

# Information Systems Outsourcing: A Survey and Analysis of the Literature

**Jens Dibbern**

Lehrstuhl für Wirtschaftsinformatik,  
Universität Mannheim

**Tim Goles**

College of Business, University of Texas  
at San Antonio

**Rudy Hirschheim**

Ourso College of Business Administration,  
Louisiana State University

**Bandula Jayatilaka**

School of Management, SUNY-Binghamton

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## Abstract

In the last fifteen years, academic research on information systems (IS) outsourcing has evolved rapidly. Indeed the field of outsourcing research has grown so fast that there has been scant opportunity for the research community to take a collective breath, and complete a global assessment of research activities to date. This paper seeks to address this need by exploring and synthesizing the academic literature on IS outsourcing. It offers a roadmap of the IS outsourcing literature, highlighting what has been done so far, how the work fits together under a common umbrella, and what the future directions might be.

In order to adequately address the immense diversity of research on IS outsourcing and outsourcing in general, we develop a conceptual framework that helps us to categorize the literature. In particular, we look at the research objectives, methods used and theoretical foundations of the papers. In identifying the major research objectives, we view outsourcing as an organizational decision process and adapt Simon's stage model of decision making. This allows us to identify five major sourcing issues, from which at least one is covered by each academic article. These are the questions of *why* to outsource, *what* to outsource, *which* decision process to take, *how* to implement the sourcing decision, and what is the *outcome* of the sourcing decision. In analyzing the literature, we identify and structure the main explanatory factors and theoretical relationships within each of these sourcing stages. Based on our discussion of the research objectives, theoretical foundations and research approaches taken in the literature, we show how the various research streams hang together and we come up with a number of implications for research. Moreover, we identify a number of emerging sourcing issues. We believe that research on these "new" phenomena such as offshore outsourcing, application service providing and business process outsourcing would benefit from 'standing on the shoulders' of what has already been accomplished in the field of IS outsourcing.

**Keywords:** Outsourcing, literature review, theoretical foundations, research approaches, determinants, relationships, outcomes.

## 1 Introduction

### 1.1 Background

For some time there has been widespread acknowledgement that Information Technology (IT) has become the engine that drives the modern organization. Over the last decade, one of the more widespread developments in meeting an

organization's IT needs is the growth in the practice of outsourcing. In fact, when Eastman Kodak announced that it was outsourcing its information systems (IS) function in 1989 to IBM, DEC and Businessland it created quite a stir in the information technology industry. Never before had such a well-known organization, where IS was considered to be a strategic asset, turned it over to third party providers (Applegate & Montealegre, 1991). Since then both large and small companies have found it acceptable, indeed fashionable, to transfer their IS assets, leases and staff to outsourcing vendors (Arnett & Jones, 1994). Kodak appears to have legitimized outsourcing, leading to what some have called "the Kodak effect" (Caldwell, 1994). Senior executives at well known companies in the U.S. and abroad have followed Kodak's example and signed long term contracts worth hundreds of millions of dollars with outsourcing "partners". A number of high-profile multi-billion dollar "mega-deals" have been signed which has raised awareness even more. A Dataquest report (2000) notes that since 1989 there have been over 100 of these mega-deals (Young, 2000).

Studies performed by Dataquest and The Yankee Group estimated global revenues for IS outsourcing have been growing at a rapid rate. The Outsourcing Institute's survey of 1200 companies indicates that 50% of all companies with IS budgets of \$5 million or more are either outsourcing or evaluating the option. They also report that one-twelfth of IS dollars spent in 1995 flowed through an outsourcing contract and that this proportion was rising fast (<http://www.outsourcing.com>). Another view of the IS outsourcing market comes from an International Data Corporation report, which using a narrow definition of IS outsourcing, noted actual global IS outsourcing spending to be \$40 billion in 1996 growing to reach \$71 billion in 2003 representing a growth rate of 12.2% per annum (IDC, 1999). A Dataquest report stated the IS outsourcing industry revenue to be \$194 billion in 1999 and growing to \$531 billion by 2002 (Young, 2000). So by any stretch of the imagination, the IS outsourcing market is significant.

Although companies outsource IS for many reasons (Willcocks and Fitzgerald, 1994), industry watchers generally attribute the growth of the IS outsourcing market to two primary phenomena (Lacity & Willcocks, 2001). First, interest in IS outsourcing is largely a consequence of a shift in business strategy. Many companies have recently abandoned their diversification strategies – once pursued to mediate risk – to focus on core competencies. Senior executives have come to believe that the most important sustainable competitive advantage is strategic focus by concentrating on what an organization does better than anyone else while

outsourcing the rest. As a result of this focus strategy, IS came under scrutiny. Senior executives frequently view the entire IS function as a non-core activity, and believe that IT vendors possess economies of scale and technical expertise to provide IS services more efficiently than internal IS departments. Second, the growth in outsourcing is a function of the unclear value delivered by IS. In many companies, senior executives view IS as an overhead – an essential cost but one to be minimized nevertheless.

These two phenomena – refocus to core competencies and the perception of IS as a cost burden – prompt many senior executives to sign outsourcing "mega-deals" for the provision of all IS services. But while such mega-deals afford these companies with much press, some have voiced concern about the long-term viability of these deals. Indeed, some prominent IS professionals have cautioned against the wholesale transfer of the management and control of a "strategic asset" such as IS. In a number of cases, these concerns proved valid, with "outsourcing partnerships" experiencing grave problems. A few companies have paid out significant sums of money to extricate themselves from outsourcing contracts and then rebuilt their internal IS capability (Hirschheim & Lacity, 2000). On the other hand, some IS managers who have refused to deal with outsourcing vendors or ignored them, have either been fired or had their jobs marginalized when their IS shops have failed to demonstrate value for money (Lacity & Hirschheim, 1993b). So clearly outsourcing must be taken seriously.

What appears to be happening is that an important change is taking place in the sourcing of IS activity. Fundamentally, companies need to consider how best to obtain the needed IS services – this is the so-called "sourcing dilemma". This is explored next.

## 1.2 IS Outsourcing History

Initially, IS outsourcing consisted of an external vendor providing 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. Outsourcing of information systems began to evolve in 1963 when Ross Perot and his company Electronic Data Systems (EDS) signed an agreement with Blue Cross of Pennsylvania for the handling of its data processing services. This was the first time a large business had turned over its entire data processing department to a third party. Such an arrangement was different from other 'facilities management' contracts that EDS had entered into because in the Blue Cross case, EDS took over the responsibility for Blue Cross's IS people. This deal

extended the previous use of third parties to supplement a company's IS (e.g., the use of contract programmers, timesharing, the purchasing of packaged software, the management of the data processing facilities, systems integration, and service bureaus). Following on from the Blue Cross deal; EDS's client base grew during the 1970s to include such noteworthy customers as Frito-Lay and General Motors. However, the real interest in outsourcing occurred during the mid-1980s when EDS signed contracts with Continental Airlines, First City Bank and Enron. These deals signaled an acceptance of outsourcing, which heretofore did not exist. These three deals were financially motivated deals where EDS took an equity position in its client and paid handsomely for certain software products which it thought could be extended and used to attract new clients. Continental Airlines' System One was a case in point. EDS felt this on-line reservation system could be used not only in the airline industry but other industries that had the same need to book reservations, e.g. car rental and hotels.

By the end of the 1980s, the now famous lawsuit brought forward by CDC that precluded IBM from entering the lucrative IS services business had ended. This, along with EDS's success, led IBM to form its ISSC division that would compete directly against EDS. It was an immediate success. ISSC signed its first deal with Kodak in 1989. This deal, for all intents and purposes, signaled the arrival of the IS outsourcing mega-deal. It also legitimized outsourcing. Prior to the Kodak deal, IS outsourcing deals had been entered into, but little interest seemed to be generated by such deals. It was not until Kathy Hudson – the Kodak CIO – announced to the world that Kodak had entered into a 'strategic alliance' with its IS partners led by IBM but also including DEC and Businessland, did the world sit up and take notice. Perhaps it was Hudson's charisma, or maybe it was the household name of Kodak, or perhaps it was just simple luck; but whatever it was, Kodak's \$1 billion outsourcing deal led to the widespread interest in outsourcing. No longer was it possible to say "IS is strategic and hence can not be turned over to a third party". If Kodak can do it, why can't every other organization? Indeed this became the mantra for IS outsourcing. Following on from the success of the Kodak deal, other well known companies quickly followed suit – General Dynamics, Delta Airlines, Continental Bank, Xerox, McDonnell Douglas, Chevron, Dupont, JP Morgan, and Bell South. Nor is the trend strictly a US phenomenon. Deals by Lufthansa and Deutsche Bank in Germany; Inland Revenue, Rolls Royce, BP and British Aerospace in Britain; KF Group in Sweden; Canada Post in Canada; the South Australia government, Telestra, LendLease, and the Commonwealth Bank of Australia in Australia; Swiss Bank in Switzerland; and

Bank di' Roma in Italy signal the rise of outsourcing globally.

IS outsourcing was thought to be such a major growth arena that a number of companies who outsourced took equity positions in their outsourcing vendor – LendLease and Telstra in IBM in Australia; Commonwealth Bank in EDS in Australia; and Swiss Bank in Perot Systems in Switzerland. General Motors went so far as to buy the entirety of EDS in the early 1980s only to spin it off in 1996. Other companies like DaimlerChrysler – former Daimler Benz in Germany – spun-off a major part of its IS department and created Debis, a wholly-owned subsidiary that served as an IS service provider for both Daimler Benz and the external market. Recently, however, they sold off a major part of the spin-off to Deutsche Telekom.

Outsourcing has evolved from the one vendor – one client arrangement where the vendor provides ostensibly all IS services to its client, to complex arrangements involving multiple vendors and multiple clients (see for example the 'cluster' deals entered into by Australia's Federal Government). Outsourcing now embraces significant partnerships and alliances – EDS likes to refer to them as "co-sourcing deals" – where client and vendor share risk and reward. The deals have moved beyond simple cost-savings to include value-based outsourcing, equity based outsourcing, eBusiness outsourcing, and business process outsourcing. High profile alliances such as the Pinnacle Alliance with JP Morgan, AT&T alliance with IBM, and Rolls Royce's co-sourcing deal with EDS signal a new wave of outsourcing. Creativity in deal making abounds. One need look no further than the arrangement the Government of South Australia has with EDS where EDS must put back 10% of its generated outsourcing revenue into the States' economic growth.

One of the attractions, and indeed a primary reason, that vendors enter into outsourcing arrangements is that it provides them with a relatively long-term revenue stream. This is in contrast to IT consulting engagements, with their attendant uncertainties and fluctuations. Long-term outsourcing arrangements help stabilize vendor business volume and revenue, making planning more predictable, and increase shareholder's comfort levels.

The growth of IS outsourcing has spawned an industry whose primary function is the monitoring of outsourcing contracts. Benchmarking, auditing, contract management, customer relationship management, etc. have all become fashionable. So has contract renegotiation. Although Gartner Group reports that 70% of companies engage in some form of IS outsourcing, they estimate that a significant proportion of these companies will also have to

renegotiate their contracts (Young, 2000). Contract lengths of 5 to 10 years which are commonly signed by clients, simply cannot take into account the changes that will occur in a company's IS needs nor the developments in new information technology. Thus, both client and vendor have come to expect that during the life of the contract, some form of renegotiations will be likely.

More recently, the industry has seen the growth of two new areas of IS outsourcing – web and e-Business outsourcing where vendors are contracted to provide web-based applications to enable a firm to enter the e-Business era. The second growth area surrounds the emergence of the application services provider (ASP) industry (Kern et al., 2001). Whilst it is too early to say how this industry will evolve, most companies are keeping a close eye on this rapidly developing market to see if this model of outsourcing will hold promise for them. A Dataquest report (2000) predicts the ASP market would grow in revenue from \$7 million in 1999 to \$7 billion by 2004 (Young, 2000). This, coupled with an expected IS service market growing at a rate of 19.6% per annum through 2004 and an overall market of \$792 billion – of which IS outsourcing makes up 67% – clearly indicates that outsourcing is no passing fad.

### 1.3 Motivation and Overview of Paper Structure

The modern era of IS outsourcing is over 15 years old now (if one assumes it began when Kodak signed its outsourcing deal). Since then companies have been signing major outsourcing deals across the globe. Academics, by and large, have been relatively slow to research this phenomenon. Perhaps it is a topic that is difficult to research, generates little interest within the academic community, or simply is 'off the radar screen' for whatever reason. Because of this, awareness of IS outsourcing has for the most part been driven by the practitioner community. Although academic research has been increasing over the last years, it seems largely disconnected without much of an accumulated tradition. There has been no serious attempt to synthesize the research or document the extent of the research that has been done to date.<sup>1</sup> Whilst academic research has been slow to follow the practitioner community, it is now generally recognized as an important area. The purpose of this paper is to

explore and synthesize what has been done so far in the field. We offer a roadmap of the IS outsourcing academic literature, highlighting what has been so far and how the work fits together under a common umbrella. In analyzing the IS outsourcing landscape, we attempt to bring order to what on the surface appears disjointed. To do this we provide a conceptual framework – described in section 3 – which is based on Simon's (1960) classic model of decision-making. This framework helps us to classify the research literature, noting not only what areas have been looked at but also those that have not.

Let us clarify at this point that the emphasis of this paper is on *information systems* outsourcing. The generic notion of 'outsourcing' – making arrangements with an external entity for the provision of goods or services to supplement or replace internal efforts – has been around for centuries. There is a large body of research that examines outsourcing business functions such as logistics, payroll, human resources, and so forth. However, we argue that IS outsourcing is fundamentally different from other forms of outsourcing. IS is pervasive throughout the organization. It is not a homogenous function, but rather is interrelated with practically all organizational activities (Willcocks et al., 1996). Therefore it is our intention to concentrate solely on research that directly addresses IS outsourcing, notwithstanding the valid and worthwhile body of research concerned with outsourcing other business functions.

The paper is structured as follows. Section 2 defines what we mean by outsourcing and discusses the various outsourcing options in use in organizations. Section 3 describes the research approach taken in our literature analysis. The framework used in the analysis is formulated and its use is discussed. Section 4 applies the framework to the literature allowing the reader to see what research has been. Section 5 attempts to synthesize the literature, noting common themes, unresolved issues, gaps in our knowledge, and lessons learned. Section 6 – Conclusions – offers our reflective thoughts about the possible future directions IS outsourcing might take as well as the implications of our survey on research and practice.

## 2 Conceptualization of IS Outsourcing

### 2.1 IS Outsourcing Definitions and Concepts

The term "outsourcing", although not specific to IS in that it reflects the use of external agents to perform one or more organizational activities (e.g., purchasing of a good or service), is now in vogue in the IS domain and applies to everything from use of contract programmers to third party facilities management. It

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<sup>1</sup> We do note a few important exceptions however. For example, there have been a number of mini-tracks on outsourcing at HICSS over the past several years. Then there is the Lacity and Hirschheim (1999) paper that attempted to summarize what we know and what we don't know about outsourcing. There is also the Lee et al. (2000) survey paper on the subject. And lastly, the recently published book which attempts to highlight key developments in the field (Hirschheim et al., 2002).

has variously been defined in the IS literature as follows:

"... turning over to a vendor some or all of the IS functions..." (Apte et al., 1997, p. 289)

"...the contracting of various information systems' sub-functions by user firms to outside information systems vendors" (Chaudhury et al., 1995, p. 132)

"...the organizational decision to turn over part or all of an organization's IS functions to external service provider(s) in order for an organization to be able to achieve its goals" (Cheon et al., 1995, p. 209)

"... the commissioning of a third party (or a number of third parties) to manage a client organization's IT assets, people and/or activities (or part thereof) to required results" (Fitzgerald & Willcocks, 1994, p. 92)

"...the third party provision of IT products and services (Hancox & Hackney, 1999, p. 1)

"...business practice in which a company contracts all or part of its information systems operations to one or more outside information service suppliers" (Hu et al., 1997, p. 288)

"... a decision taken by an organization to contract-out or sell the organization's IT assets, people, and/or activities to a third party vendor, who in exchange provides and manages assets and services for monetary returns over an agreed time period" (Kern 1997, p. 37)

"...the purchase of a good or service that was previously provided internally" (Lacity & Hirschheim, 1993b, p. 74).

