009, but only 22 by 2014 since two companies did not report their final financial results for 2014.

The sample size resulting from these measures met the target size of 24 for statistical significance based on a-priori power analysis, however, the sample group represents only those organizations that publically communicated conducting a system replacement during the research period. When examined against a population of companies with over $100 million in direct written premium in 2009, 31 of the companies conducting implementations would meet the criteria. For purposes of this analysis, I confined my research to those organizations with over $250 million in 2009 written premium. Further followup testing should be performed on the larger group as part of a subsequent study.

Using a MANOVA with six levels allowed me to compare results from the financial performance of the insurance industry population to those of the quasi-experimental group that performed a system replacement. I ran the test in two groups,

one for the financial values of earned premium and written premium, and one group for the financial ratios, the loss ratio, expense ratio, and combined ratio.

Inferential Results

Financial impact of policy administration system implementation on corporate performance was measured for companies that performed system replacements and those that did not perform system replacements at intervals of 1 year, for six years. The measurement started prior to replacement implementation and followed for five consecutive years. Repeated-measures MANOVA analysis confirmed the null-hypothesis that there were no significant between subjects financial impacts between policy administration system implementation and financial performance ($V = .021$, $F(3,146) = 1.519$, $p = .384$). There is a significant relationship between year measured and financial performance ($V = .309$, $F(15,134) = 3.995$, $p < .001$), as demonstrated in table 4. The interaction between year measured and policy administration system implementation was not significant ($V = .057$, $F(15,134) = .540$, $p = .914$). As demonstrated in Table 5. Univariate between-group analysis showed that

Table 3

Repeated Measures MANOVA results for Loss, Expense, and Combined Ratios

Effect			Value	*F*	Hypothesis *df*	Error *df*	Sig.
Between Subjects	Intercept	Pillai's Trace	.952	1458.150[b]	2.000	147.000	.000
		Wilks' Lambda	.048	1458.150[b]	2.000	147.000	.000
		Hotelling's Trace	19.839	1458.150[b]	2.000	147.000	.000
		Roy's Largest Root	19.839	1458.150[b]	2.000	147.000	.000
	PASImplementation	Pillai's Trace	.020	1.519[b]	2.000	147.000	.222
		Wilks' Lambda	.980	1.519[b]	2.000	147.000	.222
		Hotelling's Trace	.021	1.519[b]	2.000	147.000	.222
		Roy's Largest Root	.021	1.519[b]	2.000	147.000	.222
Within Subjects	Years	Pillai's Trace	.301	5.976[b]	10.000	139.000	.000
		Wilks' Lambda	.699	5.976[b]	10.000	139.000	.000
		Hotelling's Trace	.430	5.976[b]	10.000	139.000	.000
		Roy's Largest Root	.430	5.976[b]	10.000	139.000	.000
	Years * PASImplementation	Pillai's Trace	.042	.616[b]	10.000	139.000	.799
		Wilks' Lambda	.958	.616[b]	10.000	139.000	.799
		Hotelling's Trace	.044	.616[b]	10.000	139.000	.799
		Roy's Largest Root	.044	.616[b]	10.000	139.000	.799

Table 4

Univariate Analysis of Loss, Expense, and Combined Ratios

Source	Measure		Type III Sum of Squares	*df*	*MS*	*F*	Sig.
Years	Combined	Sphericity Assumed	2551.361	5	510.272	.610	.692
		Greenhouse-Geisser	2551.361	1.155	2209.729	.610	.458
		Huynh-Feldt	2551.361	1.166	2188.530	.610	.460
		Lower-bound	2551.361	1.000	2551.361	.610	.436
	Loss	Sphericity Assumed	3010.894	5	602.179	1.356	.239
		Greenhouse-Geisser	3010.894	1.324	2274.547	1.356	.254
		Huynh-Feldt	3010.894	1.340	2246.778	1.356	.254
		Lower-bound	3010.894	1.000	3010.894	1.356	.246
	Expense	Sphericity Assumed	85.563	5	17.113	.034	.999
		Greenhouse-Geisser	85.563	1.041	82.217	.034	.862
		Huynh-Feldt	85.563	1.049	81.595	.034	.864
		Lower-bound	85.563	1.000	85.563	.034	.853
Years * PASImplementation	Combined	Sphericity Assumed	751.611	5	150.322	.180	.970
		Greenhouse-Geisser	751.611	1.155	650.969	.180	.708
		Huynh-Feldt	751.611	1.166	644.724	.180	.711
		Lower-bound	751.611	1.000	751.611	.180	.672
	Loss	Sphericity Assumed	523.573	5	104.715	.236	.947
		Greenhouse-Geisser	523.573	1.324	395.527	.236	.695
		Huynh-Feldt	523.573	1.340	390.699	.236	.698
		Lower-bound	523.573	1.000	523.573	.236	.628

	Expense	Sphericity Assumed	9.257	5	1.851	.004	1.000
		Greenhouse-Geisser	9.257	1.041	8.895	.004	.956
		Huynh-Feldt	9.257	1.049	8.828	.004	.957
		Lower-bound	9.257	1.000	9.257	.004	.951
	Combined	Sphericity Assumed	618845.138	740	836.277		
		Greenhouse-Geisser	618845.138	170.881	3621.491		
		Huynh-Feldt	618845.138	172.537	3586.749		
		Lower-bound	618845.138	148.000	4181.386		
Error(Years)	Loss	Sphericity Assumed	328599.138	740	444.053		
		Greenhouse-Geisser	328599.138	195.913	1677.274		
		Huynh-Feldt	328599.138	198.334	1656.797		
		Lower-bound	328599.138	148.000	2220.264		
	Expense	Sphericity Assumed	368493.232	740	497.964		
		Greenhouse-Geisser	368493.232	154.024	2392.439		
		Huynh-Feldt	368493.232	155.197	2374.361		
		Lower-bound	368493.232	148.000	2489.819		

The first analysis was conducted for the dependent variable of system implementation. The between-subjects factors were loss ratio, expense ratio, and combined ratio and time with six levels. The time main effect was tested using the multivariate criterion of Wilk's lambda.

Table 5

Repeated Measures MANOVA for Net Written and Earned Premium

Effect			Value	*F*	Hypothesis *df*	Error *df*	Sig.
Between Subjects	Intercept	Pillai's Trace	.953	977.000[b]	3.000	146.000[b]	.000
		Wilks' Lambda	.047	977.000[b]	3.000	146.000[b]	.000
		Hotelling's Trace	20.075	977.000[b]	3.000	146.000[b]	.000
		Roy's Largest Root	20.075	977.000[b]	3.000	146.000[b]	.000
	PASImplementation	Pillai's Trace	.021	1.023[b]	3.000	146.000[b]	.384
		Wilks' Lambda	.979	1.023[b]	3.000	146.000[b]	.384
		Hotelling's Trace	.021	1.023[b]	3.000	146.000[b]	.384
		Roy's Largest Root	.021	1.023[b]	3.000	146.000[b]	.384
Within Subjects	Years	Pillai's Trace	.309	3.995[b]	15.000	134.000[b]	.000
		Wilks' Lambda	.691	3.995[b]	15.000	134.000[b]	.000
		Hotelling's Trace	.447	3.995[b]	15.000	134.000[b]	.000
		Roy's Largest Root	.447	3.995[b]	15.000	134.000[b]	.000
	Years * PASImplementation	Pillai's Trace	.057	.540[b]	15.000	134.000[b]	.914
		Wilks' Lambda	.943	.540[b]	15.000	134.000[b]	.914
		Hotelling's Trace	.060	.540[b]	15.000	134.000[b]	.914
		Roy's Largest Root	.060	.540[b]	15.000	134.000[b]	.914

The second analysis was conducted with the dependent variable of system implementation and the within-subjects factors of net written premium, earned premium, and time with six levels. The two tests were conducted separately to limit type one error due to unanticipated interactions between the test factors. The time main effect was significant (years) ($V = .309$, $F(15,134) = 3.995$, $p < .001$). The time x net written premium and time x earned premium effects were non significant.

While the results were not significant for variance on the mean between groups, the data comparison in Figure 4 demonstrates that the companies performing a policy administration system replacement experienced a consistently higher growth in premium over the 5 years following implementation when compared with those companies that did not perform an implementation. In addition, the year six data demonstrated in Figure 4 shows the policy replacement companies outperforming the combined ratios of the companies that did not perform a policy replacement for the first time, following a consistent trend of performing poorly in comparison with those companies that did not perform a policy replacement. Additional testing in future years could determine whether a trend is starting for the replacement organizations.

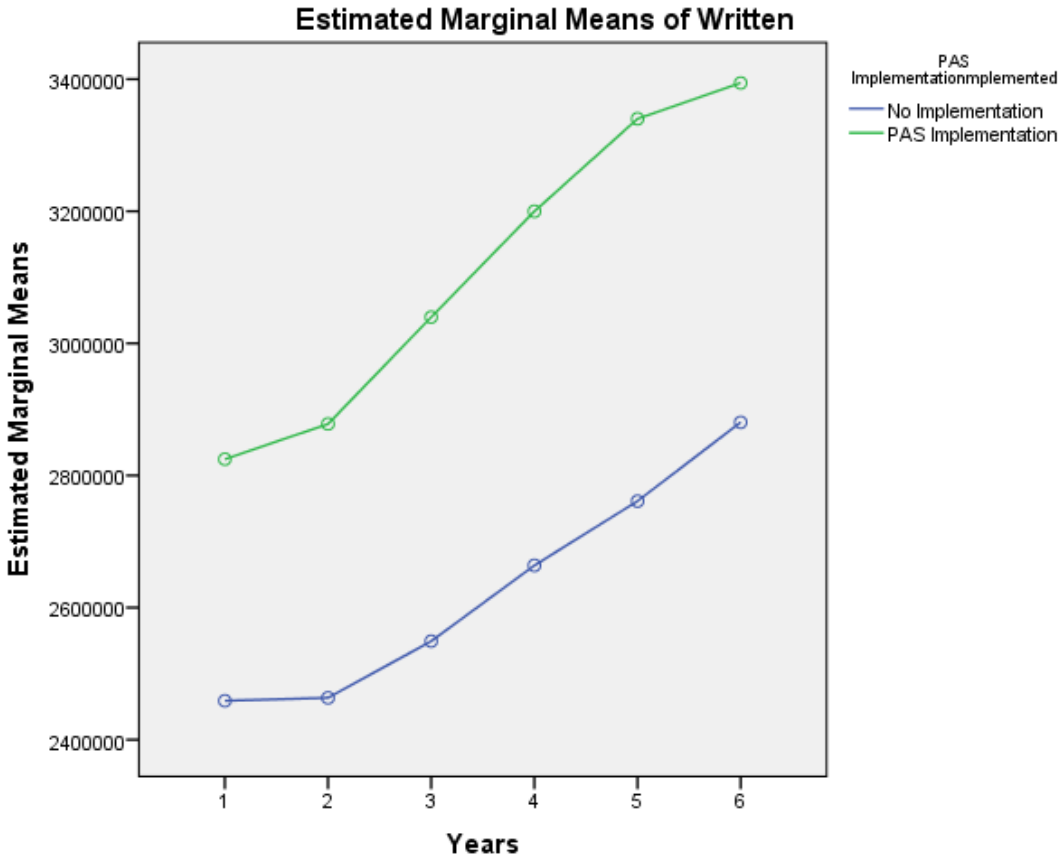

Figure 4. A comparison of the growth of direct written premiums over the five years following PAS implementation. The results are consistent between companies performing a system replacement and those that do not. In absolute terms the companies replacing a policy administration system tended to be larger organizations, supporting the criteria of the $250 million lower bound for this analysis due to the high cost of system replacement.

