A review of the IT outsourcing literature: Insights for practice

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ABSTRACT

This paper reviews research studies of information technology outsourcing (ITO) practice and provides substantial evidence that researchers have meaningfully and significantly addressed the call for academics to produce knowledge relevant to practitioners. Based on a review of 191 IT outsourcing articles, we extract the insights for practice on six key ITO topics relevant to practitioners. The first three topics relate to the early 1990s focus on determinants of IT outsourcing, IT outsourcing strategy, and mitigating IT outsourcing risks. A focus on best practices and client and supplier capabilities developed from the mid-1990s and is traced through to the late 2000s, while relationship management is shown to be a perennial and challenging issue throughout the nearly 20 years under study. More recently studies have developed around offshore outsourcing, business process outsourcing and the rise, decline and resurrection of application service provision. The paper concludes by pointing to future challenges and developments.

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0. Introduction

This paper provides substantial evidence that information technology outsourcing (ITO) research has meaningfully and significantly addressed the call by Lee (1999) and Westfall (1999) for academics to produce knowledge relevant to practitioners. The ITO academic literature that studies practice is widely cited and indicates that academics have clearly served to disseminate learning. In addition, thoughtful practitioners have published their IT outsourcing experiences in academic outlets (Cross, 1995; Huber, 1993), further fueling the ability of academics to abstract lessons for practice. In several ways then, ITO research has been an exemplar of how information systems (IS) academics can study and inform practice.

ITO research aimed at studying and influencing practice has examined multiple aspects of the phenomena, from reasons why organizations outsource through to the long-term consequences of outsourcing from both client and supplier perspectives. The first published outputs from academic research appeared in 1991, which documented companies pursuing large-scale *domestic* IT outsourcing (Applegate and Montealegre, 1991; Huber, 1993). More quantitative research and multiple-case studies followed, focusing on why firms outsource (Loh and Venkatraman, 1992a) and how firms benefit (or do not benefit) from IT outsourcing (Lacity and Hirschheim, 1993; Willcocks and Fitzgerald, 1993). Between 1994 and 2000, at least 79 other academic studies were published (Dibbern et al., 2004), many geared towards practice. Since the beginning of 2009, we found 357 published papers on ITO.

The 18 years of research on domestic IT outsourcing has generated a good understanding of the practice. Overall, we learned *why* firms outsource (mostly to reduce costs, access resources, and focus internal resources on more strategic work[1]), *what* firms outsource (mostly a portion of their overall IT portfolio), *how* firms outsource (mostly by formal

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[1] Besides these rational reasons, some studies find personal agendas dominating large-scale outsourcing decisions (Hall and Liedtka, 2005; Lacity and Hirschheim, 1993).

processes), and IT outsourcing *outcomes* as measured by realization of expectations, satisfaction, and performance (Dibbern et al., 2004). Overall, we know that client readiness, good strategy, good processes, sound contracts, and good relationship management are key success factors (Cullen et al., 2005a; Feeny and Willcocks, 1998; Teng et al., 1995; Willcocks and Lacity, 2006).

More recently, much of the academic research has focused on *offshore* outsourcing. Offshore outsourcing research addresses macroeconomic issues, supplier capabilities in developing countries, and specific client and supplier practices to ensure success. From the client perspective, researchers have found that offshore IT outsourcing poses additional challenges when compared to domestic IT outsourcing (Rottman and Lacity, 2006). Some of these issues are so difficult to manage that, more recently, according to Carmel and Abbott (2007), practitioners are turning to nearshore alternatives.

There are many other emerging outsourcing trends that interest practitioners, including business process outsourcing, application service provision, freelance outsourcing, rural sourcing, certifications of outsourcing professionals, and global standards. Academics have already contributed to practice for the first two trends among this list. The remaining topics offer academics a chance for future research.

Our aim in this paper is to extract the insights academics have identified for ITO practice. From an in-depth study of the literature, we classified 191 ITO research papers into six topics. Each topic is thoroughly reviewed in this paper (see Table 1). Each topic answers specific questions relevant to practice.

0.1. Research method

Our study goal requires a complete review of past ITO research relevant to practice. To identify papers which adequately represent the topics above, we searched the full-text of articles within ABI/INFORM, EBSCOHost, and JSTOR databases with ITO-related keywords for articles published between 1990 and 2008. The preliminary search resulted in 765 papers. Perusal of abstracts resulted in the elimination of 408 articles which did not directly pertain to ITO. This resulted in a list of 357 papers related to ITO across 71 journals (see Appendix). Following this, we carefully examined each paper and categorized it into the six topics (see Table 1). Some papers cover more than one topic, thus the total number of papers considered for this review was 191. These papers are a rich mix of conceptual and empirical studies.

As ITO researchers will well attest, there are few standard terms and definitions applied across ITO studies. For example, ITO outcomes have been measured as cost expectations realized (Lacity and Willcocks, 1998), project duration, re-work, and quality (Gopal et al., 2002), perceptions of strategic, economic, and technical benefits (Grover et al., 1996), and effects on stock price performance (Hall and Liedtka, 2005). In order to compare findings across this vast body of literature, we coded the empirical findings[2] for both qualitative and quantitative articles using a unique grounded coding technique we developed and published in Jeyaraj et al. (2006).

The method works as follows. We first extracted the authors' terms and definitions for dependent and independent variables to begin building a master list. We then began to combine variables that had similar definitions, altering the master list with each pass through another article. For example, 18 articles empirically examined the variable we call "Access to expertise/skills". The specific variable names in the articles were, for example, "Technical expertise for new IT" (Kishore et al., 2003), "Access to experts" (Al-Qirim, 2003), and "Access to a larger group of highly schooled professionals" (Sobol and Apte, 1995). Each pass through a new article also triggered a re-analysis of the master list and a re-examination of previously coded articles, until all articles were coded against the master list of terms and definitions. In the end, we identified 174 variables of which 130 were independent variables, 17 were dependent variables, and 27 variables were used as both an independent and a dependent variable. We use these codes to report on the overall findings for practice for the six topic areas.

1. Determinants of IT outsourcing

As evidenced by Table 1, the category "Determinants of IT outsourcing" is one of the most researched areas in our database of ITO articles with 73 empirical articles. Researchers who study the determinants of IT outsourcing primarily ask:

- Which types of firms are more likely to outsource IT?

Researchers examine attributes of client organizations that engage in IT outsourcing. These client firm attributes include *financial attributes* (firm profitability, return on assets, earnings per share, operating expenses, and financial slack in the organization), *size attributes* (size of the client firm in terms of total revenues or number of employees or size of the IT department within the client firm) and *industry attributes.* Below we present the findings from the academic literature on the three types of determinants of ITO.

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[2] The articles were coded by Mary C. Lacity, Shaji Khan and Aihua Yan.

Table 1
ITO topics relevant to practice.