"...the significant contribution by external vendors in the physical and/or human resources associated with the entire or specific components of the IT infrastructure in the user organization" (Loh & Venkatraman, 1992a, p. 9)

"...the handing over to a third party management of IT/IS assets, resources, and/or activities for required results" (Willcocks & Kern, 1998, p. 2)

In addition to these definitions of outsourcing, many authors also describe various outsourcing arrangements or options. For example, Lacity and Hirschheim (1995) offer a taxonomy of sourcing decision options: *Total Outsourcing* – the decision to transfer IS assets, leases, staff, and management responsibility for delivery of IS products and services

from an internal IS function to a single third party vendor which represents more than 80% of the IS budget. *Total Insourcing* – the decision to retain the management and provision of more than 80% of the IS budget internally after evaluating the IS services market. *Selective Sourcing* – the decision to source selected IS functions from external provider(s) while still providing between 20% and 80% of the IS budget internally. This strategy may include single or multiple vendors.

The use of percentages of IS budget as differentiating total from selective decisions is consistent with the studies done by Willcocks and Fitzgerald (1994) which show that selective sourcing usually takes up between 25 to 40% of the formal IS budget.

Other authors have further categorized the variety of outsourcing options. Lacity and Hirschheim (1993a) used the following taxonomy to capture the range of outsourcing options: (a) *Body Shop* – management uses outsourcing as a way to meet short-term demand. The most common type of body shop outsourcing is the use of contract programmers/personnel that is managed by company employees. (b) *Project Management* – management outsources for a specific project or portion of IS work. Examples of project management outsourcing include the use of vendors to develop a new system, support an existing application, handle disaster recovery, provide training, or manage a network. In these cases, the vendor is responsible for managing and completing the work. (c) *Total outsourcing* – the vendor is in total charge of a significant piece of IS work. The most common type is total outsourcing of the hardware (e.g., data center and/or telecommunications) operations. The newest outsourcing strategy is to turn over the entire hardware and software support to an outside vendor. Lacity and Hirschheim have euphemistically termed this type of outsourcing, "turning over the keys to the kingdom".

Millar (1994) defines four basic types of outsourcing arrangements:

(1.) *General outsourcing* which encompasses three alternatives: (a) *selective outsourcing* – where one particular area of IS activity is chosen to be turned over to a third party, such as data center operations; (b) *value-added outsourcing* – where some area of IS activity is turned over to a third party who is thought to be able to provide a level of support or service which adds value to the activity that could not be cost-effectively provided by the internal IS group; or (c) *co-operative outsourcing* – where some targeted IS activity(ies) is (are) jointly performed by a third party provider and the internal IS department.

(2.) *Transitional outsourcing* involves the migration from one technological platform to another. Such

transitional outsourcing has three phases: (a) management of the legacy systems; (b) transition to the new technology/system; and (c) stabilization and management of the new platform. Any one or all of these three phases could be turned over to a third party provider.

(3.) *Business process outsourcing* is a relatively new outsourcing arrangement. It refers to an outsourcing relationship where a third party provider is responsible for performing an entire business function for the client organization. According to Millar, a number of industries are considering business processing outsourcing; in particular, government, financial services (banks and insurance companies), health care, transportation, and logistics. Targeted services include hotlines, help desks, call centers, claims management, and document processing.

(4.) *Business benefit contracting* is also a relatively recent phenomenon. It refers to a "contractual agreement that defines the vendor's contribution to the client in terms of specific benefits to the business and defines the payment the customer will make based upon the vendor's ability to deliver those benefits. The goal is to match actual costs with actual benefits and to share the risks." Given the risks associated with traditional outsourcing, there is considerable interest in this form of outsourcing. Millar notes, however, that while business benefit contracting is frequently used in the marketing of outsourcing services by third party providers, it typically is not actually adopted because of the difficulty associated with measuring benefits. Benchmarking in this area is particularly problematic. Because vendor revenue and margin potential is directly tied to the benchmarks, it is not surprising that getting agreement by both parties on the benchmarks proves especially thorny.

Outsourcing options have also been discussed by Wibbelsman and Maiero (1994). For them, the key issue facing organizations is not "should we outsource" but "how should we source". They refer to the sourcing question in terms of "multi-sourcing", i.e. the multiple sourcing of IS services. More specifically, they see multi-sourcing as a continuum. The end points of their continuum span from "OK as is" to "divest completely". The "OK as is" point on the continuum relates to the belief that the status quo is the best sourcing strategy; IS activities are insourced. Another insourcing strategy that moves along the continuum is termed "*fix and keep in-house*". This strategy believes that insourcing is the best strategy but the internal IS department needs to adopt better practices to become more efficient and effective. Moving to the "*co-sourcing*" arrangement, Wibbelsman and Maiero talk about a "*rehabilitation and return*" strategy whereby the IS organization is reformed through the assistance of a third party and then kept

in-house. Another co-sourcing strategy is the "*transition assistance*" strategy where a third party takes on certain IS activities while the internal IS group transitions itself to a new set of skills. The next arrangement is termed "*capability development*" where a third party takes on either permanently or temporarily IS activities while the IS organization develops new capabilities. This option allows the IS organization to focus on certain core capabilities. Moving to the outsourcing end of the continuum, Wibbelsman and Maiero speak of "*option to reverse*" whereby IS is outsourced to a third party but there is a specific plan which would allow the function to return in-house without undue hardship at a later time if the management of the company deems this desirable. Lastly, there is the "*divest completely*" strategy where the IS function is outsourced permanently. In such cases, IS is perceived to be a non-core business function best handled by an outsourcer.

Willcocks and Lacity (1998) discuss 6 forms of what they call "emerging sourcing arrangements": *value-added outsourcing* – where the strengths of both outsourcing parties are combined in an attempt to market new products and services; *equity holdings* – where one party takes an equity position in the other; *multi-sourcing* – where there is one outsourcing contract but multiple suppliers of services; *co-sourcing* – where the outsourcing vendors' revenue is tied to performance of the company that the services are provided to; *spin-offs* – where the internal IS department is spun off to become a new entity selling its services to the market; and *creative contracting* – which encompasses specialist clauses to satisfy particular customer needs.

## 2.2 Synthesis of Outsourcing Concepts

For the purposes of this paper, we prefer to use a broader notion, i.e. "IS sourcing" which we define as the *organizational arrangement* instituted for obtaining *IS services* and the management of resources and activities required for producing these services. *IS services* refer to the manner in which IS products are delivered and the provision of IS functions. *Functions* may be characterized as commodities, differentiators, etc. and may include such common tasks as: systems operations, applications development, applications maintenance, network and telecommunications management, help desk and end user support, and systems planning and management (Grover et al., 1994a). In the performance of services, issues such as resources (human, technical and financial assets), governance structure, specialist skills, etc. will be required. *Organizational arrangement* refers to the formal structure of the responsibility and delegation of tasks within the IS function. This could be handled either internally (insourcing) or externally (outsourcing)

**Table 1. Types of Sourcing Arrangements**

Degree of outsourcing	Ownership		
	<i>Internal</i>	<i>Partial</i>	<i>External</i>
<b>Total</b>	Spin-offs (Wholly Owned Subsidiary)	Joint-Venture	Traditional Outsourcing
<b>Selective</b>			Selective Sourcing
<b>None</b>	Insourcing / Backsourcing	Facilities Sharing among multiple clients	N/A

(cf. Ang & Cummings, 1997; Ang & Slaughter, 1998; Clark et al., 1995; Currie, 1998; DiRomualdo and Gurbaxani, 1998; Duncan, 1998; Lacity and Hirschheim, 1993b; McFarlan & Nolan, 1995; Quinn & Hilmer, 1994; Smith et al., 1998). In the following, we will focus specifically on the organizational arrangements associated with outsourcing. These arrangements are comprised of what we term 'outsourcing parameters'.

There are four fundamental parameters that determine the kind of outsourcing arrangement that a firm may enter into: *degree* (total, selective, and none); *mode* (single vendor/client or multiple vendors/clients); *ownership* (totally owned by the company, partially owned, externally owned); and *time frame* (short term or long term). The combination of specific instances of these parameters yields different types of sourcing arrangements such as joint ventures, facilities sharing, spin-off, etc. The combination of degree and ownership is illustrated in Table 1 (Types of Sourcing Arrangements). The combination client and vendor mode is illustrated in Table 2 (Outsourcing Mode).

Referring to Table 1, IS could be *spun off* into a separate services unit or company – a situation where the ownership is still internal but the function is either

totally or selectively outsourced (Heinzl, 1993a; Heinzl, 1993b; Reponen, 1993, p. 104). An alternative is when the 'spin off' is jointly owned between the client and vendor organizations – we call these *joint ventures*. Such joint ventures are based on a strategic partnership (Fitzgerald & Willcocks, 1994; Marcolin & McLellan, 1998). IS ownership might also be handed over to the outsourcing vendor. If outsourcing is of the 'total' variety we refer to this as simply *traditional outsourcing* (Earl, 1996); if it is 'selective', this is termed *selective outsourcing* (Lacity et al., 1996). On the other hand, a firm might wish to have IS entirely inside and have total ownership of it. We refer to this as *insourcing* if IS had not previously been outsourced (Lacity & Hirschheim, 1995), and *backsourcing* if the unit has been brought back in-house after being outsourced (Hirschheim & Lacity, 1998). There is also the possibility of a firm choosing to share ownership of IS with either a vendor or others in the same industry which we refer to as *facilities sharing* (Currie, 1998).

Table 2 depicts the various types of Vendor – Client Sourcing Arrangements available when there are one or more clients and one or more vendors. Four types of vendor-client arrangements are possible, i.e., single vendor – single client, single vendor – multiple clients, multiple vendors – single client and multiple vendors –

**Table 2. Outsourcing Mode (Client–Vendor Arrangements based on Gallivan and Oh, 1999)**

<i>Client \ Vendor</i>	<i>Single Vendor</i>	<i>Multiple Vendors</i>
<i>Single Client</i>	Simple Dyadic (1:1)	Multi-Vendor (1:n)
<i>Multiple Clients</i>	Multi-Client (n:1)	Complex Relationship (n:n)

multiple clients. Single vendor – single client relationships are the simplest and are referred to by Gallivan and Oh (1999) as *simple dyadic* relationships. These simple dyadic relationships could become risky due to vendor opportunism so some companies have formed relationships with multiple vendors in order to mitigate the risks (Chaudhury et al., 1995; Cross, 1995). These are called *multi-vendor* arrangements. On the other hand, several client companies in the same or related industry might have similar needs that could be met more economically by forming an alliance when obtaining services from a single vendor (Sharma & Yetton, 1996) and this is termed the *multi-client* outsourcing mode – previously named as co-sourcing by Gallivan and Oh (1999). Additionally, several client companies may form an outsourcing relationship with more than one vendor. Gallivan and Oh (1999), for example, presented an example of seven insurance companies holding contract negotiations with two vendor companies. Such an arrangement is called a *complex relationship*.

One of the enduring features of these parameters is the contractual length of the outsourcing arrangement entered into. This is the time dimension associated with outsourcing contracts and is typically discussed in terms of short-term, mid-term or long-term although what actually constitutes ‘short-, mid- or long-term’ may vary depending on who defines the term (cf. Lacity et al. 1996; Lacity & Willcocks 1998). More recently, the notion of short-term has been extended to include service provision on a day to day basis through the hiring of free-lance personnel (Knolmayer, 2002).

Lastly, according to Mitchell and Fitzgerald (1997), it is important to understand the different types of vendors that a client might engage in a sourcing arrangement. They note five categories of vendor: (1.) *IS consultancies/solutions providers* – very large global players providing services in all IS functions; (2.) *Systems houses* – those that specialize in system integration; (3.) *hardware vendors* – those specializing in IT hardware; (4.) *Ex-IS departments*, who focus on industry specific sourcing; and (5.) *generic outsourcers* who specialize in managing functions, especially infrastructure. In addition to these five types, (6.) *freelancers* might be considered a sixth type of external service providers.

### 3 Research Approach of the Review

#### 3.1 Research Objectives

Although there has been a passable amount of research effort directed towards studying the outsourcing phenomenon, it seems to lack a coherent focus. When reviewing the academic literature on outsourcing, it soon becomes apparent that, while

there are numerous and diverse studies directed towards investigating outsourcing, there are few if any comprehensive models that organize and integrate the literature. Accordingly, this study was undertaken to fill that gap in the field of outsourcing-related knowledge. More specifically, the study's objectives are as follows.

- First, to provide a comprehensive and coherent framework for cataloging, synthesizing, and integrating existing outsourcing literature.
- Second, to identify and categorize the various research foci.
- Third, to determine the underlying theoretical perspectives used to frame the analysis of the topic.
- Fourth, to ascertain the nature of the research – that is, the methodologies utilized to conduct the analysis.
- Fifth, to distinguish any themes or trends in the literature; more specifically to identify areas of consensus as well as point out opportunities and suggestions for future research.

Most literature reviews are performed with the goal of examining the progress that has been made in the study of a particular phenomenon, and assessing the current state of the literature. Because the topic of interest here – outsourcing – is a relatively recent phenomenon, and is evolving so rapidly, there has been scant opportunity for the research community to take a collective breath, and complete a global assessment of research activities to date. This provides the motivation for our paper.

#### 3.2 Analytical Framework

Frameworks in general are designed to describe the structure of a set of objects within a given domain, and the relationships among those objects (Mitroff, 1983; Pepper, 1942). This can be especially useful during the early stages of research in a domain, serving as initial steps in: (1) clearly delineating the domain; (2) providing a foundation for describing and organizing knowledge related to the domain; and (3) uncovering or highlighting opportunities for more specific theory development and testing within the domain. In this particular case, our framework encompasses the domain of academic research addressing the phenomenon of IS outsourcing.

According to Laudan, academic research consists of three main interdependent elements that together form “the triad network of justification” (Laudan, 1984, p.63), (– cited in Landry & Banville, 1992, p. 89). This triad consists of methods, theories, and aims (research objectives). Robey (1996) and Benbasat and Weber



(1996) adopted a similar triad but called them the diversity of research. 'Aims' refers to the research problem or objectives being addressed. 'Theories' refer to the conceptual underpinnings used to address the particular problem area. And 'methods' refer to the techniques used to collect, analyze, and interpret the data (for empirical research), or the construction and use of a mathematical model/system/application (in non-empirical research).

In looking at the IS outsourcing literature, it became apparent that there was neither a single research question nor a single method nor theory that all researchers adopted. Even single papers address more than one research objective, and draw on several different theories. For example, Loh (1994) looked at *why* organizations outsource, and the resulting *outcomes*, through the twin theoretical lenses of *transaction cost economics* and *agency theory*. To bring order to this diversity we focused on identifying (1.) the main *research objectives*, (2.) the *theoretical foundations*, i.e. the applied reference theories, and (3.) the *methods* used in the studies on IS outsourcing.

To understand the *methods* used in the literature, we adopted the well-known categorizations of empirical and non-empirical research (cf. Alavi et al., 1989; Galliers, 1991). For the *theoretical foundations*, we took an inductive approach identifying the main reference theory or theories embraced in the research articles, e.g. transaction cost theory, resource-based theory, diffusion of innovation. In addition, we adopted the two complementary dimensions – 'logical structure' (Mohr, 1982) and 'level of analysis' (Pfeffer, 1982) – to further structure the theoretical arguments and constructs used within the IS outsourcing papers (cf. Markus & Robey, 1988).

*Research objectives*, on the other hand, posed some difficulty since there is no generally agreed upon paradigmatic set of objectives for IS outsourcing research. We thus determined that an appropriate strategy would be to identify what the IS outsourcing phenomenon was and then divide it into its constituent parts. From an academic perspective, the practice of outsourcing IS functions is a practitioner-driven phenomenon. This is illustrated by the fact that the first research papers on the subject did not appear until 1992, over three years after Kodak's landmark decision to outsource its IS functions (Loh & Venkatraman, 1992b).<sup>2</sup> Our approach to constructing a framework for organizing the knowledge related to IS

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<sup>2</sup> It should be noted that publication lead times of 3 to 4 years are not uncommon in academic journals. Thus, although Kodak's decision may have caught the academic community by surprise (as it did the practitioner community), researchers have recovered, albeit slowly. However, it was still a reactive response, as opposed to a proactive one.

outsourcing reflects this strong practitioner influence. This allows us to provide a structure and terminology that is tightly linked to the practitioner side of the phenomenon, adding a degree of relevance to the framework.