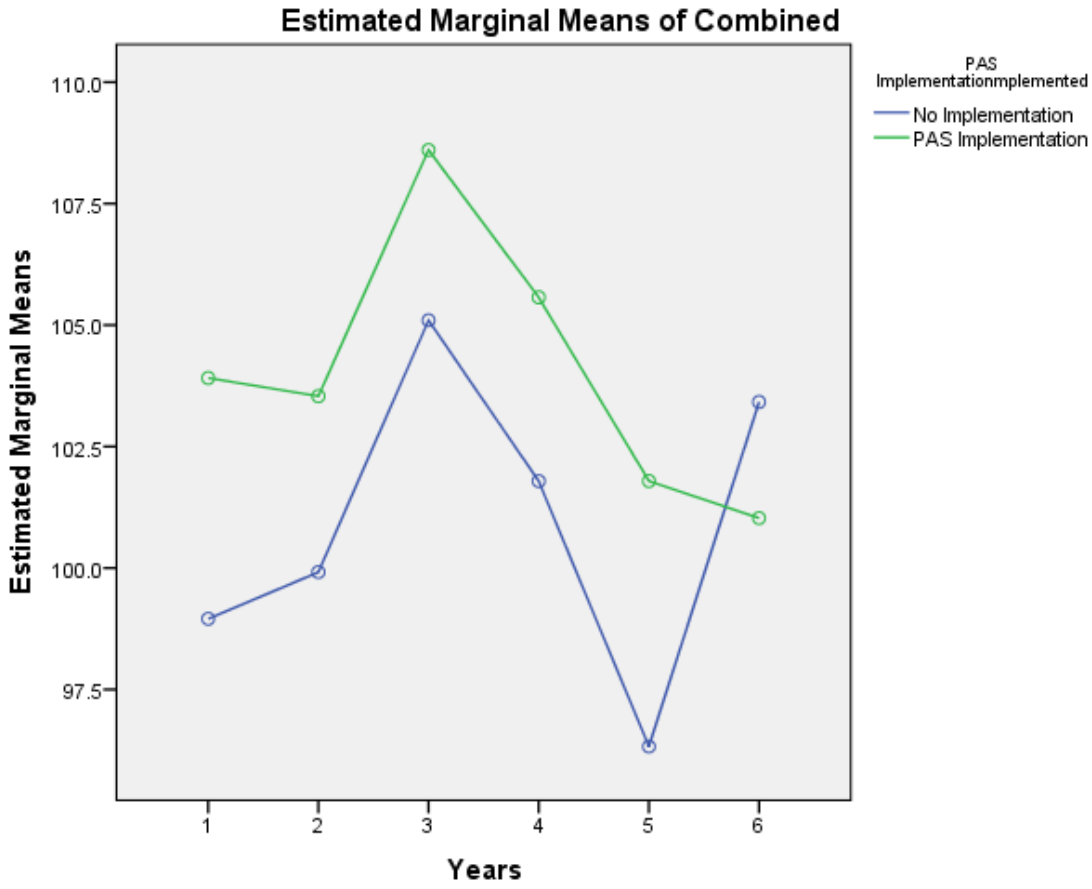

Figure 5. A graphical comparison of the combined ratio trend for companies performing a system replacement. The comparison shows that these ratios match that of the industry as a whole until year 5. Years 1 through 4 show underperformance of the PAS replacement group against the industry, but year 5 shows a shift to outperforming the industry average.

Model Generalizability

The quasi-experimental approach and limited sample set for companies that have implemented policy administration replacement prevents me from drawing a generalization broader than the study population. Within the target group of companies, those over $250 million in written premium in 2009, the study demonstrated a significant

effect on earned premium. To generalize further, follow up research would have to be conducted on a broader selection of insurance companies. Extending the study from $250 million to $100 million in written premium in 2009 would expand the industry population to over 300 participants for example within the United States, but would also begin to approach the lower bound for companies that are able to afford the multimillion cost of commercially available policy administration system implementation.

Applications to Professional Practice

Results indicated that there was not a significant impact to revenue growth in the organizations that implemented new policy administration systems. However, there was an impact in the profitability of those organizations as measured by the combined ratio compared to the population at large in years 4 and 5 of the study. The implication is that organizations who implement new policy administration systems achieve more efficient operations and either improve risk selection by writing the right types and prices of policies to improve the loss ratio and combined ratios.

The application to the professional practice indicates that the implementation of a replacement system is not a growth strategy, but may contribute to cost savings and efficiency to improve profitability. Improved profitability allows organizations to focus on future initiatives that enhance growth. Additionally, increased margins provide other key organizational benefits that set organizations up for long-term stability, like focusing on employee satisfaction, recruiting, and retaining key talent. The findings also indicated that there was revenue growth to the quasi-experimental population over the period,

however, that revenue growth was not significantly different from the population as a whole. In the context of stability and sustainability, the organizations also tended to be performing more poorly than the industry prior to the replacement in terms of efficiency, but demonstrate improved results by year 5, and tended to consistently beat industry combined ratio performance in the following year.

For leaders considering whether to focus on replacing legacy technology, and how to align that replacement to the organizational strategy, this study provides insights that show a portfolio strategy focusing on improving operating efficiency and long-term stability will benefit from system replacement and drive operational efficiency. Near-term results can be expected to be poor following implementation, and may underperform prior years. The organization will need to demonstrate the fortitude to move through the implementation in order to reach the benefits of longer-term efficiencies.

However, an organization that is focusing on a revenue growth strategy either through expansion or sales introductions would be advised that the implementation of a new system does not appear to lead to increased revenue growth. However, seven of the organizations performing system replacement did outperform the industry from a revenue growth perspective every year following implementation from 2010 through 2014. Three of the companies had been underperforming the industry in 2008 and 2009, making this change in performance from a revenue perspective a larger shift. Additional studies would be required to determine the factors leading to the turn-around in performance for those particular organizations, and how those success factors could be utilized elsewhere.

Implications for Social Change

This study may contribute to social change by generating increased competitiveness and efficiency. Social responsibility leads to increased competitiveness and results in performance improvements and an increased standard of living (Popescu & Crenicean, 2013). Performance improvements can help organizations thrive and give back to their communities.

My study demonstrated that system replacement does not contribute to improved financial performance. Thus organizational decision makers need to decide if the organization has the financial stability and the strategic alignment to support system replacement.

Potential impact to social change could be realized through this study by enabling organizations to continue steady and sustainable growth with reduced risk. The improved combined ratio observed in later years following implementation demonstrates organizations experiencing an improved balance between expenses and revenues for companies post implementation. Insurance organizations provide services that reduce risk for their customers by distributing that risk across a broader geographic or demographic pool of participants. By improving the stability and growth of these organizations they could be better positioned to serve their communities, employees, and customers.

In addition, decision makers often place a heavier emphasis on the findings of quantitative research than qualitative research when it comes to implementing policy and

decision-making (Pahl-Wostl, et al., 2013). Improving access to long term comparisons, large data sets, and interdisciplinary work is recommended to aid decision makers in realizing the benefits of social change in the business community (Pahl-Wostl, et al., 2013). Since my study leverages a large data set of financial data to perform comparative research over a five year period, this study could aid stakeholders by demonstrating a long term improvement that contributes to social change.

One of the other benefits that my study may indirectly promote is growing individual agency in organizations. Individual agency is a key component of transformative behavior in organizations, and that key individuals, whether as leaders or change agents, or champions within the terminology of various organizations are responsible for demonstrating the skills required for organizational transformation and innovation (Westley, et al., 2013). Organizations that see a benefit in performing a system replacement in order to improve effeciency may also derive the side benefit of building leaders and change agents within the organization by growing those individuals within the replacement innitiative. The key organizational and change leaders can help influence social change by bringing the benefits of their experience to benefit community and broader stakeholders (Camisón & Villar-López, 2012; Dinh, et al., 2014).

Recommendations for Action

The immediate application of this study's results should be considered by those organizations in the strategic planning and evaluation stage prior to implementing policy administration system replacement projects. Business case justification should consider

whether the motivating strategy behind policy replacement is based on a revenue growth strategy or based on an efficiency strategy. If the organization is pursuing a strategy to increase operational efficiency, this study indicates that policy administration system replacement is a good fit, based on the results experienced over the last five years in the marketplace. If the company is pursuing a strategy of revenue growth through increased sales, policy administration replacement does not appear to be a strong fit for that strategy. Strategic decision makers within the organization can utilize the findings within this study to support corporate decision-making and portfolio selection, and to help evaluate the risk and potential return of performing a system replacement.

The study findings may also be disseminated through the body of knowledge in the area of policy system implementation by consulting and implementation partners. These partner organizations aid P&C carriers in system selection and implementation, and often help with developing the business case for a system replacement program. The information from this study can aid these providers in helping client companies target the products and implementation strategy that best aligns with corporate strategic goals. The forum for distributing these findings can include industry conferences and symposia related to the insurance industry or vendor conferences as well as project management peer reviewed journals such as the *International Journal of Project Management, Journal of Business Research* or industry specific peer reviewed journals such as *Journal of Risk and Insurance* and *Geneva Risk and Insurance Review.*

Recommendations for Further Study

Additional research in the field of policy administration system replacement would be beneficial both to the insurance industry, and as an example of Enterprise System Replacement that can be utilized in a broader sense throughout the financial sector. The availability of data to support analysis in the insurance industry allows for a level of specificity that is lacking in research focusing on CRM or ERP implementations where small data sets are the norm for researchers. Further research opportunities by conducting a mixed method study could identify the specific organizations that saw the greatest financial benefits and use qualitative methods to identify the success factors that differentiated those organizations from the organizations that did not experience benefits following system implementation. By identifying particular success factors, organizational behavior, implementation strategies, and system adoption could be influenced with future research to enhance outcomes across the industry.

I would recommend combining the quasi-experimental approach as a pre-study in a mixed method model with a follow up using phenomenological research into success factors. The combination of data-driven results and expert analysis from within organizations would help a researcher to triangulate on key factors and provide insight into changes taking place over the duration of the study period. In addition, following my study with one looking for changes following an implementation date of 2014 or 2015 would provide insights into whether the results of system implementation have changed as new technologies have become available over the last several years.

In addition, my study experienced limitations in terms of the sample data set and of the effect size and power of the analysis that could be revisited with a larger analysis. By running the quasiexperiment with a lower bound on the population of $100 million in 2009 direct written premium, the population of P&C insurance carriers in the US would be over 300, and the number of implementations confirmed within that group increases to 28.

Reflections

In conducting research on system replacement, I had some pre-conceived notions that system replacement would lead to a measureable improvement in corporate financial results based on the technologist theory and the benefits that process and innovation improvements provide to competition. However, the high rate of project failure, and my own industry experience with the risk-aversion in the insurance industry lead me to consider that project and implementation challenges might offset any benefits from system implementation. In addition, insurance system implementation involves lengthy timeframes necessary to see implementation results due to the year-long cycle times for insurance policies. The year of postimplementation conversion to the new system as business rolls-over from the legacy system also meant that the impact of moving to a new system would be a gradual one, and might not be visible outside of the normal pattern of business change from year to year.

When I started looking at the data, the amount of duplication present in the data set due to organizations filing financial reports under multiple names and groupings was

surprising. When I removed the duplicate records to reach a single set of records for each corporate entity, my data set represented a much smaller group than I had originally anticipated for my research. This lead to an even greater difficulty in identifying a large enough sample of organizations for the quasi-experimental population that had performed a system replacement, and in fact several of the organizations that performed system replacements failed to reach the $250 million in written premium cut-off for my research.

While I had no research subjects to impose a bias on in conducting my research, I did carry with me a pre-conceived notion that the significant expense invested in system replacement and the new technologies that are implemented should have a benefit to organizations that helps to justify the cost and risk of implementation. However, the mixed findings I observed, with improvements to efficiency but not a significant result in revenue demonstrated that there is limited quantitative evidence to offset the risk and failure potential of these enterprise system replacement projects. The experience has left me with many new open questions regarding the development of strong business case potential for strategic projects and portfolios, and how to better make informed decisions within the insurance industry when the financial data provides ambiguous results to leaders and decision makers.

Summary and Study Conclusions

Policy Administration System replacement is a complex and costly undertaking that shares many similarities with ERP or CRM implementations. Like many large project initiatives, benefits exist outside of the purely financial performance measures,

and have been reported for other types of system replacement by Goncalves (2009), Naro & Travaille (2011), and Yaghootkar & Gil, (2012) in the use of the balanced scorecard to evaluate the project portfolio and project success. In these systems, financial performance is one of several charateristics used to assess project success and impact on the organization. However, my research demonstrated that the case for policy administration system replacement cannot be based on financial performance alone, as performance measured either in terms of efficiency through the expense ratio, loss ratio, and combined ratio, or in terms of growth as measured by direct written premium and earned premium did not vary significantly from the population following implementation. While this study was limited in number of participants, several key takeaways were identified that could aid organizations in assessing system implementation.

