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The Evolution of Information Systems Offshoring Research: A Past, Present and Future Meta Analysis Review

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ABSTRACT

This research article presents a past, present and future meta analysis of information systems offshoring (ISO) research over the 2000-2010 time period. ISO has emerged as a significant sourcing strategy adopted by many organizations to manage, support and deliver their information system needs. Across the selected academic articles our findings compare research methodologies applied, client vs. vendor perspectives studied and ISO topic areas investigated. Interesting results emerge in the range and evolution of ISO research. As a result of our analysis, our findings clearly indicate areas of need for future ISO researchers to consider when conducting future ISO research.

INTRODUCTION

Information Systems Offshoring (ISO) has evolved to be an important sourcing option for many organizations (Dibbern & Heinzl, 2009). Technological advances combined with increased globalization and competitive pressures have forced many firms to consider ISO as a sourcing alternative to reduce organizational cost and at the same time create and/or maintain their competitive advantage in the global marketplace. Increasingly, the phenomenon of ISO has been considered by many firms as a sourcing solution for their information systems (IS) needs. Recent estimates put the global ISO market at over $55 billion for 2008 and some estimates suggest an annual growth rate of 20% over the next five years (Oshri, Kotlarsky & Willcocks, 2009).

ISO has received increased widespread attention due to its considerable impact on a diverse set of stakeholders (Niederman, Kundu & Salas, 2006). ISO directly influences a diverse set of stakeholders, including: people working in the IS industry and those considering a career the IS industry, organizations buying or offering IS services (or considering doing so), as well as nations or regions competing to retain IS work domestically or to attract the offshoring of such work. The concept of offshoring has been discussed as an organizational and a societal issue since the dawn of the Industrial Revolution (Davis, Ein-Dor, King & Torkzadeh, 2006). From an academic perspective, evidence of the increased interest and significance of ISO is demonstrated by the sheer number of research articles directly addressing ISO, along with entire special issues from top tier journals dedicated to the topic (MISQ 2008). This increased interest confirmed in recent years has contributed to our interest in investigating and reflecting on what is known about ISO. Clearly with the growing reliance and predicted growth in ISO, there is a significant need for academic researchers to learn from past research, assess the present state of ISO research and plan future research directions to support the anticipated continued growth of ISO.

From our review of the literature, we feel that the ISO phenomenon has matured into its own subject field and is a viable IS sourcing solution that is differentiated from traditional IS

outsourcing. What sets ISO apart from traditional IS outsourcing is the inclusion of vendor location into the definition. In ISO the third party vendor firm providing the IS products and services to the client firm is located outside of the client firm's home country (Carmel & Tjia, 2005). For example, a client located in the U.S.A. utilizing a vendor located offshore in India demonstrates ISO. The vendor's offshore location allows the client firm purchasing the IS products and services to take advantage of the inherent lower cost international labor arbitrage (King, 2008).   Organizations have traditionally turned to the outsourcing of activities in search of cost savings among other reasons. However, as long as the third party vendor operates in the same country the achievable cost savings tend to be limited. The restrictions on cost savings as well as the continuous increase in global competition prompted firms to look worldwide for new profitable ways to structure IS operations. In this context, the labor costs differences and the large pool of highly qualified workers in low-wage countries like India promoted the growth in ISO (Post & Pfaff, 2007; Sahay, Nicholson, & Krishna, 2003; Willcocks & Lacity, 2006). The addition of a global external location in relation to the client firms location contributes to a number of unique differences, challenges and risks associated with ISO when compared to traditional IS outsourcing (Carmel & Agarwal, 2002; Wei & Peach, 2006). Examples of these unique aspects include: cultural differences (Winkler, Dibbern, & Heinzl, 2008), time zone differences (Rottman & Lacity, 2004), communication challenges (Zatolyuk & Allgood, 2004), geopolitical (Ranganathan & Balaji, 2007), infrastructure (Rao, 2004), legal and security (Balaji & Ranganathan, 2006), etc. Thus, ISO has many distinct factors that differentiate ISO from traditional outsourcing that needs to be highlighted and discussed on its own.