	Topic	Questions relevant to practice	Number of articles
1.	Determinants of IT outsourcing	Which types of firms are more likely to outsource IT?	73
2.	IT outsourcing strategy	What is the strategic intent behind IT outsourcing decisions? What are the strategic effects of IT outsourcing decisions?	24
3.	IT outsourcing risks	What are the risks of IT outsourcing? How are IT outsourcing risks mitigated?	34
4.	Determinants of IT outsourcing success	Which practices increase the likelihood that a client's outsourcing decision will be successful?	86
5.	Client and supplier capabilities	Which capabilities do client firms need to develop to successfully engage IT outsourcing suppliers? Which capabilities do client firms seek in an IT outsourcing supplier?	64
6.	Sourcing varietals	How do practices differ when pursuing different types of outsourcing such as offshore outsourcing, application service provision, and business process outsourcing?	49
Total unique articles (topics overlap across articles)			*191*

1.1. Financial attributes

Concerning the client-firm's financial attributes, we coded 14 relationships that examined financial attributes as determinants of IT outsourcing decisions. Five relationships were not significant. Among the nine significant relationships, eight found that poor financial performance was a determinant of IT outsourcing decisions. Thus, more than half the findings report that IT outsourcing is primarily done by firms with poor financial performance.

Practitioners became aware of this finding from Paul Strassmann's controversial 1995 article "Outsourcing: A Game for Losers". He looked at financial data and layoff data for 13 companies with the largest IT outsourcing contracts. He concluded "*Strategy isn't driving outsourcing. Statistics show the real reason companies outsource is simple: They're in financial trouble.*" In a 2004 publication, Strassmann (2004) conducted another statistical analysis on 324 companies and reached the same conclusion: "*My 1995 assertion that 'outsourcing is a game for losers' still stood up in 2002.*"

Academic research has generally found Stassmann's findings to be robust across time, from the most widely cited study by Loh and Venkatraman in 1992a to a more recent study by Mojsilovic et al. in 2007. This was particularly true for client-firms pursuing large-scale IT outsourcing because academic researchers primarily rely on outsourcing announcements in the trade press to identify a pool of outsourcing clients to study. (Small IT outsourcing contracts are unlikely to be announced in press releases.) For example, Loh and Venkatraman (1992a) is one of the first major articles on the determinants of IT outsourcing – it has been cited 341 times. Based on data from 55 large US firms, the authors found that high business cost structures, poor business performance in terms of reduced profits, high levels of debt, high annual IT costs, and poor IT performance determine large-scale outsourcing of IT in client firms. Thirteen years later, Hall and Liedtka (2005) found very similar findings. They examined the financial determinants of large-scale IT outsourcing decisions. They used secondary data to compare 51 firms doing large-scale outsourcing of IT with 1261 control firms. The authors conclude that IT outsourcing is a practice of "financial losers" in that the 51 firms had significantly lower profits, higher operating expenses, and less cash than control firms. Mojsilovic et al. (2007) studied 68 publicly traded firms and found that companies with lower profits and lower earnings per share were more likely to outsource IT.

1.2. Size attributes

Concerning size of the client firm, the findings are mixed. Of the 11 relationships we found in the empirical ITO literature, six found that size of the client firm did not matter (e.g., Grover et al., 1994), two found that larger client firms are more likely to outsource (e.g., Nam et al., 1996), and three found that smaller firms are more likely to outsource (e.g., Ang and Straub, 1998). Studies of the size of the IT department also produced mixed results. Of the seven relationships we examined, three found that larger IT departments are more likely to outsource (e.g., Sobol and Apte, 1995), two found that smaller IT departments were more likely to outsource (e.g., Barthélemy and Geyer, 2004), and two found no relationship between size of IT department and IT outsourcing (e.g., Miranda and Kim, 2006).

1.3. Industry attributes

We coded 14 relationships between client industry and IT outsourcing. Five relationships did not find that industry mattered (e.g., Barthélemy and Geyer, 2005). Nine relationships found that industry mattered, but it is difficult to identify a clear pattern because of the variety of ways researchers operationalize "industry". Some researchers use Standard Industry Classification (SIC) codes (e.g., Oh et al., 2006). Some researchers use dichotomous classifications such as public versus private (e.g., Slaughter and Ang, 1996) or service versus industrial (e.g., Loh and Venkatraman, 1992a). Some researchers use categories of industries such as manufacturing, finance, and healthcare industries (e.g., Grover et al., 1994).

1.4. Insights for practice

For the practitioner, this body of research does not extract best practices, but instead provides a deeper understanding of the attributes of client firms that pursue IT outsourcing. Which types of firms are more likely to outsource IT? *Overall, client firms that are more likely to pursue IT outsourcing—particularly large-scale IT outsourcing—are in poorer financial health compared to peer firms.* Some industries are more likely to outsource than others, but because researchers have used so many different industry classifications, there is no clear list of particular industries to report. Size of the client firm and size of the client firm's IT function also have no clear pattern to report.

Academic research has also looked at the determinants of second generation outsourcing decisions (e.g., Cullen et al., 2005b; Lacity and Willcocks, 2000; Whitten and Leidner, 2006). After a client firm outsourced IT, did the firm next decide to bring the IT function back in-house, renew the contract with the existing supplier, or continue outsourcing using a different supplier? For example, Whitten and Leidner (2006) found that both economic and relationship constructs are important determinants of second generation outsourcing decisions. Clients renewing contracts report high levels of product, service, and relationship quality, and higher switching costs. Clients that switched suppliers report high product and service quality but low relationship quality and switching costs. Clients that brought back IT in-house report low levels on all four variables.

2. IT outsourcing strategy

This topic examines ITO strategies and how IT outsourcing strategies either affect or are affected by firm strategies and firm performance. Researchers have addressed the questions:

- What is the strategic intent behind IT outsourcing decisions?
- What are the strategic effects of IT outsourcing decisions?

2.1. The strategic intent behind IT outsourcing decisions

As evident in the section on the determinants of IT outsourcing decisions, empirical results generally found that large-scale ITO decisions are driven by poor financial performance, suggesting that the "strategic" intent of IT outsourcing is to reduce costs. To get a more thorough view on ITO strategy, we coded the motivations for IT outsourcing as assessed by client firm representatives. Research on what motivates client organizations to outsource ITO has uncovered a long list of motivations or expectations from outsourcing IT (see Table 2). By far, *cost reduction was the most common motive identified by researchers.* Despite all the rhetoric of using outsourcing strategically, cost reduction has remained an important driver for a majority of client firms, from the earliest studies (e.g., Lacity et al., 1994) to more recent ones (e.g., Fisher et al., 2008).

Some of the most interesting research, however, challenges practitioners to consider outsourcing for more strategic reasons other than just cost reduction. One of the most widely-cited articles on this topic is by DiRomualdo and Gurbaxani (1998).[3] The authors addressed three strategic intents for IT outsourcing: IS improvement (including cost savings), business impact (such as improving business processes), and commercial exploitation. Their paper also suggested which types of contracts, incentives, measures, and pricing provisions should be used to match the strategic intent. The logic of their prescriptions is solid, but many of the examples cited in the article as exemplars of an IT strategy actually failed to deliver the expected benefits in the longer term, including Xerox, J.P. Morgan, Swiss Bank, and Delta Airlines. This suggests that realizing the strategic intent of IT outsourcing is exceedingly difficult and requires a high degree of managerial attention.