First, though as a whole the organizations that replaced their policy administration systems did not show improvement over the marketplace, several individual organizations did outperform the industry each year following system replacement. Further research could identify what key traits or behaviors lead to the improved financial results. Second, in the fifth year of the analysis, the companies performing a system replacement did outperform the industry as a whole. Extending the study into future years could determine if the trend continues, demonstrating a potential long-term return on investment. Lastly, confirmation of the null hypothesis that system replacement does not significantly impact financial performance, will aid decision makers in determining organizational strategy and portolio selection.

In summary, the results of the MANOVA analysis of financial performance data in two groups indicated no significant difference in performance for the quasi-experimental group that performed a system replacement as compared to the group that did not perform the system replacement. Several avenues for additional research were identified during the study, including mixed methods and qualitative approaches that could generate additional insights regarding the benefits of system replacement projects in the insurance industry. The current study has applicability for strategic decision makers in the insurance industry as they consider investing in policy administration replacement, and can aid evaluation of the business case by encouraging the case to focus on non-financial performance gains and how those factors align with organizational strategy.

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Appendix A: Press Releases and Filing Statements for PAS Replacement

Guidewire®

NEWS & EVENTS

Overview

News Coverage

Press Releases

Events

Global Media Contact

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MORE MEDIA INFO

American Family Insurance Selects Guidewire for Policy Administration and Billing

American Family selects Guidewire to help deliver on its customer and agent service vision

SAN MATEO, Calif., October 20, 2009:

Guidewire Software, a leading provider of flexible core systems to property/casualty insurers, today announced that American Family Insurance has selected Guidewire InsuranceSuite™ products, Guidewire PolicyCenter® and Guidewire BillingCenter® to deliver policy administration and customer billing services.

"Our mission is to be the most trusted and valued service-driven insurance company," said Bill Westrate, Personal Lines Vice President, American Family Insurance. "One part of achieving that mission is finding ways to continually make the insurance experience easier and more convenient for our customers and agents. Integrating our policy administration and billing systems for personal and commercial products will allow us to deliver on this focus and proceed with plans for maturing our products."

Kristin Kirkconnell, American Family's Information Services Senior Vice President, said "We selected a

system that corresponds with our existing standards and our future-state standards that allows us to react quickly to changing market and business needs."

"We are honored to be selected by the American Family team," said John Raguin, Chief Executive Officer, Guidewire Software. "Guidewire began in the claims management space. Over the last few years, we have made significant R&D investments to provide carriers with high quality systems to meet their underwriting, policy management and billing needs. The reaction from insurance providers is something we take great pride in."

Guidewire PolicyCenter provides property/casualty insurers with a flexible, full lifecycle policy administration system. Supporting both commercial and personal lines, PolicyCenter streamlines the processes of new business submission, change endorsement, and renewal management.

Guidewire BillingCenter is a comprehensive billing system designed to: make it easier for insurers to manage agent commissions; automate the billing lifecycle; design flexible billing, payment and delinquency plans; and enable rapid integration with external payment systems – i.e. EFT, EBPP, check writing, payroll deduction, etc.

PolicyCenter and BillingCenter are built on the same platform as Guidewire's industry-leading claims solution, Guidewire ClaimCenter® and have been designed for maximum flexibility and scalability. Both are available as standalone systems or as part of the Guidewire Insurance Suite™ and can be integrated to an insurer's existing systems or third party applications.

About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have selected Guidewire. For more information, please visit www.guidewire.com. Follow us on twitter: @Guidewire_PandC.

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Amica Selects Guidewire for Policy Administration

Guidewire PolicyCenter® will support Amica's passion for delivering excellent customer service

LINCOLN, R.I. and SAN MATEO, Calif., May 13, 2009:

Amica Mutual Insurance Company (Amica), a direct writer of personal lines insurance, and Guidewire Software®, a global provider of solutions to property/casualty insurers, today announced that Amica has selected Guidewire PolicyCenter® as its new policy administration and underwriting system. Amica will begin its phased PolicyCenter implementation with its automobile line of business and will follow with deployment to its other lines of business (homeowners, marine and personal excess liability).

Amica has been ranked the highest in customer satisfaction among national auto and homeowners insurers, nine and seven years in a row respectively, by J.D. Power and Associates. Amica's passion for delivering excellent customer service led to a decision to find a new policy administration system that would have the flexibility to quickly respond to changes requested by the business, and provide an intuitive system for its customer service representatives and underwriters.

"We are very comfortable with our Guidewire selection and have confidence they will deliver just as good a policy and underwriting system for us as they have a claim system," said Jim Bussiere, senior

vice president, sales and client services, Amica Mutual Insurance Company. "Our Customer Services Representatives consistently deliver superior service with the technology they have available to them today. As a company, we want our front-line representatives to have state of the art systems to complement their efforts. PolicyCenter will provide us with the intuitive and flexible foundation we need to make their lives easier."

Guidewire PolicyCenter will enable Amica to:

- More easily complete applications over the phone with customers;
- Reduce training times for new customer service representatives by roughly 50%;
- Capture more and higher quality data for improved underwriting decisions; and
- Make product changes quickly.

Amica has completed deployment of Guidewire ClaimCenter®, and is now using the system to support its claims handling operations across the country. Amica will now leverage the technology skills acquired during that successful project for its PolicyCenter implementation. "Our decision to go with Guidewire PolicyCenter was based every bit as much on our positive past experience with Guidewire as it was on the strength of the PolicyCenter product," said Lou Peranzi, senior vice president of information technology, Amica Mutual Insurance Company. "We believe in Guidewire's ability to apply technology to effective business solutions, and we were impressed with the advances made in the latest version of PolicyCenter."

"Amica is committed to doing everything in its power to deliver excellent service for its customers. As a result, the Amica team sets a high bar for their potential vendors and we are very proud that they have selected Guidewire for policy administration," said John Raguin, chief executive officer, Guidewire Software. "On behalf of the Guidewire team, I would like to thank Amica for being our customer. We have enjoyed a great relationship and are looking forward to working together on this implementation."

Guidewire PolicyCenter provides property and casualty insurers with a modern, full lifecycle policy administration system. Supporting both commercial and personal lines, PolicyCenter streamlines the processes of new business submission, change endorsement, and renewal management. PolicyCenter is built on the same web-based, proven platform as Guidewire's industry-leading claims solution, Guidewire ClaimCenter®.

About Amica Mutual Insurance Company

Amica Mutual Insurance Company, the nation's oldest mutual insurer of automobiles, was founded in 1907. The company is a national writer of automobile, homeowners, marine, and personal umbrella liability insurance. Life coverage is available through Amica Life Insurance Company, a wholly owned subsidiary. Amica employs more than 3,100 people in 39 offices across the country. For more information, please visit www.amica.com.

About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have selected Guidewire. For more information, please visit www.guidewire.com.

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RESS (/press-releases-verisk/2015.html) CONTACT (/contact-verisk.html)
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MWW Group (for ISO)
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Amerisure Mutual Insurance Company First to Implement ISO Rating Service

JERSEY CITY, N.J., December 4, 2007 — ISO Insurance Technology Solutions (ISO-ITS) today announced that Amerisure Mutual Insurance Compar has become the first company to fully integrate ISO Rating Service® into its policy administration system.

Amerisure implemented ISO Rating Service for commercial auto in all ISO-supported states to process quotes and policies, as well as endorsement renewal transactions.

ISO Rating Service is a comprehensive, automated insurer rate-management system using a combination of advanced technology and product-management tools. Through a powerful rating engine combined with insurer-controlled rate-management decision tools, the system provides insurer with advisory information and continual ISO updates.

"We're looking forward to using ISO Rating Service to help streamline our rate/quote and service processes, enhance our rate-maintenance workflow and improve performance," says Debbie Szmagaj, vice president of Application Services at Amerisure. "The shortened turnaround time on our rate revisions and compressed product-implementation time frames are other benefits.

"In mid-2008, we plan to implement general liability in all states and inland marine and crime in late 2008, with commercial property and commercial package to follow in early 2009," adds Szmagaj.

"ISO Rating Service provides an efficient process for adopting, managing, and implementing ISO insurance program revisions," says John Joly, chief operating officer, ISO Insurance Technology Solutions. "By implementing ISO Rating Service, Amerisure will be able to reduce the expense and effort associated with administering disparate processes and resources, establish a market-responsive environment, increase sales and service productivity and improve the competitive advantage of its products among distributors and policyholders."

About Amerisure Mutual Insurance Company
Amerisure Mutual Insurance Company is a regional property and casualty insurance group with more than nine decades of experience insuring Amer businesses. Amerisure services manufacturing, construction, and commercial enterprises through strategically located Core Service Centers in the midwestern and southern United States. For more information, visit www.amerisure.com (http://www.amerisure.com/).

About ISO Insurance Technology Solutions
ISO Insurance Technology Solutions (ISO-ITS) delivers ISO Rating Service and the browser-based quoting/underwriting and policy-administration platform of AscendantOne®. The scalable, tool-based components of ISO-ITS let insurers cost-effectively and rapidly deploy property/casualty programs, automatically manage rates, conduct rules-based underwriting, perform online quoting, and administer full policy life cycles.

About ISO
ISO is a leading provider of products and services that help measure, manage, and reduce risk. ISO provides data, analytics, and decision-support solutions to professionals in many fields, including insurance, finance, real estate, health services, government, and human resources. Clients use ISO databases and services to classify and evaluate a variety of risks and detect potential fraud. In the United States and around the world, ISO's service help customers protect people, property, and financial assets.

Automobile Club of Southern California Selects Guidewire

Largest member of the AAA federation of clubs selects Guidewire ClaimCenter to transform claims process and enable enhanced member service

SAN MATEO, Calif., November 14, 2007:
The Automobile Club of Southern California (Auto Club), the largest AAA affiliate in the nation and Guidewire Software®, a leading global provider of solutions to property and casualty insurers, today announced that the Auto Club has selected Guidewire ClaimCenter. ClaimCenter will consolidate and ultimately replace the company's existing legacy claims systems, performing end-to-end claims handling functionality for all Auto Club lines of business.
The Auto Club, together with its affiliated motor clubs in other states, provides club services in fourteen states from Hawaii to Maine; has over ten million members and nine thousand employees. Real-time data sharing across the organization is one of the key challenges in providing outstanding member service. The Auto Club recognized that in order to maintain and build on its high service standards it needed to modernize and consolidate its claims systems. The Auto Club selected Guidewire's intuitive, web-based claims solution to help with this business transformation.
"We didn't want system or technology limitations to hinder our business growth or service capabilities" said Michael Kerrigan, Vice President and CIO, Automobile Club of Southern California. "Guidewire is customer-success focused and has the industry expertise, products, and most importantly, the track record to deliver what they promise."
ClaimCenter provides the modern technology foundation needed to retool claims processes and deliver enhanced member services. Guidewire ClaimCenter will enable the Auto Club to:

- Reduce manually-intensive adjuster tasks freeing them to better serve members;
- Share information across its organization by moving to electronic claim files;
- Improve claims practices with automatic assignment and rule-driven handling;
- Enhance management reporting capabilities with expanded data collection;
- Reduce loss costs by identifying cost reduction opportunities and recoveries; and
- Reduce IT maintenance costs and efforts by moving to a single modern platform for all lines of business.

"That ClaimCenter is web-based and very user-friendly was a key factor in our selection," said Cortland Ray, Vice President Insurance Claims, Automobile Club of Southern California. "We are excited about the functionality and performance enhancements we will be able to achieve with ClaimCenter."
Guidewire ClaimCenter is a leading end-to-end claims system for property and casualty insurance. ClaimCenter's flexible business rules enable claims organizations to optimize

and monitor the claim process. Claims executives can define, enforce, and continually refine their preferred claim handling practices. In addition, ClaimCenter uses a modern technology architecture, including a 100% Web client and Web services interface that enable lower total cost of ownership in any environment.
“Guidewire helps carriers transform their businesses,” said John Raguin, chief executive officer, Guidewire Software. “We’re excited to work with the Automobile Club of Southern California. They will benefit from our expertise and dedication in delivering a well engineered, modern technology solution that is industry proven around the globe.”

About The Automobile Club of Southern California

The Automobile Club of Southern California, the largest member of the AAA federation of motor clubs, has been serving Southern California since 1900. Today, the Auto Club’s members benefit by roadside assistance, insurance products and services, travel agency, financial products, automotive pricing and buying programs, automotive testing and analysis, trip planning services and highway and transportation safety programs. Information about these products and services is available on the Auto Club’s Web site at http://www.aaa.com/.

