# The Early History of IT Outsourcing: A Personal Reflection



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**Abstract** In this chapter, I attempt to document the early days of Information Technology Outsourcing, starting with the initial EDS facilities management contracts, which then led to the notion of IT outsourcing and its proliferation. I will present the history of the mega-deals, and some of the ideas, lessons, and rationale, which drove early outsourcing. By understanding the early history of IT outsourcing, it better positions us to appreciate the evolution and challenges facing today's new forms of outsourcing.

### 1 Introduction

While there have been a number of papers surveying the field of Information Technology (IT) Outsourcing (cf. Dibbern et al., 2004; Hatonen & Eriksson, 2009; Lacity et al., 2009; Liang et al., 2016), the actual *history* of the field has been given scant attention. This seems odd and inconsistent with the Information Systems field's interest in—and recognition of the importance of—history (Hirschheim et al., 2012; Bryant et al., 2013) and the historical method (Mason et al., 1997; Porra et al., 2014). Without a documented history, there is no sense of shared understanding of how IT outsourcing got to where it is, and what challenges it faces now and possibly in the future. However, with a shared understanding of IT outsourcing, each of us who is engaged in the field can achieve a sense of the larger meaning of our individual contributions and the contribution of others. It leads to shared concepts and the ability to communicate with others across boundaries, especially across the academic/practitioner divide. It allows us to appreciate the work that came before and helps establish a cumulative tradition. With this in mind, I will offer my thoughts on the historical antecedents which lie behind the evolution of IT outsourcing.

### 2 Three Waves of IT Outsourcing<sup>1</sup>

The history of IT outsourcing is a rich one. We can see that outsourcing has evolved considerably since the late 1980s when large IT outsourcing vendors such as EDS and IBM, signed multibillion-dollar deals with clients involving the transfer of corporate IT to these vendors. While the types of outsourcing arrangements have evolved to include business processes, offshoring, crowdsourcing and the like, the current trend is now firmly associated with organizations' desire for digital transformation (cf. Willcocks & Lacity, 2012).

Digital transformation has been defined as "the use of new digital technologies, such as mobile, artificial intelligence, cloud, blockchain, and Internet of things (IoT) technologies, to enable major business improvements to augment customer experience, streamline operations, or create new business models" (Warner & Wäger, 2019). Essentially, digital transformation changes the way organizations use technology, people and processes to fundamentally change business performance (Westerman et al., 2014). While the notion is not particularly new (cf. Scott Morton, 1991; Markus & Benjamin, 1997; Andal-Ancion et al., 2003), the role of outsourcing within this transformation has only somewhat recently been considered. The emphasis has shifted from outsourcing legacy and/or traditional services to outsourcing for digital transformation. Organizations are looking for vendors, consultants, and researchers who can assist them in this transformation. This is evident in the academic research which is now exploring sourcing topics such as crowdsourcing (Blohm et al., 2013; Geiger & Schader, 2014), platform ecosystems (Constantinides et al., 2018; Foerderer et al., 2018; Ghazawneh & Henfridsson, 2013; Huber et al., 2017; Schmeiss et al., 2019; Tiwana, 2002), cloud computing (Venters & Whitley 2012; Schneider & Sunyaev, 2016; Yinghui et al., 2018), service innovation (Barrett et al., 2015; Lusch & Nambisan, 2015), service automation (robotic process automation—RPA) (Lacity & Willcocks, 2016; Rutschi & Dibbern, 2020; Willcocks & Lacity, 2016), impact sourcing (Heeks, 2013; Sandeep & Ravishankar, 2018); artificial intelligence/machine learning (Davenport & Ronanki, 2018), process mining/analytics (Fogarty & Bell, 2014), internet of things (Dijkman et al., 2015), and blockchain (cf. Lacity & Willcocks, 2018).

<sup>&</sup>lt;sup>1</sup> The three waves of IT outsourcing are based on a chapter that Jens Dibbern and I collaborated on Dibbern and Hirschheim (2020).

The current growth of digital transformation has led to a changing IT outsourcing landscape which could be thought of as three commingling "waves of change." They are:

### 2.1 Wave 1: The Evolving Traditional Outsourcing of IT Services

This wave refers to the outsourcing of IT functions and IT tasks, such as software development or data center operations, that are performed by external IT work forces. In such labor-intensive traditional outsourcing of IT services, enduring trends include offshoring and multi-sourcing, which have been around for some time. But also new sourcing arrangements that are characterized by novel value propositions, such as striving for innovation through outsourcing rather than simply cost savings or getting access to scarce resources. The development of "impact sourcing" emerged as a new way of looking at the notion of value. Here, clients and vendors consider how their outsourcing arrangements contribute to creating social and society-wide (rather than purely firm) economic value (Lacity et al., 2014; Babin & Nicholson, 2020; Carmel et al., 2016; Lacity et al., 2016; Kahn et al., 2018).

## 2.2 Wave 2: The Emergence of Cloud Computing and Platform Ecosystems

This wave involves a new approach to service development and delivery by the IT industry where IT services are developed in large platform ecosystems and provided via platforms. These comprise new pricing models (i.e., renting readily available services) and the provision of services via the internet (i.e., cloud) as Software as a service (SaaS), Infrastructure as a service (IaaS), or Platform as a service (PaaS) (Weinhardt et al., 2009; Ceccagnoli et al., 2012). The move toward platforms also includes the provision of labor as a service and has led to entirely new business models that disrupt traditional industries (Willcocks et al., 2018). This includes crowdsourcing, i.e. engaging the crowd in a new service delivery model, and embracing the use of digital platforms to expose untapped supply and demand of services that are based on the sharing of individually owned resources and assets as exemplified by Airbnb and Uber.

## 2.3 Wave 3: The Development of Robotic Process Automation and "Outsourcing" to Software Bots

This wave embodies an arrangement where entire tasks or business functions are taken over by some type of automation such as a chatbot. Thus, the goal is not to support humans with cheaper or better IT services that may stem from external providers, but rather to replace humans by IT (Przegalinska et al., 2019; Adam et al., 2021; Rutschi & Dibbern, 2020). Al/machine learning, data analytics, and blockchain are all integral elements of this wave.

It is important to note that although this description is of three distinct waves of change, they are in fact commingled and entangled. They overlap both within and between the waves. For example, a software bot may be developed by an external service provider using a traditional outsourcing arrangement with an external vendor and the bot may take over work from the former in-house personnel of the client and hence the work is outsourced to the bot. The bot may then also be provided as a SaaS via cloud computing. So the waves are really a simplifying vehicle to make sense of the broad evolution of IT outsourcing from the late 1980s through today. However, IT outsourcing has a richer tradition that extends back into the 1960s when Ross Perot, and his company EDS, first started managing IT facilities for a number of companies, which eventually evolved into the first IT outsourcing arrangements (cf. Mack & Quick, 2002). It is to this early history of IT outsourcing that I turn next.