Historically meta analysis has served as a valuable tool in determining where we have been and where we are headed as researchers in the IS field (i.e., Palvia, Leary, Mao, Midha, Pinjani & Salam, 2004). Although previous meta analysis articles have been conducted specifically on the outsourcing topic (Dibbern, Goles, Hirschheim, & Jayatilaka, 2004; Gonzalez, Gasco, & Llopis, 2006; Yadav & Gupta, 2008), no literature review has been performed specifically on the ISO field. The maturity of the ISO field along with the increased number of publications dedicated to ISO in recent years contributed to our motivation to investigate and reflect on the ISO field. This study aims to make a contribution to signifying the philosophical and methodological approaches conducted regarding ISO. The research also presents a comparative analysis among the leading IS and management journals reviewed. The focus of this article is to highlight the ISO subject areas investigated and the research methodologies employed during the 2000-2010 time period.

As a result of the growing academic, social and practitioner interest in the field of ISO, there is a significant need to do a comprehensive assessment of research activities. Regardless of the stakeholder perspective considered, it can be argued that ISO is a noteworthy global phenomenon that demands researcher attention and a greater understanding. The article at hand seeks to meet this need by systematically reviewing and analyzing prior academic literature on ISO. Based on a review of top-ranked IS and management journals, we compile an exhaustive review of 72 publications focused solely on ISO during the 2000-2010 time period.   The article seeks to answer questions such as: "What research methods are commonly used to study ISO?", "What are the dominant topics addressed by ISO research?", "What are the principal (client vs. vendor) perspectives of ISO research?"and "What are the trends and opportunities for future ISO research?" In sum, the goal and objective of this article is to address and reflect on the past, present and future of ISO research. The remainder of the paper is organized as follows. The next section discusses our methodology for collecting and analyzing the ISO articles. Section three discusses the results describing the research methodologies applied, subject matters

addressed and trends in regards to ISO research. Section four presents implications and future research directions. Section five summarizes and concludes the study's main findings.

METHODOLOGY

In order to capture and analyze the past, present and future of ISO research, an extensive meta analysis was conducted. For the purpose of this research, the focus was on mainstream journals that would reflect progress in the field of ISO. In addition to leading IS journals, leading academic management journals were reviewed to account for the strong applied nature of ISO (Dibbern et al., 2004). Articles published in the journals over the time period of 2000-2010 were coded to analyze the state of ISO research. The rationale behind investigating roughly the last 10 years of academic research is that this time frame includes both the start of the ISO phenomenon along with the most recent publications. By spanning this period, we believe that our review covers an adequate time period to fully capture developments and identify areas of research opportunity. In total, 72 articles from leading IS and management academic journals were selected and reviewed (Table 1).

The selected academic journals were consistent with previous IS related meta analysis studies (Dibbern et al., 2004; Gonzalez et al., 2006; Yadav & Gupta, 2008) which are all recognized for their excellence in the IS field. Our decision to focus our study on articles published, and not books or conference proceedings was influenced by the higher prestige typically placed on journal article publications in the IS discipline. Additionally, our selection is based on the belief that practitioners and academics prefer to use journal publications to acquire and disseminate new knowledge (Donahue & Fox, 2000; Nord & Nord, 1995). It should be noted however, that conferences such as ICIS, AMCIS and HICSS are of high importance and well respected in the IS field. Although not included, their contributions to the ISO area should not be overlooked or ignored. Similar to other meta analysis work (Wiener, Vogel & Amberg, 2010), we are aware that by concentrating on a limited number of journals we excluded a large body of research work (not only other journals and conferences but also books and doctoral theses). However, we believe that this pre-selection resulted in a comprehensive set of papers from high-quality sources that presents an ample picture of ISO research.

After the thirteen journals were identified, the researchers searched for, collected and reviewed ISO articles published over the 2000-2010 time period. Both authors coded the articles together to achieve a common understanding and inter-rater reliability. The ABI and Proquest databases were searched using the keywords of: information systems offshoring, offshoring, offshore, and global sourcing without limiting the search to abstracts, keywords or title inclusion. This manual search procedure took place from August 2010 to February 2011. Each article match was reviewed with the objective of identifying the ISO topics, client vs. vendor perspectives, and research methodologies applied. To do so, we read the paper's key sections (introduction, discussion, and conclusions). This procedure conforms to the general approach proposed by Swanson and Ramiller (1993) when performing meta-analysis research.