About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have selected Guidewire. For more information, please visit http://www.guidewire.com/. Follow us on twitter: @Guidewire_PandC.

Dovetail Insurance Selects Duck Creek Policy Administration and Billing Solutions

Posted November 12th, 2008 by Duck Creek Tech...

Bolivar, MO, November 11, 2008 - Duck Creek Technologies, Inc./>, a leading provider of software and services for the insurance industry, today announced that Dovetail Insurance Corporation has selected Duck Creek?s Policy Administration Commercial ISO Lines and Billing Solutions.

Paramount to Dovetail Insurance?s selection of Duck Creek was the flexibility of the solutions which would enable the servicing provider to quickly develop and deploy the products and services to its client base. Dovetail will utilize Duck Creek?s pre-built ISO products (templates) which include a full inventory of rates, rules, and over 20,000+ forms to support all lines of business in all 50 states. Dovetail has licensed Duck Creek?s solutions for Commercial Package Policies (CPP), which includes Commercial Auto, Commercial Property, Crime, Inland Marine, and General Liability. Implementation will start with Workers? Comp lines followed by Commercial Property lines.

Stephen Francis, President & CEO of Dovetail Insurance, commented, ?We wanted a solution that would give us the IT functionality and flexibility that our business model requires and Duck Creek?s Policy Administration and Billing solutions meet those needs. We also found that Duck Creek?s configuration tools and level of support for the ISO monthly circulars complements our own product and service offerings, enabling us to continue to provide customizable solutions to our clients. Duck Creek?s web-based billing solution will give us the opportunity to increase our client?s customer retention ratios by automating our client?s billing lifecycle from initial billing instruction through collections with a robust integrated workflow.?

Duck Creek?s CEO, Steve Hall, noted ?We are proud to welcome Dovetail Insurance to our growing family of clients and thank them for selecting Duck Creek. Our prebuilt ISO lines templates were developed to allow customers, like Dovetail, to quickly bring business lines into production and enable them to provide a cost effective, timely, and high level of support to customers. Today?s announcement is further evidence of our solution?s agility that carriers and servicing providers require as they service their clients in today?s challenging insurance market.?

About Dovetail Insurance Corporation
Dovetail Insurance Corporation is headquartered in Columbia, SC, and provides a full range of both licensed and unlicensed insurance services to carriers and other insurance related entities. Dovetail Managing General Agency Corporation, a wholly-owned subsidiary of Dovetail Insurance Corporation, is a licensed agency authorized to produce property and casualty insurance policies for licensed insurers in forty-eight states and is capable of performing all policy related functions from sales to claims management. For more information on Dovetail Insurance Corporation visit www.dovetailinsurance.com.
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About Duck Creek Technologies®/>
Duck Creek Technologies, Inc. is a leading provider of software and services to the insurance industry, providing next-generation policy administration, sales automation, product definition & configuration, and rating for the Property & Casualty and Healthcare insurance markets. Duck Creek is dedicated to

Kentucky Farm Bureau Mutual Insurance Company Deploys Guidewire ClaimCenter

Kentucky's largest property & casualty insurer modernizes claim handling operations with Guidewire ClaimCenter®

LOUISVILLE, Ky and SAN MATEO, Calif., October 29, 2008:

Kentucky Farm Bureau Mutual Insurance Company ("KFB"), the largest insurer in the state of Kentucky, and Guidewire Software®, a leading global provider of technology solutions to property and casualty insurers, today announced that KFB has deployed Guidewire ClaimCenter® as its next generation claims management system. ClaimCenter replaces KFB's legacy claims system.

KFB has deployed ClaimCenter to improve its levels of customer service to insureds, claimants, and agents; automate its claims processes; and reduce cycle time for claims processing. Approximately 1,000 users (300 of which are claim personnel) are now in production with ClaimCenter, serving the needs of KFB's over 470,000 member families.

"Our recent ClaimCenter implementation proved very beneficial in handling the influx of Hurricane Ike related claims," said Mike Fisher, vice president, Claims, Kentucky Farm Bureau Mutual Insurance Company. "With ClaimCenter, we can immediately assign claims to the most qualified

adjusters during the loss intake process, based on the expertise the claim requires and adjuster workloads, resulting in better and quicker policyholder service."

The KFB user community has embraced ClaimCenter's modern technology and intuitive design which enables them to perform their work throughout the entire claims process more efficiently and consistently. The technology allows KFB to have real-time views into its claims handling processes and adjuster workloads and has improved communication between its Claims and Underwriting teams.

"Working with Guidewire was a positive experience for our organization," said Kelly Hall, vice president, Information Technology, Kentucky Farm Bureau Mutual Insurance Company. "Our deployment of a web-based claims handling solution will help us efficiently manage our operations, IT support efforts, and overall costs."

Guidewire ClaimCenter is a leading end-to-end claims system for property/casualty insurance. ClaimCenter's flexible business rules enable claims organizations to optimize and monitor the claim process. Claims executives can define, enforce, and continually refine their preferred claim handling practices. In addition, a modern technology architecture, providing 100% web client, and web services interface enable lower total cost of ownership in any environment.

"We congratulate KFB on their smooth ClaimCenter deployment," said John Raguin, chief executive officer, Guidewire Software. "We wish them continued success with the remainder of their deployment and with their other exciting Guidewire projects as well."

About Kentucky Farm Bureau Mutual Insurance Company

Kentucky Farm Bureau Mutual Insurance Company (KFB) is the largest property and casualty insurer in the state of Kentucky. With nearly 1.2 million policyholders, over $700 million in direct written premium, over 150 member agencies/offices, and more than 1,000 agents and support staff, KFB has been serving policyholders across Kentucky for more than 60 years. The Company's lines of business include: Homeowner, Farmowner, Mobile Home, Dwelling Fire, Personal Auto, Commercial Auto, Commercial Excess, Personal Farm Umbrella, Boat, Pollution, BOP, Agent's Professional Liability (Errors and Omissions), Commercial (Property, Liability, Crime, Inland Marine).

KFB is a member service of the Kentucky Farm Bureau Federation. The Company is rated A+, (a superior performance rating) by A.M. Best Company. Additionally, KFB consistently earns the A+ (excellent) rating from Weiss Ratings, Inc. Weiss Ratings, Inc. has been recognized as the property and casualty insurance industry's leading consumer advocate. For more information please visit www.kyfbins.com.

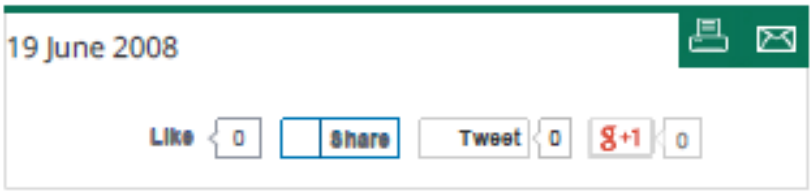
About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have

Oregon Mutual Insurance selects Duck Creek Technologies Policy Administration Commercial ISO Lines Solution

Infrastructure | Insurance Systems | Consultancy

19 June 2008



Duck Creek Technologies, Inc., a leading provider of modern policy administration, product definition & configuration, sales automation, and rating solutions for the insurance industry, today announced that Oregon Mutual Insurance Company has selected Duck Creek's Policy Administration Commercial ISO Lines Solution. The implementation will consist of nine lines of business being implemented across multiple states.

Oregon Mutual's selection of Duck Creek was due in large part to the solution's ability to support any product, any line of business and any distribution channel across Oregon Mutual's various business needs. The flexibility offered with Duck Creek's platform enables the support for all property and casualty commercial lines of business, giving the carrier speed and flexibility to add additional lines and volume as their business grows.

Oregon Mutual licensed the Duck Creek ISO solution for CPP (Commercial Package Policies), which includes Commercial Auto, Commercial Property, Crime, Inland

Marine, and General Liability. These pre-built out-of-box ISO products (templates) coupled with Duck Creek's flexible platform proved an ideal fit for Oregon Mutual's need to package several commercial lines across multiple states. The Duck Creek solution offers Oregon Mutual full ISO support for rates, rules, circulars, and over 20,000 ISO forms. Ongoing implementation and enhancement of the ISO content is included with Oregon Mutual's maintenance agreement with Duck Creek. In addition to the ISO solutions, they also purchased EPLI, Farm and Commercial Umbrella.

"We wanted a system that would allow our agents easy online access to a wealth of capabilities. We also wanted to ensure that the system we selected would support our anticipated growth while enabling us to continue to provide exemplary service to our agent partners," said Rick Prouser, Vice President of Information Systems at Oregon Mutual Insurance Company. "After an extensive market search and evaluation of the available systems, we felt the Duck Creek system best fit our needs. The agent portal, commercial lines ISO processing capabilities, and configuration flexibility offered with Duck Creek's tool-based approach made for an attractive offering."

Oregon Mutual Insurance, Finance & Commercial Lines Vice President Ed Yorty added, "Self-sufficiency was also a key in our decision. As part of the product implementation, Duck Creek is building a solution for our Farm/Agribusiness/Ranch line. This work combined with the system's pre-built commercial line ISO templates and the tool-based platform will give us the ability to internally maintain the system and support our products without the need to rely on Duck Creek."

Curtis Gekle, Duck Creek Technologies EVP for Sales & Marketing, commented, "I thank Oregon Mutual for selecting Duck Creek and for their confidence in both our system and the Duck Creek team. We welcome them to our growing family of clients taking advantage of our commercial ISO lines solution and we look forward to continuing our work with Oregon Mutual's implementation team."

The Duck Creek Technologies Policy Administration Solution supports the complete policy life cycle including: agent & consumer self-service portals, rating, underwriting, policy issuance, product definition & configuration, document management, bureau and stat code generation, reporting, and business workflow. With the flexibility of the Duck Creek solution, carriers are able to easily tailor the policy administration system to address their company's specific business needs. This can be accomplished by purchasing an out-of-the-box solution, extending an out-of-the-box solution, or

MEMIC selects Duck Creek Technologies Solution

Posted July 14th, 2009 by Duck Creek Tech...

Best of Breed Solution key in MEMIC?s decision to implement Duck Creek for workers? compensation

Bolivar, MO, June 3, 2009 - Duck Creek Technologies, Inc.,a leading provider of software and services for the insurance industry, today announced that MEMIC has chosen Duck Creek Rating? Solution. The Duck Creek solution is built on a tool-based architecture and will be implemented as a best-of-breed rating solution. The selection of Duck Creek Rating is an integral component to MEMIC?s initiative to continuously provide its independent agents, an easy to use streamlined process to quote and rate MEMIC?s workers? compensation products.

With its configuration and rules-engine approach, the Duck Creek solution will enable MEMIC to achieve self-sufficiency and require minimal dependence on Duck Creek for ongoing product changes. The phased implementation will begin with two states and continue with the goal of converting all MEMIC workers? compensation lines to the new rating solution for the 46 states in which MEMIC writes business.

Gary Baxter, CIO with MEMIC Insurance, commented, ?After an extensive analysis of the market we selected Duck Creek Rating? Solution because it offered the best approach for us and is built on a .NET architecture. This new rating solution will allow our agents to easily rate and quote while further enhancing our agent-centric culture.?

Steve Hall, CEO of Duck Creek Technologies, said, ?We welcome MEMIC into our growing family of customers and are pleased that our streamlined solution offers MEMIC the ability to provide a high-level of service to their independent insurance agents.?

About MEMIC

Specializing in workers' compensation insurance, MEMIC insures more than 20,000 employers and their estimated 200,000 employees. Based in the Northeast, MEMIC is the leading workers' compensation insurer inMainethrough Maine Employers Mutual Insurance Company which is rated A (Excellent) by A.M. Best. MEMIC Indemnity Company, rated A (Excellent) by A.M. Best, has offices inManchester,NH;Glastonbury,CT; andAlbany,NY. The company is licensed to write workers' compensation in 45 states plus the District of Columbia.

About Duck Creek Technologies®

Duck Creek Technologies, Inc. is a leading provider of software and services to the insurance industry, providing next-generation policy administration, sales automation, billing, and rating for the Property & Casualty and Healthcare insurance markets. Duck Creek is dedicated to enabling customers to develop insurance products and to sell and service those products in their chosen markets with unprecedented speed to market, flexibility, reach and quality. Founded in 2000, Duck Creek is headquartered in Bolivar, Missouri, and has multiple offices within the United States, with its affiliate and licensing partner in Europe, the Middle East and Africa, Duck Creek Technologies Europe Ltd., headquartered in London. For more information, visitwww.duckcreektech.comor call 866-382-5832.