Other authors have also tried to challenge practitioners to use IT outsourcing more strategically. The main issue is that these papers rely on anecdotal evidence from a few exceptional firms. Most notable are three excellent papers by Quinn (Quinn and Hilmer, 1994; Quinn, 1999, 2000). His work, although based on anecdotal evidence and not focused on IT, celebrates the most innovative and strategic uses of outsourcing. Linder (2004), Ross and Beath (2006), and Lacity et al. (2003, 2004) also wrote about a few companies using IT outsourcing to facilitate large-scale transformation. Some of their examples, however, pertain to BPO rather than IT outsourcing.

2.2. The strategic effects of IT outsourcing decisions

Researchers have also assessed the effects of IT outsourcing on firm-level performance using such metrics as stock price performance and financial performance. Concerning stock price, senior executives want to know how stockholders perceive their large-scale IT outsourcing decisions. Therefore, a number of academic event studies have examined how announcements of large-scale IT outsourcing decisions affect stock prices (Farag and Krishnan, 2003; Hayes et al., 2000; Loh and Venkatraman, 1992b; Madison et al., 2006; Oh et al., 2006; and Smith et al., 1998). In total, we coded 13 effects of IT outsourcing

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[3] Cited 261 times by Summer 2009 according to Harzing's Publish or Perish.

Table 2
Motivations for IT outsourcing.

Motivation for outsourcing	Description	Number of articles
Cost reduction	A client organization's need or desire to use outsourcing to reduce or control IS costs	39
Focus on core capabilities	A client organization's desire or need to outsource in order to focus on its core capabilities	24
Access to expertise/skills	A client organization's desire or need to access supplier(s) skills/expertise	18
Improve business/process performance	A client organization's desire or need to engage a supplier to help improve a client's business, processes, or capabilities	17
Technical reasons	A client organization's desire or need to gain access to leading edge technology through outsourcing	10
Flexibility	The ability to adapt to change	7
Political reasons	A client stakeholder's desire or need to use an outsourcing decision to promote personal agendas such as eliminating a burdensome function, enhancing their career, or maximizing personal financial benefits	5
Change catalyst	A client organization's desire or need to use outsourcing to bring about large scale changes in the organization	4
Commercial exploitation	A client organization's desire or need to partner with a supplier to commercially exploit existing client assets or form a new enterprise	3
Scalability	A client organization's desire or need to outsource to be able to scale the volume of IS services based on demand	3
Access to global markets	A client organization's desire or need to gain access to global markets by outsourcing to suppliers in those markets	2
Alignment of IS and business strategy	The fit or congruence between a firm's business strategy (conceptualized as defenders, prospectors, analyzers) and its outsourcing strategy (e.g., arm's length, independent, and embedded)	2
Cost predictability	A client organization's desire or need to use outsourcing to better predict IS costs	2
Headcount reduction	A client organization's need or desire to use outsourcing to reduce the number of staff	2
Need to generate cash	A client organization's desire or need to generate cash through the sale of IT assets to the supplier	2
Rapid delivery	A client organization's desire or need to engage in outsourcing in order to speedup project delivery	2
Innovation	A client organization's desire or need to use outsourcing as an engine for innovation	1
Total articles		*143*

on stock price performance. Six found significant positive effects on stock price (e.g., Agrawal et al., 2006), four found no relationship (e.g., Florin et al., 2005), and three found a negative effect on stock price (e.g., Oh et al., 2006).

Oh et al. (2006) is the best paper to help understand these mixed results. These authors summarize all prior event studies and also present the results of their own event study. Their event study is unique because they did not just look at the overall change in stock market value, which tends to be very small. Instead, they looked at the differences between announcements that led to *above* Average Abnormal Returns (AAR) versus announcements that led to *below* AAR. The authors examined 192 IT outsourcing announcements during a 9 year period (1995–2003). On the day of an announcement, 97 announcements lead to negative AAR and 95 announcements lead to positive AAR. The authors conclude that the content of ITO announcement matters. *Investors reacted favorably to ITO announcements about smaller contracts, ITO contracts intending to reduce costs, transactions with low asset specificity (data centers and telecommunications), and contracts signed with larger supplier firms.*

Concerning the effects of IT outsourcing on a client-firm's financial performance, we coded nine relationships. Again, the results were mixed. Four relationships found that the client's financial position improved (e.g., Mojsilovic et al., 2007), three relationships found that the financial performance worsened (e.g., Wang et al., 2008), and two found no effects on financial performance (e.g., Bhalla et al., 2008).

2.3. Insights for practitioners

For nearly 20 years of ITO research, client firms have primarily pursued outsourcing as a way to reduce ITO costs. Cost reduction drove domestic ITO decisions in the 1990s and continues to drive both domestic and offshore outsourcing in the 2000s. We are perplexed when practitioners argue with this seemingly ignominious finding. Indeed, some of the world's most respected thinkers – such as Oliver Williamson – argue that cost efficiency is the only long-term viable strategy a company should pursue:

> "*I furthermore aver that, as between economizing and strategizing, economizing is much the more fundamental...More importantly, I maintain that a strategizing effort will rarely prevail if a program is burdened by significant cost excesses in production, distribution, or organization. All the clever ploys and positioning, aye, all the king's horses and all the king's men, will rarely save a project that is seriously flawed in first-order economizing respects*" (Williamson, 1991, p. 75).

While both practitioners and academics are highly interested in more strategic uses of ITO (Galliers and Leidner, 2009), the preponderance of evidence is based on single-case studies of exceptional firms. *The strategic exploitation of IT outsourcing remains a minority pursuit.* Furthermore, the effects of IT outsourcing on firm-level attributes are small, even when they are statistically significant. On average, most firms only spend three percent of their annual revenues on IT; outsourcing even a large portion of IT may not be substantial enough to affect firm-level financial metrics such as profitability (Aubert et al., 2008). Another challenge is trying to isolate the true effects of IT outsourcing on firm-level performance.

3. IT outsourcing risks

Another important topic to practitioners is managing IT outsourcing risks. Risks are generally defined as the probability that an action will adversely affect an organization. Risk management is a set of activities geared toward identifying, assessing, prioritizing, and addressing risks in order to minimize their probability or impact. ITO researchers address two questions relevant to practitioners:

- What are the risks of IT outsourcing?
- How are IT outsourcing risks mitigated?

In the ITO academic literature, we found 34 published papers on ITO risks and risk management, of which 18 were conceptual. Conceptual papers primarily identify lists of ITO risks (e.g., Jurison, 1995; Earl, 1996; Sakthivel, 2007) or develop ITO risk models (e.g., Aron et al., 2005; Osei-Bryson and Ngwenyama, 2006). The empirical papers primarily address specific risks and risk management strategies as they pertain to IT outsourcing in general (Aubert et al., 1999; Bahli and Rivard, 2005; Currie and Willcocks, 1998; Willcocks and Lacity, 1999; Willcocks et al., 1999), or as they pertain to specific types of outsourcing such as offshore outsourcing (Iacovou and Nakatsu, 2008) or application service provision (Kern et al., 2002a,b,c). Measurement of risks has also been studied (e.g., Bahli and Rivard, 2005; Whitten and Wakefield, 2006).