### 3 The Early, Early Days of Outsourcing

Given this chapter is about IT outsourcing and its early history, it is important to define what is meant by "outsourcing." I define outsourcing as the practice of engaging with a third-party entity for the provision of goods or services to either replace, supplement, or provide specific activities or tasks; and it has been around for centuries. According to Jones (2018), one of the earliest occurrences of outsourcing can be traced back to the ancient Roman Empire where publicans ('men engaged in public business') were hired to collect taxes and harbor dues, provide military and civilian supplies, build and repair roads, bridges and aqueducts, handle waste disposal, and so on. In the late seventeenth century in America, the production of wagon covers and clipper ships' sails was outsourced to laborers in Scotland, where they used raw material imported from India. As Ghimire (2005) writes: "England's textile industry became so efficient in the 1830s that eventually Indian manufacturers couldn't compete, and that work was outsourced to England." Outsourcing remained popular in the manufacturing sector, with part of the assembling in many industries being subcontracted to other organizations and locations where the work could be done more efficiently and cheaply (Momme, 2002; Akbari, 2018). Commenting on this trend, Pastin and Harrison (1987) note that such outsourcing of manufacturing functions was creating a new form of organization which they termed the "hollow corporation" (i.e., an organization that designs and distributes, but does not produce anything). They note that such an organizational form would require considerable changes in the way organizations were managed. But this has not stopped the inexorable growth of outsourcing in virtually every industry. As Hatonen and Eriksson (2009) write: "What we have been witnessing is an outsourcing revolution, which has changed the way firms compete in as diverse industries as automobiles, aerospace, telecommunications, computers, pharmaceuticals, chemicals, healthcare, financial services, energy systems and software just to name a few." (p. 142).

It was not long before the idea of outsourcing was applied to the procurement of information technology (IT) services also. Initially, when organizations looked to external sources for the provision of IT services, the vendor provided a single basic function to the customer, exemplified by facilities management arrangements where the vendor assumed operational control over the customer's technology assets, typically a data center. Electronic Data Systems (EDS) contract with Frito-Lay in 1963 was the first major example of such an arrangement. However, EDS's agreement with Blue Cross/Blue Shield of Texas in 1966 was different from previous 'facilities management' contracts in that EDS was responsible for handling Blue Cross/Blue Shield's data processing services. EDS took over the responsibility for Blue Cross's IT people extending the scope of the agreement beyond the use of third parties to supplement a company's IT services. EDS and Blue Shield of California inked a similar deal in 1969. EDS's client base grew to include customers such as HCA Inc., the U.S. Department of Defense, and the U.S. Government's National Flood Insurance Program in the seventies. In 1982, the U.S. Army awarded EDS a 10-year \$650 million contract, which at the time was the largest in the history of the information services industry. EDS signed a \$350 million contract with the U.S. Navy the following year. In 1984 General Motors bought EDS for \$2.5 billion. These deals portended a new type of IT services provision—largescale IT outsourcing.<sup>2</sup> Such IT outsourcing agreements were entered into with three large companies headquartered in Houston—Continental Airlines, First City Bank and Enron in the late eighties. These EDS arrangements were not simply IT service contracts but typically involved EDS either purchasing stock in the companies they were providing IT services to and/or providing an upfront cash payment for the client company's IT assets. So these were financial arrangements that allowed all three companies to receive a cash infusion to help stave off potential chapter "Airline Market Concentration in Europe" filings. In 1989, other players besides EDS entered the outsourcing arena, the most noteworthy of these being the ISSC division of IBM. In fact, ISSC's deal with Kodak in 1989 heralded the arrival of the IT outsourcing mega-deal and legitimized the role of outsourcing for IT. Following the success of the Kodak deal, well-known companies around

<sup>&</sup>lt;sup>2</sup> In the IT world, the term "outsourcing" has been attributed to Morton Meyerson of EDS who used the term to refer to EDS's business model of providing IT services to its clients, often in the context of facilities management (Yost, 2017).

the world quickly followed suit. In 1991, General Dynamics signed a \$3 billion deal with CSC. Equifax signed a \$650 million outsourcing contract with ISSC in 1993. EDS signed a \$3.2 billion deal with Xerox in 1994. In 1997, IBM, Telstra and Lend Lease of Australia entered into a major IT deal valued at \$2 billion. In the same year, EDS inked an IT outsourcing deal with the Commonwealth Bank of Australia for \$3.8 billion. In 1997, Swiss Bank signed a \$3 billion outsourcing deal with Perot Systems. The same year, saw Dupont/Conoco ink a deal with CSC and Anderson worth \$4.2 billion. And in 1996, General Motors sold off EDS and then signed a 10-year IT outsourcing deal with them valued at \$38 billion. Other major multi-billion-dollar deals were implemented by McDonnell Douglas, AT&T, JP Morgan/Chase, Bell South, Delta Airlines, and the U.S. Military in the U.S.; Lufthansa in Germany; Rolls Royce, Inland Revenue, Bank of Scotland, and British Aerospace in Britain; KF Group in Sweden; Canada Post in Canada; Government of South Australia in Australia; Bank di' Roma in Italy; and ABN Amro in the Netherlands (Dibbern et al., 2004).

It is interesting to note that a number of the outsourcing deals in the 1990s were very creative and became models for future arrangements. Here are two which are worth considering, both from outside the US. The first example is a 1996 deal, that was struck with EDS and the Government of South Australia in Adelaide. This is an arrangement that allows the South Australian Government to outsource its IT to a third-party provider, in this case EDS. What was interesting about that deal, was that EDS was required to spend approximately 10% of the revenue of the outsourcing deal to spur economic development in the state of South Australia. Thus, the interesting aspect about this deal was, that it was not simply an outsourcing arrangement, where a vendor provided IT services for a set dollar amount. It was the IT vendor providing services but also spurring the economy of this state by creating new jobs, spending money in the state of South Australia to bolster its economy. This was clearly a very creative venture even though it had its difficulties in terms of determining what was the value of EDS' contribution to the State of South Australia's economy. A second example is the co-sourcing arrangement that EDS structured with Rolls Royce in the UK. It was a £2 billion arrangement. EDS' co-sourcing arrangement was that Rolls Royce would provide EDS £500 million to manage and deal with the higher-level IT arrangements for Rolls Royce. The other £1.5 billion would be spent on either EDS providing initial services or EDS subcontracting to third-party providers for the provision of system development, system maintenance and the like. That deal shows the breadth of the kind of arrangement a client can strike with an outsourcing vendor. There are also a number of other arrangements which have led to so-called win-win operations. One is Telstra (Australia) signing a deal with IBM Global Services. In this deal, Telstra outsourced its IT to IBM. Telstra and IBM then formed a company called Advantra whose purpose was to provide telecommunication services to Pacific Rim countries. This is an example of a joint venture between the outsourcing vendor and client with the intention of offering the prospect of a new source of revenue for them. Such new joint ventures would allow the industry skills provided by the client with the technology skills of the vendor coming together to provide a new venture which would offer both expertises in a particular industry segment to sell these skills to others in that same industry. (Although how successful such joint ventures are, or could be, is far from clear.)