We believe that outsourcing is best understood as a management decision with enduring impacts and involves an on-going process. This belief is consistent with behavioral management theory where decision-making is the essence of management (Cyert & March, 1963; Simon, 1947). One of the well-known decision models is that of Simon (1960). Applying and transferring that model led us to identify five stages of outsourcing. These then reflect the research objectives (or research questions): why, what, which, how and outcome, which are explored next.

The framework<sup>3</sup> is in essence a microcosm of the IS field itself, in that it reflects the wide-ranging diversity of problems addressed, methods used, and theoretical foundations employed in IS research as a whole (Benbasat & Weber, 1996). It allows us to co-locate an individual paper in more than one category as appropriate, reflecting the still emerging and evolving nature of research into a phenomenon hardly a decade old. It lends itself to a more refined analysis of the literature, leading to some (hopefully) intriguing findings. Table 29 (Appendix) – *Diversity of Research in IS Outsourcing* – summarizes the heterogeneity of research objectives, theories, and methods used to examine outsourcing.

In the following the main elements of the framework are discussed.

### 3.2.1 Outsourcing Stages

In 1960, Simon published what must be one of the better-known models in the management literature – his model of decision-making. According to Simon, there are four different stages in decision-making: intelligence, design, choice, and implementation. *Intelligence* relates to the identification of the problem that needs to be solved. This requires the individual problem solver to gather information about the area under scrutiny. *Design* refers to the alternative

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<sup>3</sup> Before examining the framework, we would like to note that our framework is in many ways an extension of other frameworks. It is a cumulative development building on the work of Lee et al. (2000), which in turn, built on the work of Cheon et al. (1995), and others. One should look at our effort as a contribution to the construction of a grounded framework for classifying outsourcing research. We are, in essence, trying to provide the outsourcing equivalent of what the Markus and Robey (1988) framework did with the relationship between information technology and organizational change. We are attempting to be more like pioneers, building a classification trail for others to follow. We are not following an already well-marked path.

solutions that the individual problem solver avails himself of to solve the identified problem. This stage often requires obtaining additional information beyond what was collected during the intelligence stage. *Choice* consists of choosing among the various alternative solutions identified in the design stage. This stage may also require obtaining additional information beyond what was collected during the intelligence and design stages. *Implementation* relates to the execution of the solution choice made in the previous stage. It also includes the continuous reporting on the progress of the chosen solution.

Whilst Simon's model is a general model of decision-making, we feel it is appropriate when considering outsourcing because outsourcing is a major decision that an organization makes. However, because Simon's model is a general model of decision-making, not specific to outsourcing, it needs to be adapted. From an analysis of the literature, and attempting to make sense of the diverse literature, we develop a framework that parallels the decision-making process an organization supposedly goes through when evaluating its sourcing options and subsequent outcomes.

Figure 1 shows how we started with Simon's four-stage model of decision-making, and then adapted it to 5 stages to better reflect what we thought occurred

when organizations evaluated and implemented outsourcing. This part of our framework is depicted as 'outsourcing stages'. Stage 1 – 'why' – is similar to Simon's 'intelligence' where the organization weighs up the advantages and disadvantages of considering the outsourcing of IS. Stage 2 – 'what' – is similar to Simon's 'design' where the organization addresses what alternative outsourcing arrangements are to be considered and which might be most appropriate. Stage 3 – 'which' – is similar to Simon's 'choice', reflecting the actual decision that the organization makes when comparing the various options. These three stages combine to form what we consider the first phase of outsourcing: the *decision process*. Stage 4 – 'how' – is consistent with Simon's 'implementation' where the organization chooses a vendor, negotiates a contract, and implements tools which helps them manage the outsourcing relationship. Stage 5 – 'outcomes' – reflects the consequences of making the outsourcing choice; the success or failure of the arrangement, and the lessons learned. We combine these two stages into a second phase of outsourcing, which we refer to as *implementation*. These stages are further expanded to include the activities/tasks that organizations go through as they progress their outsourcing evaluation. This is depicted in the figure as 'application of the outsourcing stages'.

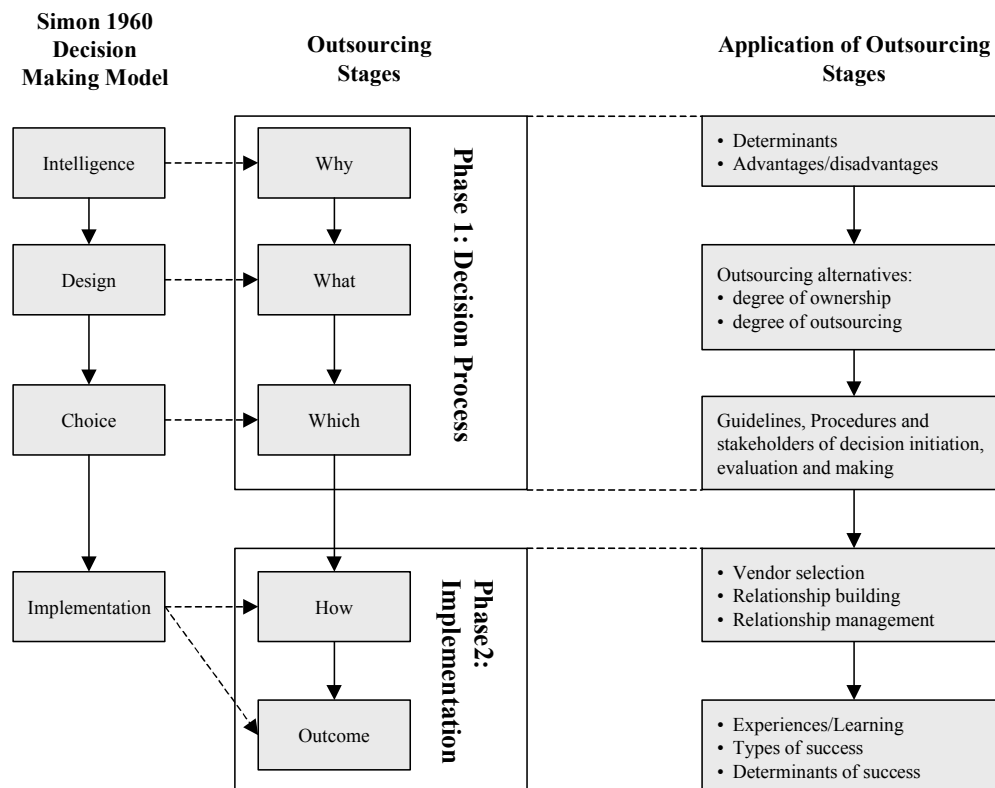


Figure 1. Stage model of IS outsourcing

- **Why**

We begin by asking 'why' an organization might consider outsourcing its IS functions. What are the conditions or situations (i.e., the *determinants* or *antecedents*) that might lend themselves to a decision to outsource? What are the *risks and rewards*, or *advantages and disadvantages*, associated with outsourcing?

One example of research in this category is an early paper by Loh and Venkatraman (1992b). They attempt to identify the determinants of IS outsourcing through a diffusion of innovation perspective. They view IS outsourcing as an administrative innovation, arguing that it amounts to adopting new arrangements for governing the IS infrastructure. By utilizing diffusion models based on differing sources of influence (internal or external), the paper seeks to understand and explain why companies outsource their IS. This study is often cited as one of the pioneering papers that investigates the determinants of outsourcing.

- **What**

One can argue that the question of "what to outsource" can only be answered if two conditions are fulfilled. First, at least two different options have to be available. Second, there needs to be a reason or a rationale that serves as a selection criterion. The latter is related to the question "why to outsource". In fact, the answers to "why to outsource" can be used as criteria to evaluate the options available when asking "what to outsource". Thus there obviously exists interdependency between both questions. Indeed, some papers combine the two into a compound research objective: "why to outsource what" (e.g., Teng et al., 1995). Nevertheless, we shall attempt to draw a clear line between 'why to outsource' and 'what to outsource', and in this section focus on the research that examines the range of IS functions that might be chosen when answering the question "what to outsource".

An example of an article that focuses on what to outsource is Grover et al. (1994a). They distinguished different IS functions and examined if the extent of outsourcing of each of these functions is related to a number of organizational factors, such as the IS budget as a percentage of sales of a company. They conclude that there is a relationship between organizational strategy, the role of IT, and firm resources, and the particular IS function(s) being outsourced.

- **Which**

After considering what to outsource, the next question faced is 'which choice to make'. In making the choice to outsource, organizations adopt *procedures* involving a step-by-step process for arriving at an outsourcing

decision; *guidelines* to help them assess the various selection criteria, and their choice; and the actual *selection* of the final decision.

The literature has been relatively sparse when considering the issue of how organizations actually choose, i.e. make their sourcing decision. Some suggest transaction cost economics can help guide such a choice (Ang & Slaughter, 1998; Chalos & Sung, 1998; Lacity & Willcocks, 1995); others focus on the politics of organizational choice (Lacity & Hirschheim, 1993b). Nevertheless, some research like that from Lacity and Hirschheim (1995) offers some guidelines on outsourcing selection criteria as well as case studies showing how organizations have actually made their choice.

- **How**

After answering the preceding questions, the organization is faced with a host of implementation decisions, which can be summarized by asking 'how to outsource'. In considering 'how', we focus on outsourcing implementation. This includes three issues: selecting a vendor, structuring the relationship between the vendor and the customer (e.g., contract negotiation and relationship building), and managing the subsequent arrangement. In general, 'how' relates to the implementation of *best practices* – methods, techniques, and approaches used to effect the outsourcing decision that tend to result in a higher degree of outsourcing success (i.e. outcome).

An example of a paper concentrating on "how to outsource" is Klepper (1995). He explores the formation of long-term relationships between outsourcing vendors and their customers using a sequential stage model of partnership development drawn from the management literature. The paper discusses actions that can be taken to establish, grow, and strengthen the customer/vendor relationship.

Of course "how to outsource" and the outcome(s) of outsourcing are often inextricably linked, but we treat them separately in this paper. For example, Lee and Kim (1999) investigate both the quality of the vendor-client relationship, and its impact on outsourcing success. In the 'how' section, we focus only on how Lee and Kim conceptualize the relationship, reflected by the *attributes* and the *determinants* of partnership quality. We address the 'outcome' portion of the Lee and Kim paper in the next section – outcomes.

- **Outcomes**

After (and even during) the implementation of outsourcing, organizations must look at the results of their outsourcing choice. That is, they must evaluate the actual 'outcomes' of the outsourcing phenomenon. What are the *experiences* of organizations that have outsourced? What *lessons learned* might we glean

from them? How could they lead to organizational success? What *implications* do they have for the practice of outsourcing, not only for the IS community but for business in general? Thus outcomes deal with the wider implications of different types of outsourcing decisions.

One paper that addresses outcomes is Aubert et al. (1998). They investigate potential undesirable outcomes associated with outsourcing (e.g., service debasement), and the risk factors that could lead to these outcomes. Other research in this section examines outcome factors such as employee behavior (Ang & Slaughter, 1998), continuation of contracts (Fitzgerald & Willcocks, 1994), client satisfaction (Grover et al., 1996; Lee & Kim, 1999; Saunders et al., 1997), vendor satisfaction (Heckman & King, 1994), financial outcomes (Lacity et al., 1996) and perceptions of outsourcing from different stakeholders (Hirschheim & Lacity, 1998).

### 3.2.2 Theoretical Foundations

Our approach to analyzing the theoretical foundations used to study outsourcing was of a dual nature. On the one hand, we simply noted what theory or theories the authors drew on to support their research, and entered that information into Table 29 (Appendix). Our rule of thumb was to include a column in Table 29 for every theoretical foundation used more than once. Theories that are only referenced one time fall into the "Other" category. Papers that were included in the "Not Applicable (NA)" category do not refer to any specific reference theory.

In order to further analyze the theoretical foundation(s) of the articles, we used the two complementary dimensions: *logical structure*, and *level of analysis* (Markus & Robey, 1988). The purpose of this is to identify general patterns within each category. *Logical structure* refers to the "logical formulation of the theoretical argument" (Markus & Robey, 1988, p. 589). In this dimension, *variance* and *process theories* can be distinguished. *Variance theories* are commonly related to a cross-sectional perspective. A certain phenomenon is perceived as the outcome that is causally explained by its antecedents or precursors. These must have both necessary and sufficient conditions for the outcome to happen. *Process theory*, on the other hand, is concerned with how the outcome has developed over time, and is generally associated with a longitudinal or historical perspective. As the outcome itself is evolving and changing over time

(dynamic process) precursors are perceived as being necessary but not sufficient for the outcome to occur.<sup>4</sup>

The second dimension, *level of analysis*, enhances our understanding of "the entities about which the theory poses concepts and relationships" (Markus & Robey, 1988, p. 583). In general macro and micro level perspectives can be distinguished (Pfeffer, 1982, p. 12). At the *macro level* we differentiate between the country representing the whole social system, the industry within a country, and the organization/firm level. The latter will be subdivided into overall firm perspective, overall IS perspective, and functional IS-perspective. As an example, the concept of "strategy" can be related to the industry level (e.g. Institutional Economics - Porter, 1980), to the firm level (e.g. competitive strategy of cost leadership - Porter & Millar, 1985), to the overall IS level (e.g., the strategic importance of the whole IS function - Porter and Millar, 1985) or to the functional IS level (e.g., the strategic importance of systems development). Finally the *micro-level* is concerned with individuals within the firm and their behavior, motivations, perceptions, and preferences.

In the process of identifying the reference theories adopted in the outsourcing literature, we noted a considerable diversity. To simplify this diversity we adapted the structuring approach of Lee and Kim (1999) (who in turn adopted the Cheon, Grover and Teng (1995) approach) combining the alternate reference theories into three categories: *strategic*, *economic*, and *social/organizational*. *Strategic theories* focus on how firms develop and implement strategies to achieve a chosen performance goal. Reference theories of this type include: game theory, resource-based theory, resource dependency theory, and strategic management theories. *Economic theories* focus on the coordination and governance of economic agents regarding their transactions with one another. Reference theories on this type include: agency theory and transaction cost theory. *Social/organizational theories* take an entirely different focus. Eschewing rigidly rational views of organizations, these theories concentrate on the relationships that exist between individuals, groups, and organizations. Reference theories of this type include: social exchange theory, innovation theories, power politics theories, and relationship theories. In the following, the reference theories that were identified in the literature are briefly described. (Table 3 summarizes these theories and their supporting literature, and may be found at the end of this section.)

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<sup>4</sup> The differences between variance and process theory are described in detail in Mohr (1982).

**Table 3. Overview of Theoretical Foundations**

Theoretical Foundation	Level of Analysis	Basic assumptions	Main Variables/focus	Key Authors
Agency theory	Organizational	Asymmetry of information, differences in perceptions of risk, uncertainty	Agent costs, optimal contractual relationships	Jensen and Meckling (1976)
Game theory	Organizational, individual	Every player under the same conditions, make rational and intelligent decisions to maximize profit, incomplete information	Decisions under certain situations	Kreps et al. (1982); Nash (1953); Spence (1976); Fudenberg & Tirole (1990)
Innovation theories	Individual, organizational	Innovation occurs in stages, some models not based on stages	Adoption, and diffusion	Daft (1978) ; Rogers (1983); Schroeder et al. (1989); Zaltman et al. (1973)
Power and Politics theories	Individual, organizational	Power, idiosyncratic interests, and politics play major roles in organizational decision-making	Different degrees of power, organizational politics	Pfeffer, (1981; 1982) ; Markus (1983)
Relationship theories	Organizational	Parties in the relationship assume that the outcome of a relationship is greater than achieved by individual parties separately	Cooperation, interactions, social and economic exchanges	Klepper (1995) ; Kern (1997)
Resource theories	Organizational	A firm is a collection of resources, and resources are central to a firm's strategy	Internal resources, resources in the task environment	Barney (1991); Penrose (1959); Pfeffer & Salancik, (1978); Thompson, (1967)
Social Exchange theory	Individual, organizational	Participation in exchange occurs with the assumption of rewards and obligation to return rewards	Exchange of activities, benefits/costs, reciprocity, balance, cohesion, and power in exchanges	Blau (1964) ; Emerson (1972); Homans (1961)
Strategic Management theories	Organizational	Firms have long-term goals, and they plan and allocate resources to achieve these goals	Strategic advantage, strategies, choice of individuals	Chandler, (1962); Miles & Snow (1978); Porter (1985); Quinn, (1980)
Transaction Cost theory	Transaction	Limited rationality, opportunism	Transaction costs, production costs	Coase (1937); Williamson (1975; 1981; 1985)

- **Agency theory**

Agency Theory is based on the conceptualization of the firm as a nexus of contracts between principals or stakeholders and agents. The stakeholders are represented by different groups or persons within the firm as well as outside the firm, such as customers, suppliers or shareholders (Jensen & Meckling, 1976, p. 310-311). The basic assumption of agency theory is the existence of asymmetric information and different perceptions of risk between principal and agent as well as uncertainty. The basic argument is that the principal transfers decision rights to the agent. To make sure that the agent behaves in the principal's best interest the latter sets incentives. When calculating the magnitude of these incentives the anticipated costs of controlling the agent are considered. The total cost is

the sum of monitoring and bonding including issues such as residual loss. This 'positive agency theory' can be distinguished from normative Principal-Agent theory, which tries to determine optimal contractual relationships based on mathematical models that build on restrictive assumptions like perfect information (Jensen & Meckling, 1976). An example of positive agency theory used in outsourcing is Hancox and Hackney (1999) who note: "...the focus of AT [agency theory] is not the decision to source via the hierarchy or via the market. ... AT in short, helps to expose problems of divergent interests within both markets and hierarchies." We note however, the paucity of attention paid to the potential for adverse outcomes associated with the making of wrong decisions.