The most cited paper on ITO risks is by Earl (1996).[4] Earl discusses 11 risks of IT outsourcing: possibility of weak management, inexperienced staff, business uncertainty, outdated technology skills, endemic uncertainty, hidden costs, lack of organizational learning, loss of innovative capacity, dangers of an eternal triangle, technology indivisibility, and fuzzy focus. One of the reasons why this paper is so valuable is because it holds the client accountable for the success of outsourcing. Before IT outsourcing can work, "*a company must be capable of managing the IT services first*" (p. 27).

In reviewing the body of literature, the number of identified ITO risks is quite intimidating. For example, we counted 43 unique ITO risks from just the first three sources we coded (Jurison, 1995; Kern et al., 2002a; Lacity and Rottman, 2008)! The most common risks are found in Table 3.

Concerning risk mitigation advice for practitioners, academic researchers have identified many specific practices designed to reduce risk and therefore increase the likelihood of ITO success. In general, we found as many risk mitigation practices as we found ITO risks. Advice, therefore, is tied to each specific ITO risk. For example, one ITO risk is "supplier has too much power over the customer". Many ITO practices mitigate this risk such as engaging multiple suppliers (Currie, 1998), signing short-term contracts (Lacity and Willcocks, 1998), outsourcing standard IT services for which there are many suppliers capable of delivering good services (Apte et al., 1997; De Loof, 1995; Lacity and Hirschheim, 1993), and insourcing highly specific assets (Watjatrakul, 2005).

Academics have also discussed risks specific to certain types of outsourcing, such as application service provision or offshore outsourcing (Kern et al., 2002a,b; Sakthivel, 2007). Kern et al. (2002a) examine specific risks and risk mitigation strategies for application service provision. Sakthivel (2007) identifies 18 risks and 18 risk control mechanisms specific to offshore systems development. As new IT sourcing models emerge, early adopters will always face more risks.

3.1. Insights for practice

Facing so many risks may prompt clients to re-phrase the IT sourcing question to "*Why should we not **insource** IT services?*" (Earl 1996, p. 27). *Although the number of ITO risks and risk mitigation practices are daunting, practitioners may find that the best way to mitigate risks is through experience.* Clients cannot fully bypass the learning curve based on explicit risk mitigation practices identified from other organizations – there is no substitute for the tacit knowing that comes from actual experiences. Many researchers have found that learning curve effects and prior client experience are vital to ITO success (Barthélemy, 2001; Carmel and Agarwal, 2002; Kaiser and Hawk, 2004; Lacity and Willcocks, 1998; Rottman and Lacity, 2006). Any organization that explores a new sourcing option in terms of new suppliers, new services, or new engagement models with existing suppliers must plan on false starts and many mistakes. Executives often manage learning by pilot testing new sourcing options. This is a risk mitigating practice, but we also note that when pilot tests are too small, the learning is slow, supplier capabilities are not fully tested, and expected benefits are not often realized. Thus there is a trade-off between mitigating risks and achieving substantial benefits from outsourcing.

4. Determinants of IT outsourcing success

We found 86 articles on the determinants of ITO success. Specifically, this body of research answers:

- Which practices increase the likelihood that a client's outsourcing decision will be successful?

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[4] Cited 399 times by Summer 2009 according to Harzing's Publish or Perish.

Table 3
Common ITO risks.

Backlash from internal IT staff	Loss of in-house capability
Biased portrayal by vendors	No overall cost savings
Breach of contract by the vendor	Perceived as unpatriotic (offshore)
Cultural differences between client and supplier	Poor supplier capability, service, financial stability, cultural fit
Difficulty in managing remote teams	Security/privacy breech
Excessive transaction costs	Supplier employee turnover/burnout
Hidden costs	Supplier employees are inexperienced
Inability to manage supplier relationship	Supplier employees have poor communication skills
Inflexible contracts	Supplier goes out of business
Infringement of IP rights	Supplier has too much power over the customer
Lack of trust	Transition failure
Loss of autonomy and control over IT decisions	Treating IT as an undifferentiated commodity
Loss of control over data	Uncontrollable contract growth
Loss of control over vendor	Vendor lock-in (high switching costs)

Researchers have defined and measured ITO success using three units of analysis—the organization, the IT function, and the project. At an organizational level, we have already discussed the strategic impact of outsourcing decisions on firm-level performance using such metrics as stock price performance and financial performance (see Topic 2). At the level of an IT function, researchers have examined the effects of ITO decisions on IS improvements such as reduced costs or increased service levels. At the level of a project, researchers have examined the effects of ITO decisions on cost, quality, and time to complete outsourced projects.

Concerning the determinants of ITO success, researchers have inspected three categories—the ITO decision, contractual governance and relational governance. These are very broad categories of determinants meant to capture the practices associated with ITO decisions, the practices associated with contracts, and the practices associated with managing supplier relationships.

4.1. The ITO decision

Researchers have examined the relationships between the types of ITO decisions made and their subsequent outcomes. In particular, researchers have examined how the degree of outsourcing, top management commitment and the evaluation process have affected ITO success.

The *degree of outsourcing* is the amount of outsourcing as indicated by percentage of IT budget outsourced and/or the type and number of IS functions outsourced. We coded nine relationships that looked at the effects of degree of outsourcing on ITO success. Seven relationships found that the degree of outsourcing mattered. In general, too much outsourcing was associated with lower levels of success (Currie, 1998; Lacity and Willcocks, 1998; Seddon, 2001; Straub et al., 2008). As an example of "too much", Lacity and Willcocks (1998) found that clients who outsourced more than 80% of their IT budgets had success rates of only 29%; clients who outsourced less than 80% of their IT budgets had success rates of 85%. Seddon (2001) provides another example of outsourcing "too much". He examined one of the most aggressive public sector ITO programmes in the world – the Australian federal government's Au$1.2 billion ITO program. The Australian federal government experienced poor results, both financially and operationally. One reason for the disappointing financial results is that the Australian government clustered disparate IT functions in hopes of achieving cost savings through economies of scale. However, the increased coordination costs across disparate IT functions canceled the intended effects of cost savings through economies of scale.

The types of IT functions outsourced also mattered. For example, Grover et al. (1996) found clients had higher levels of satisfaction from outsourcing systems operations and telecommunications than they did from outsourcing applications development, end user support, and systems management.