In total we collected a total initial sample of 93 articles. After further review 21 articles were removed from the study because they were found to discuss other topics. The removed articles were found to be strictly discussing traditional outsourcing, with no ISO context, which was outside of the scope of this research article. A total of 72 articles were therefore retained in the final sample. These selected articles were analyzed, classified and read carefully. All articles reviewed are included among the list of ISO references. In this article we provide a

comprehensive analysis of ISO research by reviewing the following key areas: research methodologies, ISO topic areas and client vs. vendor perspectives.

RESULTS

Period Covered and Journals Reviewed

Overall, it can be observed in Table 1 that the ISO topic has been addressed to varying degrees by the leading IS and management journals over our selected time period. Based on our analysis, *MIS Quarterly* and *Communications of the ACM* were tied in publishing the most ISO articles based on sheer numbers. Both *MIS Quarterly* and *Communications of the ACM* published 14 ISO articles each focused specifically on ISO.   Out of the remaining reviewed journals, *European Journal of Information Systems* had the fewest ISO publications with no publications specifically discussing the ISO topic. The lack of ISO publications could be explained by the lower emphasis and or business use of ISO in European countries. It should also be noted that IS journals have published the most articles on ISO. This could be due to the unique and significant impact ISO has had on the information systems from both an academic and practitioner perspective. In total 72 articles were published on ISO and evaluated over the 2000-2010 time period.

Table 1: Journals & number of articles reviewed.

Journal Name	Number of Articles (2000-2010)
MIS Quarterly	14
Communications of the ACM	14
Information System Research	8
Information & Management	7
Information Systems Frontiers	6
Decision Science	5
Journal of Management Information Systems	5
European Management Journal	4
Journal of Computer Information Systems	3
Management Science	2
Journal of the Association for Information Systems	2
Decision Support Systems	2
European Journal of Information Systems	0
Total	72

Research methodologies

For all research articles reviewed, we recorded the research methodology applied within each publication.   For the purpose of our paper we followed the definition that a research methodology may be viewed as the "overall process guiding the entire research project" and is viewed as the "primary evidence generation mechanism" (Palvia, Midha & Pinjani, 2006). The classification scheme for the methodologies applied (Table 2) was selected and based on the recommendations of Palvia et al., (2006). Following their framework as a guide, a total of fourteen research methodologies are identified within the IS area. Our results demonstrate that

the articles utilized many different research methodologies. It must be noted that some papers included more than one type of research methodology, such as interviews and case studies, so the total is greater than the journal total.

Table 2: Methodologies in MIS research.

Research Methodology	Description
Speculation/commentary	Research that derives from thinly supported arguments or opinions with little or no empirical evidence.
Frameworks and Conceptual Model	Research that intends to develop a framework or a conceptual model.
Library Research	Research that is based mainly on the review of existing literature.
Literature Analysis	Research that critiques, analyzes, and extends existing literature and attempts to build new groundwork, e.g., it includes meta analysis.
Case Study	Study of a single phenomenon (e.g., an application, a technology, a decision) in an organization over a logical time frame.
Survey	Research that uses predefined and structured questionnaires to capture data from individuals. Normally, the questionnaires are mailed (now, fax and electronic means are also used).
Field Study	Study of single or multiple and related processes/ phenomena in single or multiple organizations.
Field Experiment	Research in organizational setting that manipulates and controls the various experimental variables and subjects.
Laboratory Experiment	Research in a simulated laboratory environment that manipulates and controls the various experimental variables and subjects.
Mathematical Model	An analytical (e.g., formulaic, econometric or optimization model) or a descriptive (e.g., simulation) model is developed for the phenomenon under study.
Qualitative Research	Qualitative research methods are designed to help understand people and the social and cultural contexts within which they live. These methods include ethnography, action research, case research, interpretive studies, and examination of documents and texts.
Interview	Research in which information is obtained by asking respondents questions directly. The questions may be loosely defined, and the responses may be open-ended.
Secondary Data	A study that utilizes existing organizational and business data, e.g., financial and accounting reports, archival data, published statistics, etc.
Content Analysis	A method of analysis in which text (notes) are systematically examined by identifying and grouping themes and coding, classifying and developing categories

(Palvia et al., 2006)

Overall our findings (Table 3) indicate that ISO research utilizes many different research methodologies, but is dominated overall by two research methodologies. In total, survey research appears to have been the leading research methodology applied over the 2000-2010 time period with a total of 31 articles applying the survey research methodology. The case study research methodology was close behind with a total of 27 publications. These findings suggest that IS researchers have ample room and opportunities to expand upon the methodologies selected to study ISO. None of the other research methodologies were close in the times utilized when compared to survey and case study research methodologies. Future research should look to spread out and distance themselves from the popular methodologies followed to make unique contributions to the ISO body of knowledge.