- **Transaction Cost theory**

This theory maintains that making use of the market is costly (Coase, 1937) and that economic efficiency can be achieved through comparative analysis of production costs and transaction costs (Williamson, 1975; Williamson, 1981; Williamson, 1985). In this analysis the transaction is the unit of analysis and a firm's success depends on managing transactions efficiency. The theory is built on two fundamental *behavioral assumptions*: (1) limited rationality (Simon, 1957) and (2) opportunistic behavior. Based on the first assumption it is only possible to enter into *incomplete contracts*. This would, however, be irrelevant if both parties to the contract were completely trustworthy ("stewardship behavior," Williamson, 1975, p. 26). It is, however, assumed that in reality the parties behave *opportunistically*, i.e., they cunningly take advantage of opportunities at the expense of others ("...self-interest seeking with guile," Williamson, 1981, p. 554). The danger of opportunistic behavior is further assumed to be less likely within a firm than in market coordination, since it can be prevented within a firm by means of the authority principle (hierarchy). The main theoretical argument of the theory is concerned with the conditions under which certain characteristics of the transaction or the object of the transaction would lead its internal, hybrid or external governance.

- **Game theory**

Game theory (Kreps, et al., 1982; Nash, 1953; Spence, 1976) attempts to explain the strategic behavior of players or actors (e.g., companies) in particular game situations. These situations are characterized by specific assumptions concerning the production function of a company, the environment and informational structures. It is assumed that all players work under the same conditions and make rationale and intelligent decisions to maximize their profits. The only determinant for these decisions is the perception of the expected actions of the antagonist, i.e. other player (Fudenberg & Tirole, 1990). In general, it is possible to have 2-player games or n-player games. Newer, i.e. dynamic game theory as opposed to the traditional mathematical game theory, incorporates the assumption of incomplete information into its analytical models.

- **Resource theories**

There are basically two types of resource theories: resource-based and resource-dependence. Both note the centrality of a firm's resources as being the foundation for a firm's strategy. The basic difference between the two is that resource-based theory focuses on a firm's internal resources and capabilities while resource-dependency theory focuses on resources in the external environment. Resource-based theory

defines resources as inputs required for performing a firm's tasks. A firm is a collection of resources and competitive advantage can occur only when there is heterogeneity and immobility of the firm's resources (Barney, 1991; Penrose, 1959). Resource-dependence theory in general states that all organizations are dependent on some elements of their external environments to varying degrees due to the control these external environments have on the resources (Pfeffer & Salancik, 1978; Thompson, 1967).

- **Strategic Management theories**

Theories that explain the strategic activities of a firm fall under this category. Various definitions of strategy can be found in the literature. According to Chandler's definition, strategy is the determinant of the basic long-term goals of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals (Chandler, 1962; Quinn, 1980). Examples of classic strategic management theories are Miles and Snow's (1978) taxonomy of Defenders, Prospectors, and Analyzers, and Porter's (1985) theories of Strategic Advantage, especially his Five-Forces model.

- **Social Exchange theory**

Early sociologists conceptualized social associations as exchanges of activities between two or more persons (Homans, 1961). These activities can be tangible or intangible and rewarding or costly. Fundamentally, the individual who supplies rewarding services to another obligates the second. In order to discharge this obligation the second must furnish benefits to the first in return. Blau (1964, p. 91) defines "Social Exchange" as: "voluntary actions of individuals that are motivated by the returns they are expected to bring and typically do in fact bring from others". Several attributes are important in an exchange. They are reciprocity, balance, cohesion, and power (Emerson, 1972). The need to reciprocate the benefits received acts to reinforce the characteristics of the exchange. Balance refers to the balance of dependence of one actor in the exchange over the other and vice versa. Cohesion occurs when one or both actors in the exchange encounters conflict involving the exchange. Emerson (1972) defines power as the level of cost one actor can induce over the other.

- **Innovation theories**

These are the theories that explain the adoption of new technologies, and organizational processes by firms (Daft, 1978). Two important concepts in innovation theories are adoption and diffusion (Rogers, 1983). Adoption is the decision to use the innovation and diffusion is the process by which an innovation

spreads out into social systems (e.g., in organizations, industries, countries). Different models - stage based as well as models without stages - are used in explaining the innovation process (Schroeder et al., 1989; Zaltman et al., 1973).

- **Power and Politics theories**

These theories assume that power, idiosyncratic interests, and politics play major roles in organizational decision-making (Pfeffer, 1981; Pfeffer, 1982). According to this perspective organizations are political entities and people within organizations have different degrees of power. Power is often defined as the basic energy to initiate and sustain action to translate intentions into reality. As attempts are made to implement idiosyncratic objectives and decisions of people with power, organizational politics transpire. Power and politics can play an important role in decisions on IS in general (Markus, 1983) and in outsourcing decisions (Lacity & Hirschheim, 1993b).

- **Relationship theories**

Relationship theories focus on cooperation, interactions, and social and economic exchanges as major factors in interorganizational relationships. More specifically, they focus on interactions between parties that are geared towards the joint accomplishment of the individual party's objectives. Relationship theories often appear in the strategic management and marketing literature, addressing topics such as alliances and partnerships, competitive advantage, supply chain management, and supplier-buyer relationships. As Klepper (1995) and Kern (1997) have pointed out, underlying this work is the notion that at the root of all relationships is some type of exchange. In this view, parties to an exchange are in mutual agreement that the resulting outcomes of the exchange are greater than those that could be attained through other forms of exchange, or from exchange with a different partner. This motivates the parties to consider the relationship important in and of itself, and to devote resources towards its development and maintenance.

- **Other**

This category is used for papers that employ theoretical foundations or concepts other than the ones mentioned above. These theoretical foundations are not as extensively used as the previous ones. Examples include: *Knowledge management* - organizations need and possess knowledge, and need to manage this knowledge effectively (Davenport & Prusak, 1997). Knowledge is typically divided into two types: explicit knowledge, which can be expressed in numbers and words and shared formally and systematically in the form of data, specifications, and documents; and tacit knowledge, which includes

insights, intuitions, and hunches, is difficult to express and formalize, and therefore difficult to share (Polanyi, 1958). *Psychological contract theory* - linkages or psychological contracts exist between employers and employees (Morrison & Robinson, 1997; Rousseau, 1995). *Risk management* - there could be undesirable outcomes or risks in organizational/managerial actions and it is necessary to manage these risks properly (MacCrimmon & Wehrung, 1986); *Social contract theory* - the nature of a contract evolves from the four principles of society (MacNeil, 1980); *Theory of reasoned action* - an individual's behavior is preceded by intentions which are preceded by attitude and subjective norms (Fishbein & Ajzen, 1975); *Theory of planned behavior* - similar to theory of reasoned action but perceived control influences intentions and behavior (Ajzen, 1985), and the *theory of practice* - society is characterized by multiple fields or spheres that may be described by an interplay of structure, habits and practice (Bourdieu, 1990; Bourdieu & Wacquant, 1992).

- **Not Applicable**

This category reflects the situation where no specific reference theory is applied or the theoretical foundations are not specific in these papers. Some papers in that category are of a theory emergent nature. Most of the papers derive their arguments from various concepts, case studies, or qualitative data.

### 3.2.3 Research Approaches

Galliers (1991) in an analysis of IS research, differentiated between *approaches* and *methods*. Approaches are a generic or overarching way of going about research, while methods are more narrowly focused techniques and procedures for conducting research (i.e., for generating knowledge). In other words, when differentiating research approaches, methods are just one dimension to look at. Another dimension, frequently used to characterize research approaches, refers to its philosophical assumptions; in particular its epistemological foundation (Lee, 1991; Orlikowski & Baroudi, 1991). We adopt this general perspective in that we have divided the papers reviewed according to more than one dimension. First we divided them into empirical and non-empirical approaches by asking whether they applied some type of empirical method or not (cf. Alavi et al., 1989).<sup>5</sup> We

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<sup>5</sup> Galliers (1991) also divided IS research approaches into two categories; *scientific* (or empirical), and *interpretivist*, (arguing for multiple interpretations of social phenomena). We have adopted Galliers' 'approach' (that is, categorizing IS research based upon high-level attributes of the research) while differing from him on the 'method' (that is, the categories themselves).

then examined the two resulting groups, empirical and non-empirical, in terms of their epistemology.

### **Empirical**

In our framework, empirical research may be defined as that based upon some type of empirical data, in its broadest sense (i.e. data emanating from one or more of the five human senses). It is the process of generating knowledge through various types of sensory perceptions of observed events. Typically, empirical research involves at least one of the following three types of research methods: (1) Survey, where data is collected in a large number of organizations through methods such as mail questionnaires, telephone interview, or from published statistics, and this data is analyzed using statistical methods (Gable, 1994, p. 114); (2) Case Study, which is an empirical inquiry that investigates contemporary phenomena within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 1999, p. 13). Data is collected from a small number of organizations through methods such as participant observations, in-depth interviews and longitudinal studies (Gable, 1994, p. 112); (3) Action Research – which contributes both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework (Rapoport, 1970).

We subdivided the empirical papers according to two basic types of epistemology: *positivism* and *interpretivism*. Moreover, in line with Orlikowski and Baroudi (1991, p. 5), we found it useful to distinguish *descriptive* studies from positivist and interpretivist papers. We do *not* treat descriptive studies as a subcategory of positivist papers as suggested by Orlikowski and Baroudi, *nor* do we treat them as subcategories of interpretivist research as suggested elsewhere (Galliers, 1991; Galliers & Land, 1987). Rather, we believe that the subordinate role that theory plays in descriptive studies makes them a distinctive category.

#### **• Empirical: Positivist**

These are "... studies (that) are premised on the existence of *a priori* fixed [hypothetical-deductive] relationships within phenomena which are typically investigated through structured instrumentation" (Orlikowski & Baroudi, 1991, p. 5). Landry and Banville (1992) note four requirements of positivist research: (1) use of controlled observations; (2) use of controlled deductions; (3) striving for replicability; and (4) desire for generalizability. Positivism typically involves the application of nomothetic methods that include experimental methods (laboratory and field

experiments) and non-experimental methods such as field studies and surveys. According to Burrell and Morgan (1979, p.6) they are "epitomized in the approach and methods employed in the natural sciences, which focus upon the process of testing hypotheses in accordance with the canons of scientific rigor".

#### **• Empirical: Descriptive**

These are studies with "... no theoretical grounding or interpretation of the phenomenon; rather they present what they (the researchers) believed to be straightforward 'objective', 'factual' accounts of events to illustrate some issue of interest..." (Orlikowski & Baroudi, 1991, p. 5). These are typically descriptive case studies which intent to 'tell a story' and often have a normative component to them.

#### **• Empirical: Interpretive**

These are studies that seek to understand the deeper structure of a phenomenon through different approaches such as trying to understand the meaning an act has for the actor himself, trying to understand the observed world reflected by written or spoken text, or trying to understand the meanings that a particular behavior signifies to the subjects (Lee, 1991). According to Orlikowski and Baroudi (1991), in interpretive studies researchers do not impose their outsiders' *a priori* understanding of the situation. Instead, they adopt a non-deterministic perspective where the intent of the research is to increase understanding of the phenomenon, and the phenomenon of interest is studied in its natural setting from the perspective of the participants. That is, theoretical preconceptions may be used to guide the research design, but the researcher is alert for possible contradictions between *a priori* theory and the findings that emerged from her/his investigations (Klein & Myers, 1999; Lee, 1991). For that purpose, in interpretive research idiographic methods are often used. These methods are often case studies and action research, and place "... considerable stress upon getting close to one's subject and exploring its detailed background and life-history" (Burrell & Morgan, 1979, p. 6).

One additional comment may be helpful to clarify our distinction between *empirical: positivist* and *empirical: interpretive* papers. Within the empirical category, we view the positivist-interpretivist perspectives as polar extremes of a continuum, rather than two discrete positions. Thus the articles we classified as *empirical: interpretivist* are studies that exhibit empirical characteristics, but with 'emergent' insights. This places them towards the interpretivist end of the continuum, while still in the empirical category. We consciously did not enter into a detailed debate of the



rigor with which interpretivist and positivist research methods were applied.

### **Non-Empirical**

In contrast to empirical research, non-empirical research is not based on specific data; it is more abstract and intangible. It is the process of generating knowledge through conceptual or quantitative analytical reasoning, not directly 'contaminated' by observed events. We identify two types of non-empirical research: *conceptual and mathematical*. In terms of epistemology both types of non-empirical research papers are positivist in nature.

- **Non-Empirical: Conceptual**

These are frameworks and arguments that sort out unstructured thoughts and concepts that circumscribe the phenomenon under study. Two different types of conceptual papers can be distinguished. The first group tries to develop *frameworks* that primarily serve as a basis for research by synthesizing existing knowledge and developing new concepts. The major aim of the second group is to provide *guidelines for management* on what factors to consider when deciding about IS outsourcing. According to Alavi (1989), such conceptual research is typically illustrative in nature and involves opinions and examples based on the authors' experiences. The purpose of the research is to give advice and guidelines for practice, often in the form of rules and recommendations, steps and procedures to be followed, hints and warnings.

- **Non-Empirical: Mathematical**

Such studies involve mathematical models and analyses that are based on a set of restrictive assumptions about the nature of the world, and the rationality of the actors involved. The calculation of rationality is often based on minimizing costs or maximizing profits by changing certain parameters while holding others constant (*ceteris paribus* restrictions). These studies are typically highly analytical (cf. Whang, 1992).

### **3.3 Review Procedure**

To meet the five research objectives outlined in section 3.1, it was necessary to go through a two-step process. The first step involved selecting the papers to be included in this review. The second step consisted of identifying and classifying the research objectives, theoretical perspectives, and methodologies of the selected papers.

#### **3.3.1 Selection Process**

The 'selection process', i.e. how the research papers were chosen, involved three phases – journal<sup>6</sup> selection, time frame selection, and paper selection.

In order to cast as wide a net as possible over the broad topic of IS outsourcing, an extensive literature review was conducted. Journals reviewed included not only mainstream North American IS journals but English language European ones as well. To ensure that the literature reviewed was as current and inclusive as possible, the proceedings from major IS conferences were also examined. In recognition of the strong applied nature of outsourcing, relevant papers appearing in recognized applied management publications were included. Finally, the major management journals were also scanned. (See Table 4 for a breakdown of the journals and conferences reviewed.) Since it is generally agreed that the present outsourcing boom has its genesis in Eastman Kodak's 1989 decision to outsource its IS function (cf. Lacity and Willcocks, 1998), the selected publications were searched spanning a twelve year period, from 1988 through 2000.

To select the papers included in this review, two researchers independently examined each of the publications in the specified time frame. The initial selection criteria were broad. In addition to papers that obviously focused on outsourcing, we also included ones addressing such things as contractor selection or evaluation, and general make versus buy decisions. From this preliminary list we singled out those with a primary research focus on IS outsourcing. (Note: the organization theory/management journals were not manually examined. They were searched using the ABI-Inform database as described in the following paragraph.)