Top management commitment/support in ITO initiatives is a critical factor for success. Ten out of the 10 relationships we coded suggest top management's commitment and support are critical for client satisfaction (e.g., Lee and Kim, 1999; Han et al., 2008), offshore project success (Iacovou and Nakatsu, 2008) and overall outsourcing success (e.g., Quinn, 1999; Seddon, 2001; Koh et al., 2004). For example, Lacity and Willcocks (1998) report the positive effects of joint IT and non-IT senior management involvement in the ITO decision on cost savings realized. Smith and McKeen (2004) suggest top management's involvement in outsourcing decisions impact overall outsourcing success.

The client organization's *evaluation process* for selecting suppliers seems to be a rather consistent predictor of the contract price, the outsourcing decision, expected cost savings being realized, and the achievement of outsourcing success in general. Eight out of the nine relationships we coded for the evaluation process reported significant findings (e.g., Lacity and Willcocks, 1998; Kern et al., 2002a; Cullen et al., 2005a). For example, inviting internal and external bids has been identified as a proven practice (e.g., Lacity and Willcocks, 1998; Smith and McKeen, 2004).

4.2. Contractual governance

In all, we coded 40 relationships between contractual governance and ITO success. Contractual governance was operationalized most frequently as contract detail (12 relationships), contract type (11 relationships), contract duration (six relationships), and contract size (four relationships).

Contract detail is the number or degree of detailed clauses in the outsourcing contract, such as clauses that specify prices, service levels, benchmarking, warranties, and penalties for non-performance. Overall, 10 of the 12 relationships found that higher levels of contractual detail led to higher levels of ITO success. For example, Poppo and Zenger (2002) found that contractual complexity (i.e. contract detail) was significantly related to ITO performance.

Contract type is a term denoting different forms of contracts used in outsourcing. Examples include customized, fixed, time and materials, fee for service, and partnership based contracts. Out of 11 relationships—all 11 found that the type of contract affected the level of ITO success. For example, Gopal et al. (2002) found that fixed-fee contracts resulted in less re-work than time and materials contracts.

Contract duration also produced consistent findings—all six studies that examined contract duration found that shorter-term contracts had higher frequencies of success than longer-term contracts. For example, Lacity and Willcocks (1998) found that contracts that were three years or less had a higher frequency of success than contracts greater than three years.

Somewhat counter to prior findings—all four relationships that studied the effects of *contract size* on ITO success found that the larger contracts had higher frequencies of success than smaller contracts. For example, Domberger et al. (2000) found that higher-valued contracts (price) were positively related to service quality. How can the contract duration and contract size findings be reconciled? Contract duration is measured in years and long-term relationships tend to lose their momentum and enthusiasm. Contract size is measured in dollars—larger-valued contracts lead to successful outcomes because suppliers are more motivated to allocate their best resources to clients with large contracts. Large contracts also spread the enormous transaction costs associated with outsourcing over more volume of work.

4.3. Relational governance

Relational governance covers the softer issues of managing client–supplier relationships, including trust, norms, open communication, open sharing of information, mutual dependency, and cooperation. In total, we coded 44 relationships on relational governance. In all instances, the research shows that higher levels of all the relational governance attributes are associated with higher levels of ITO success. In some ways, the findings are obvious and trivial. Few people would argue that distrust, closed communication, or lack of cooperation would lead to better outsourcing relationships!

Some of the more interesting research in this area uses interviews and case studies rather than sample surveys (e.g., Kern and Willcocks, 2002; Heiskanen et al., 2008). These qualitative methods allow researchers to understand *why* factors are important or *how* relational governance develops over time. For example, Sabherwal (1999) studied 18 outsourced IS development projects in seven client organizations to determine the role of trust in client–supplier relationships. The paper provides a good overview of the different types of trust, including (1) *calculus-based trust* that is rooted in rewards and punishments associated with a particular project, (2) *knowledge-based trust* that depends on the two parties knowing each other well, (3) *identification-based trust* that follows from the two parties identifying with each other's goals, and (4) *performance-based trust* that depends on early project successes. The paper is one of the first to incorporate two important determinants of ITO success—trust (a form of relational governance) and structural control (a form of contractual governance). ITO success was measured by the quality and timeliness of project deliverables. The author found that relational governance and contractual governance must both be in place to ensure ITO success. More interesting, however, was the reciprocal relationships among trust, contractual governance, and ITO success. ITO success fueled further trust among clients and suppliers. In contrast, projects that suffered from delays or poor performance led to decreased trust.

Since Sabherwal (1999), a number of researchers have begun to simultaneously study contractual and relational governance (Kern and Willcocks, 2000; Poppo and Zenger, 2002; Goo et al., 2009). Are they substitutes? Are they complements? Newer studies show them as complements. Kern and Willcocks (2000) used 12 case studies to argue the importance of both contractual and relational governance. Poppo and Zenger (2002) surveyed 151 US client firms and found that ITO success was greater when both contractual complexity and relational governance were greater. Goo et al. (2009) also found that formal contracts and relational governance function as complements, rather than as substitutes, in a sample of South Korean firms.

Researchers have also studied the interactions between ITO decision and contractual governance. Lee et al. (2004) is a very interesting article that used the same dependent variable to measure ITO success as Grover et al. (1996) and many of the same independent variables used in Lacity and Willcocks (1998) including ITO decision (degree of outsourcing) and contract governance (contract duration and contract type). The authors surveyed 311 South Korean firms. Instead of treating outsourcing decision scope, contract duration, and contract type as independent variables, they created three ideal profiles that integrate these constructs. For example, one ideal pattern is called "arms-length" and has the ideal value of selective outsourcing for decision scope, detailed contract for contract type, and medium contract duration. The expected effect of "arms-length" profile on ITO success is "cost efficiency". The other two patterns are "independent" and "embedded". The authors found that two of the three profiles were significant—the arms-length and the embedded profiles. Overall, they show the importance of matching ITO decision and contractual governance to achieve higher levels of ITO success.

4.4. Insights for practitioners

The three major categories of determinants of ITO success are ITO decisions, contractual governance, and relational governance. These determinants are depicted as direct relationships to ITO success in Fig. 1. Overall, we know *ITO decisions that entailed selective use of outsourcing, the involvement of senior managers, and rigorous evaluation processes were associated with higher levels of ITO success.* Contractual governance also positively affected ITO success. In general, *more contract detail, shorter-term contracts, and higher-dollar valued contracts were positively related to ITO success.* Such contracts maintain the balance of power between clients and suppliers, clearly define expectations, and motivate good supplier performance. Relational governance positively affected ITO outcomes. *Trust, norms, open communication, open sharing of information, mutual dependency, and cooperation were always associated with higher levels of ITO success.*

Recently, research has found that the interaction among these determinants is important. *The **combination** of ITO decision and contractual governance are associated with higher levels of ITO success* (Lee et al., 2004) *and the **combination** of contractual governance and relational governance are associated with higher levels of ITO success* (Goo et al., 2009; Poppo and Zenger, 2002; Sabherwal, 1999).