Similar joint venture and/or spinoff arrangements were not uncommon in the early days of outsourcing. Important examples of IT spinoffs that competed in the IT outsourcing space include Debis Systemhaus (a spinoff of Daimler-Benz's IT department in 1990); T-Systems (a spinoff of Deutsche Telekom in 2000 which in 2002 acquired Debis Systemhaus); Shell Services Company (the spinoff of Royal Dutch Shell in 1994 to compete in the IT outsourcing market); and General Motors spinning off EDS in 1996 (having purchased it in 1984). Spinoffs and joint ventures have only increased in number, size, and scope since the early days of IT outsourcing (cf. Lacity et al., 2004; McIvor, 2010). A recent example can be found in IBM's announced spinoff of its Managed Infrastructure Services division as a new company called Kyndryl (Enderle, 2021).

Figure 1 offers a timeline of the growth of IT Outsourcing focusing on the early period of this history.



Fig. 1 IT outsourcing timeline

### 3.1 Why Do Companies Really Outsource?

A question that drove much of the early IT outsourcing research was "why do companies really outsource?" The conventional wisdom suggested that while organizations outsource IT for many reasons, the growth was largely attributed to two primary phenomena: (1) a focus on core competencies and (2) a lack of understanding of IT value (Lacity et al., 1994). First, motivated by the belief that sustainable competitive advantage can only be achieved through a focus on core competencies, the management of organizations chose to concentrate on what an organization does better than anyone else while outsourcing the rest. As a result of this focus strategy, IT came under scrutiny. Did it make sense for companies to devote so much time, money, and effort to keeping up with IT advances, particularly when IT was simply a "support" function? As such, the IT function was viewed as a non-core activity in organizations, so much so that Carr (2003) went so far as to argue that IT was simply a commodity. Further, senior executives believed that IT vendors possessed economies of scale and technical expertise to provide IT services more efficiently than internal IT departments. Second, and perhaps more telling, the growth in outsourcing was also due to a lack of clear understanding of the value delivered by IT (Porra et al., 2005; Lacity & Hirschheim, 1993a). Though senior executives viewed IT as essential to the functioning of the organization,<sup>3</sup> it was viewed as a cost that needed to be minimized. Believing that outsourcing would help meet the IT needs of the organization less expensively, it was hardly surprising that organizations jumped on the outsourcing bandwagon (Lacity and Hirschheim 1993b; Willcocks & Fitzgerald, 1994).

Although early research documented the orthodox thinking on why companies "supposedly" outsourced their IT, i.e., cost savings, focusing on core competencies, and the like, Lacity and Hirschheim (1993a) questioned the validity of this orthodoxy. Deciding that the best way to *really* understand what was happening with outsourcing was to undertake detailed case studies of organizations who had outsourced their IT. The cases involved large companies who had signed high dollar value outsourcing contracts with well-known outsourcing vendors such as EDS and IBM. Using an interpretive research approach, they found a much more nuanced approach to IT outsourcing that involved shifts in organizational power, as well as financial issues that were less to do with overall IT cost savings, and more to do with the desperate need for an immediate cash infusion. Indeed, the early outsourcing deals (for example, EDS's arrangement with Enron, First City Bank, and Continental Airlines), were primarily short-term financial transactions where EDS would inject significant amounts of capital through cash and stock purchases in

<sup>&</sup>lt;sup>3</sup> Davis et al. (2006) make the interesting observation that while IT was indeed not a core competence for most organizations, it was nevertheless "special," i. e., a critical success factor that was necessary but not sufficient for the success of a firm. Initially it was thought that such functions could not be outsourced, but either (a) IT was not "special," or (b) the logic that "special" functions could not be outsourced was fallacious. In either case, the outsourcing of IT continued to grow.

exchange for long-term IT outsourcing contracts. Companies either in, or very close to, chapter "Airline Market Concentration in Europe" filings, desperately needed such cash infusion to survive, so it is hardly surprising they entered into these long-term, mega-outsourcing contracts. Such announcements were promoted to the stock market as an indication that these companies had made a strategic decision to "reign in the runaway costs of IT and focus on their own specific core competencies." The stock market was only too willing to reward these companies with increased stock prices believing that IT outsourcing meant that the company was "putting its house in order." But did it? Were the promulgated benefits of outsourcing real?

The Lacity and Hirschheim research on Insourcing (Lacity & Hirschheim, 1995; Hirschheim & Lacity, 2000) paint a rather perplexing picture of the results of early IT outsourcing. They report that the impact of IT outsourcing was not as simple or as straightforward as the literature—both academic and practitioner—was contending. In fact, they found that IT outsourcing had not yielded the benefits that organizations had hoped for. Indeed, for a number of companies, IT outsourcing increased the overall cost of IT, although the way IT was accounted for and reported, made this calculation difficult to see and comprehend. Moreover, IT outsourcing created new problems that seemed to be overlooked in the zeal to outsource. In particular, two thorny issues were identified.

## 3.2 Unresolved Issues of Early Outsourcing Research: Loss of Internal Skills and Succession

While much of the literature focused on the short-term reasons and value of outsourcing, the question of what happens in the longer term, seemed to be rarely asked. The focus was squarely on the decision to outsource which was typically motivated by cost savings, irrespective of any collateral damage that might occur in the long term. In particular, what were the long-term consequence of turning over strategic parts of the business to third-party providers; would there be lost opportunities of not having these strategic parts internal to the organization? And who should be involved in making the decision of what to outsourcing and what not to outsource? Then there was the concern of what happens when the company no longer has the individual skills sets possessed by those individuals who have been outsourced. Often those skills were exactly what was needed in the making of important decisions. Lastly, there was the issue of succession. When a company turns over a significant number of functions to third-party providers and the people working in these functions then go to the outsourcing vendor, where does the next generation of senior executives come from? Essentially, those individuals who formerly worked for the company—and formed the base for the next generation of top management—have now gone over to the vendor. Thus, in the long-term outsourcing can lead to the difficult situation of how organizational succession occurs, because the executives or the executives in training have been outsourced

to third-party providers. Issues such as loss of internal skills and succession were left for future research to explore.