To double-check the completeness of our selection process, we searched the ABI-Inform database for the journals listed above using the unlimited truncation option. This retrieves all possible suffix variations of a root word. By entering "outsourc\$" as the search term, articles with "outsource", "outsourced", "outsourcing", and "outsources" were returned. These articles were compared to the initial list from the manual search. The automated search did not turn up any articles that were not already selected. Following this procedure 84 papers were identified and are included in our review.

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<sup>6</sup> We specifically excluded books and doctoral dissertations from our selection process assuming that most book/dissertation authors had produced articles which summarized their research findings.

**Table 4. IS outsourcing literature sources**

IS Journals	Management Journals
<i>Accounting, Management and Information Technologies (AMIT – now called Information &amp; Organization)</i>	<i>Academy of Management Journal (AMJ)</i>
<i>Communications of the Association for Computing Machinery (CACM)</i>	<i>Academy of Management Review (AMR)</i>
<i>European Journal of Information Systems (EJIS)</i>	<i>Administrative Science Quarterly (ASQ)</i>
<i>Journal of Information Technology (JIT)</i>	<i>Decision Sciences (DS)</i>
<i>Journal of Management Information Systems (JMIS)</i>	<i>Management Science (MS)</i>
<i>Information &amp; Management (I&amp;M)</i>	<i>Organization Science (OS)</i>
<i>Information Systems Journal (ISJ)</i>	<i>Strategic Management Journal (SMJ)</i>
<i>Information Systems Research (ISR)</i>	<b>Applied Management Journals</b>
<i>Management Information Systems Quarterly (MISQ)</i>	<i>Harvard Business Review (HBR)</i>
<b>IS Conferences</b>	<i>California Management Review (CMR)</i>
<i>International Conference of Information Systems (ICIS)</i>	<i>Sloan Management Review (SLR)</i>
<i>Hawaii International Conference on System Sciences (HICSS)</i>	

Of course, this process does have its limitations. We made a deliberate decision to exclude a large body of work outside these journals, or even in these journals, which address other types of business outsourcing. We also did not review papers published in less mainstream journals, or in journals with a specialized interest (e.g. international scope), which may have provided different perspectives on the topic.<sup>7</sup> However, we believe that the process we followed resulted in a comprehensive set of papers from high-quality journals that focus on the phenomena of interest we are studying – information systems outsourcing.

### 3.3.2 Identification and Classification Process

Once an article was selected, it was classified according to research focus, theoretical foundation, and methodology. To do so, we followed the general approach used by Swanson and Ramiller (1993) in their analysis of submissions to *Information Systems Review (ISR)*. That is, we read each paper's abstract, introduction, discussion section, and conclusion to determine the paper's research questions or objectives. Some papers clearly stated the research questions; others did not. Consequently, this step involved some degree of interpretation on our part. Similarly, we searched each paper for indications of its theoretical foundation. Once more we found that, while some authors were quite explicit in drawing from a particular theoretical base, others were less clear. Identifying the theoretical foundations of these papers

necessitated additional judgment and interpretation. Finally, we determined each paper's research methodology. Our intent was to place each paper in the single category to which it most strongly, if not exclusively, belonged. Again, this required us to make some judgment calls. For instance, the McLellan et al. (1995) and Marcolin and McLellan (1998) papers are combinations of positivist investigation and interpretive, emergent findings.<sup>8</sup> However, since the purpose was to categorize papers according to their primary research method, we placed these papers in the positivist category<sup>9</sup>.

Once the research objectives, theoretical foundations, and methodologies were identified, we then reviewed their reported results looking specifically for emergent patterns, trends, and/or groupings. (It should be noted that some papers reported results that covered more than one outsourcing stage. In such cases, the paper is listed more than once.)

<sup>7</sup> For a different perspective on the topic, interested readers are referred to Kakabadse and Kakabadse (2000).

<sup>8</sup> More recently, Klein (2002) has synthesized the contributions of the book "Information Systems Outsourcing: Enduring Themes, Emergent Patterns and Future Directions" by Hirschheim et al (2002) using the same distinction between interpretivist and positivist research. He came to the same conclusion: that many of the papers contained both positivist and interpretive elements.

<sup>9</sup> This is not to imply that research cannot utilize more than one approach. Lee (1991), for example, argues for integrating positivist and interpretive approaches. However, to reiterate, we are adopting a single-approach perspective for a descriptive purpose (classifying the body of research), not a prescriptive one.

**Table 5. Overview of “Why to outsource”**

Research Approach	Focus	Reference
Positivist	Determinants external to the firm	Section 4.1.1 - Table 6
	Determinants within the firm but outside the IS function	Section 4.1.1 - Table 7
	Determinants reflecting market failure	Section 4.1.1 - Table 8
	Determinants reflecting firm failure	Section 4.1.1 - Table 9
Conceptual	Guidelines and Frameworks reflecting a conceptual basis for outsourcing	Section 4.1.2 - Table 10
Mathematical	Normative statements regarding when to outsource based on mathematical models	Section 4.1.3 - Table 11
Descriptive - Single case studies	Arguments for IS outsourcing drawn from single-case studies	Section 4.1.4 - Table 12
Descriptive – multiple case studies and surveys	Identifies arguments for and against outsourcing based on multiple case studies and surveys	Section 4.1.4 - Table 13
Interpretive	Determinants of sourcing decisions	Section 4.1.5 - Table 14

## 4 Literature Review and Analysis

In the following, the different perspectives researchers have chosen to investigate the five outsourcing stages described in Figure 1 are presented. The analysis is based on the analytical framework introduced in Section 3.2. Based on this framework, we identify general patterns and evolutionary paths within these stages.<sup>10</sup> As an aid to the reader, an overview table has been placed at the beginning of selected subsections that provides an outline of the detailed analysis found in that subsection.

### 4.1 Decision phase: “Why to outsource”

Table 5 provides an outline of this subsection. A closer examination of Table 29 (Appendix) reveals that from 1992 to 1997 there was a strong focus on positivist empirical research in the “why” stage. This concentration is associated with the application of theoretical lenses from various reference disciplines. Sorted by the frequency of their application, the following theoretical lenses can be distinguished: transaction cost theory (9x), agency theory (4x), resource-based theory (3x), resource-dependence theory (2x), innovation diffusion theory (2x), institutional theory (1x), power theory (1x) and labor market economics (1x). One reason for this observation might be that IS outsourcing was perceived as being a decision similar to those concerned with the level of vertical integration and

make-or-buy choices in general. These management decisions have been the subject of an enduring research tradition in marketing and organization science long before the widespread awareness of the IS outsourcing phenomenon. Transaction cost theory in particular has been applied in various studies<sup>11</sup>. It seems logical that researchers first attempted to ‘stand on the shoulders of giants’ (Merton, 1965) in the sense of using pre-existing theories to explain IS outsourcing behavior, prior to generating new concepts and relationships. Accordingly, we will start with the main patterns along positivist research. We will then focus on non-empirical studies utilizing conceptual and mathematical approaches before concentrating on the role of descriptive and interpretive empirical research.

#### 4.1.1 Positivist “why”

The positivist studies are primarily concerned with testing hypotheses about the determinants of IS outsourcing. In the following we will focus on the conceptualization and theoretical underpinnings of these determinants.<sup>12</sup> One aspect of the conceptualization refers to the names of the constructs and their proposed impact on the degree of outsourcing. Another aspect refers to the level of analysis (logical structure) of a particular construct. In addition, to better illustrate the content focus of each construct we grouped constructs under certain dimensions that together represent the ‘Construct Focus’ of a particular determinant.<sup>13</sup> In terms of the levels of analysis, we distinguish three levels.

<sup>10</sup> It is important to note that some of the outsourcing stages might be thought to be more complex or broader in scope (i.e. have more options and/or be more detailed) than others. This has led our review to be somewhat ‘unbalanced’ in that we devote more attention to some stages than others, e.g. approximately 21 pages for ‘why’ to 4 for ‘which’. This is also partly explained by the fact that the stages have been unevenly represented in the literature, e.g. 46 papers on ‘why’ to 15 papers on ‘which’.

<sup>11</sup> For an overview see the reviews from Shelanski and Klein (1995) and Rindfleisch (1997).

<sup>12</sup> Detailed information on the dependent construct – IS outsourcing – will be given in the “What” section.

<sup>13</sup> See the discussion on level of analysis provided in Section 3.2.2.

**Table 6. Determinants external to the firm**

Level	Construct Focus	Constructs <sup>14</sup>	Results	References
Industry	Institutional pressures	Influence from peer banks (+)	Supported (dominant)	Ang & Cummings (1997)
		Influence from federal regulators (+)	Supported	Ang & Cummings (1997)
Country/Society	Communication channels as diffusion drivers	Internal (interpersonal – managers from other organizations) (+)	Supported	Loh & Venkatraman (1992b)
			Not supported	Hu et al (1997)
		External (e.g. media) (+)	Not supported	Loh & Venkatraman (1992b)
			Not supported	Hu et al (1997)
		Mixed (internal and external) (+)	Not supported	Loh & Venkatraman (1992b)
			Supported	Hu et al (1997)
		Influence of Kodak outsourcing event (+)	Supported	Loh & Venkatraman (1992b)
			Not supported	Hu et al (1997)

First, we start with analyzing constructs at the society and industry level, which we call “*Determinants external to the firm*” (an example of such would be institutional pressures and influences to outsource). Second, we look at determinants that represent constructs at the overall firm level, excluding IS-specific constructs (an example of such would be Miles and Snow’s (1978) strategic orientation – defender, analyzer, or prospector – and its affect on the decision to outsource). We refer to these as “*Firm level determinants outside of the IS function*”. Third, we look at “*Determinants at the IS level*” (an example of an IS level determinant would be the skill set possessed by the internal IS staff relative to the skill set needed by the organization).

#### 4.1.1.1 *Determinants external to the firm*

Early on in the positivist stream of research, the motivation for asking why to outsource was based on the observation of the ever-increasing number and size of outsourcing contracts – especially in the USA. See Table 6.

Loh and Venkatraman (1992b) were the first who investigated how this diffusion of IS outsourcing took place. They gathered secondary data from the public press identifying 60 IS outsourcing deals in the period from 1988 to 1990. Guided by *innovation diffusion theory* they tested competing diffusion models that best matched the observed distribution of outsourcing events in this *time period*. These models are based on the argument that the diffusion reflects an *imitation process*. The differences in the models are due to different sources of influence of the imitation, which

reflect different *communication channels*. Loh and Venkatraman (1992b) found evidence for internal sources of influence (outsourcing behavior of other organizations) being better predictors for the observed distribution of outsourcing events than external sources (mass media reports and vendor sales figures) or mixed sources of influence (both external and internal). They noted the tendency to outsource in response to other organizations (internal) was stronger after the Kodak announcement – the so-called “Kodak effect”.

Five years later Hu et al. (1997) replicated the study by Loh and Venkatraman (1992b) using a richer data set, which included 175 outsourcing deals for the decade 1985 to 1995. They did not find any evidence for the Kodak effect but did find support that both internal and external communication channels (i.e., mixed) drove outsourcing decisions.

These studies have in common that IS outsourcing was analyzed from a “social system level” (Loh & Venkatraman, 1992b, p. 353). The aim of using this perspective is to explain *homogenous behavior* of organizations. A similar perspective was incorporated in the study by Ang and Cummings (1997). Their aim was to explain IS outsourcing behavior in the banking industry. However, instead of using a diffusion perspective they took a *variance theoretic* perspective, built on *institutional theory*. They tested the homogenous influence of both peer banks and federal regulators on IS outsourcing. Their results indicate that banks respond to institutional pressures, but that response varies depending on the source of the pressure. For example, when the source of pressure was other banks, strategic and economic

<sup>14</sup> In the Tables, a ‘(+)’ reflects a hypothesized positive influence on outsourcing where a ‘(-)’ is a hypothesized negative influence.

contingencies had more influence than the actions of the other banks. When the source of pressure was federal regulators, reactions were more in line with the regulator's desired actions, and less responsive to strategic and economic contingencies. In addition, large banks were less likely to be influenced by peer pressure than small banks.

An important finding of the Ang and Cummings (1997) study was that firms do not unreflectively respond to institutional pressures. Mixed support is found for firm level factors moderating these external impacts. The moderators reflect different variance theoretic arguments and are related to different levels of analysis within the firm. In many of the other studies these moderators are perceived as firm level determinants that directly influence the outsourcing decision. These studies aim to explain why firms show *heterogeneous behavior* in IS outsourcing. The main objective is to determine what factors might influence the variance in the degree of IS outsourcing observed

within certain industries and social systems. This perspective was found to be dominant among the positivist studies within the literature reviewed. However, different levels of analyses and *variance theoretic arguments* were found to exist. They can be separated into two groups. The first represents determinants at the overall firm level. They are not directly related to the IS function, or to a potential exchange relationship. The second group of factors – determinants at the IS level – can be either aggregated representing the whole IS function, or segmented into different IS functions.

#### 4.1.1.2 Firm level determinants outside of the IS function

Determinants at the firm level can be categorized into (1) financial, (2) strategic, and (3) demographic factors. An overview of the concepts is presented in Table 7.

**Table 7. Determinants within the firm but outside the IS level**

Level	Construct Focus	Constructs	Results	References
Overall organizational/firm level	Costs / Financial situation	Financial capacity to resist conformity to institutional pressure (-)	Supported	Ang & Cummings (1997)
		Financial slack (+)	Not supported	Ang & Straub (1998)
		Cost Structure (+)	Supported	Loh & Venkatraman (1992a)
		Business financial performance (-)	Supported	Loh & Venkatraman (1992a)
		Financial leverage (+)	Not supported	Loh & Venkatraman (1992a)
		Need to generate cash (+)	Supported	Smith et al. (1998)
		Focus on cost reduction (+)	Supported	Smith et al. (1998)
		Discrepancies in firm performance (+)	Not supported	Teng et al. (1995)
	Financial impacts	Business benefits of outsourcing (Focus, Financial, Savings) (+)	Supported	Loh & Venkatraman (1995)
		Perceived fiscal impetus of outsourcing (+)	Supported	Loh (1994)
	Strategy	Moderating effect of strategy type on outsourcing of IS functions as a response to resource gaps	Partly Supported due to IS function	Grover et al. (1994b)
		Need to focus on core business (firms in the computer industry outsource more than firms not in the computer industry) (+)	Supported	Slaughter & Ang (1996)
		Focus on core competency (+)	Not supported	Smith, et al. (1998)
		Strategy type (defender, analyzer, prospector)	Not supported	Teng, et al. (1995)
	Size	Firm size (assets)	Supported	Ang & Cummings (1997)
		Firm size (assets) (-)	Supported	Ang & Straub (1998)
		Smaller firms less than larger firms	Supported	Sobol & Apte (1995)
	Business sector	Firms in the computer industry outsource less than firms not in the computer industry	Supported	Slaughter & Ang (1996)
		Public more than private sector	Supported	
		Manufacturing more than service	Supported	Sobol & Apte (1995)

**Firm level costs/financial situation.** Representing this stream of research, Loh and Venkatraman (1992a) focused on financial characteristics of companies to explain different degrees of overall IS outsourcing, measured as a percentage of total outsourcing expenditure over total assets. Based on secondary data from financial statements and reports, the firm level determinants reflected (1) business competencies represented by cost structure, (2) economic performance, and (3) business governance – especially financial leverage. A similar research design was chosen by Smith et al. (1998). They tested if firms that entered into large scale outsourcing contracts – identified in the public press in the period from 1988 to 1993 – would significantly differ in firm level financial metrics compared with the industry average before and after outsourcing.

Both studies have in common that determinants of IS outsourcing were based on *secondary data sources* not directly related to the IS function. Their arguments are primarily based on the idea that firms outsource in reaction to weak financial performance at the firm level. This logic is based on the commonly held belief that outsourcing would reduce costs and, in the short run, create a cash infusion resulting from the sale and lease-back of IS assets. Smith et al. (1998) appropriately described these financial factors as “pre-emptive firm characteristics”.

The same logic was incorporated in some studies that gathered data from *primary data sources*, especially through surveys and case studies. One common characteristic of these studies is that the concepts that served as independent variables to explain the variance in IS outsourcing were typically treated as latent constructs assessed using multi-item scales.