Contact

Jaye Tower

Mercury Insurance Group Selects Guidewire for Policy Administration, Billing and Claims Management

Mercury to build on reputation for delivering market-leading products and high levels of service with Guidewire InsuranceSuite™

LOS ANGELES and SAN MATEO, Calif., September 2, 2009:
Mercury Insurance Group (NYSE: MCY), a multi-line insurance organization, and Guidewire Software®, a leading provider of flexible core systems to property/casualty insurers, today announced that Mercury Insurance Group has selected the Guidewire InsuranceSuite as its new policy administration, billing and claims platform for its homeowners business. Guidewire Insurance Suite applications (PolicyCenter, BillingCenter and ClaimCenter) will be deployed simultaneously to enable the carrier to expand its business and enhance customer experience.
"Mercury's goal is to provide great service and market-leading solutions for our agents and customers. We believe it is essential that we make strategic investments in well-architected platforms that are robust, nimble and flexible," said Allan Lubitz, Senior Vice President & Chief Information Officer, Mercury Insurance Group. "We selected Guidewire for their reliable track record and integrated core P&C platform that will give us the ability to innovate and allow us to quickly adapt to our customers' changing needs."
The Guidewire InsuranceSuite will enable Mercury to provide an enhanced level of agent and customer service in addition to providing the company with several other business benefits, including:

- Improving the speed at which the company is able to expand its product portfolio and regional focus;
- Increasing efficiency and effectiveness across all aspects of the insurance lifecycle, including account and policy management, underwriting, billing and claims handling operations; and
- Leveraging IT skills across a common technology platform, enabling a quicker response to the needs of the business while also reducing maintenance costs.

"Mercury Insurance has a long-standing reputation for delivering high-quality service and for providing insurance products that meet the needs of the market," said John Raguin, Chief Executive Officer, Guidewire Software. "Mercury, already a market leader, is intent on further improving in these areas and we are very honored that they have selected us to be their partner."
The Guidewire InsuranceSuite provides the flexible, core systems essential for the mission-critical operations of property/casualty carriers competing in today's market: underwriting, policy administration, billing and claims. The suite was designed using a modular approach, enabling carriers to select individual applications or a pre-integrated

set, driven by their requirements and priorities. The suite provides the flexibility insurers need to deliver insurance the way they want to by rapidly delivering better products and service to their policyholders and agents, while improving underwriting discipline and lowering operational costs. Insurers' personnel (including underwriters, customer service representatives, adjusters, supervisors, and executives) gain intuitive, productive role-specific user interfaces. Insurer IT organizations gain flexibility in addressing evolving business requirements through consistent tools for configuring and enhancing operational data stores, user interfaces, workflows and business logic across their underwriting, policy administration, billing and claims systems.

About Mercury Insurance Group

Mercury Insurance Group (NYSE-MCY) is a multiple line insurance organization offering predominantly personal automobile and homeowners insurance through a network of independent producers in the country's top insurance markets. Mercury is focused on providing its policyholders with high quality insurance products at an affordable rate, while also providing its customers with industry-leading service and protection. For more information, visit the Company's website at www.mercuryinsurance.com.

About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have selected Guidewire. For more information, please visit www.guidewire.com. Follow us on twitter: @Guidewire_PandC.

March 06, 2008 09:12 ET

QBE's General Casualty Goes Live on AQS Advantage

Flexible Architecture and Efficient Implementation Create Sound Partnership

HARTLAND, WI--(Marketwire - March 6, 2008) - AQS, Inc., a provider of policy administration systems for commercial property/casualty insurance, announced that General Casualty, a subsidiary of QBE Regional Companies (N.A.), Inc., has gone into production on AQS Advantage, the AQS policy administration system for commercial property/casualty lines. General Casualty also purchased AQS Integrator, an administrative tool that monitors the ETL process, providing success/failure notifications to targeted back-end systems.

"We needed to automate commercial lines that we'd been processing manually," said Rich Kalina, General Casualty's Vice President for the Wisconsin Region. "And we wanted to give our processing and underwriting personnel automated quoting capabilities. We also wanted to work with a partner who knew and understood our business. AQS provided that partnership, efficiently implementing their system, and collaborating with us at all levels -- from the executive leadership through the project teams."

General Casualty initially went live in Wisconsin with Commercial Package (Property, Crime, General Liability, and Inland Marine), including Commercial Mass Marketing and Target Market programs, and Garage lines of business. Twenty-five remaining core states will be rolled out over the balance of the year. And 22 non-core states will be implemented in 2009.

"The relationship we've established with General Casualty is a model for our business," said David Kerford, CEO at AQS. "Our companies worked together as a team to determine the best solution for each implementation step and together managed the scope of the project effectively and efficiently. We look forward to quickly completing the roll out of their remaining states."

About General Casualty Insurance

General Casualty is a property/casualty insurance provider headquartered in Sun Prairie, Wisconsin. The company sells through 1,500 independent agencies in 25 states and offers a complete line of coverages for homes, autos, and businesses. General Casualty is rated "A" (Excellent) by A.M. Best and reported $1 billion in premiums last year. Additional information is available at www.generalcasualty.com.

About AQS, Inc.

AQS provides complete policy administration and business-support services to commercial property and casualty insurers, supporting all transactions for all lines of business in all 50 states. The AQS policy administration system -- AQS Advantage -- is built for scalability and interoperability, using Web services and .NET architecture to maximize extensibility, to

optimize integration with other systems, and to automate the entire policy lifecycle. For more information, please visit www.aqssys.com.

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Sentry Insurance Launches Guidewire PolicyCenter to Improve New Business Application Processes

Major property and casualty insurer modernizes business underwriting and policy administration operations with Guidewire's policy administration system

STEVENS POINT, Wis., and SAN MATEO, Calif., March 31, 2009:
Sentry Insurance, a major property and casualty insurer, and Guidewire Software®, a leading global provider of technology solutions to property and casualty insurers, announced that Sentry has recently launched Guidewire PolicyCenter®.
PolicyCenter is now being used by 400 Sentry Business Products sales producers and staff handling policy submissions for two business units – Standard Business Products and Dealer Operations.
Sentry uses PolicyCenter to support the account setup and submission process for 12 lines of insurance in more than 40 states. PolicyCenter has been integrated with existing customer relations management software, document management and other legacy systems. The new system significantly improves Sentry's submission process that formerly required labor-intensive data entry into multiple systems.
Don Olson, Sentry's Vice President of Business Products Systems, said that Sentry wanted to invest in technology that would streamline its new business sales and underwriting processes, as well as help simplify IT support efforts and reduce system maintenance costs.
"Guidewire impressed us with the functionality of its PolicyCenter product. After an extensive review of options, we selected PolicyCenter for its flexibility which would enable us to readily adapt as our business requirements change," said Mr. Olson.
PolicyCenter provides Sentry's Standard Business Products and Dealer Operations with a modern business application system that optimizes sales, underwriting and policy administration operations as well as improves service to policyholders. With PolicyCenter, Sentry has been able to:

- Replace multiple new business application systems with a consolidated, integrated and modern technology solution.
- Implement an improved insurance application validation process on the front end of the application process, improving data accuracy and completeness.
- Deliver increased Straight-Through-Processing by eliminating the need to rekey data into the policy administration system. Data is now entered just once at the point of sale.
- Decrease turnaround time in the new business application process through error reduction and increased automation of the application submission process.

Mr. Olson said that Sentry customers and sales producers will benefit from new system application. “We have also greatly appreciated Guidewire’s dedication to our project and to our implementation success.”

Adapting Guidewire PolicyCenter for additional lines of Sentry’s new business and policy transactions is under way.

“We congratulate Sentry Insurance on reaching this milestone in its policy administration system replacement journey,” said John Raguin, chief executive officer, Guidewire Software. “We enjoy a great relationship with Sentry and look forward to our continued work together as they deploy PolicyCenter to other groups within their business.”

Guidewire PolicyCenter provides property and casualty insurers with a modern, full lifecyle policy administration system. Supporting both commercial and personal lines, PolicyCenter streamlines the processes of new business submission, change endorsement, and renewal management for both agents and underwriters. PolicyCenter is built on the same web-native, proven platform as Guidewire’s industry-leading claims solution, Guidewire ClaimCenter.

About Sentry

Sentry Insurance is one of the largest and strongest mutual insurance companies in the United States. Sentry offers a full line of insurance coverages, retirement programs and related services for businesses and individuals. Rated A+ by A.M. Best and headquartered in Stevens Point, Wisconsin, Sentry Insurance was founded in 1904 by members of the Wisconsin Retail Hardware Association. For more information, please visit www.sentry.com.

About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have selected Guidewire. For more information, please visit www.guidewire.com. Follow us on twitter: @Guidewire_PandC.

RADNOR, Pa., May 25 /PRNewswire/ -- Unirisx LLC, the leading global software-as-a-service (SaaS) provider of insurance services announces the "go live" implementation of the Unirisx Policy Administration System (PAS) with two US clients.

Armed Forces Insurance Exchange (AFI) successfully launched Unirisx for their Texas Homeowners lines, which includes the ability to process "out of sequence endorsements". AFI is a property and casualty insurer for military personnel and Department of Defense employees (www.afi.org).

Related Stories

AFI has been a client of IDP since 2004 and selected the Unirisx Integrated Solution (UIS) as a tool to market all lines of business in all 50 states in which they write. According to Kurt Seelbach, President of AFI, "I want to congratulate you on your efforts in allowing us to bring up the new system for Texas Homeowners. A monumental day for us at AFI and we look forward to the future."

In addition to AFI, Unirisx completed the successful PAS implementation for Eternal Care Insurance Company, based in Harrisburg, PA. Eternal Care (www.eternalcareinsurance.com) is a start-up property and casualty insurer that offers specialty products for the funeral industry.

"Unirisx is just the solution we were looking for to help us launch our products. We are excited to be up and running in our home state of Pennsylvania," said David Wisneski, CEO of Eternal Care.

Dave Hollander, CEO of Unirisx added, "We are pleased to add out of sequence endorsements to our growing list of capabilities. By working with clients such as AFI, Unirisx is able to combine our best-of-breed solutions with their quality products and membership." In November 2009, Unirisx and IDP announced a strategic alliance to private label IDP billing and claims components as part of the Unirisx Integrated Solution.

About Unirisx

Unirisx Integrated Solution (UIS) the leading low cost platform to launch, distribute, manage and process insurance and healthcare products. The web-based, on-demand solution enables insurers, agents, brokers and other users to rapidly launch new products, create broader distribution networks and manage the full policy lifecycle in real time. UIS components for policy, claims and billing deliver full straight through processing, eliminating errors from manual processes and reducing costs. Unirisx delivers premium growth, cost savings of 30-50 percent, improved risk management, and efficient control and management across multiple distribution channels. The fully configurable platform requires no software to install or hardware to buy and can generally be implemented in 60 to 90 days. Unirisx services more than 50 lines of business with 25 currencies in 20 countries. Unirisx is offered by Unirisx LLC, a privately held company based in Radnor, PA, with offices in Hong Kong and Reading, England. For more information, please visit www.unirisx.com.