### 4 Academic Initiatives on IT Outsourcing

### 4.1 Academic Conferences

Reports from well-known IT consulting companies such as Gartner, Forrester, McKinsey noted that outsourcing would continue to rapidly grow both domestically and globally and embrace emerging domains such as offshoring, business process outsourcing, crowdsourcing, and the like. Indeed, IT outsourcing was a "proof of concept" that even strategic functions such as IT, could be turned over to third-party providers. It was, as it were, a continuation of converting fixed assets and costs into variable ones. The trend was unmistakable. It, therefore, became apparent to many in the academic community that IT outsourcing was not a passing fad and needed to be studied by academics. Early academic IT outsourcing research was undertaken around the same time in various countries such as the USA, UK, the Netherlands, Germany, and Finland among others. In the early 90s, it became apparent that there was a need for individual researchers around the globe to come together to take stock on what research was being done and what was known about the phenomenon. To this end, Markku Saaksjarvi, Arje Wassenaur, and Rudy Hirschheim got together and decided it was time to have an academic conference on IT outsourcing. The outcome was the first academic conference to explore this global phenomenon was held on May 20–22, 1993 at the University of Twente, in Enschede, the Netherlands. It was called the "Conference on Outsourcing of Information Systems Services (OUT'93)" with the intention that it would be the first of more to come. Indeed, that has been the case. Noting that the growth of academic research had been dramatic (by 2001, over 100 academic papers, along with numerous doctoral dissertations had been published on IS outsourcing), motivated the team of Rudy Hirschheim, Armin Heinzl, and Jens Dibbern to conduct the "Second International Conference on Outsourcing of Information Services (ICOIS'2001)" which was carried out at Castle Thurnau, Bayreuth, Germany, June 22–23, 2001. This was followed by the "Third International Conference on Outsourcing of Information Services (ICOIS'2007)" held at Villa Bosch in Heidelberg, May 29-30, 2007. In 2013, ICOIS continued with the "Fourth International Conference on Outsourcing of Information Services (ICOIS'2007)" held at Mannheim Castle in Mannheim, June 9–11, 2013. And in 2019, the "Fifth International Conference on Outsourcing of Information Services (ICOIS'2019)" was held again at Mannheim Castle, in Mannheim, June 16-18, 2019.

Another academic conference initiative was the Global Sourcing Workshop initiated by Leslie Willcocks, Julia Kotlarsky, and Ilan Oshri as part of the AIS Special Interest Group on Outsourcing—SIGSourcing. The first conference was

held in 2007 and has been an annual event ever since. 2019 marked the 15th Global Sourcing Workshop. More recently, Julia Kotlarsky, Ilan Oshri, and Ji-Ye Mao started the Asia-Pacific Global Sourcing Conference with the first event being held on September 23–25, 2016, and the second, September 14–16, 2018.

In addition to these specialized academic outsourcing conferences, mainstream IS academic conferences such as ICIS, AMCIS, ECIS, ACIS, and PACIS had specific tracks on outsourcing. These included not only conference papers but also panel sessions and keynote sessions. So it is clear, that IT outsourcing had a rich history in the IS academic conference scene.

### 4.2 Journals/Institutions

Following the success of outsourcing in academic conferences, 2008 saw the introduction of a new journal—Strategic Outsourcing: An International Journal—that focused exclusively on outsourcing. While mainstream journals such as: MIS Quarterly, Information Systems Research, Journal of MIS, Journal of the AIS, European Journal of Information Systems, Information Systems Journal, Journal of Information Technology, Journal of Strategic Information Systems, Information & Management, Communications of the ACM, Communications of the AIS, International Journal of Information Management, and Information & Organization as well as many other IS-oriented journals, published individual articles on outsourcing, Strategic Outsourcing: An International Journal was the first journal whose mission statement was to publish outsourcing papers. In that sense, it was unique and was an outlet that all outsourcing researchers could count on to provide a knowledgeable and fair treatment of their research.

Interestingly, the so-called "applied" journals, such as *Harvard Business Review*, *California Management Review*, *Sloan Management Review*, and *Business Horizons* published many papers on outsourcing. This suggested that practitioners, who made up the lion's share of the audience of these journals, felt that outsourcing was an important topic. In the IS field, *MISQ Executive* also published a number of outsourcing papers which is suggestive of a topic that had wide appeal.

More specifically, the broad area of IT outsourcing can be seen as one of a rather small number of IS academic research domains that practitioners were interested in and led to significant interaction between academics and practitioners: for example, practitioners speaking at academic outsourcing conferences, academics speaking at practitioner outsourcing conferences, academics advising companies on outsourcing decisions, academics working with practitioners on outsourcing research projects, and the like. Another example of this interaction can be seen by The International Association of Outsourcing Professionals (IAOP) inducting both Mary Lacity and Leslie Willcocks into the IAOP Hall of Fame in 2013.

Another indication of the importance of outsourcing to the IS academic IS field can be seen by the commencement of several interest groups on outsourcing. For example, in the early 2000s, the Association for Information Systems (AIS)

formed a special interest group—SIG IS Outsourcing (SIGISO) which later became SIGOUT, that offered an opportunity for outsourcing researchers to get together and share experiences and research at various IS conferences. SIGOUT has now been superseded by SIGSourcing which not only holds sessions at the AIS conferences (in particular ICIS) but also has its own annual conference—The Global Sourcing Workshop.

#### 5 Conclusion

My personal reflection on the early days of IT outsourcing contains, of course, my own biases of what I chose to include in my interpretation of the history of outsourcing. 4 My recollection of the early outsourcing history is no doubt incomplete and there might be some mistakes in terms of dates of when certain outsourcing events occurred. It is also likely that additional academic outsourcing research was done by others around the globe that I am unfamiliar with.<sup>5</sup> Additionally, considerable work on outsourcing was undertaken by the many outsourcing consulting firms that formed in and around that time period. Those were heady days in the evolution of outsourcing! Case in point was the excellent work done in the early days of IT outsourcing by Technology Partners International (TPI) (which has now become ISG). Other advisory firms also helped the outsourcing industry to grow and prosper. Lastly, it is important to recognize how IT outsourcing has transformed from the arrangements in the late 1980s and 90s to include Business Process Outsourcing (BPO), Offshore Outsourcing, Crowdsourcing, Impact Sourcing, Cloud Computing/Platform Ecosystems Outsourcing, Robotic Process Automation (RPA), bots, and AI Outsourcing. But I shall leave that subject for another paper!

#### References

Adam, M., Wessel, M., & Benlian, A. (2021). AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, 31(2), 427–445.

Akbari, M. (2018). Logistics outsourcing: A structured literature review. Benchmarking: An International Journal, 25(5), 1548–1580.