Ang and Cummings (1997) hypothesized that the ability of banks to resist conformity to institutional pressure would be higher in those firms with a higher degree of perceived *financial slack/capacity*. In another study based on the same data set they proposed a direct negative effect of financial slack on IS outsourcing (Ang and Straub, 1998). Teng et al. (1995) tested if discrepancies in organizational performance measured using a variety of financial indices would increase the level of IS outsourcing.

As shown in Table 7, the argument that weak financial performance indices would be positively related with IS outsourcing was widely supported. However, a positive impact of financial slack resources on IS outsourcing could rarely be confirmed.

**Firm level strategic determinants.** Mixed support was found for the notion that firms outsource their IS in response to an overall firm strategy to focus on its core competencies. In addition, the strategy type (defender, analyzer, prospector – see Miles & Snow, 1978) was

found to moderate the positive influence of IS gaps on IS outsourcing (e.g., prospectors will more likely outsource due to gaps than defenders) (Grover et al., 1994b). However, there is no direct effect on IS outsourcing (Teng et al., 1995).

**Firm level demographic determinants.** It could not be falsified that large banks are less likely to outsource than smaller banks (Ang & Straub, 1998; Sobol & Apte, 1995) and that public sector organizations are more likely to outsource than private firms (Slaughter & Ang, 1996). In addition, firms in the computer industry were found to outsource less than the firms not in the computer industry, which supports the argument that core competencies are not outsourced (Slaughter & Ang, 1996).

#### 4.1.1.3 Determinants at the IS level

The main objective of positivist studies using primary data sources was to test the impact of those IS-related factors that are associated with the outsourcing decision. These constructs were primarily derived from economic and strategic reference theories that could be summarized as “theories of the firm” (Dibbern, 2004; Dibbern et al., 2001; Holmstrom & Tirole, 1990; Seth & Thomas, 1994) including transaction cost theory, agency theory, resource-based theory, and strategic lenses. Often the dimensions deduced from these theoretical lenses were complemented by constructs that could not be identified as belonging to any particular theoretic lens. They were derived from literature reviews or experiences with IS outsourcing (e.g., Loh, 1994).

We see four sub-categories of determinants at the IS level: (1) market failure, (2) firm failure and superiority, (3) integration of market and firm failure, and (4) power, politics and individual level reasoning. *Market failure* reflects the situation where firms evaluate outsourcing in terms of negative consequences; for example, opportunistic behavior by the vendor. In other words, the outsourcing market has failed to deliver an attractive alternative to an internal IS function. *Firm failure and superiority* refers to the assessment of outsourcing based on an evaluation of a firm's own resources and capabilities compared to the market. For example, when a firm lacks the IS skills to perform particular IS tasks it might choose to outsource (‘firm failure’). When a firm considers its own IS strategic, or when a firm sees its internal IS as superior to the vendor, it might choose to keep the IS function in-house (‘firm superiority’). *Integration of market and firm failure* takes into account both arguments, considering potential overlaps in the constructs that they both use. For example, if the human resources in a particular IS function are thought to be unique to a firm (high asset specificity)

this might be considered a competitive advantage since these resources cannot be easily imitated by other companies ('firm superiority'). At the same time, it might lead to the perception of high transaction and production costs when using the external market ('market failure') (Dibbern et al., 2001). *Power, politics and individual level reasoning*, in contrast, adopts the view that outsourcing involves major changes in the allocation and power over resources. As a consequence, personal interests and preferences of management are likely to be affected. This might be perceived favorably or unfavorably, and hence supported or unsupported by management and employees.

#### 4.1.1.3.1 Market failure

'Market failure' typically involves two economic lenses; transaction cost theory (TCT), and agency theory (AT). TCT plays the dominant role.<sup>15</sup> The determinants of market failure can be categorized into three groups, which are related to: (1) characteristics of the firm's IS assets; (2) beliefs associated with outsourcing an IS function; or (3) perceptions of environmental dynamics regarding the IS function.

**Characteristics of IS assets.** The TCT constructs (*human or technological*) *asset specificity* (Ang & Cummings, 1997; Hancox & Hackney, 1999; Loh, 1994; Nam et al., 1996; Poppo & Zenger, 1998)<sup>16</sup>, *functional complexity* (Ang & Cummings, 1997) and *tacit knowledge*<sup>17</sup> (Nam, et al., 1996) incorporate perceptions of the IS function(s). It is argued that a strong presence of one or more of these factors would increase the risk of opportunistic behavior by an external supplier, as it would have to make specific investments which would have to be recovered during the life of this one individual contract. To avoid such opportunistic behavior, the costs of negotiating service level agreements and monitoring the vendor would be significant. Another dimension that is related to characteristics of IS/IT function(s) is *measurement difficulty*. Poppo and Zenger (1998) relate this construct to AT, arguing that a high level of measurement difficulty would be negatively related to IS outsourcing, as it would lower the ability to monitor the vendor and therefore would increase agency costs. A fourth construct is the *frequency* of transactions.

<sup>15</sup> A variety of overlaps between both theories were found to exist. However Hancox and Hackney (1999) were the only ones who noted: "...thus its [AT's] focus was never on organizational boundaries, as with TCT theory. Hence the focus of AT is not the decision to source via the hierarchy or via the market".

<sup>16</sup> Hancox and Hackney (1999) use case studies to test arguments from four different theoretical lenses – one of them being TCT.

<sup>17</sup> The origin of the concept of "tacit knowledge" can be traced back to Polanyi (1958). In the context of transaction cost economics it is associated with human asset specificity.

Aubert et al. (1996) propose that if IS functions are associated with both high asset specificity and recurrence they should be kept in-house.<sup>18</sup>

Mixed support was found for the relationship between IS characteristics and the degree of IS outsourcing (see Table 8). The inconsistencies are likely due to different conceptualizations of IS characteristics, and different ways of operationalizing them. Measures of the IS functions' asset characteristics were related to the human workforce, and/or to physical assets. *Human asset specificity* is related to the employees' skill sets or tacit knowledge within the IS function(s), whereas *physical asset specificity* refers to the technology (i.e., the IS/IT itself). Most studies used a mixture of both dimensions, measuring asset specificity in terms of: (1) relatively unique technical skills; (2) substantial investments in custom-tailored equipment by external service providers; and (3) extensive business knowledge that is specific to the environment (Ang & Cummings, 1997). In general, it can be stated that whenever the measures were dominated by human aspects – especially firm related business knowledge – the proposed negative relationship between asset specificity and IS outsourcing was supported. On the other hand, no significant relationship could be found between physical asset specificity and IS outsourcing (see Table 8).

In addition, support could be found for the hypothesis that IS functions are less likely to be outsourced when it is difficult to *measure the performance* of employees. The positivist case study by Aubert et al. (1996) reveals that the measurability (observability and verifiability) of performance varies according to the IS function. Whereas formal measures exist for systems operations (e.g., response time, disk space, MIPS, time between failure, etc.), software development is more difficult to measure. They conclude that it is the "specificity and the capability to measure the activities involved that define which activities will be outsourced" (p. 62).

#### **Beliefs associated with outsourcing IS function(s).**

In contrast to the preceding dimensions, which all have an impact on the difference between the sum of production and transaction costs within the company versus using the market, Ang and Straub (1998) measure *transaction costs* and *production costs* directly. A similar attempt to test the relationship between the previously mentioned dimensions and the governance structure can be found in the study by Loh (1994). He defines the costs related to the exchange

<sup>18</sup> They tested their hypotheses using case studies as opposed to the mainstream of positivist studies that use questionnaires or surveys.

**Table 8. Determinants reflecting market failure at the IS level**

Level	Construct Focus	Constructs	Findings	Authors
IS function	Asset characteristics			
	Human assets	Asset specificity (-)	Supported	Aubert et al. (1996)
		Tacit knowledge (-)	Supported	Nam et al. (1996)
		Measurement difficulty of performance (-)	Partly supported	Poppo & Zenger (1998)
	Mixed: Human / physical assets	Measurability (+)	Supported (qualitative)	Aubert, et al. (1996)
		Asset specificity (-)	Supported	Ang & Cummings (1997)
			Not supported	Loh (1994)
			Supported	Poppo & Zenger (1998)
	Physical assets	Functional Complexity (-)	Not supported	Ang & Cummings (1997)
		Asset specificity (-)	Not supported	Nam et al. (1996)
	Beliefs associated with outsourcing			
	Costs	Transaction Costs (-)	Supported	Ang & Straub (1998)
			Supported (qualitative)	Hancox & Hackney (1999)
	Supplier behavior	Absence of agreement inducement (counter productive actions by vendor) (-)	Supported	Loh (1994)
		Opportunism risk (-)	Supported	
	Contract	Difficulty in contractual resolution (-)	Supported	
		Absence of incentive payoffs: Difficulty in structuring the contract (-)	Supported	
		Difficulties in goal alignment (-)	Supported	
	Supplier Control	Difficulty in monitoring vendor (-)	Supported	Loh & Venkatraman (1995)
		Control risk (-)	Supported	
	Perceptions towards environment			
	Technological / IS related dynamics	Environmental technological uncertainty (-)	Not supported	Ang & Cummings (1997)
			Supported	Nam et al. (1996)
	Mixed: technological / human dynamics	Environmental technological uncertainty and human dynamics (-)	Not supported	Loh (1994)
			Not supported, Mixed support for opposite causality	Poppo & Zenger (1998)
	Supplier Market	Supplier presence (+)	Supported	Ang & Cummings (1997)
		Number of potential vendors (+)	Not supported	Nam et al. (1996)

relationship as *dyadic costs*, modeled as a second order factor reflected by four groups of constructs; *transaction costs*, *agency costs*, *bargaining costs*, and *influence costs*. However, only the latter three are operationalized as costs directly related to the exchange. They are not derived from TCT, but rather from AT and other concepts which can not clearly be identified as belonging to separate theories. Transaction costs are measured indirectly through the constructs asset specificity and uncertainty. In a second study which was based on a sub-sample of the previous study, Loh and Venkatraman (1995) tested the negative impact of *opportunism risk* (derived from

TCT) and *control risk* (derived from AT) on IS outsourcing.

Overall, when referring to the exchange relationship, measures that are related to the (1) costs of market transactions, (2) behavior of the supplier, (3) contract, and (4) control of the vendor can be differentiated. The hypothesized influence of all these dimensions that were directly related to the exchange relationship could be supported. The findings of Hancox and Hackney (1999) show, however, that transaction costs can differ depending on the organizational form. Public sector organizations were found to be more



bureaucratic than private sector organizations and therefore had higher transaction costs. Thus further market usage may not necessarily improve the provision of IS services, and may offset any perceived cost reductions. Managers from both the private and the public sector doubted the commitment of some vendors and, indeed, even the notion of outsourcing, which indicates an awareness of the potential for vendor opportunism.

**Environmental dynamics of IS function(s).** The TCT constructs of environmental uncertainty and number of suppliers are related to the IS function(s) from an external or environmental point of view. Concerning *environmental uncertainty*, the argument is that a high volatility in the IS/IT market and in the needs of IS/IT would increase the costs for both negotiating and subsequently adjusting contracts with external suppliers (Ang & Cummings, 1997; Loh, 1994; Nam et al., 1996; Poppo & Zenger, 1998). Accordingly, a high degree of uncertainty is hypothesized to be negatively correlated with the level of IS outsourcing. Another TCT argument entails that a high *number of potential suppliers* lowers switching costs in the event of terminating a contract, and thus would be positively related to IS outsourcing (Ang & Cummings, 1997; Nam et al., 1996).

The hypothesized negative impact of environmental uncertainty on IS outsourcing could rarely be supported. In fact, Poppo and Zenger (1998) found some evidence for an opposite causality. Regarding the impact of the number of suppliers, Ang and Cummings (1997) found support for a moderating effect on the relationship between institutional pressures and IS outsourcing. However, no direct impact could be substantiated in the study by Nam et al. (1996).

#### 4.1.1.3.2 Firm failure or superiority

In contrast to 'market failure', the focus of 'firm failure or superiority' is on situations when the firm either fails to provide IS services in an appropriate way or when the internal IT/IS is inferior (or superior) to the market, based on an evaluation of resources and capabilities. This reasoning is essentially reflected in the strategic lenses of resource-based and resource-dependence theory, and in the strategic management perspective.

Grover et al. (1994b) were the first who tested hypotheses derived from a combination of resource-based theory and resource-dependence theory. Their main argument was that firms would outsource IS functions because of discrepancies in IS resources *within the firm (firm failure)* such as information quality, support quality, personnel quality, and cost

effectiveness. Additionally, they hypothesized that the tendency to outsource due to these IS gaps would be moderated by the firm's strategy type (defender, prospector, analyzer, or reactor) (Miles & Snow, 1978) and the strategic role that IS plays within the company (supportive, evolving, or integrative). In another paper based on the same data set these two strategic concepts are proposed to directly influence the degree of IS outsourcing (Teng et al., 1995). Nelson et al. (1996) do not relate their arguments to any specific reference theory. They propose that in the case of buying packaged software or developing customized software, there would be a positive relationship between systems using specialized technology or advanced development environments, and outsourcing. They argue that specialized *suppliers* would have *superior* knowledge in coding and installation. The costs for acquiring this know-how internally would be higher than contracting and monitoring costs. Poppo and Zenger (1998) argue that IS functions requiring personnel with extensive knowledge and skills would likely be outsourced, because the vendor can leverage these assets through a wider range of customers, and consequently realize economies of scale.

Another perspective that is related to resource-based theory in combination with 'evolutionary theory' (Nelson & Winter, 1982) can be found in the study of Loh and Venkatraman (1995). They propose that the perceived benefits of outsourcing (exchange perspective) reflected by access to scarce IS resources would be positively related to IS outsourcing.

Slaughter and Ang (1996) analyzed job advertisements for IS jobs as indicators for the need of insourced versus outsourced employees. Even though this approach reflects a social system level perspective, the logic of their theoretical arguments is related to the firm level. Based on labor market economics, they argue that a volatile internal demand and jobs requiring scarce skills are associated with a high need for outsourced employees. McLellan et al. (1995) examined determinants of outsourcing using case studies. Focusing at the IS function level, they found that the firms attempt to obtain added benefits by outsourcing because of the perceived 'failure' of internal IS departments.

Notwithstanding different levels of analysis, the determinants reflecting firm failure and market superiority contextually are related to (1) characteristics of the assets within the IS function(s), (2) beliefs associated with outsourcing IS functions, (3) firm level characteristics/roles of IS, and (4) the environment (see Table 9).

**Table 9. Determinants reflecting firm failure or market superiority at the IS level**

Level	Construct Focus	Constructs	Findings	Authors
IS function(s)	<b>Asset characteristics</b>			
	Human assets	Required skill sets (+)	Supported	Poppo & Zenger (1998)
		Discrepancy in support/staff quality (+)	Supported	Grover et al. (1994b), Teng, et al. (1995)
	Technological / IS related assets	Systems Heterogeneity (+)	Supported	Nam et al. (1996)
		Specialized technology /advanced development environments (+)	Supported	Nelson et al. (1996)
		Discrepancy in information quality (+)	Supported	(Teng et al., 1995)
	Strategic significance	Common applications (+)	Partly supported	Nelson et al. (1996)
		Strategic applications (-)	Not supported	Nelson et al. (1996)
		Strategic importance – impact on contract continuation (+)	Supported	Nam et al.(1996)
		Core competencies (-)	Not supported	Hancox & Hackney (1999)
	<b>Beliefs associated with outsourcing</b>			
	Costs	Perceived Gain in Production Economics (+)	Supported	Ang & Cummings (1997)
	Assets	Technical benefits - access to scarce resources (+)	Supported	Loh (1994)
	Capabilities	Introduction of new resources and skills (+)	Supported	McLellan et al. (1995)
	Vendor behavior	Trust with the vendor (+)	Supported	McLellan et al. (1995)
Overall IS function	<b>Firm level characteristics</b>			
	Strategy	Moderating effect of strategic role of IS on outsourcing of IS functions due to gaps	Partly Supported due to outsourced IS function	Grover et al. (1994b)
		Strategic role of IS (-)	Supported	(Teng et al., 1995)
	Costs / Financial performance	IS-Cost structure (expenditure ratio) (+) <sup>19</sup>	Supported	Loh & Venkatraman (1992a)
		IS performance (economic efficiency) (-) <sup>20</sup>	Supported	Loh & Venkatraman (1992a)
		Discrepancy on cost-effectiveness (+)	Not supported	(Teng et al., 1995)
		Reduce costs (+)	Supported	McLellan et al. (1995)
	Organizational change	Vehicle for change (+)	Supported	McLellan et al. (1995)
	<b>Environment</b>			
	Technological and human dynamics	Dynamics of IS skills markets (+)	Supported	Slaughter & Ang (1996)
		Volatile demand / Need for flexibility (+)	Supported	
	Environmental uncertainty	Reduce technological risk and uncertainty	Supported	McLellan et al. (1995)

**Assets within the IS function(s).** Within the firm failure chain of causality, human and technological asset characteristics can be distinguished. Concerning human assets, the hypotheses that the degree of outsourcing is higher in those functions that require extensive knowledge and skills is supported. In

addition, discrepancies between the desired and actual level of support and staff quality were found to be positively related to IS outsourcing. Both arguments refer to *human assets* in a sense of *special technological knowledge*. The market is assumed to have advantages due to specialization that results in

<sup>19</sup> Ratio of IT expenditure with both gross plant, property, equipment (i.e. before depreciation) and net plant property, equipment (i.e. after depreciation)

<sup>20</sup> Net income and sales divided by IT expenditure

superior know-how and economies of scale due to the ability to leverage specialized skills among a broader range of customers.