Finally, what is also clear from the preponderance of evidence is that ITO success is not only *caused* by sound decisions and strong contractual and relational governance, but *ITO success in turn caused better ITO decisions and stronger governance.* Thus, the relationship between ITO success and its "dependent variables" (sound decisions, contractual governance, and relational governance) is *reciprocal.* Specifically, ITO success fueled higher levels of trust (relational governance), built stronger client and supplier capabilities, and determined the kinds of ITO decisions and ITO contracts clients made moving forward (Gopal et al., 2003; Levina and Ross, 2003; Sabherwal, 1999; Seddon, 2001; Whitten and Leidner, 2006). Conversely, ITO failure fueled greater need for controls, monitoring mechanisms, tougher contracts, and determined the kinds of ITO decisions clients made moving forward (Choudhury and Sabherwal, 2003; Lacity and Willcocks, 1998; Sabherwal, 1999). For practice, then, a more complicated but richer depiction of the relationships among ITO decision, contractual governance, relational governance and ITO success is found in Fig. 2.

5. Client and supplier capabilities

Organizational capability is defined as the previous experience, productive capacity, personnel, and other resources which indicate that the applying organization can carry out a proposal.[5] In general, this research topic asks:

- Which capabilities do client firms need to develop to successfully engage IT outsourcing suppliers?
- Which capabilities do client firms seek in an IT outsourcing supplier?

In Table 4, we list the overall capabilities found in the articles we reviewed sorted by frequency of occurrence. The most frequently mentioned capability was "IS technical/methodological capability" (e.g., Levina and Ross, 2003; Kishore et al., 2003; Oza et al., 2006; Ross and Beath, 2006). This is an operational capability that is important to both client and supplier firms. For the outsourcing of new application development, research has found that it is important for clients and suppliers to have shared processes (Davenport, 2005). For example, Rottman and Lacity (2006) interviewed 149 people from both client and supplier organizations. They found that ITO success was greater when both the client and supplier firms had at least CMMI[6] level 3 capabilities.

The most important capability for clients is the "Supplier management capability". This is defined as the extent to which a client organization is able to effectively manage outsourcing suppliers (e.g., Cross, 1995; Michell and Fitzgerald, 1997; Al-Qirim, 2003; Ranganathan and Balaji, 2007). For example, Michell and Fitzgerald (1997) found that among clients that disputed with vendors, nearly four-fifths said they would "*strengthen their ability to manage the vendor*" (p. 232).

The most important capability for suppliers was the "IS human resource management capability." (e.g., Gopal et al., 2003; Beulen and Ribbers, 2003; Rao et al., 2006; Oshri et al., 2007a). This is an organization's ability to identify, acquire, develop, and deploy human resources to achieve its organizational objectives. Clients achieved higher levels of ITO success when supplier staff turnover was low and when the supplier assigned the most capable people to the client's account.

5.1. Insights for practice

Our review treats these capabilities as independent, but *the most widely-cited and respected papers on this topic identify a **mix** of complementary capabilities that lead to ITO success* (see Table 5). The first paper to meaningfully address this question is Feeny and Willcocks (1998).[7] The authors identified nine inter-related capabilities, depicted as three inter-locking rings. Levina and Ross (2003) found that suppliers need three complementary capabilities: (1) IT personnel career development, (2) meth-

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[5] http://www.broward.k12.fl.us/grants/old/html/resources/definitions.html.

[6] CMMI (Capability Maturity Model Integrated) defines five levels of software development maturity and specifies what processes must be in place to achieve those levels.

[7] Their model has been adopted by many large organizations, including DuPont and Commonwealth Bank in Australia. As further evidence of this model's impact, the original paper has been cited 336 times as of 2009. The paper has been updated in Willcocks and Feeny (2006).
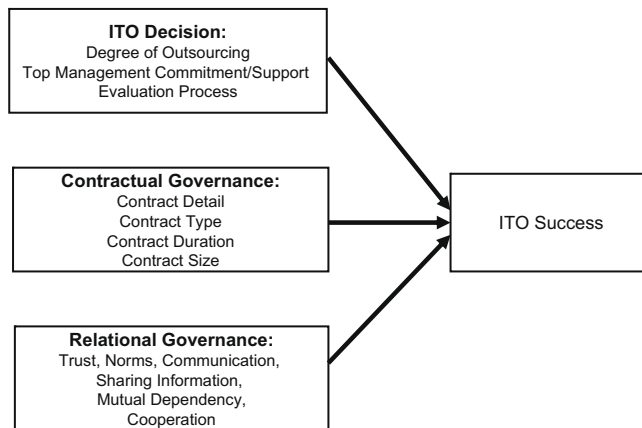
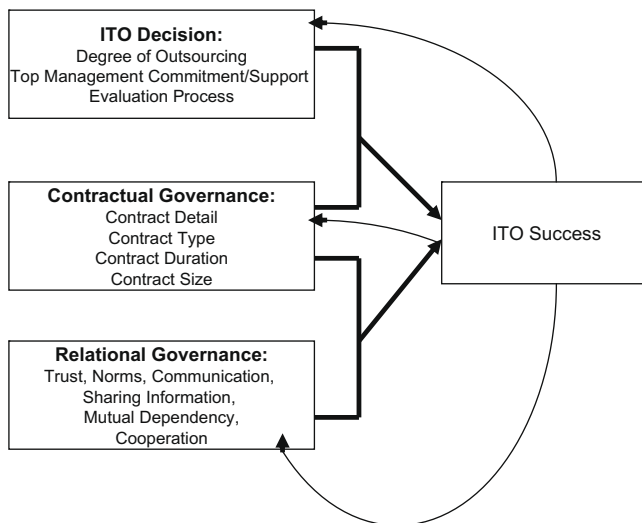**Fig. 1.** Three main categories of determinants of ITO success.

Fig. 2. The complementary and reciprocal relationships of ITO success.

odology development and dissemination, and (3) client relationship management. They showed how supplier capabilities were complementary in that engaging in one capability improved the other two capabilities. Feeny et al. (2005) developed a sister model to identify the twelve most important, inter-related capabilities clients seek in a supplier.

6. Sourcing varietals: offshore, ASP, and BPO

Thus far we have covered foundational issues associated with ITO practice, including strategy, risk management, best practices, and capabilities. The insights for practice have been primarily derived from the studies of domestic IT outsourcing. Recently, much of the academic research has focused on ITO using other sourcing models, including the offshore outsourcing of IT work, application service provision, and business process outsourcing. A common question for all these sourcing varietals is:

• How do practices differ when pursuing different types of outsourcing such as offshore outsourcing, application service provision, and business process outsourcing?

6.1. Offshore outsourcing

Recently, academics have extracted important insights for practice about offshore outsourcing of IT work. We have coded 69 findings from 20 major papers in this area. Academics are beginning to have a good understanding of how off-

Table 4
Client and supplier capabilities.