Andal-Ancion, A., Cartwright, P., & Yip, G. (2003). The digital transformation of traditional businesses. *MIT Sloan Management Review*, 44(4), 34–41.

Babin, R., & Nicholson, B. (2020). Impact sourcing (socially responsible outsourcing). In E. Beulen & P. M. Ribbers (Eds.), *The Routledge companion to managing digital outsourcing*. Routledge.

<sup>&</sup>lt;sup>4</sup> Appendix provides a bibliography of the published papers in the first decade of IT outsourcing.

<sup>&</sup>lt;sup>5</sup> An excellent survey of the early literature of outsourcing can be found in Dibbern et al. (2004). See also Lacity et al. (2009).

- Barrett, M., Davidson, E., Prabhu, J., & Vargo, S. (2015). Service innovation in the digital age: key contributions and future directions. *MIS Quarterly*, 39(1), 135–154.
- Blohm, I., Leimeister, J. M., & Krcmar, H. (2013). Crowdsourcing: How to benefit from (too) many great ideas. *MIS Quarterly Executive*, 12(4), 199–211.
- Bryant, A., Black, A., Land, F., & Porra, J. (2013). Information systems history: what is history? What is IS history? What IS history? ... and Why even bother with history. *Journal of Information Technology*, 28, 1–17.
- Carmel, E., Lacity, M., & Doty, A. (2016). The impact of impact sourcing: Framing a research agenda. In B. Nicholson, R. Babin, & M. Lacity (Eds.), *Socially responsible outsourcing* (pp. 16–47). Springer.
- Carr, N. G. (2003). IT doesn't matter. Harvard Business Review, 38, 24–38.
- Ceccagnoli, M., Forman, C., Huang, P., & Wu, D. (2012). Cocreation of value in a platform ecosystem. *MIS Quarterly*, 36(1), 263–290.
- Constantinides, P., Henfridsson, O., & Parker, G. (2018). Introduction—platforms and infrastructures in the digitalage. *Information Systems Research*, 29(2), 381–400.
- Davenport, T., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review*, 96(1), 108–116.
- Davis, G., Ein-Dor, P., King, W., & Torkzadeh, R. (2006). IT offshoring: History, prospects and challenges. *Journal of the Association for Information Systems*, 7(11), 770–795.
- Dibbern, J., & Hirschheim, R. (2020). Introduction: Riding the waves of outsourcing change in the era of digital transformation. In R. Hirschheim, A. Heinzl, & J. Dibbern (Eds.), *Information systems outsourcing in the era of digital transformation* (5th ed., pp. 1–20). Springer.
- Dibbern, J., Goles, T., Hirschheim, R., & Jayatilaka, B. (2004). Information systems outsourcing: A survey and analysis of the literature. *The DATA BASE for Advances in Information Systems*, 35(4), 6–102.
- Dijkman, R., Sprenkels, B., Peeters, T., & Janssen, A. (2015). Business models for the internet of things. *International Journal of Information Management*, 35(6), 672–678.
- Enderle, R. (2021). The IBM Kyndryl Spin-Off: When separation makes sense. *Datamation*, November 22, 2021. https://www.datamation.com/big-data/ibm-kyndryl-spin-off-separation-makes-sense/
- Foerderer, J., Kude, T., Mithas, S., & Heinzl, A. (2018). Does platform owner's entry crowd out innovation? Evidence from Google photos. *Information Systems Research*, 29(2), 444–460.
- Fogarty, D., & Bell, P. (2014). Should you outsource analytics? *MIT Sloan Management Review*, 55, 41–45.
- Geiger, D., & Schader, M. (2014). Personalized task recommendation in crowdsourcing information systems—Current state of the art. *Decision Support Systems*, 65, 3–16.
- Ghazawneh, A., & Henfridsson, O. (2013). Balancing platform control and external contribution in third-party development: The boundary resources model. *Information Systems Journal*, 23(2), 173–192.
- Ghimire, B. (2005). IT job outsourcing. *Ubiquity*, Volume 2005, Issue August https://ubiquity.acm.org/article.cfm?id=1088430
- Hatonen, J., & Eriksson, T. (2009). 30+ years of research and practice of outsourcing Exploring the past and anticipating the future. *Journal of International Management*, 15, 142–155.
- Heeks, R. (2013). Information technology impact sourcing. *Communications of the ACM*, 56(12), 22–25.
- Hirschheim, R., & Lacity, M. (2000). Information technology insourcing: Myths and realities. *Communications of the ACM*, 43(2), 99–107.
- Hirschheim, R., Saunders, C., & Straub, D. (2012). Historical interpretations of the IS discipline: An introduction to the special issue. *Journal of the Association for Information Systems*, 13(4), i–viii.
- Huber, T. L., Kude, T., & Dibbern, J. (2017). Governance practices in platform ecosystems: Navigating tensions between co-created value and governance costs. *Information Systems Research*, 28(3), 563–584.
- Jones, P. (2018). Outsourcing, a long history. The Spectator, February 3, 2018.

Kahn, S., Lacity, M., & Willcocks, L. (2018). Entrepreneurial impact sourcing: a conceptual framework of social and commercial institutional logics. *Information Systems Journal*, 28, 538– 562.