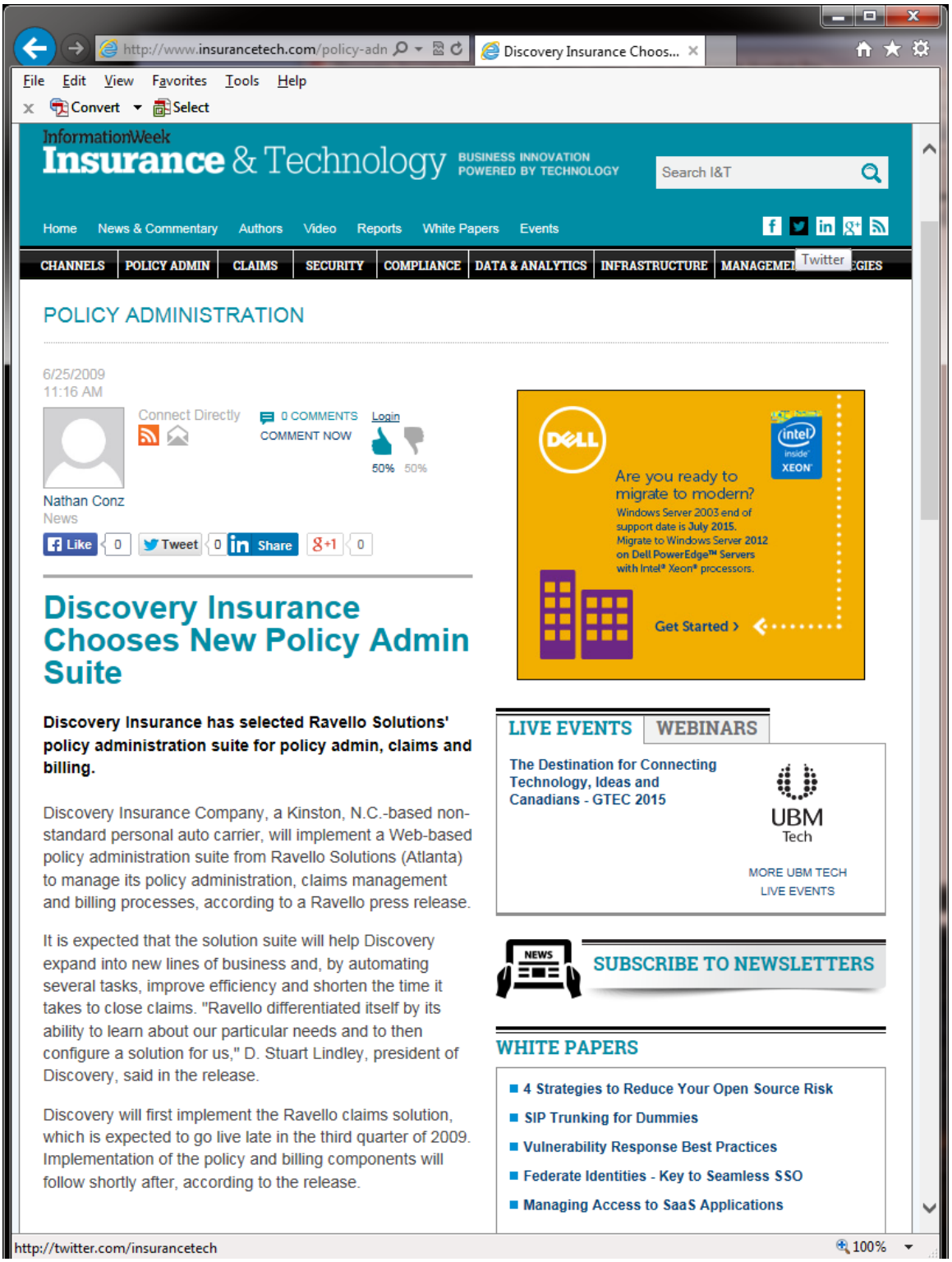
About Armed Forces Insurance

AFI was founded in 1887 by military leaders with a single mission: to protect the property of those who protect our nation. The company provides premium quality, competitively-priced property and casualty insurance to military professionals throughout the United States and overseas. Headquartered in Leavenworth, Kansas, AFI understands that its subscribers have unique circumstances and insurance needs, enabling the company to offer a level of personalized service that's unequaled in the industry. For more information, please visit www.afi.org or call (800) 495-8234.

Unirisx Contact

Stuart Ferrell -- Global Marketing Director

(484) 367-7250


http://www.insurancetech.com/policy-adn
Discovery Insurance Choos...
File Edit View Favorites Tools Help
Convert Select
InformationWeek
Insurance & Technology
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Search I&T
Home News & Commentary Authors Video Reports White Papers Events
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Discovery Insurance Chooses New Policy Admin Suite
Discovery Insurance has selected Ravello Solutions' policy administration suite for policy admin, claims and billing.
Discovery Insurance Company, a Kinston, N.C.-based non-standard personal auto carrier, will implement a Web-based policy administration suite from Ravello Solutions (Atlanta) to manage its policy administration, claims management and billing processes, according to a Ravello press release.
It is expected that the solution suite will help Discovery expand into new lines of business and, by automating several tasks, improve efficiency and shorten the time it takes to close claims. "Ravello differentiated itself by its ability to learn about our particular needs and to then configure a solution for us," D. Stuart Lindley, president of Discovery, said in the release.
Discovery will first implement the Ravello claims solution, which is expected to go live late in the third quarter of 2009. Implementation of the policy and billing components will follow shortly after, according to the release.
DELL
intel inside XEON
Are you ready to migrate to modern?
Windows Server 2003 end of support date is July 2015. Migrate to Windows Server 2012 on Dell PowerEdge™ Servers with Intel® Xeon® processors.
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Three New Insurers Select CSC's POINT IN Midrange Policy Administration System

ORIGINALLY PUBLISHED SEPTEMBER 18, 2008

CSC recently announced that three new insurers have chosen CSC's POINT IN midrange policy administration system to improve efficiencies and enhance service to their agents and consumers. American Keystone Insurance Company and Florida Peninsula, both of Florida, have signed six –year business process outsourcing (BPO) contracts for CSC to administer policies on the POINT IN solution suite, while Lititz Mutual has licensed the software for use at its facilities in Lititz, Penn.

POINT IN, which automates policy administration, claims management, billing, collections, reinsurance and other processes, is used by more than 120 start–up, small and medium –sized insurance companies and managing general agents. Under the agreements, Florida Peninsula and Lititz Mutual will also deploy CSC's Agency Link software, which enables independent agents to directly serve current accounts and initiate new ones over the Internet.

"We chose CSC's POINT IN to consolidate and modernize the disparate administration systems of four companies and create a modern Web front–end for agent self–service," said Robert Dodds, Lititz Mutual Vice President. "POINT IN offers a complete solution with a proven track record to address our complex business and technology needs."

This BeyeNETWORK news item contains information from a recent press release by the company mentioned.

Wawanesa Insurance Selects Guidewire ClaimCenter

Guidewire's claims management system to provide leading Canadian insurer with modern claims handling platform for all its personal and commercial lines of business

WINNIPEG, Manitoba and SAN MATEO, Calif., September 15, 2009:
The Wawanesa Mutual Insurance Company (Wawanesa), which provides coverage to 1.8 million policy holders in Canada and the United States, and Guidewire Software®, a leading provider of flexible core systems to property/casualty (general) insurers, today announced that Wawanesa has selected Guidewire ClaimCenter® as its new platform to manage claims for all lines of business: Home, Auto, Farm, and Commercial.
Wawanesa sought a new core claims processing and management solution to provide the company with a foundation on which to modernize its claim handling processes in order to enhance its customer service offerings and more efficiently operate its claims business. The solution needed to be easy to use, scalable and flexible enough to grow and evolve with Wawanesa's changing business needs. After a thorough search and review, Wawanesa selected Guidewire ClaimCenter.
"Guidewire's customer focus, strong industry rating and consistent implementation track record, in both Canada and the United States, really appealed to us," said Ken McCrea, President and Chief Executive Officer, Wawanesa Mutual Insurance Company. "We are looking forward to the service and operational improvements ClaimCenter will help us realize."
Guidewire ClaimCenter will help Wawanesa:

- Enhance its customer service capabilities;
- Automate processes for operational efficiency and reduced expense costs; and
- Provide its staff with a modern, easy to use system.

"Guidewire is particularly proud to welcome Wawanesa Mutual Insurance, our sixth Canadian insurer, to our customer family," said John Raguin, Chief Executive Officer, Guidewire Software. "Wawanesa has a long history of serving customers across Canada and in the United States. ClaimCenter is an excellent foundation to help them take their service capabilities to new levels."
Guidewire ClaimCenter is a leading end-to-end claims management system, built from the ground up to meet the specific needs of today's property/casualty (general) insurers. ClaimCenter's flexible business rules enable claims organizations to define, enforce, and continually refine their preferred claim handling practices in order to optimize and monitor claim processes. ClaimCenter is in use by insurers of all sizes across all product lines to improve speed and accuracy, reduce loss adjustment expense, and enable proactive management of claims.

About The Wawanesa Mutual Insurance Group

Wawanesa is a Canadian mutual company owned by its policyholders. It is one of the largest property and casualty insurers in Canada. Wawanesa has a rich history dating back to 1896, when it was founded in the Village of Wawanesa, Manitoba. Today executive offices are located in Winnipeg, Manitoba, Canada. Wawanesa operates in 9 Canadian provinces and in the states of California and Oregon. It has total assets of $4.7 billion (CDN) and over 1.8 million policies. Wawanesa has 100% ownership of two subsidiary companies; The Wawanesa Life Insurance Company and Wawanesa General Insurance Company (U.S.A.).

About Guidewire Software

Guidewire builds software products that help Property/Casualty insurers replace their legacy core systems and transform their business. Designed to be flexible and scalable, Guidewire products enable insurers to deliver excellent service, increase market share and lower operating costs. Guidewire InsuranceSuite™ provides the core systems used by insurers as operational systems of record. Additional products provide support for data management, business intelligence, anytime/anywhere access and guidance and monitoring. More than 180 Property/Casualty insurers around the world have selected Guidewire. For more information, please visit www.guidewire.com. Follow us on twitter: @Guidewire_PandC.

Western World Insurance Group Selects INSTEC for black-box rating and policy administration software for Commercial Package Policy, Auto, Product and Professional Liability

June 24, 2009

INSTEC will provide black-box rating and policy administration software for Commercial Package Policy, Auto, Product and Professional Liability

INSTEC, a leading provider of rating and policy administration software for the insurance industry, announces the agreement with Franklin Lakes, New Jersey-based Western World Insurance Group for INSTEC's rating and policy administration software, QuickSolver, a rich internet application.

Western World Insurance will implement QuickSolver as a black-box component behind their proprietary web portal using INSTEC's web services. The interface project to link QuickSolver and the company web portal will be led by Western World Insurance with consultation and documentation provided by INSTEC. Further integration with in-place document management and back-end systems is expected as well.

Thad DeBerry, Senior Vice President Information Technology said, "INSTEC provides a flexible solution that allows the organization to rate our various classes of business within a common architecture while supporting the different needs of our agents and

internal underwriting staff. Their overall stability, industry expertise, and execution capabilities make INSTEC an ideal development partner as we enhance our rating infrastructure."

Western World Insurance appointed wholesale agents and brokers will use the company portal to quote and administer company policies while internal staff will leverage the native QuickSolver interface. Both constituencies will operate using a shared architecture and database. A multi-phased approach will be used to deliver multiple lines of business and three separate rating companies which are comprised of both admitted and non-admitted business.

"We appreciate the trust that Western World Insurance has placed with the INSTEC team. Our web services have given us a platform from which we can deliver solutions that align with our client's business strategies regardless of interface or delivery mechanism." said Pat Walsh, INSTEC Vice President. "We are looking forward to a long and successful partnership."

About Western World Insurance Group

Western World Insurance Group offers commercial insurance products on a surplus lines and specialty admitted basis through appointed wholesale agents and brokers on a nationwide basis. Product offerings include Commercial General Liability, Professional Liability, Product Liability and Commercial Auto coverages. Western World specializes in underwriting classes of business that are not easily placed in the standard insurance market due to their complexity, high hazard, or unusual nature. The Group also offers underwriting facilities for Associations and Affinity Groups through Westco Programs.

Media Contact

Samara Hamiltion

Marketing Director

shamilton@instec-corp.com

Retrieved from SNL Newsfeed:
SNL Letter of Cooperation and Data Use Agreement are included in Appendix B.

ULLICO Inc. : Annual Report
... manage costs and **implementation** has begun **...** months ended December 31, 2010 and **2009**. **...** related to a **policy administration system**, partially offset **...**
/interactivex/doc.aspx?id=12728107 - 474k - Friday, December 31, 2010

Unico American Corp. (UNAM-US) : Annual Report
... Although our **implementation** of a new **policy administration system** was somewhat **...** December 31, 2010, December 31, **2009**, and December 31 **...**
/interactivex/doc.aspx?id=12733976 - 33k - Friday, December 31, 2010

Baoviet Holdings (BVH-STC) : Annual Report
... the preparation and **implementation** of risk **...** in comparison with **2009** to VND4 **...** an international standard **policy administration system** supporting the **...**

Markel Corp. (MKL-US) : Annual Report
... was $20.4 million as compared to $4.6 million in 2009. ... deferred some Atlas initiatives, such as the policy administration system, while increasing ...