Capability	Capability description	Number of articles		
		For clients	For suppliers	Total
IS technical/ methodological capability	An organization's level of maturity in terms of technical or process related standards including the Capability Maturity Model (CMM), Capability Maturity Model Integrated (CMMI), and the Information Technology Infrastructure Library (ITIL)	5	8	13
IS human resource management capability	An organization's ability to identify, acquire, develop, and deploy human resources to achieve its organizational objectives	1	9	10
Supplier management capability	The extent to which a client organization is able to effectively manage outsourcing suppliers	10	0	10
Contract negotiation capability	The extent to which an organization is able to effectively bid, select, and negotiate effective contracts with suppliers	7	0	7
Domain capability	The extent to which a supplier has built a capability of the client organization's business and technical contexts, processes, practices, and requirements	0	4	4
IS change management capability	The extent to which an organization effectively manages change	3	0	3
Transition management capability	The extent to which an organization effectively transitions services to outsourcing suppliers or integrates client services with supplier services	2	0	2
Client management capability	The extent to which a supplier organization is able to effectively manage client relationships	0	2	2
	Total	*28*	*23*	*51*

Table 5
The mix of complementary capabilities.

Research study	Empirical base	Focus	Critical capabilities identified
Feeny and Willcocks (1998)	Analysis of over 100 sourcing decisions	Client	(1) IS leadership, (2) business systems thinking, (3) relationship building, (4) technical architecture, (5) making technology work, (6) informed buying, (7) contract facilitation, (8) contract monitoring, and (9) vendor development
Levina and Ross (2003)	Detailed case study of client/ supplier relationship	Supplier	(1) IT personnel career development, (2) methodology development and dissemination, and (3) client relationship management
Feeny et al. (2005)	Analysis of over 100 sourcing decisions	Supplier	(1) planning and contracting, (2) governance, (3) organizational design, (4) leadership, (5) business management, (6) customer development, (7) domain expertise, (8) behavior management, (9) sourcing, (10) process re-engineering, (11) technology exploitation, and (12) program management

shore outsourcing differs from domestic outsourcing. So far, *researchers have found that offshore outsourcing poses considerably more challenges than domestic outsourcing.* Offshore outsourcing is more challenging because of time zone differences (Carmel, 2006; Gokhale, 2007), the need for more controls (Choudhury and Sabherwal, 2003; Kotlarsky et al., 2008), problems transferring knowledge (Gupta et al., 2007; Oshri et al., 2007a), cultural differences (Carmel and Tjia, 2005; Iacovou and Nakatsu, 2008; Oza and Hall, 2005; Rao et al., 2006; Smith and McKeen, 2004), having to define requirements more rigorously (Gopal et al., 2003), and difficulties in managing dispersed teams (Oshri et al., 2007a,b; Zviran et al., 2001). The transaction costs of offshore outsourcing are considerably higher than domestic outsourcing (Dibbern et al., 2008; Lacity and Rottman, 2008).

Researchers are also identifying practices and capabilities that are specific to offshore outsourcing (Rottman and Lacity, 2004; Ranganathan and Balaji, 2007). Sample practices include the use of middlemen (Mahnke et al., 2008), the design of special interfaces between client and offshore supplier employees (Oshri et al., 2007a; Kaiser and Hawk, 2004; Leonardi and Bailey, 2008; Rottman and Lacity, 2006), and the use of increased number of liaisons (Gopal et al., 2003; Lacity and Rottman, 2008). Researchers have also studied up to 10 capabilities required for offshore outsourcing (Ranganathan and Balaji, 2007; Jarvenpaa and Mao, 2008). Achieving total cost savings has been difficult in the context of offshore outsourcing because of all the additional challenges and practices needed to ensure success. *Client organizations need to commit a high enough volume of work offshore to ensure total cost savings.*

The recent economic downturn may predict a significant change in the way such offshore sourcing is organized and structured. Cash strapped organizations, both large and small, are selling off their captive centers to offshore suppliers which get lengthy offshore outsourcing contracts in return for purchasing an organization's captive center assets. For example, Citigroup has reportedly sold its IT captive center in India to Tata Consultancy Services (TCS) Ltd. for (US) $505 Million, and in turn got into an offshore outsourcing arrangement with TCS resulting in a (US) $2.5 Billion, 9-year deal (The Wall Street Journal, June 8, 2009).

6.2. Application service provision

Initially, application service provision (ASP) was a business model in which suppliers hosted and rented standard applications to clients over the Internet. ASP was one way small client firms could access expensive software – like enterprise resource planning software by SAP or Oracle – while avoiding high infrastructure costs, support costs, or hefty software license fees. The ASP model flourished during the dot.com era, but although the value proposition to clients was solid, suppliers had difficulty generating revenues. Many ASP suppliers went bankrupt because the client contracts were too small, their duration too short, the marketing costs to educate clients about ASP too high, the margins from reselling propriety software too thin, and the transaction costs of serving so many needy clients too high (Kern et al., 2002b,c).

The ASP bubble burst by 2001, but has since been revived into what we call "netsourcing". Netsourcing uses the internet as the delivery mechanism, but the suppliers, clients, and services have changed. Netsourcing suppliers have new business models and are attracting larger-sized clients. Rather than reselling other vendor's software, the new netsourcing suppliers have developed net-native applications (proprietary applications designed and delivered specifically for Internet delivery) that are only available through ASP delivery (e.g., Salesforce.com). Traditional IT suppliers like IBM and EDS (now part of HP) also incorporated netsourcing into their service options, offering a portfolio of application delivery options to their clients. Providers got the message: *clients want customized services, even if the products are standardized.* The need for customized services actually increases the service providers' viability because they can generate profits by charging for value-added services. Companies like Xchanging and Hewitt have highly customized service contracts but deliver many services in an ASP manner (Willcocks and Lacity, 2006).

Kern et al. (2002a) provides a good overview of how ASP differs from traditional IT outsourcing. They conclude that the risks of ASP are similar to traditional IT outsourcing, but that the probabilities of occurrence for many risks are higher with ASP. In particular, *the probabilities for risks increase with ASP because of immature suppliers, immature customers, and immature technologies.*

Loebbecke and Huyskens (2006) examined the determinants of netsourcing decisions in 88 German companies. The authors found that the companies that netsource applications had significantly *lower* values for (1) competitive relevance of the software application, (2) strategic vulnerability of netsourcing, and (3) technical uncertainty. Thus, applications that were netsourced were perceived as non-strategic and technically certain and thus could be safely netsourced—very similar findings to traditional outsourcing. Susarla et al. (2003) examine the determinants of ASP success as measured by ASP satisfaction and ASP supplier performance. Based on a sample of 256 client firms that netsource at least one software application, the authors found that the clients most satisfied with ASP (1) rated ASP supplier performance higher, (2) had more prior systems integration experience, (3) had higher *a priori* expectations about the ASP's functional capability, and (4) had lower gaps between *a priori* expectations and *a posteriori* perceptions of ASP performance. *Like findings from research in traditional IT outsourcing, clients have more success with ASP when they have realistic expectations and have already conquered the learning curve through prior experience.*

6.3. Business process outsourcing

Business process outsourcing (BPO) entails a supplier taking over the execution of a client's business processes within functions such as human resource management, finance, and accounting (Lacity et al., 2003). BPO is a growing trend and, with increasing standardization of business processes, is expected to permeate the organizations of the future (Davenport, 2005). Although research on BPO is still evolving, much in the way IT outsourcing research did, we do see some important patterns emerging.