**Beliefs associated with outsourcing IS function(s).**

Perceived production cost advantages by external suppliers and technical benefits arising from access to scarce resources were found to be positively related to IS outsourcing. Furthermore, production cost advantages of external suppliers were found to have a stronger impact on the degree of IS outsourcing than transaction cost disadvantages (Ang & Straub, 1998). Resources available from the vendors provide an opportunity for firms to expand its capabilities (McLellan et al., 1995) -“Outsourcing offers an opportunity to use resources beyond those contained in the bank to increase competitive capabilities within the IS function” (McLellan et al., 1995, p. 310). According to senior managers, an important precursor to outsourcing was anticipated trust with the vendor, based on the vendor's reputation (McLellan et al., 1995). Outsourcing also provides an opportunity to reorganize internal IS and according to senior managers, an important precursor to outsourcing was anticipated trust with the vendor, based on the vendor's reputation. Another prime motivation for IS outsourcing was the desire to restructure the organization. “All but one firm found it necessary to unlock the organizational structure that had been firmly entrenched in the firm's management system, corporate culture, bureaucracy, and employee's resistance to massive organizational change”. Many banks reported having previously tried to reorganize their company, but found the process impossible because of internal barriers, and eventually “had given up in frustration and exhaustion” (McLellan et al., 1995 p. 313). Thus potential market failure was found to have a lower impact on IS outsourcing than perceived market superiority, due to economies of scale.<sup>21</sup>

**Strategic impact of IS/IT function(s).** Within the positivist studies no support could be found for the argument that firms do not outsource strategic IS functions. The study of Nam et al. (1996) indicates that strategic functions *are* indeed outsourced. Similar conclusions can be found in McLellan et al. (1995). Contrary to conventional strategic management thinking, outsourcing was undertaken when, at the organizational level, IS was rated as a core activity, defined as providing the competitive capabilities that lead to competitive advantage (even though on an individual IS-activity level, some different aspects were rated non-core).

**Strategic impact of overall IS function.** A similar result was found in the study by Grover et al. (1994b). They found support for the hypothesis that the tendency to close gaps in support and staff quality through outsourcing is higher in those companies where IS plays a strategic role, reflected by the extent to which it is integrated with firm level strategy and strategic planning groups. On the other hand, the strongest effect on IS outsourcing was found when the strategic role of IS was low, reflecting the “traditional” role of IS as a utility (Teng et al., 1995).

**Costs/financial characteristics at the overall IS level.** Mixed support was found for the argument that high costs and poor financial ratios at the overall IS level would lead to increased IS outsourcing. McLellan et al. (1995) did not find evidence for firms to outsource due to weak financial performance at the firm level. However, the generally held belief that firms outsource to reduce costs and to get a more responsive IS organization was supported. Contrary to transaction cost theory expectations, outsourcing occurred in firms that required tight IS control.

**Environment.** The hypotheses that IS job positions with a volatile demand in the job market are more likely outsourced than those with a stable demand, and that jobs requiring relatively abundant skills are insourced more than jobs requiring scarce skills, were supported (Slaughter & Ang, 1996). Technological uncertainty poses a risk to firms and outsourcing provides an opportunity to mitigate the risk. Managers claimed outsourcing to be a means of reducing technological risk and uncertainty. Both dimensions are interrelated. “IS contains a large component of technological uncertainty with its rapidly changing foundation” (McLellan et al., 1995 p. 314). This leads to the risk of underestimating the costs of IS projects. Through outsourcing, managers seek to transfer this risk to the supplier. The vendor organization is expected to have superior skills and resources to handle these risk factors.

4.1.1.3.3 Integration of market failure and firm failure

Attempts to integrate ‘market failure’ and ‘firm failure’ can be seen in Poppo and Zenger (1998) who integrated TCT and resource-based theories (RBT) through the concept of asset specificity. They hypothesized that according to TCT, the specificity of each IS function would be negatively related to the performance of an external vendor, whereas according to RBT it would be positively related to internal performance. Both causal chains suggest that a high level of asset specificity would result in a low degree of IS outsourcing because of performance disadvantages either within the firm (RBT) or in the exchange relationship with the market (TCT). Interestingly, the

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<sup>21</sup> This finding is not inconsistent with transaction cost theory, as Williamson (e.g. 1981) states that both transaction costs and production costs need to be considered.

hypotheses concerning the negative impact of asset specificity on IS outsourcing was supported. However, only the TCT argument could be confirmed, whereas the RBT logic was rejected.

Similar to Poppo and Zenger (1998), Nam et al. (1996) implicitly tried to integrate the same theoretical lenses through the concepts of asset specificity and tacit knowledge. Beside the TCT effect on outsourcing, they proposed that from a strategic/resource-based perspective both dimensions would increase the strategic significance of the IS function to be outsourced, which in turn would be related to the decision to continue different forms of outsourcing relationships. Concerning tacit knowledge, both arguments held to be true. However, the proposed negative impact of (technological) asset specificity on IS outsourcing was insignificant, whereas its hypothesized positive impact on the strategic importance of the IS function was confirmed. The results indicate that outsourcing relationships tend to persist when *either* the strategic impact of outsourced IS activities *or* the extent of substitution by vendors is high.

#### 4.1.1.3.4 Power, politics and individual level reasoning

Both market failure and resource/strategic-based lenses assume that management is acting with bounded rationality and in the best interest of the company. However, as outsourcing entails major changes in the allocation and *power* over resources, personal interests and preferences of management might be affected. Goodstein et al. (1996) considered these effects in their study of hospital services. They take into account that individuals and groups will likely use their power to influence the sourcing decision according to their own interests. Even though their logic is related to an 'individual perspective', the concepts they define are still on the 'macro level'. They measure the power of different groups within the company through secondary data sources such as "percentage of physicians' representation on the board of directors" (p. 580). In a separate study, Nam et al. (1996) do not explicitly take a political or power theory perspective. However, they hypothesize that a high level of power held by the IS function within a company, reflected by its influence on corporate decision making and strategizing, would be negatively related to IS outsourcing.

Goodstein et al. (1996) find support for the hypothesis that hospital services are less likely to be outsourced when the power of physicians is high, and are more likely to be outsourced when the hospital managers' power is high. The findings indicate that different power distributions of stakeholder groups have

different impacts on outsourcing. They also find evidence for environmental changes influencing the balance of power between internal stakeholder groups. Nam et al. (1996) did not find a significant link between IS power, operationalized as the degree of involvement of the IS function in strategic decision making at the firm level, and IS outsourcing.

#### 4.1.2 Conceptual "why"

The tendency to use multiple theories and to integrate elements of competing theories in a complementary way can be observed in the conceptual papers as well. Two different types of conceptual papers can be distinguished. The first group tries to develop *frameworks* that primarily serve as a basis for research by synthesizing existing and developing new concepts. The major aim of the second group is to provide *guidelines for management* on what factors to consider when deciding about IS outsourcing (see Table 10).

Representing the second group – i.e. guidelines – Cronk and Sharp (1995) argue that a first step when considering IS outsourcing is to segment the IS function into services and infrastructure. A second step is to identify the processes that are supported by each segment. These can be classified according to their *strategic significance* into "unit of competitive advantage", "value adding" and "essential". Finally the IS services can be rated either as value adding or essential support. However, the authors do not provide any rule that suggests which governance mode to choose based on this analysis.

Apte and Mason (1995) distinguish between necessary, feasible and desirable conditions for the selection of candidate service activities (e.g., transportation, marketing, inbound-outbound logistics, management information systems, etc) for *global disaggregation*. The latter means that the provision of services is located in another country – particularly countries with low relative wages. According to Apte and Mason there are two alternative forms: insourcing and outsourcing. When the *strategic importance* and the *relative efficiency* in performing a service activity are high, insourcing should be chosen. When both dimensions are low, outsourcing should be favored. If strategic importance is high and relative efficiency is low the choice would be to either build a strategic partnership or to invest in acquiring the necessary competence. In the case of high relative internal efficiency the establishment of a profit center to offer that function in the marketplace should be considered.

McFarlan and Nolan (1995) take an aggregated view of the IS function. They identified a variety of drivers of IS outsourcing and developed a strategic grid that guides the decision to outsource. In general, they suggest that no matter how dependent a company is

**Table 10. Determinants reflecting a conceptual basis for outsourcing**

Level	Construct Focus	Constructs used	Conceptual state	Authors
IS function	<b>Current IS characteristics</b>			
	Information	Dependency on information (-/+)	Guidelines (Strategic grid)	McFarlan & Nolan (1995)
		Importance of sustained innovative information resource development (-)		
	Capabilities	Gaps in IS capabilities (+)	Conceptual model	Cheon et al. (1995)
	Strategy	Strategic significance analysis	Guidelines	Cronk & Sharp (1995)
		Strategic importance (-)	Guidelines (Strategic grid)	Apte & Mason (1995)
	<b>Beliefs associated with outsourcing</b>			
	Costs	Organization's relative performance efficiency (-)	Guidelines (Strategic grid)	Apte & Mason (1995)
		Transaction Costs (-)	Conceptual model	Cheon et al. (1995)
		Agency Costs (-)		
	Capabilities	Leverage internal technical capabilities (+)	Guidelines	Quinn & Hilmer (1994)
	<b>Perceived risks of outsourcing (-)</b>			
	Internal capabilities	Lack of organizational learning	Guidelines	Earl (1996)
		Possibility of weak management	Guidelines	Earl (1996)
		Loss of innovative capacity	Guidelines	Earl (1996)
		Loss of access to assets	Theoretical arguments	Duncan (1998)
		Erosion of knowledge (technological and firm )	Theoretical arguments	Duncan (1998)
		Loss of cross-functional skills	Guidelines	Quinn & Hilmer (1994)
		Loss of critical skills	Guidelines	Quinn & Hilmer (1994)
	IS constraints	Technological indivisibility	Guidelines	Earl (1996)
	Internal control	Loss of control over strategic assets	Theoretical arguments	Duncan (1998)
		Loss of control over resources	Framework and theoretical case	Jurison (1995)
	Strategy	Fuzzy (short term) focus	Guidelines	Earl (1996)
	Monitoring	Inability to control vendor	Framework and theoretical case	Jurison (1995)
		Loss of control over supplier	Guidelines	Quinn & Hilmer (1994)
	Vendor Capabilities	Outdated technological skills	Guidelines	Earl (1996)
		Inexperienced staff	Guidelines	Earl (1996)
	Costs	Hidden costs	Guidelines	Earl (1996)
	Adjustment time/costs	Dangers of an eternal triangle (Client-vendor adjustment time hinders evolution)	Guidelines	Earl (1996)
	Uncertainty	Endemic uncertainty	Guidelines	Earl (1996)
	External forces	Business uncertainty	Guidelines	Earl (1996)

on *information* it should not outsource if sustained innovative information resource development is of high importance.

Earl (1996) holds a similar position. He remarks that an organization might be able to identify and build a web of best-of-breed suppliers of particular services. However, outsourcing will be accompanied with a

*variety of risks*, one of them being the risk of losing innovative capacity within the business. The internal process of innovation might be limited due to a lack of interaction between users and technology specialists. This is in contrast to Quinn and Hilmer (1994) who state that access to superior information resources is not limited to a firm's own innovative capabilities (see also Quinn, 1999; Quinn, 2000). They do not deny the

**Table 11. Determinants reflecting mathematical models**

Level	Construct Focus	Constructs used	Conceptual state	Authors
Function (non IS)	Information	Information intensity (-)	Mathematical model	Sridhar and Balachandran (1997)
	Costs	Agency costs (-)		
		Incentive costs (-)	Mathematical analysis	Chalos and Sung (1998)
	Task variety	Number of tasks a manager has to oversee (+)		
IS function (project)	Costs	Uncertainty about IS development costs (-)	Economic Modeling: Propositions tested using numerical example	Wang, et al. (1997)

existence of potential strategic risks like loss of critical skills or loss of control over a supplier. However, they argue this vulnerability can be ameliorated through appropriately structured contracts.

The *focus on risks* seems to be prevalent in the *conceptual papers with a theoretical focus* as well. Jurison (1995) develops a framework that reflects the trade-off between cost advantages and risks of IS outsourcing. He tries to integrate transaction cost theory and the idea of the return on investment equaling the sum of a risk free return plus a risk premium incorporated in the Capital Asset Pricing Model (CAPM). According to CAPM, risk is defined as the variance in outcome. Translated into management language this would be the chance of loss associated with a given management decision. Potential sources of risk could be the loss of control over critical strategic resources, and the inability to control the vendor's costs, schedule, and technical quality. These factors in turn can be influenced by contractual safeguards. Jurison (1995) argues that these arrangements cause additional transaction costs and therefore lower the cost advantage.

Duncan (1998) posits that there might be risks associated with IS outsourcing which are independent of the risk of opportunism and corresponding high transaction costs. Based on the resource-based view she identifies asset erosion, loss of access to assets and loss of control over strategic assets as potential risks. In particular, the development and care of intangible assets (e.g., technology-specific knowledge, firm-specific knowledge, learning capabilities) are affected through outsourcing, and should be considered in the decision to outsource IS resources. According to Duncan (1998) both transaction cost theory and resource-based theory are non-exclusive theories in "...understanding risks to the firm when it turns to the market to source its IS resources" (p. 675).

The same basic view is taken by Cheon et al. (1995). However, in addition to transaction cost theory and

resource-based theory, they include agency theory and resource-dependence theory as theoretical lenses through which IS outsourcing behavior may be viewed. Based on these four theories they developed a contingency model that contains economic (TCT and AT) and strategic (RBT and RDT) perspectives.

#### 4.1.3 Mathematical "why"

A second non-empirical group of articles develops normative statements about when to outsource based on mathematical models that are analyzed in distinctive scenarios. The arguments are primarily based on agency theory (see Table 11).

Sridhar and Balachandran (1997) develop a model that is concerned with whether two different types of tasks, characterized as downstream (associated with the final stage of the production process) and upstream (intermediate state), should be assigned internal to the firm or outsourced. They consider agency costs that arise due to different *information structures* in both governance modes between principal and agent. The model is analyzed assuming risk neutrality. Given the research setting of constrained resources and incomplete information, a firm will tend to retain the information intensive upstream task(s) internally while outsourcing the production of the final product.<sup>22</sup>

Chalos and Sung (1998) design an agency model, which deals with the question of why a firm cannot replicate market *incentives* for cost reduction internally. Two tasks are distinguished. One is associated with non-core production processes (e.g., support activities). The other is related to core activities that involve a high degree of either technological or human

<sup>22</sup> Transferred to IS outsourcing the question would be what IS functions/tasks can be characterized as upstream and which as downstream. In the areas of applications development, the use of software development life-cycle models might be considered.