- Lacity, M., & Hirschheim, R. (1993a). *Information systems outsourcing: Myths, metaphors, and realities.* Wiley.
- Lacity, M., & Hirschheim, R. (1993b). The information systems outsourcing bandwagon. *Sloan Management Review*, Fall 1993 (pp. 73–86).
- Lacity, M., & Hirschheim, R. (1995). Beyond the information systems outsourcing bandwagon: The insourcing response. Wiley.
- Lacity, M., & Willcocks, L. (2016). A new approach to automating services. Sloan Management Review, 58, 40–49.
- Lacity, M., & Willcocks, L. (2018). *Robotic process and cognitive automation: the next phase*. Steve Brookes Publishing.
- Lacity, M., Hirschheim, R., & Willcocks, L. (1994). Realizing outsourcing expectations: Incredible expectations, credible outcomes", *Information Systems Management*, Vol. 11, No. 4, Fall 1994, pp. 7–18.
- Lacity, M., Willcocks, L., & Feeny, D. (2004). Commercialising the back office at Lloyds of London: Outsourcing and strategic partnerships revisited. *European Management Journal*, 22(2), 127–140.
- Lacity, M., Khan, S., & Willcocks, L. (2009). A review of the IT outsourcing literature: Insights for practice. *Journal of Strategic Information Systems*, 18, 130–146.
- Lacity, M., Rottman, J., & Carmel, E. (2014). Prison sourcing: 'doing good' or 'good for business'? Journal of Information Technology Teaching Cases, 4, 99–106.
- Lacity, M., Khan, S., & Carmel, E. (2016). Employing U.S. military families to provide business process outsourcing services: A case study of impact sourcing and reshoring. *Communications* of the Association for Information Systems, 39(9), 150–175.
- Liang, H., Wang, J.-J., Xue, Y., & Cui, X. (2016). IT outsourcing research from 1992 to 2013: A literature review based on main path analysis. *Information and Management*, 53, 227–251.
- Lusch, R., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. MIS Quarterly, 39(1), 155–175.
- Mack, D., & Quick, J. (2002). EDS: An inside view of a corporate life cycle transition. *Organizational Dynamics*. 30(3), 282–293.
- Markus, M. L., & Benjamin, R. (1997). The magic bullet theory in IT-enabled transformation. Sloan Management Review, 38, 55–68.
- Mason, R., McKenney, J., & Copeland, D. (1997). An historical method for MIS research: Steps and assumptions. *MIS Quarterly*, 21(3), 307–320.
- McIvor, R. (2010). Global services outsourcing. Cambridge University Press.
- Momme, J. (2002). Framework for outsourcing manufacturing: Strategic and operational implications. Computers in Industry, 49(1), 59–75.
- Pastin, M., & Harrison, J. (1987). Social responsibility in the hollow corporation. Business and Society Review, 87(63), 54–58.
- Porra, J., Hirschheim, R., & Parks, M. (2005). Forty years of corporate information technology at Texaco Inc. An interpretation using a systems theoretical lens. *MIS Quarterly*, 29(4), 721–746.
- Porra, J., Hirschheim, R., & Parks, M. (2014). The historical research method and information systems research. *Journal of the Association for Information Systems*, 15(9), 536–576.
- Przegalinska, A., Ciechanowski, L., Stroz, A., Gloor, P., & Mazurek, G. (2019). In bot we trust: a new methodology of chatbot performance measures. *Business Horizons*, 62, 785–797.
- Rutschi, R., & Dibbern, J. (2020). Towards a framework of implementing software robots: Transforming human-executed routines into machines. *ACM SIGMIS Database: The DATA BASE for Advances in Information Systems*, 51(1), 104–128.
- Sandeep, M., & Ravishankar, M. (2018). Sociocultural transitions and developmental impacts in the digital economy of impact sourcing. *Information Systems Journal*, 28(3), 563–586.

- Schmeiss, J., Hoelzle, K., & Tech, R. (2019). Designing governance mechanisms in platform ecosystems: Addressing the paradox of openness through blockchain technology. *California Management Review*, 62 1, 121–143.
- Schneider, S., & Sunyaev, A. (2016). Determinant factors of cloud-sourcing decisions: Reflecting on the IT outsourcing literature in the era of cloud computing. *Journal of Information Technology*, 31(1), 1–31.
- Scott Morton, M. (1991). How information technologies can transform organizations. In M. S. Morton (Ed.), The corporation of the 1990's: Information technology and organizational transformation. Oxford University Press.
- Tiwana, A. (2002). The knowledge management toolkit: orchestrating IT, strategy, and knowledge platforms. Prentice Hall International.
- Venters, W., & Whitley, E. (2012). A critical review of cloud computing: Researching desires and realities. *Journal of Information Technology*, 27(3), 179–197.
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349.
- Weinhardt, C., Anandasivam, A., Blau, B., Borissov, N., & Meinl, T. (2009). Cloud computing a classification, business models, and research directions. *Business and Information Systems Engineering*, 1(5), 391–399.
- Westerman, G., Bonnet, D., & McAfee, A. (2014). The nine elements of digital transformation. MIT Sloan Management Review, 55(3), 1–6.
- Willcocks, L., & Fitzgerald, G. (1994). A business guide to IT outsourcing. Business Intelligence.
- Willcocks, L., & Lacity, M. (2012). The new IT outsourcing landscape From innovation to cloud services. Palgrave Macmillan.
- Willcocks, L., & Lacity, M. (2016). Service automation: Robots and the future of work. Palgrave Macmillan.
- Willcocks, L., Oshri, I., & Kotlarsky, J. (2018). Dynamic innovation in outsourcing theories, cases and practices. Palgrave Macmillan.
- Yinghui, Z., Deng, R., Liu, X., & Zheng, D. (2018). Blockchain based efficient and robust fair payment for outsourcing services in cloud computing. *Information Sciences*, 462, 262–277.
- Yost, J. (2017). Making IT work: A history of the computer services industry. The MIT Press.

### Appendix: Bibliography of the First Decade of IT Outsourcing Research

- Ang, S., & Cummings, L. (1997). Strategic response to institutional influences on information systems outsourcing. Organization Science, 8(3), 235–255.
- Ang, S., & Slaughter, S. (1998). Organizational psychology and performance in IS employment outsourcing. In *Proceedings of the 31<sup>st</sup>Annual Hawaii International Conference on System Sciences* (pp. 635–643).
- Ang, S., & Straub, D. (1998). Production and transaction economies and IS outsourcing: A study of the U.S. Banking Industry. MIS Quarterly, 22(4), 535–551.
- Apte, U. M., & Mason, R. (1995). Global disaggregation of information-intensive services. *Management Science*, 41(7), 1250–1262.
- Apte, U. M., Sobol, M. G., Hanaoka, S., Shimada, T., Saarinen, T., Salmela, T., & Vepsalainen, A. P. J. (1997). IS outsourcing practices in the USA, Japan, and Finland: A comparative study. *Journal of Information Technology*, 12, 289–304.
- Aubert, B., Patry, M., & Rivard, S. (1998) Assessing the risk of IT outsourcing. In *Proceedings of the 31st Annual Hawaii International Conference on System Sciences* (pp. 685–691).
- Aubert, B., Dussault, S., Patry, M., & Rivard, S. (1999). Managing the risk of IT outsourcing. In *Proceedings of the 32nd Annual Hawaii International Conference on System Sciences*. doi:https://doi.org/10.1109/HICSS.1999.772972.