Table 3: ISO research methodologies.

Research Methodology	Frequency
Survey	31
Case Study	27
Secondary Data	6
Speculation/commentary	6
Frameworks and Conceptual Model	3
Field Study	3
Qualitative Research	3
Content Analysis	2
Interview	1
Laboratory Experiment	1
Library Research	2
Mathematical Model	2
Field Experiment	0
Literature Analysis	0

Offshoring topic area trends

Over the 2000-2010 time periods, we can see that researchers have studied a wide variety of topics related to ISO. Table 4 presents the topics of interest from the 72 articles focused on ISO. A total of 24 different subject areas were identified. The topic classification for IS offshore topics were guided by a previous study on IS outsourcing topics (Dibbern et al., 2004) and by the authors' reading of the collected articles. The reference of the IS outsourcing review articles provided background and insight in the topic areas typically addressed by IS sourcing research. Several articles included more than one topic area, such as culture and success, so the total number in following table is greater than the earlier indicated article total.

The most written about ISO subject was virtual team/distributed team issues. This should not come as a huge surprise since one of the inherent differences as compared to traditional IS outsourcing is the virtual nature of the ISO relationship. It is no surprise that virtual team/distributed team is on the top of the list, as most people would argue that almost all ISO projects involve distributed teams due to the increasing availability of competitive resource pools across the world and the continuous advancement of collaboration technologies (Cairncross,

2001; Malhotra & Majchrzak, 2005; Vlaar, van Fenema & Tiwari, 2008). The next topic area in sheer numbers was the area of security and risk. ISO does introduce many unique security issues due to the offshore locations when compared to traditional IS outsourcing (Wei & Peach, 2006). The topic areas of culture and offshoring success followed to complete the top four topic areas addressed. The importance given to culture should also not come as a surprise to its relevance and popularity, since ISO distinguishes itself from traditional outsourcing by introducing an international cultural factor into the sourcing relationship. Researchers and practitioners have been in search of understanding the cultural differences to better understand and manage the ISO initiative.

Table 4: ISO topic areas.

Research Topic	Frequency
Virtual Team/Distributed Team	10
Security and Risk	8
Culture	6
Success	6
Decision	5
Project Quality/Project Performance	5
Project Management	5
Client-Vendor Relationship	3
Contract	3
Project Control	3
Reason	3
General View	2
Impacts of Offshoring	3
IT Professionals	3
IT Skills	2
Knowledge Management	2
Offshore Portfolio Management	2
Offshoring Trend/ Future	2
Software Development Costs	2
Trust	2
Global Open Sourcing	1
Strategy	1
Perspectives on Offshoring Value	1
Offshoring Stages	1

During our reviews, we decided that an investigation into topic area trends over time could be of interest to improve our understanding of ISO past, present and future. In order to gauge if topic areas have changed over the time periods reviewed the collections of articles were separated into three distinct time periods: 2000-2004, 2005-2007, and 2008-2010.   The time period blocks were selected by the researchers, and served the purpose of organizing the articles for comparison purposes only. The separated time period blocks can be viewed a demonstration of

maturation of ISO research. The general trends over these three periods are displayed in Figure 1. The major topics and the frequency of the topic in each period are presented in Table 5, Table 6, and Table 7 respectively. The growth in the number of articles in the 2008-2010 time period demonstrate the increased interest and attention being given to ISO in general by both the academic and practitioner communities. Overall, virtual team related research remained at the top of the topic trend lists over all of the time periods reviewed. However, when evaluated deeper, one can begin to uncover a transgression from early ISO research (2000-2004) to the more recent ISO research time period (2008-2010). Topic areas appear to have evolved from an early focus on the cultural and physical differences of ISO as compared to traditional IS outsourcing to a more managerial and business oriented ISO success and future planning research based topics.