Employers Holdings Inc. (EIG-US) : Annual Report
... This policy administration system reduces transaction costs and provides for ... if any, the implementation of the ... during 2008 and 2009 continued into ...
/interactivex/doc.aspx?id=12624561 - 1,200k - Friday, December 31, 2010

Euler Hermes (ELE-PAR) : Annual Report
... art CRM system, a new policy administration system and the ... After implementation of four countries in 2010 all ... At end-2009, all its large European ...
/interactivex/doc.aspx?id=12690195 - 3,534k - Friday, December 31, 2010

Cincinnati Financial Corp. (CINF-US) : Company Communication
... Diamond personal lines policy administration system, completed delivery ... 31, 2010 2009 2008 2007 ... adoption and implementation of underwriting ...
/interactivex/doc.aspx?id=12510260 - 215k - Friday, December 31, 2010

Ohio Casualty Insurance Co. : Insurance State Product Filing
... 0232, 06-1307, 08-2373, 07-2009 ... nationwide underwriting companies, through one policy administration system. ... delays in implementation, we are ...
/interactivex/doc.aspx?id=29120946 - 233k - Thursday, December 23, 2010

Ohio Security Insurance Co. : Insurance State Product Filing
... 0232, 06-1307, 08-2373, 07-2009 ... nationwide underwriting companies, through one policy administration system. ... delays in implementation, we are

...
/interactivex/doc.aspx?id=29120948 - 233k - Thursday, December 23, 2010

West American Insurance Co. : Insurance State Product Filing
... 0232, 06-1307, 08-2373, 07-2009 ... nationwide underwriting companies, through one policy administration system. ... delays in implementation, we are ...
/interactivex/doc.aspx?id=29120950 - 233k - Thursday, December 23, 2010

American Fire and Casualty Co. : Insurance State Product Filing
... 0232, 06-1307, 08-2373, 07-2009 ... nationwide underwriting companies, through one policy administration system. ... delays in implementation, we are ...
/interactivex/doc.aspx?id=29120944 - 233k - Thursday, December 23, 2010

Horace Mann Educators Corp. (HMN-US) : Transcript
... to the development of a new policy administration system. ... about three points lower than 2009 third quarter. ... All of our implementation efforts are now ...
/interactivex/doc.aspx?id=11899598 - 52k - Friday, October 29, 2010

GuideOne Mutual Insurance Co. : Insurance State Product Filing
... premiums after the implementation of the ... in Varnum v. Brien (2009) and matches ... cannot be processed through the policy administration system. ...
/interactivex/doc.aspx?id=30476710 - 7,069k - Friday, October 22, 2010

Union Labor Life Insurance Co. : Insurance Regulatory Filing
... required ERISA payments) and the implementation of a ... In January of 2009, Union Labor Life ... costs related to a policy administration system in the ...
/interactivex/doc.aspx?id=12005350 - Thursday, September 30, 2010

GuideOne Elite Insurance Co. : Insurance State Product Filing
... process due to policy administration system constraints. ... 30-590 issued in December, 2009, and more ... in conjunction with the implementation of the ...
/interactivex/doc.aspx?id=32528984 - 2,250k - Tuesday, September 07, 2010

State Auto Financial Corporation
STFC-US
Columbus
OH, USA
10-K (10-K)
12/31/2009
3/5/2010

Snippet: "... guidelines; • our ability to innovate with new pricing strategies, and the success of those innovations on implementation; • ..."

Fireman's Fund Insurance Company

Novato
CA, USA
Insurance State Product Filing (PC-RateRule)

1/11/2010

Snippet: "**...** Date Submitted: 12/30/**2009** SERFF Tr **...** Company wishes to **implement** a new **...** into our new enhanced Enterprise **Policy Administration System** (EPAS **...**"

Universal Insurance Holdings, Inc.
UVE-US
Fort Lauderdale
FL, USA
10-K (10-K)
12/31/2009
3/16/2010

Snippet: "**...** As of December 31, **2009**, American Platinum had not yet underwritten any **...** on its ability, among other things, to successfully **implement** its business **...**"

Citizens Property Insurance Corporation

Tallahassee
FL, USA
Insurance State Product Filing (PC-Rule)
2/1/2011
11/5/2010

Snippet: "... Implementation ... All applications must be submitted by using Citizens' electronic policy administration system (ePAS) and must be fully completed ..."

AssuranceAmerica Corporation	ASAM-US	Atlanta	GA, USA	10-K (10-K)	12/31/2009	3/26/2010	

Snippet: "... industry. This software application is an end-to-end, enterprise wide, real-time, web-based policy administration system. ..."

Appendix B: SNL Data Use Agreement and Letter of Cooperation

Letter of Cooperation from a Research Partner

March 23, 2015

Dear Trevor Owen,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Financial Performance outcomes following System Replacement in the Insurance Industry with the use of Property and Casualty Insurance Industry statutory and financial filing data provided by SNL Financial LC. As part of this study, I authorize you to perform research using the Peer Analytics Insurance Industry Statutory Financial Database, conduct data analysis, document findings, and disseminate the results for academic research purposes.

We understand that our organization's responsibilities include:

- Providing access to the Peer Analytics Insurance Industry Statutory Financial Database for P&C Insurance in the United States, for the period from 2008-2014.
- Provide an extract from the Peer Analytics Insurance Industry Statutory Financial Database in Microsoft Excel format containing records for all P&C Carriers doing business in the United States with Direct Written Premium greater than $250 Million in the year 2008 and in each subsequent year through 2014.
- Provide the extract with the fields specified as indicated in the Data Use Agreement as entered into by Trevor Owen from Walden University, and Daniel Oakey from SNL Financial LC.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Daniel Oakey

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).

DATA USE AGREEMENT

This Data Use Agreement ("Agreement"), effective as of March 23, 2015 ("Effective Date"), is entered into by and between Trevor Owen ("Data Recipient") and SNL Financial LC ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research **in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.** In the case of a discrepancy among laws, the agreement shall follow whichever law is more strict.

1. Definitions. Due to the study's affiliation with Laureate, a USA-based company, unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the USA "HIPAA Regulations" and/or "FERPA Regulations" codified in the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.

3. Data Fields in the LDS. **No direct identifiers such as personal names may be included in the Limited Data Set (LDS).** In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research:

    a. Company Name

    b. Year

    c. Earned Premium

    d. Direct Written Premium

    e. Loss Ratio

    f. Cost Ratio

    g. Combined Ratio

4. Responsibilities of Data Recipient. Data Recipient agrees to:

    a. Use or disclose the LDS only as permitted by this Agreement and Data Provider's Master Subscription Agreement or as required by law;

    b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;

c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

e. Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS **for its Research activities only.**

6. Term and Termination.

a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.

c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

Signed: _____

Print Name: DANIEL OWEN

Print Title: CHIEF CONTRACTS OFFICER

DATA RECIPIENT

Signed: _____

Print Name: Trevor J. Owen

Print Title: Walden University Doctoral Research Student

Appendix C: Sample Data Extract[3]

		DWP[2]						
PAS Implementation[1]	**ID Code**	**2008 Y ($000)**	**2009 Y ($000)**	**2010 Y ($000)**	**2011 Y ($000)**	**2012 Y ($000)**	**2013 Y ($000)**	**2014 Y ($000)**
No Implementation	151224	865,378	798,310	745,817	771,747	824,376	870,054	946,574
No Implementation	151225	8,012,008	7,780,534	8,236,604	8,990,128	9,277,091	9,752,969	9,979,585
No Implementation	151226	783,483	744,710	776,693	839,592	982,923	1,124,310	1,242,975
No Implementation	151227	335,580	301,731	298,254	193,528	198,359	304,007	331,179
PAS Implementation	151228	977,099	990,963	1,038,387	1,065,143	1,049,899	1,096,790	1,119,489
No Implementation	151229	1,324,158	1,238,831	1,074,086	1,088,623	1,231,441	1,451,392	1,499,880
No Implementation	151230	901,909	929,709	1,390,901	1,457,499	1,470,218	1,447,435	1,617,858
No Implementation	151231	519,366	661,453	727,087	835,178	990,115	1,160,584	1,312,673
No Implementation	151232	26,761,637	26,081,725	25,767,489	25,464,920	26,530,999	27,410,815	-
No Implementation	151233	440,552	325,198	243,082	150,126	112,472	97,354	69,613
PAS Implementation	151234	5,835,204	5,681,565	5,594,103	5,401,097	5,456,040	5,686,523	6,493,966
No Implementation	151235	4,091,750	3,565,868	3,418,671	3,800,581	4,015,280	4,409,025	5,207,587
No Implementation	151236	32,088,391	26,140,201	25,536,259	25,324,100	23,596,418	17,802,678	18,653,981
No Implementation	151237	1,271,096	1,252,344	1,280,050	1,258,409	1,176,851	1,181,596	1,223,474
No Implementation	151238	303,549	252,608	225,863	269,404	323,731	364,246	384,633
PAS Implementation	151239	623,542	530,900	495,068	555,624	612,751	691,292	742,535
PAS Implementation	151240	1,350,095	1,394,738	1,495,452	1,588,976	1,688,392	1,792,800	1,873,670
No Implementation	151241	618,598	595,022	633,303	680,507	725,034	775,357	808,742
No Implementation	151242	1,790,081	1,835,277	1,724,684	1,740,069	1,890,693	1,942,245	2,312,418
No Implementation	151243	1,188,585	1,106,909	931,460	891,044	934,866	998,316	1,035,884
No Implementation	151244	386,154	472,464	559,465	661,733	872,885	1,022,495	1,141,994
PAS Implementation	151245	1,444,689	1,192,130	1,259,463	1,338,866	1,487,896	2,322,908	2,432,273
No Implementation	151246	3,853,077	3,735,278	3,801,833	4,026,941	4,290,979	4,558,820	5,228,944
No Implementation	151247	787,594	270,757	445,046	314,884	239,047	305,915	257,232
No Implementation	151248	385,422	321,951	284,840	318,977	320,777	339,953	360,456
PAS Implementation	151249	2,574,654	2,547,520	2,652,243	2,777,783	2,926,191	3,089,050	3,223,689
PAS Implementation	151250	1,444,562	1,680,227	1,786,604	1,953,631	2,024,246	2,098,396	2,104,950
No Implementation	151251	4,409,411	4,451,729	4,673,178	4,974,353	5,226,750	5,527,796	5,796,075
No Implementation	151252	1,110,469	1,174,940	1,196,782	1,212,520	1,284,189	1,372,818	1,367,406
No Implementation	151253	287,495	295,405	312,676	330,131	360,028	403,164	422,903
No Implementation	151254	318,796	315,186	310,457	308,805	314,332	326,906	336,735
No Implementation	151255	142,387	325,174	441,020	484,274	579,682	742,714	873,608
No Implementation	151256	583,283	587,601	549,185	499,492	500,699	533,723	580,532
No Implementation	151257	568,993	568,750	584,397	582,969	591,924	618,619	638,971
PAS Implementation	151258	3,180,461	3,071,344	3,123,543	3,304,724	3,662,233	4,084,470	-
No Implementation	151259	1,760,458	1,741,980	1,860,456	1,946,255	1,942,473	2,039,521	2,123,162
No Implementation	151260	252,624	294,500	356,705	551,999	634,778	506,223	338,796