- Beath, C., & Walker, G. (1998). Outsourcing of application software: A knowledge management perspective. In *Proceedings of the 31st Annual Hawaii International Conference on System Sciences* (pp. 666–674).
- Chalos, P., & Sung, J. (1998) Outsourcing decisions and managerial incentives. *Decision Sciences*, 29(4), 9 pp. 01–919.
- Chaudhury, A., Nam, K., & Rao, H. R. (1995). Management of information systems outsourcing: A bidding perspective. *Journal of Management Information Systems*, 12(2), 131–159.
- Cheon, M., Grover, V., & Teng, J. (1995). Theoretical perspectives on the outsourcing of information systems. *Journal of Information Technology*, 10, 209–219.
- Clark, T. D., Zmud, R. W., & McCray, G. E. (1995). The outsourcing of information systems: transforming the nature of business in the information industry. *Journal of Information Technology*, 10, 221–237.
- Clemons, E. K., Reddi, S. P., & Row, M. C. (1993). The impact of information technology on the organization of economic activity: The 'move to the middle' hypothesis. *Journal of Management Information Systems*, 10(2), 9–35.
- Cross, J. (1995). IT outsourcing: British petroleum's competitive approach. *Harvard Business Review*, May–June, 1995 (pp. 94–102).
- Currie, W. L. (1996). Outsourcing in the private and public sectors: an unpredictable IT strategy. *European Journal of Information Systems*, 4, 226–236.
- Currie, W. L. (1998). Using multiple suppliers to mitigate the risk of IT outsourcing at ICI and Wessex Water. *Journal of Information Technology*, 13, 169–180.
- Currie, W. L., & Willcocks, L. P. (1998). Analysing four types of IT sourcing decisions in the context of scale, client/supplier interdependency and risk mitigation. *Information Systems Journal*, 8(2), 119–143.
- DeLooff, L. (1995). Information systems outsourcing decision making: A framework, organizational theories, and case studies. *Journal of Information Technology*, 10, 281–297.
- DiRomualdo, A., & Gurbaxani, V. (1998). Strategic intent for IT outsourcing. *Sloan Management Review*, 39(4), 67–80.
- Duncan, N. (1998). Beyond opportunism: A resource-based view of outsourcing risk. In *Proceedings of the 31st Annual Hawaii International Conference on System Sciences* (pp. 675–684).
- Earl, M. (1996). The risks of outsourcing IT. *Sloan Management Review*, Spring 1996 (pp. 26–32).
- Elitzur, R., & Wensley, A. (1997). Game theory as a tool for understanding information services outsourcing. *Journal of Information Technology*, 12, 45–60.
- Fitzgerald, G., & Willcocks, L. (1994). Contracts and partnerships in the outsourcing of IT. In *Proceedings of the Fifteenth International Conference on Information Systems* (pp. 91–98).
- Fowler, A., & Jeffs, B. (1998). Examining information systems outsourcing: A case study from the United Kingdom. *Journal of Information Technology*, 13, 111–126.
- Gable, G. (1996). A multidimensional model of client success when engaging external consultants. *Management Science*, 42(8), 1175–1198.
- Gallivan, M. J., & Oh, W. (1999). Analyzing IT outsourcing relationships as alliances among multiple clients and vendors. In *Proceedings of the 32nd Annual Hawaii International Conference on System Sciences*. doi:https://doi.org/10.1109/HICSS.1999.772970.
- Goodstein, J., Boeker, W., & Stephan, J. (1996). Professional interests and strategic flexibility: a political perspective on organizational contracting. *Strategic Management Journal*, 17, 577–586.
- Grover, V., Cheon, M. J., & Teng, J. T. C. (1994). An evaluation of the impact of corporate strategy and the role of information technology on IS functional outsourcing. *European Journal of Information Systems*, *3*(3), 179–190.
- Grover, V., Cheon, M. J., & Teng, J. T. C. (1996). The effect of service quality and partnership on the outsourcing of information systems functions. *Journal of Management Information Systems*, 12(4), 89–116.
- Hancox, M., & Hackney, R. (1999). Information technology outsourcing: Conceptualizing practice in the public and private sector. In *Proceedings of the 32nd Annual Hawaii International Conference on System Sciences*. doi:https://doi.org/10.1109/HICSS.1999.772971.

- Heckman, R., & King, W. (1994). Behavioral indicators of customer satisfaction with vendorprovided information services. In *Proceedings of the Fifteenth International Conference on Information Systems* (pp. 429–444).
- Heinzl, A. (1993). Outsourcing the information systems function within the company: An empirical survey. In OUT'93 Outsourcing of Information Systems Services Conference, Enschede, May 20–22, 1993 University of Twente.
- Heiskanen, A., Newman, M., & Similae, J. (1996). Software contracting: A process model approach. In *Proceedings of the Seventeenth International Conference on Information Systems* (pp. 51–62).
- Hirschheim, R., & Lacity, M. (1994). IS outsourcing evaluations: Lessons from the field. In Glasson, B., Hawryszkiewycz, I., Underwood, B., & Weber, R. (Eds.), Business process reengineering: Information systems opportunities and challenges (pp. 363–373). (Proceedings of the IFIP TC8 Conference on Business Process Re-engineering: Information Systems Opportunities and Challenges), Gold Coast, May 8–12, 1994.
- Hirschheim, R., & Lacity, M., (1998) Reducing information systems costs through insourcing: Experiences from the field. In: H. Watson (ed) *Proceedings of the Thirty-First Annual Hawaii International Conference on System Sciences* (pp. 644–653). IEEE Computer Society Press, Kona, Hawaii, January 6–9, 1998.
- Hu, Q., Saunders, C., & Gebelt, M. (1997). Diffusion of information systems outsourcing: A reevaluation of influence sources. *Information Systems Research.*, 8(3), 288–301.
- Huber, R. (1993) How continental bank outsourced its 'Crown Jewels'. Harvard Business Review, Jan–Feb 1993 (pp. 121–129).
- I/S Analyzer. (1990). Taking an objective look at outsourcing, 28(8), September 1990.
- Jurison, J. (1995). The role of risk and return in information technology outsourcing decisions. *Journal of Information Technology*, 10, 239–247.
- Kern, T. (1997). The *Gestalt* of an information technology outsourcing relationship: An exploratory analysis. In *Proceedings of the Eighteenth International Conference on Information Systems* (pp. 37–58).
- Klepper, R. (1995). The management of partnering development in I/S outsourcing. *Journal of Information Technology*, 10, 249–258.
- Klotz, D., & Chatterjee, K. (1995). Dual sourcing in repeated procurement competitions. *Management Science*, 41(8), 1317–1327.
- Lacity, M., & Hirschheim, R., (1993) Implementing information systems outsourcing: Key issues and experiences of an early adopter. *Journal of General Management*, 19(1), Autumn 1993, pp. 17–31.
- Lacity, M., & Willcocks, L. (1995). Interpreting information technology sourcing decisions from a transaction cost perspective: Findings and critique. *Accounting, Management and Information Technologies*, 5(3/4), 203–244.
- Lacity, M., & Willcocks, L. (1997). Information systems sourcing: examining the privatization option in USA public administration. *Information Systems Journal*, 7(2), 85–108.
- Lacity, M., & Willcocks, L. (1998). An empirical investigation of information technology sourcing practices: Lessons from experience. MIS Quarterly, 22(3), 363–408.
- Lacity, M., Willcocks, L., & Feeny, D. (1995). IT outsourcing: Maximize flexibility and control. *Harvard Business Review*, May–June 1995, pp. 85–93.
- Lacity, M., Willcocks, L., & Feeny, D. (1996). The value of selective IT sourcing. Sloan Management Review, Spring 1996, pp. 13–25.
- Lee, J.-N., & Kim, Y.-G. (1999). Effect of partnership quality on is outsourcing success: Conceptual framework and empirical validation. *Journal of Management Information Systems*, 15(4), 29–61.
- Loh, L. (1994). An organizational-economic blueprint for information technology outsourcing: Concepts and evidence. In: *Proceedings of the Fifteenth International Conference on Information Systems* (pp. 73–89).
- Loh, L., & Venkatraman, N. (1992a). Diffusion of information technology outsourcing: Influence sources and the kodak effect. *Information Systems Research*, 3(4), 334–358.