During the 2000-2004 (Table 5) time period, the earliest years of ISO research, our results suggest that researchers were just beginning to investigate how IS offshoring was different from traditional IS outsourcing. Early ISO research focused mainly on the cultural differences and the role of a virtual or distributed team on IS delivery. Both topic areas represent an early focus of ISO research that highlights the easily distinguishable physical differences between traditional outsourcing and ISO. The low number of articles suggests ISO is just beginning to be accepted by practitioners and that the academic research is just beginning to recognize ISO as a sourcing option and important research topic requiring additional academic attention.

Table 5: ISO Topic Area Trends (2000-2004).

Research Topic	Frequency
Culture	2
Virtual Team/Distributed Team	2
Contract	1
Decision	1
Project Management	1
Reason	1
Total	**8**

If we turn our analysis to the 2005-2007 time period (Table 6), the middle stage, we start to see a progression or an evolution of ISO research. ISO researchers in this time period started to include security and risk considerations into their ISO investigations. Research appears to be shifting towards more of a management focus on the ISO initiative. Evidence of a movement towards more management issues and that the ISO option may signal that ISO is maturing as a IS sourcing solution and as a research field.   The evolution and shift of topics areas are progressing towards: project management, ISO decisions, impacts from ISO, which are all more of a managerial and business impact focus, rather than the physical or cultural differences from traditional IS outsourcing. We also begin to see researchers considering the future of ISO and see early works highlighting how the ISO decision impacts local and non-local IS professionals.

Table 6: ISO Topic Area Trends (2005-2007).

| Research Topic	Frequency
Security and Risk	3
Virtual Team/Distributed Team	3
Decision	2
Offshoring Trend/ Future	2
Project Management	2
General View	1
Impacts of Offshoring	1
IT Professionals	1
IT Skills	1
Offshore Portfolio Management	1
Perspectives on Offshoring Value	1
Total	**18**

By the 2008-2010 time period (Table 7), the most recent stage, we start to see the bulk of the ISO research that has been published to date. A total of 56 articles out of the total 72 articles reviewed (~78%) were published during this time block. Research has shifted its focus to include more of an evaluation focus. ISO has evolved from merely a sourcing option decision, to being implemented as a significant source of IS activities to a period of reflection and review. Articles are now investigating the success of the ISO initiative. Now that firms have been utilizing ISO for a number of years, the question has shifted to the evaluation of ISO success. Researchers have moved away from focusing on the ISO decision and are now focused on evaluating the ISO decision in retrospect that organizations have made. Researchers appear to have accepted that ISO is a topic that has matured from early stages of acceptance that now requires a greater understanding of performance. Researchers appear interested in determining why some ISO initiatives are more successful than others.

Table 7: ISO topic area trends (2008-2010).

Research Topic	Frequency
Success	6
Virtual Team/Distributed Team	6
Project Quality/Project Performance	5
Security and Risk	5
Culture	4
Client-Vendor Relationship	3
Project Control	3
Contract	2
Decision	2
Knowledge Management	2
Project Management	2
Reason	2

Software Development Costs	2
General View	2
IT Professionals	2
Global Open Sourcing	1
Impacts of Offshoring	1
IT Skills	1
Offshore Portfolio Management	1
Offshoring Stages	1
Strategy	1
Trust	1
Total	**56**