No Implementation	151261	350,376	342,137	335,350	328,639	286,257	219,630	261,826
No Implementation	151262	7,980,678	7,608,351	7,324,253	7,731,124	8,155,110	8,594,663	8,775,189
No Implementation	151263	300,814	291,988	295,105	297,963	292,465	301,744	-
No Implementation	151264	2,108,547	2,101,391	2,141,943	2,205,211	2,243,261	2,348,503	2,353,308
No Implementation	151265	1,001,467	831,884	866,091	1,302,606	1,513,503	1,546,982	1,671,921
PAS Implementation	151266	2,350,675	2,360,403	2,413,381	2,695,604	2,759,413	2,836,762	3,081,430
No Implementation	151267	521,552	535,621	471,919	521,121	492,391	482,118	397,009
No Implementation	151268	407,456	367,900	342,481	328,660	368,621	405,009	424,757
No Implementation	151269	671,081	602,696	695,091	858,671	794,164	736,441	694,532
No Implementation	151270	457,156	450,707	582,466	615,232	656,609	701,068	747,656
No Implementation	151271	376,022	404,685	392,510	370,466	369,265	346,458	292,792
No Implementation	151272	1,113,346	1,112,874	1,107,318	1,188,742	1,303,275	1,417,394	1,517,278
PAS Implementation	151273	480,459	376,651	319,773	416,106	575,373	680,459	686,763
No Implementation	151274	1,084,070	883,618	866,627	1,246,031	1,207,960	1,278,372	1,407,610
No Implementation	151275	324,695	336,645	326,201	322,526	334,052	359,237	377,229
No Implementation	151276	3,799,902	3,860,839	4,034,553	4,270,902	4,630,684	5,076,003	5,513,962
No Implementation	151277	779,039	825,062	824,183	795,570	1,051,269	1,243,155	1,199,400
No Implementation	151278	2,800,566	3,199,857	2,951,824	3,177,979	3,535,702	3,577,815	3,441,729
No Implementation	151279	464,432	471,401	497,276	541,016	576,572	635,994	685,550
No Implementation	151280	1,153,211	1,150,496	1,109,107	1,233,715	1,269,064	1,343,358	1,375,533
No Implementation	151281	411,932	426,186	472,076	486,674	531,597	567,859	602,840
No Implementation	151282	16,255,765	18,540,327	17,497,002	17,621,146	18,311,402	18,284,148	18,611,695
No Implementation	151283	560,000	464,327	457,273	716,634	661,758	664,560	560,548
No Implementation	151284	513,661	471,793	461,394	472,697	525,280	593,490	669,941
No Implementation	151285	9,836,727	9,419,255	9,330,464	9,438,655	9,691,654	9,914,367	10,194,172
No Implementation	151286	1,067,523	933,413	903,463	994,324	1,056,373	1,186,684	1,288,039
PAS Implementation	151287	4,839,224	4,444,177	3,563,644	3,594,059	3,427,193	2,207,648	2,137,498
No Implementation	151288	471,474	474,955	526,896	581,818	570,783	593,038	612,287
PAS Implementation	151289	530,489	498,642	457,948	425,400	411,254	432,248	446,578
No Implementation	151290	263,233	276,882	254,618	252,961	262,399	274,123	268,687
No Implementation	151291	295,601	325,574	350,190	364,605	397,370	425,097	458,100
No Implementation	151292	1,122,229	1,178,752	1,160,147	1,089,090	1,111,143	1,191,388	1,264,324
No Implementation	151293	280,626	283,598	273,554	267,134	276,712	293,518	315,355
No Implementation	151294	316,266	322,680	327,027	340,288	362,360	394,824	410,924
PAS Implementation	151295	589,304	543,122	507,210	494,652	544,137	1,138,555	752,161
No Implementation	151296	2,692,864	2,887,949	3,090,787	3,487,387	3,779,097	3,823,319	3,948,543
No Implementation	151297	11,049,581	10,473,026	10,370,367	10,633,966	10,685,021	10,870,904	10,864,926
No Implementation	151298	291,534	308,421	333,987	341,951	366,460	393,644	412,922
No Implementation	151299	1,199,927	1,260,811	1,155,704	1,125,304	1,138,794	1,153,322	1,171,875
No Implementation	151300	329,653	344,812	389,094	429,467	480,727	553,140	640,636
No Implementation	151301	257,245	321,026	388,608	478,609	520,582	612,851	-
PAS Implementation	151302	564,820	576,758	578,262	565,379	568,577	588,567	599,039
No Implementation	151303	319,937	337,347	330,967	181,195	208,933	343,282	395,096
No Implementation	151304	631,271	673,966	716,387	755,894	814,714	899,997	1,018,156
No Implementation	151305	896,098	848,690	952,417	1,082,454	1,254,386	1,339,803	1,360,807

No Implementation	151306	365,669	420,844	396,088	361,243	462,874	658,565	774,582
No Implementation	151307	50,147	338,552	555,048	630,229	708,699	820,126	901,226
No Implementation	151308	357,617	321,937	306,930	286,326	264,875	245,122	224,120
PAS Implementation	151309	730,896	765,876	832,963	880,123	909,501	901,261	898,563
PAS Implementation	151310	26,331,558	24,772,894	25,318,187	26,658,768	28,297,511	29,444,950	29,364,559
No Implementation	151311	327,269	391,790	399,353	407,215	483,766	495,686	526,391
No Implementation	151312	299,993	274,113	295,631	253,112	239,371	241,919	244,812
No Implementation	151313	523,159	407,062	352,340	275,357	205,479	143,988	109,555
No Implementation	151314	275,251	275,444	220,577	179,822	175,015	101,396	228,218
No Implementation	151315	657,943	600,211	614,918	567,136	562,214	546,311	502,503
No Implementation	151316	306,042	402,415	401,598	384,488	377,829	362,779	-
PAS Implementation	151317	2,526,433	2,338,476	2,322,652	2,339,955	2,412,867	2,504,520	2,639,528
No Implementation	151318	423,712	407,059	398,914	402,596	425,195	451,313	480,540
No Implementation	151319	3,050,105	2,984,333	3,049,386	3,115,594	3,244,146	3,446,061	3,537,249
No Implementation	151320	265,292	261,124	261,046	289,445	292,380	338,678	379,988
No Implementation	151321	1,650,132	1,316,382	1,079,513	1,132,894	1,056,981	989,977	1,024,389
No Implementation	151322	645,943	682,649	693,681	632,565	660,321	691,321	743,407
No Implementation	151323	2,295,392	1,718,419	642,330	680,158	670,192	597,370	594,682
No Implementation	151324	791,173	2,036,601	2,134,931	2,375,028	2,170,996	2,268,686	2,638,933
No Implementation	151325	16,225,292	16,054,659	16,552,366	17,956,558	20,236,495	23,169,141	26,395,906
No Implementation	151326	15,628,912	15,148,052	14,589,737	14,986,187	17,042,933	18,079,537	18,935,862
No Implementation	151327	711,383	671,866	609,500	626,710	684,827	776,714	828,867
PAS Implementation	151328	1,468,835	1,411,948	1,437,661	1,520,603	1,619,086	1,770,329	1,825,687
No Implementation	151329	455,913	467,763	489,413	486,727	487,104	484,042	481,824
No Implementation	151330	816,480	807,333	856,721	851,794	892,778	971,578	951,385
No Implementation	151331	258,906	252,790	240,514	286,447	288,965	285,236	293,225
No Implementation	151332	824,564	853,770	898,931	937,657	924,148	932,234	939,086
No Implementation	151333	1,811,613	1,470,667	1,484,652	1,549,283	1,612,701	1,694,047	1,778,180
No Implementation	151334	306,932	317,377	306,914	289,374	255,010	252,841	248,713
No Implementation	151335	2,510,907	2,213,204	2,547,236	2,639,262	2,865,338	3,089,505	3,460,038
No Implementation	151336	1,887,430	1,794,288	1,333,986	1,122,555	1,205,725	1,103,349	1,256,715
No Implementation	151337	801,479	785,065	806,977	752,286	701,037	692,077	699,550
PAS Implementation	151338	537,878	512,056	518,978	551,033	633,571	681,691	-
No Implementation	151339	1,882,582	2,026,458	2,127,846	2,163,782	2,394,208	2,652,805	2,900,304
No Implementation	151340	385,161	405,124	397,222	390,487	373,292	380,472	383,990
No Implementation	151341	335,154	319,142	307,023	307,235	335,472	372,676	404,501
No Implementation	151342	453,783	574,383	588,864	565,746	547,765	565,111	531,873
No Implementation	151343	13,776,835	14,200,294	14,699,901	15,334,929	16,559,746	17,562,610	18,914,866
PAS Implementation	151344	2,978,206	3,128,630	4,273,717	5,232,477	5,550,471	5,349,951	4,857,089
No Implementation	151345	294,421	285,949	250,139	246,198	252,227	260,186	270,174
No Implementation	151346	852,775	937,731	832,501	746,205	698,914	736,407	711,210
No Implementation	151347	673,214	614,887	586,624	648,494	709,107	770,142	787,267
No Implementation	151348	1,732,142	1,404,309	1,139,018	1,804,303	1,740,139	2,530,899	2,024,662
No Implementation	151349	321,590	345,267	330,287	294,960	283,964	286,481	308,776
No Implementation	151350	573,509	559,747	604,957	649,262	696,220	731,680	765,685

No Implementation	151351	287,987	305,695	326,165	390,978	455,491	545,786	593,170
No Implementation	151352	403,123	312,908	327,373	365,196	399,849	436,160	452,442
No Implementation	151353	264,530	284,776	259,462	256,183	249,017	44,812	305
No Implementation	151354	333,681	335,204	361,774	387,189	417,753	466,247	508,109
No Implementation	151355	1,715,140	1,666,158	1,634,415	1,725,393	1,955,667	2,135,158	2,228,270
PAS Implementation	151356	1,903,413	1,708,251	1,712,306	1,729,062	1,825,972	1,921,014	1,913,781
No Implementation	151357	1,057,288	1,114,023	1,180,348	1,234,543	1,293,182	1,349,322	1,414,983
No Implementation	151358	1,454,778	1,036,654	1,056,559	1,076,982	1,109,972	1,152,797	1,182,387
No Implementation	151359	279,004	272,541	257,106	263,509	275,607	282,092	283,792
No Implementation	151360	370,166	678,380	782,009	876,014	1,028,630	735,376	439,702
PAS Implementation	151361	1,468,783	1,685,548	1,710,104	1,758,694	1,904,513	1,995,286	2,061,734
No Implementation	151362	49,944,110	51,063,111	52,378,166	52,594,199	53,654,237	55,994,246	58,508,587
No Implementation	151363	620,698	666,196	679,610	711,736	638,072	816,601	1,048,151
No Implementation	151364	617,738	634,080	703,521	237,594	227,621	187,890	188,130
No Implementation	151365	1,155,963	1,084,061	910,427	986,287	1,247,914	1,505,779	1,499,248
No Implementation	151366	896,171	927,694	983,818	1,041,228	1,095,119	1,135,613	1,161,723
No Implementation	151367	756,894	634,389	596,191	729,912	906,405	1,031,357	1,140,962
No Implementation	151368	566,336	541,202	540,820	672,102	717,381	1,046,653	17,932
No Implementation	151369	471,630	428,848	365,322	368,429	370,582	424,511	438,035
No Implementation	151370	627,319	1,111,592	1,395,862	1,428,717	1,497,768	1,353,115	694,542
No Implementation	151371	21,807,760	21,409,548	21,541,289	22,206,994	22,695,958	22,842,941	22,790,776
No Implementation	151372	1,931,112	1,922,893	1,732,528	1,650,192	1,575,103	1,442,098	1,278,962
No Implementation	151373	545,710	552,020	555,088	531,610	558,685	584,713	578,974
No Implementation	151374	484,038	454,047	435,706	616,343	682,390	754,594	838,583
No Implementation	151375	9,575,491	10,439,502	11,235,772	12,125,537	13,286,274	14,562,012	15,678,176
No Implementation	151376	511,370	562,672	666,309	720,895	769,775	772,323	780,896
No Implementation	151377	632,470	606,906	726,861	725,270	719,111	770,211	805,859
No Implementation	151378	250,442	268,911	291,808	309,708	328,955	354,765	380,123
No Implementation	151379	399,183	398,267	404,345	467,793	512,274	583,948	672,873
PAS Implementation	151380	3,579,386	3,255,838	3,285,287	3,589,795	4,028,480	4,598,538	5,073,431
PAS Implementation	151381	243,699	256,412	260,343	292,518	316,738	332,658	344,605
No Implementation	151382	668,505	649,335	655,337	706,698	794,868	901,376	985,283
No Implementation	151383	358,625	347,646	347,896	346,772	355,653	351,168	362,393
No Implementation	151384	3,035,012	2,571,749	2,280,591	2,473,849	2,474,034	2,871,800	3,133,734
No Implementation	151385	605,578	465,199	437,196	514,169	618,782	701,516	722,544
No Implementation	151386	11,901,258	10,439,269	9,944,990	9,929,967	10,577,401	11,183,878	11,293,393

1. PAS Implementation Column is an indicator of whether or not a given company performed a system replacement in the years 2007, 2008, or 2009.
2. Reference to DWP refers to Direct Written Premium.
3. Data set example was provided via extract from the SNL Peer Analytics database of Property and Casualty financial results and filing statements submitted to state bureaus of insurance, in accordance with the data use agreement found in appendix B. Full data set available upon written request.