Loh, L., & Venkatraman, N. (1992b). Determinants of information technology outsourcing: A cross-sectional analysis. *Journal of Management Information Systems*, 9(1), 7–24.

- Loh, L., & Venkatraman, N. (1995). An empirical study of information technology outsourcing: Benefits, risks, and performance implications. In: *Proceedings of the Sixteenth International Conference on Information Systems*, pp. 277–288.
- Marcolin, B., & McLellan, K. (1998) Effective IT outsourcing arrangements. In: *Proceedings of the 31st Annual Hawaii International Conference on System Sciences* (pp. 654–665).
- McFarlan, F., & Nolan, R. (1995). How to manage an IT outsourcing alliance. *Sloan Management Review*, Winter 1995, pp. 9–23.
- McLellan, K., Marcolin, B., & Beamish, P. (1995). Financial and strategic motivations behind IS outsourcing. *Journal of Information Technology*, 10, 299–321.
- Michell, V., & Fitzgerald, G. (1997). The IT outsourcing market-place: Vendors and their selection. *Journal of Information Technology, 12, 223–237.*
- Nam, K., Rajagopalan, S., Rao, H., & Chaudhury, A. (1996). A two-level investigation of information systems outsourcing. *Communications of the ACM*, 39(7), 36–44.
- Nelson, P., Richmond, W., & Seidman, A. (1996). Two dimensions of software acquisition. *Communications of the ACM*, 39(7), 29–35.
- Pearce, J. (1993). Toward an organizational behavior of contract laborers: Their psychological involvement and effects on employee co-workers. *Academy of Management Journal*, 36(5), 1082–1096.
- Poppo, L., & Zenger, T. (1998). Testing alternative theories of the firm: Transaction cost, knowledge-based, and measurement explanations for make-or-buy decisions in information systems. Strategic Management Journal, 19, 853–877.
- Quinn, J. B. (1999). Strategic outsourcing: Leveraging knowledge capabilities. *Sloan Management Review*, Summer 1999, pp. 9–21.
- Quinn, J. B., & Hilmer, F. (1994). Strategic outsourcing. Sloan Management Review, Summer 1994, pp. 43–55.
- Reponen, T. (1992). Outsourcing or insourcing? In: *Proceedings of the Thirteenth International Conference on Information Systems* (pp. 103–113).
- Sääksjärvi, M. (1993). Outsourcing of information systems. In *OUT'93 Outsourcing of Information Systems Services Conference*, Enschede, May 20–22, 1993. University of Twente.
- Sääksjärvi, M., & Saarinen, T. (1993). Empirical evaluation of two opposite IS outsourcing strategies in Finnish Pulp and Paper Industry. In *OUT'93 Outsourcing of Information Systems Services Conference*, Enschede, May 20–22, 1993 University of Twente.
- Saarinen, T., & Sääksjärvi, M. (1993). Empirical evaluation of two different outsourcing strategies in the Finnish Wood Working Industry. In *OUT'93 Outsourcing of Information Systems Services Conference*, Enschede, May 20–22, 1993 University of Twente.
- Sabherwal, R. (1999). The role of trust in outsourced IS development projects. *Communications of the ACM*, 42(2), 80–85.
- Sarkar, S., & Ghosh, D. (1997). Contractor accreditation: A probabilistic model. *Decision Sciences*, 28(2), 235–259.
- Saunders, C., Gebelt, M., & Hu, Q. (1997). Achieving success in information systems outsourcing. *California Management Review*, 39(2), 63–79.
- Sharma, A. (1997). Professional as agent: Knowledge asymmetry in agency exchange. *Academy of Management Review*, 22(3), 758–798.
- Slaughter, S., & Ang, S. (1996). Employment outsourcing in information systems. Communications of the ACM, 39(7), 47–54.
- Smith, M. A., Mitra, S., & Narasimhan, S. (1998). Information systems outsourcing: A study of pre-event firm characteristics. *Journal of Management Information Systems*, 15(2), 61–93.
- Sobol, M., & Apte, U. (1995). Domestic and global outsourcing practices of America's most effective IS users. *Journal of Information Technology*, 10, 269–280.
- Sridhar, S., & Balachandran, B. (1997). Incomplete information, task assignment, and managerial control systems. *Management Science*, 43(6), 764–778.

- Teng, J. T. C., Cheon, M. J., & Grover, V. (1995). Decisions to outsource information systems functions: Testing a strategy-theoretic discrepancy model. *Decision Sciences*, 26(1), 75–103.
- Timbrell, G., Gable, G., Underwood, A., & Hirschheim, R., (1998). Government IT&T insourcing/outsourcing: A model and guidelines. In B. Edmundson and D. Wilson (eds.) *Proceedings of the Ninth Australasian Conference on Information Systems* (pp. 672–684), Sydney, Sept 30–Oct 2, 1998.
- Van Mieghem, J. (1999). Coordinating investment, procurement, production, and subcontracting. Management Science, 45(7), 954–971.
- Venkatraman, N. (1997). Beyond outsourcing: Managing IT resources as a value. Sloan Management Review, 38(3), 51–64.
- Wang, E. T. C., Barron, T., & Seidmann, A. (1997). Contracting structures for custom software development: The impacts of informational rents and uncertainty on internal development and outsourcing. *Management Science*, 43(12), 1726–1744.
- Whang, S. (1992). Contracting for software development. Management Science, 38(3), 307-324.
- Willcocks, L. P., & Kern, T. (1998). IT outsourcing as strategic partnering: The case of the UK Inland Revenue. *European Journal of Information Systems*, 7, 29–45.
- Willcocks, L., Fitzgerald, G., & Lacity, M. (1996). To outsource IT or not? Recent research on economics and evaluation practice. *European Journal of Information Systems*, 5, 143–160.