Figure 1: ISO topic area trends.
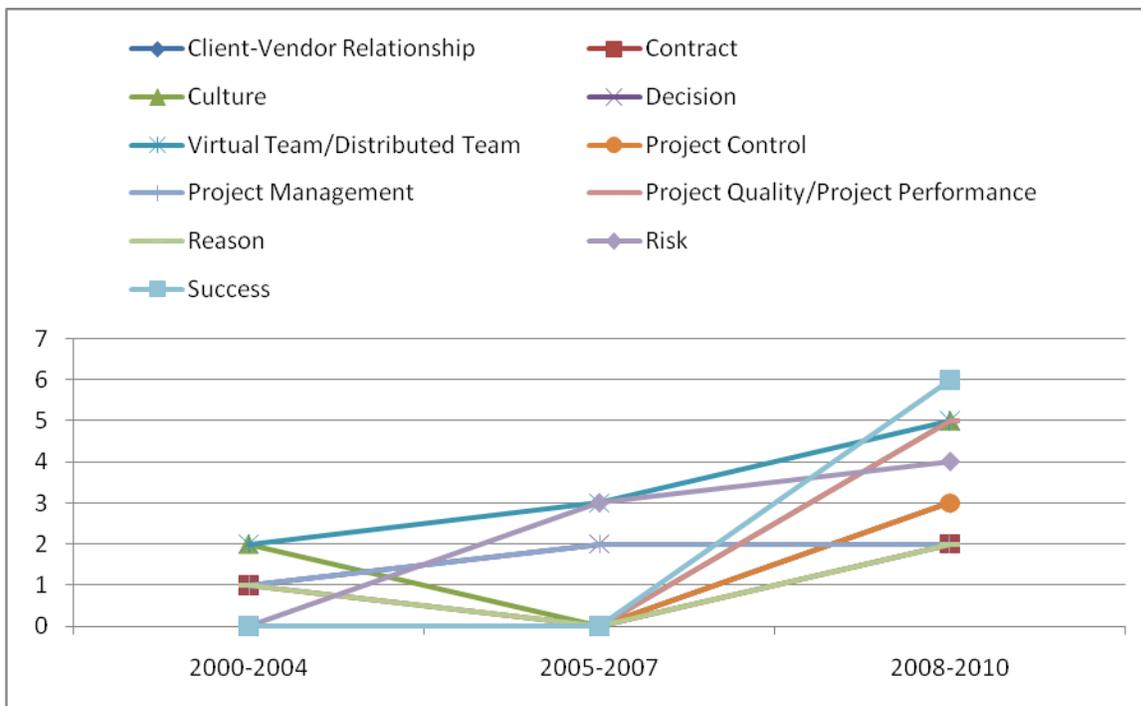
Client vs. vendor focus

When investigating ISO, two significant stakeholder group perspectives are typically at the forefront: the client perspective and the vendor perspective. Our findings suggest that the client perspective has received the most attention by ISO researchers. In total 43 papers focused on the client's perspective, whereas research focused strictly from the vendor perspective totaled only 11 articles in comparison. These results were not overly surprising, since most outsourcing research thus far has traditionally adopted a client-centric view and thereby has primarily ignored the vendor's perspective (Jiang, Yao & Feng, 2008; Levina & Ross, 2003; Murthy, 2004). Studies that take into account both the client and vendor perspectives have traditionally been comparatively rare (Koh, Ang & Straub, 2004). In total 14 papers included both the client and

vendor perspective in their study of ISO. It is critical that future ISO studies and discussions recognize that differences exist based on either the client or vendor perspective. Great value may be obtained by including both stakeholder group perspectives. Both sides of the ISO story need to be included and examined to fully understand ISO relationship dynamics. Although the client centered research contributions help us to understand ISO relationships in general, our understanding of the offshoring relationship from both parties remains limited based on our traditional client focus.

Table 8: ISO client vs. vendor focus.

Research Focus	Frequency
Client	43
Client and Vendor	15
Vendor	11

LIMITATIONS

In any research project, choices made by the researchers create limitations in interpreting the results. Any limitation that was encountered was addressed to guard against and minimize its impact. Limitations encountered consisted of the limited sample size of focusing strictly on IS and management journals. The dataset for this research was limited to thirteen journals. Thus, future research may want to conduct a larger assessment by expanding to include other IS journals, management finance and strategy journals. An opportunity also exists to include conference papers and possibly expand the time frame studied. However, for the purposes of our analysis conference papers were not included since academic journals are preferred to disseminate and acquire knowledge by academics and practitioners (Nord & Nord, 1995). Although attempts were made to ensure that a variety of the leading publications were included, limitations exist in regards to sample size. These limitations notwithstanding, we believe that the study has provided meaningful insights into the state of ISO research.   These and other limitations should be kept in mind when considering the findings.

FUTURE RESEARCH

Many additional directions for future research present themselves as a direct result of this analysis. The ISO industry as highlighted is predicted to grow in importance as a source for IS activities.   Thus, there is a high need for future research to address the challenges that will continue to be faced by many practitioners in their migration and acceptance of the ISO model. ISO has matured into a multifaceted subject, including areas from outsourcing along with unique areas associated with the global delivery of IS. As our study demonstrates, there is a great deal of diversity in terms of research methodologies, topics studied and perspectives analyzed. A further investigation into our findings suggests a number of areas of emerging research topics and directions for further research.