As standards for processes become available, outsourced processes will become increasingly commoditized (Davenport, 2005). This idea is supported by the current view that, in general, *BPO is suitable for well defined, self-contained, modular, IT-enabled and easily measurable processes* (e.g., Borman, 2006; Tanriverdi et al., 2007). Concerning IT enablement, IT may help reduce the transaction costs associated with BPO (Borman, 2006). Based on data from 287 manufacturing plants, Bardhan et al. (2006) report that plants with higher IT spending were more likely to engage in production process outsourcing. Also, when processes can be detached from the underlying IT infrastructure at a client organization they may be more suitable for offshoring. However, when processes are tightly coupled with IT, domestic sourcing or insourcing may be a better option (Tanriverdi et al., 2007).

As with IT outsourcing, cost savings, greater flexibility, and access to specialized process expertise remain key motivators of BPO (Davenport, 2005; Lacity et al., 2003). However, indicators of BPO success go beyond cost reduction and flexibility to include quality improvement, realized core competence focus, and realized strategic advantage (Wűllenweber et al., 2008). Wűllenweber et al. (2008) studied the impact of contractual and relational governance mechanisms on BPO success and report that *process standardization, contract completeness, coordination, and consensus are directly associated with BPO success.* Like Sabherwal (1999), Poppo and Zenger (2002), and Goo et al. (2009), Wűllenweber et al. (2008) also found that sound contracts (contract completeness) and relational governance (high values of coordination and consensus between client and supplier firms) are determinants of success.

We anticipate that future research will increasingly focus on the bundling of ITO and BPO because client firms are increasingly pursuing this practice. Thus, studies such as the one by Wűllenweber et al. (2008) maybe bellwethers for future research and practice.

7. Conclusions

In effect, research on practice has documented the 20 year rise to globalism of IT and business services outsourcing. The key quest for clients has been how to leverage the ever expanding services market for significant business advantage. The common denominator in the findings: researchers have uncovered no quick fix. Much depends on experiential learning and sheer hard work. Executives must conquer a significant learning curve and build key in-house capabilities in order to successfully exploit outsourcing opportunities. They need to accept that outsourcing is not about giving up management, but managing in a different way.

Suppliers have also faced learning curves in their attempts to differentiate their services, find new markets, and deal with new competition from potentially anywhere in the world. Maturing their ability to deliver fully on the promise of cost-effective service delivery, strong relationships and back-office transformation has been a constant challenge. As the 2007 economic downturn turned into 2008 recession, suppliers' abilities to develop and leverage requisite capabilities in ITO, BPO and ''bestshoring'' have become ever more critical.

The sheer dynamism of modern business and public sectors makes any lessons derived more important to learn and apply, and trends more important to watch and take suitable action on. Looking forward, McDonald (2007) suggests IT leaders need to develop an *enterprise capability,* comprising nine elements that are standardized, integrated, and operated together to achieve strategic goals. The nine elements address human capital, organization, processes, facilities and equipment technology, applications, information, rules and metrics, and specific tasks. Many of these elements will be sourced through a comprehensive portfolio of in-house workers, contract workers, and third party suppliers. Lacity et al. (2008) predict 13 trends about the size and growth of ITO and BPO markets, about suppliers located around the world, and about particular sourcing models including application service provision, insourcing, nearshoring, rural sourcing, knowledge process outsourcing, freelance outsourcing, and captive centers. They also identify five perennial, prickly, future challenges for practice pertaining to business back office alignment, client and supplier incentives, knowledge transfer, knowledge retention, and sustainability of outsourcing relationships.

As outsourcing spend increases, the alignment of business and sourcing strategy does indeed becomes a key issue, as does CEO and business executive involvement in outsourcing objectives, relationships and implementation. This requires a further advance in client thinking and action. One way of looking historically at outsourcing practice research work is to say that it has documented how organizations have been learning, experientially and often painfully, how to *manage* back-office outsourcing. But the increased size, importance, complexity of the phenomena, and the risks they engender, suggest that in the next phase researchers will be examining how organizations seek to provide *leadership* in outsourcing. Leadership is about shaping the context and mobilizing resources to deal with the adaptive challenges organizations face. In glimpsing the future, it is pretty clear that changing business needs, the globalizing and technologizing of the supply of business services, and the much greater use of outsourcing, will provide challenges that will require this shift from management to leadership – if governance, control, flexibility and superior business outcomes are to be the consequences of outsourcing practice.

Appendix A. Distribution of ITO articles by journal

Journal Name	No. of Articles	Journal Name	No. of Articles
Academy of Management Journal	1	International Journal of Organizational Analysis	1
Academy of Management Review	3	Journal of Applied Business Research	1
ACM SIGMIS Database	1	Journal of Electronic Commerce in Organizations	3
BT Technology Journal	1	Journal of Global Information Management	4
California Management Review	2	Journal of Global Information Technology Management	5
Communications of the ACM	18	Journal of High Technology Management Research	1
Communications of the AIS	10	Journal of Information Systems	2
Computers & Operations Research	4	Journal of Information Systems Management	1
Database for Advances in Information Systems	2	Journal of Information Technology	22
Decision Sciences	3	Journal of Information Technology Case and Application Research	5
Decision Support Systems	1	Journal of Information Technology Cases and Applications	5
Engineering Management Journal	1	Journal of International Management Studies	1

Appendix A (*continued*)

Journal Name	No. of Articles	Journal Name	No. of Articles
European Journal of Information Systems	10	Journal of Management	1
European Journal of Operational Research	3	Journal of Management Information Systems	14
European Management Journal	2	Journal of Operations Management	2
Foreign Affairs	1	Journal of Purchasing & Supply Management	1
Harvard Business Review	8	Journal of Strategic Information Systems	10
IEEE Computer	1	Journal of Systems Management	5
IEEE Transactions on Engineering Management	2	Journal of the Association for Information Systems	3
Industrial Management & Data Systems	1	Management Science	8
Industrial Management + Data Systems	8	MIS Quarterly	18
Industry and Innovation	1	MIS Quarterly Executive	12
Information & Management	17	Omega	1
Information and Software Technology	1	Organization Science	1
Information Management & Computer Security	7	Public Personnel Management	1
Information Resources Management Journal	2	S.A.M. Advanced Management Journal	1
Information Systems Frontiers	12	Sloan Management Review	21
Information Systems Journal	2	Strategic Management Journal	3
Information Systems Management	35	Strategic Outsourcing: An International Journal	1
Information Systems Research	8	Technovation	1
Information Technology & People	1	The Academy of Management Executive	2
Information Technology and Management	2	The Academy of Management Review	1
International Journal of E-Business Research	1	The Journal of Applied Behavioral Science	1
International Journal of Information Management	11	The Journal of Computer Information Systems	12
International Journal of Logistics Management	1	The Journal of Management Development	1
International Journal of Management	1	*Total*	*357*

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