Our findings indicate how survey and case study are the two dominant research methodologies applied to study ISO. Instead of being confined to the typical research methodologies, ample opportunity exists for researchers to expand upon their research methodology usage.   In evaluating the research methodologies applied, our findings suggest that there has been a significant lack of longitudinal studies examining ISO. Thus, there is an evident need for

longitudinal studies and is a key finding that presents a marked opportunity for researchers to more fully capture the evolution of the offshoring phenomenon and client-vendor relationship. Longitudinal studies would notably contribute to our understanding of the maturity of ISO and explain how a firm's ISO experiences evolve over time.   Accordingly, there is a great opportunity for researchers to move away from the snapshot studies and broaden the overall perspective of ISO developments.   ISO has matured over the 2000-2010 time period and researchers need to begin to focus on how the ISO process and client-vendor relationship has evolved along with the maturity of the ISO industry.   Researchers are encouraged to begin investigating how the ISO process evolves over time and to include a wider selection of research methodologies to uncover unique findings that can only improve our understanding of the ISO option.

Another fertile area for future research is the opportunity to further investigate the dynamics involved with the client-vendor relationship. An in-depth investigation and understanding of the key issues underlying client-vendor relationships is needed.   Since ISO often entails a management of IS projects across continents and cultures, a strong relationship is often desired and required to ensure offshoring success. The complicated nature of the ISO relationship makes this a challenging but necessary area for future research.   Many of the studies reviewed as indicated earlier focused on the client perspective, with the vendor perspective often being left under-researched.   Researchers are missing out on a significant piece of the ISO puzzle by overlooking the vendor perspective. Future research should not only concentrate on the client perspective, but across all stakeholder points of view. In addition, studies that include both client and vendor perspectives on specific ISO engagements, though growing but lacking in numbers, could still offer interesting future findings on the dynamic business critical relationship. Hence, future research should focus and include both perspectives to capture the dyadic client-vendor relationship that is often at the core of successful ISO initiatives.

Future research could also expand and continue the drive towards investigating ISO success. Interesting findings may emerge through the examination of how the client or vendor's evaluations criteria for success may have evolved over the maturity of the relationship. Future research might explicitly examine the differences among client and vendor stakeholders and trace the evolution of success and relationship evaluations (Fraihat, 2006). As the relationship and project matures, stakeholders may refine their desired outcomes. Such an endeavor will require longitudinal research or, at a minimum, multiple cross-sectional slices of measurement over an extended period of time to establish a keener insight into how success and its determinants evolve.   Thus, longitudinal studies may be needed and are highly encouraged to consider the success criteria at different stages of the relationship.

Moreover, future research is encouraged to focus and pay attention to the entire ISO life cycle (Nahar & Kuivanen, 2010).   Many of the studies investigated the decision to utilize ISO, but little research focused on the ongoing relationship or re-evaluation of the ISO decision after project completion. Much of the research was a single snapshot of the ISO initiative at that point in time, but little research has traced any changes to the ISO initiative. Such an endeavor will require longitudinal research or, at a minimum, multiple cross-sectional slices of measurement over an extended period of time to establish a keener insight into the ISO life cycle. In addition to these areas, researchers should are encouraged to investigate how ISO impacts the client and vendor IS worker. Current research appears to neglect these significant stakeholder groups. A

move away from the business perspective to the individual or social environment impact could offer unique findings in contributing to our understanding of ISO.

CONCLUSION

Our analysis has shown that the study of ISO has steadily increased over the 2000-2010 time period. The articles reviewed were mainly empirical and case focused on the ISO phenomenon. Along this time period our paper also demonstrates the evolution of ISO. Topic areas addressed appear to have evolved, which has only strengthened our academic and practitioner ISO understanding. Overall, our findings have important implications in today's global economy, in which firms increasingly rely on ISO to create added value and to maximize stakeholder benefits. Our research has attempted to provide an overreaching view of the work performed to date on ISO. It is essential that future studies and discussions on ISO recognize and review the accumulated ISO knowledge.

ISO of is clearly a phenomenon that will not disappear in the foreseeable future. The study's reported analysis of ISO research offers some insights into the state of ISO today and opportunities for the future. Based on our findings, a series of areas for future research was proposed to serve as a guide for future research investigating ISO. One of our main goals was to provide an early analysis on the current state and future of ISO research using a methodological lens. In conclusion, our article has identified significant implications for researchers and provided a status report of ISO research. Most importantly, our analysis clearly points to the need for further research on ISO. We hope that this work will fuel further research on ISO that will help fill in the identified gaps and opportunities.

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