**Table 12. Single case study arguments for IS outsourcing**

Level	Construct Focus	Constructs	Authors
IS function	Resources and capabilities	Better access to leading edge technologies (+)	Huber (1993)
		Reduced development time (+)	Huber (1993)
		Gain more flexible and higher quality IS resources (+)	Cross (1995)
	Strategy	Focus on IS resources that directly improve overall business (+)	Huber (1993)
	Control	Transform fixed into variable costs (+)	Huber (1993)
		Trade ownership for results (+)	Huber (1993)
Overall IS function	Costs	Cut costs (+)	Huber (1993)
			Palvia (1995)
	Power / Politics	Personal interests impact outsourcing decisions (+/-)	Palvia (1995)

asset specificity. The model assumes that the "...supplier has exactly the same technology as the host firm in operating the support unit" (p. 906). Thus the focus is on differences in incentive costs of an internal profit center versus those related to the supplier contract and the managerial compensation contract between the supplier and the supplier's manager. Both the scenario of a risk neutral (publicly held supplier) and a risk averse (owner/manager) supplier are modeled and analyzed. The results suggest that when managers have multiple tasks to oversee, marginal returns to managerial effort is maximized when that effort is focused on a core competency. If a manager is responsible for only one distinct task, then the managerial incentive benefits of outsourcing are available internally. These benefits may also be obtained by managing the supporting cost activities as separate profit centers (p. 914). Given the current trend towards downsizing and broader spans of control, it is reasonable to expect the outsourcing trend to continue. However, there is a point where the benefits of outsourcing are constrained by the coordination costs (p. 915).

The previous two papers are concerned with the governance choice of the production of physical industrial goods. In contrast, Wang et al. (1997) focus on custom software development projects. They argue that this is characterized by a high level of communication about information requirements and operational procedures between users and developers. They develop a model based on the assumption of *information asymmetry*. In addition, they assume that the bargaining process between developer and user is *non-cooperative*. In the case of insourcing there is no incentive for misrepresentation, as central management serves as a budget balancer, whereas in the case of outsourcing, extra costs are the outsourcer's profit margin. The model calculates the net value of internal vs. external development, taking

into account different levels of requirement cost or uncertainty about development costs. The results of their analysis indicate that internal developers have a substantial advantage over outsourcers when both are governed optimally (p. 1739). Neither the expected strategic value of the system under development, nor uncertainty about that value, is significant. This implies that the sourcing of strategic systems depends on a case-by-case analysis, and consequently any attempt to predict sourcing as a function of a system's strategic value will not find a clear pattern. However, uncertainty about development cost, as opposed to system value, is significant, with greater uncertainty favoring internal development (p. 1741). According to the authors, active participation and communication by both parties can help alleviate uncertainties through mutual monitoring (p. 1741).

#### 4.1.4 Descriptive "why"

In contrast to these theoretical reflections that try to construct an ideal based on logical deductions and relationships, the primary goal of 'descriptive' studies is to find out what is occurring in practice. Being exploratory in nature, these papers add insight into the phenomenon of interest. Two groups can be distinguished. The first one involves *single case studies* that illustratively present the IS outsourcing decision process of a company and its subsequent implementation (Cross, 1995; Huber, 1993; Palvia, 1995)<sup>23</sup> (see Table 12). The second group uses *surveys and multiple case studies* designed to identify the pros and cons of IS outsourcing, and specific characteristics of firms that choose to outsource (see Table 13.)

<sup>23</sup> The description of the decision-making process in one fictitious petroleum company by Lacity et al. (1995) partly falls into that category as well.

**Table 13. Descriptive determinants involving surveys and multiple case studies**

Level	Construct Focus	Constructs	Authors	
Firm	Performance	Leadership in IS industry performance (-)	Arnett & Jones (1994)	
	Manager	Active computer use by CEO (-)		
		CEO not involved in steering committee (-)		
	Organization / Power	Organizational distance between CEO and CIO (+)		
IS function	Domestic Exchange / Outsourcing Advantages (+) / Disadvantages (-)			
	Cost	Cost reduction (+)	Apte et al. (1997)	
				Clark et al. (1995)
		Cost predictability (+)	Clark et al. (1995)	
		Involves high costs (-)	Apte et al. (1997)	
	Personnel	Reduced need to hire IS professionals (+)	Apte et al. (1997)	
		Reduced size of IS department (-)	Apte et al. (1997)	
		Limits long-term career prospects (-)	Apte et al. (1997)	
	Strategy	Improved focus on strategic use of IS (+)	Apte et al. (1997)	
	Resources / Capabilities	Access to leading edge technology (+)	Apte et al. (1997)	
		Loss of internal technical knowledge (-)	Clark et al. (1995)	
		Access to management skills (+)	Clark et al. (1995)	
		More rapid development (+)	Clark et al. (1995)	
		Improved service quality (+)	Clark et al. (1995)	
	Finance	Reduced need for capital investment (+)	Apte et al. (1997)	
	Organization	Implementing change more rapidly	Clark et al. (1995)	
	Contracting	Difficulty in specifying requirements (-)	Apte et al. (1997)	
	Control	Difficulty in monitoring performance (-)	Apte et al. (1997)	
		Loss of control of quality and timetable (-)	Apte et al. (1997)	
		Increased management complexity (-)	Clark et al. (1995)	
	Flexibility	Loss of flexibility (-)	Clark et al. (1995)	
	Power	CIO status enhancement	Clark et al. (1995)	
	Security	Risk of intellectual property rights violation (-)	Apte et al. (1997)	
	Market	Availability of vendors (+)	Apte et al. (1997)	
	Global Exchange / Outsourcing Advantages (+) / Disadvantages (-)			
	Cost	Significant cost reduction (+)	Apte et al. (1997), Sobol & Apte (1995)	
	Resources	Access to pool of professionals (+)		
	Capabilities	Reduced cycle time (+)		
	Market	Improved access to global market (+)		
	Communication	Difficulty in verbal communication (-)		
		Difficulty in data communication (-)		
	Country specifics	Unclear government rules / regulations (-)		
		Time difference in working hours (-)		
		Differences in culture (-)		

Examples of the former can be seen in the case of *Continental Bank* where the decision to outsource was primarily driven by customer demands, such as better access to cutting-edge technologies and reducing the development time for new, technology driven products.

Additionally, management desired to transform fixed costs to variable costs (Huber, 1993). The primary reasons for IS outsourcing at *British Petroleum* (BP) were to cut costs, gain more flexible and higher quality IS resources, focus the IS department on resources



that directly improve the overall business, and the desire to trade ownership for results. BP also believed that the risks of IS outsourcing could be reduced through multiple supplier outsourcing (Cross, 1995). In another single case study Palvia (1995) describes the benefits and pitfalls of IS outsourcing from the perspectives of two different managers that were involved in and affected by the decision to outsource in a *single bank*. The former manager of technical IS support took over the position of the CIO after the outsourcing decision. He was one of the key persons in the decision process. According to him, outsourcing was primarily driven by strategic reasons. The second informant, the former technical staff consultant, was laid off as a result of the outsourcing decision. From his perspective the primary reason was an initiative by top management to cut costs. He argued that the decision to outsource was made early, and the whole decision process was merely a masquerade. These opposing views show that different stakeholders have different motivations for and against IS outsourcing within a company, and that power and politics play a role in the sourcing decision.

Examples of the latter include Sobol and Apte (1995) who investigate the *advantages and disadvantages* of domestic versus global outsourcing (global outsourcing is when IS services are outsourced to a supplier that is located in another country). In another study Apte et al. (1997) investigate the perceived advantages and disadvantages of domestic versus global outsourcing in a cross-cultural setting. Their survey covers companies within the USA, Japan and Finland. Clark et al. (1995) identify cases *for and against* IS outsourcing within their multiple case study.

The study by Sobol and Apte (1995) shows that there are differences between the perceived advantages and disadvantages of global versus domestic IS outsourcing. They found the primary advantage of *domestic* outsourcing to be cost containment. The most often cited disadvantage was difficulty in monitoring the vendor in terms of quality and schedule/time control. The advantages of *global* outsourcing were low salaries abroad that allow cost reduction, and access to a large group of highly schooled professionals. The primary disadvantages were unclear government attitudes toward transborder data flow, and difficulty in data communication with foreign vendors.

In the study by Clark et al. (1995) the most frequently cited arguments for IS outsourcing were reducing costs and /or infusing cash, developing IS applications more rapidly, improving service quality and productivity, gaining access to leading edge technologies, reducing technological risk and increasing technological flexibility, implementing

change more rapidly, assessing current information management capabilities, enhancing the status of the information services executives and easing the information services tasks for senior management. Arguments against IS outsourcing were increased costs, loss of internal technical knowledge, loss of flexibility, and increased information services management complexity.

Although such a 'balance sheet of arguments' (i.e., listings of pros/advantages and cons/disadvantages) show the range of criteria that need to be considered in IS outsourcing, they do not allow any kind of conclusion about whether to outsource or not within a specific situation (Clark et al., 1995, p. 228). The limits of explanatory power of such an analysis become even more obvious in the cross-cultural survey by Apte et al. (1997). Their results show that the degree of outsourcing IS functions varies across the USA, Japan and Finland. However, only minor deviations can be observed concerning the perceived advantages and disadvantages of IS outsourcing. In all three countries cost reductions were rated as the biggest advantage of IS outsourcing. Difficulty in monitoring performance was rated as the most important disadvantage.

The study of Arnett and Jones (1994) explores the structural and managerial characteristics of organizations that outsource one or more IS activities. Their results show that the frequency of outsourcing is higher in companies where the CEO does not personally or actively use a computer, where the organizational distance between CEO and IS manager is high (more than one level below the CEO), and where the CEO is not involved in a steering committee. In addition, industry leaders in IS performance were found to outsource less frequently than close followers.

#### 4.1.5 Interpretivist "why"

The third group of empirical studies entails interpretivist studies. From the seven interpretivist studies identified in the literature, all chose single or multiple case studies to investigate IS outsourcing. The study subjects (i.e., the cases) often were chosen consciously according to a specific research objective. The studies often focus on polar extremes where researchers seek to question certain patterns that seem to have been manifested in the literature or in practice. The sourcing decision is analyzed from the perspective of the main antagonists in the research settings (i.e., within the case companies). In the following, we briefly outline each study separately. An overview of the constructs used in these studies is provided in Table 14.

**Table 14. Interpretivist studies which address determinants of sourcing decisions**

Level	Construct Focus	Constructs	Sourcing Option	Authors
IS function	<b>Characteristics of IS function(s)</b>			
	Human capabilities	Need of business understanding [speculative systems] (-)	Outsourcing	Heiskanen et al. (1996)
		Need of tacit individual process knowledge (-)	Outsourcing	Beath & Walker (1998)
		Need of tacit (standard) software knowledge (+)	Outsourcing	Beath & Walker (1998)
	Strategy	Core competence (-)	Outsourcing	Currie & Willcocks (1998)
	Control	Failure to provide adequate recharge system (+)	Outsourcing	Fowler & Jeffs (1998)
	Culture	Cultural gap with user departments (+)	Outsourcing	Fowler & Jeffs (1998)
	<b>Beliefs associated with sourcing option</b>			
	Profit	Commercial exploitation (+)	Spin-off	DiRomualdo & Gurbaxani (1996)
	Service quality	Increased customer orientation (+)	Spin-off	Reponen (1993)
		Better balance between user needs and development resources (+)	Spin-off	Reponen (1993)
		Insufficient quality standards of vendor (+)	Insourcing	Hirschheim & Lacity (2000)
	Capabil-ities	Cumulative experience through the market mechanism (+)	Spin-off	Reponen (1993)
		Upgrade and transform existing resources and skills (+)	Outsourcing	DiRomualdo & Gurbaxani (1996)
		Introduction of new resources and skills (+)	Outsourcing	DiRomualdo & Gurbaxani (1996)
			Joint ventures	Currie & Willcocks (1998)
		Develop sector specific knowledge (+)	Joint venture	Currie & Willcocks (1998)
		Vendor failure to keep up with technological change (+)	Insourcing	Hirschheim & Lacity (2000)
	Controlling	Overcome inappropriate internal charging mechanism (+)	Spin-off	Reponen (1993)
	Costs	Efficiency of IS personnel (+)	Spin-off	Reponen (1993)
		Higher outsourcing costs than expected (+)	Insourcing	Hirschheim & Lacity (2000)
	Organizational change	Vehicle for change (+)	Outsourcing	Fowler & Jeffs (1998)
	Business impact	Using and deploying IS to improve business results	Joint venture	DiRomualdo & Gurbaxani (1996)
	Supplier behavior	Lack of trust about supplier motivation (-)	Outsourcing	Currie & Willcocks (1998)
Individual	Personnel	Higher motivation of IS professionals (+)	Spin-offs	Reponen (1993)

Reponen's (1993) study is concerned with reasons for and wider implications of spin-off arrangements. The study is longitudinal in nature. Based on informal discussions with experts in practice and a literature review, a number of potential reasons for *spin-off* arrangements were identified and classified into three groups related to personnel, finance, and organization. The influence of these factors was then further examined through interviews at six case sites. The

most important factors for spin-offs were higher motivation, more customer orientation and higher efficiency of IS professionals (personnel factors), cumulative experience through the market mechanism (organization factor), and better investment planning in IS (financial factor). The dimension "better professional motivation" reflects an individual level perspective. All other dimensions are derived from the perceptions of the interview partners (individuals), but represent

constructs on the macro level (e.g., more customer orientation).

In addition, Reponen (1993, p. 108) found two additional factors leading to spin-offs. First, managers found it difficult to control IS due to inappropriate internal charging mechanisms. Second, outsourcing in the form of a spin-off was also expected to result in a better balance between user needs and development resources. Although there were some transition problems in converting to a spin-off solution (e.g., unintended turnover of personnel, increased costs because of new marketing and accounting departments, or some deterioration in relationships with established users because they are now trading with an outside company), after a couple of years management seemed to be satisfied with the solution, as most of the original objectives had been achieved. However, in two of the case companies, factors such as higher than expected costs, the spin-off company's inability to adapt to a new and changing situation, the desire to use the core IS skills internally, a new IS strategy, and/or conflicts of interests between serving the company and increasing outside sales, had forced the companies to either dissolve the spin-off and convert to an in-house IS department or to selectively outsource to an external vendor. These findings show that IS sourcing is an ongoing decision process, which is influenced by changing contextual factors and environmental forces.

A similar process-based view of action was incorporated in the longitudinal case study of Heiskanen et al. (1996) reflecting the procurement histories of three information systems in a Finnish University. Evidence is found for changing perceptions of potential cost savings during the outsourcing relationship. For example, in the initial purchase of a student information system the goal of efficiency in developing the IS was found to dominate, resulting in a preference for solutions from the market. Later, during the use and maintenance phase, the costs of using an outside vendor became too high, due in part to the use of gatekeepers as intermediaries between the customer and the vendor. The development reverted to in-house sourcing. An explanation of the dynamics of contracting over time can be given based on an analysis of the maturity of the systems that need to be developed. The degree of maturity in the software development projects is related *ex post* to the concept of asset specificity from TCT. The experiences with the three information systems histories suggest that *routine applications* should be adapted through the market by acquiring a software package, whereas the implementation of *standard information systems* would favor a hybrid arrangement enabling the adaptation of software knowledge through the market. However, *speculative systems* that require a high degree of

business understanding would better be developed in-house.

Beath and Walker (1998) take an intensive view of knowledge as a resource, drawing on the concept of *tacit knowledge* and its role in the software acquisition and implementation process. Drawing on interviews in thirty major US companies, they argue that the question of whether to outsource or not depends on the kind of knowledge that is needed to complete the tasks that are considered to be outsourced. Based on an in-depth analysis of four selected cases they illustrate that external suppliers have tacit knowledge concerning the software. Knowledge of standard firm processes can easily be adapted by them. Individual processes, however, demand a learning process. Even though their arguments are not based on transaction cost theory they conclude that outsourcing is most effective when the supplier's existent knowledge is adequate to the task implied in the project.

The multiple case studies by Lacity and Willcocks (1995) are based on TCT *ex ante*. The interpretive nature of their study begins with the observation of a variety of abnormalities from the proposed relationships between the independent constructs asset specificity (non-specific or idiosyncratic) and frequency (occasional or recurrent) of transactions and the dependent construct 'transaction type' represented by the four options: insourcing, classical contract (standard), neo-classical contract (includes special clauses) and relational (based on trust and the spirit of partnership). Based on their interview data they find a variety of alternative explanations for the outsourcing decision. One of their interpretations from the perspective of TCT opponents is that "...using the transaction as the unit of analysis overlooks the broader context which sheds significant understanding on outsourcing decisions" (p. 238).

The meaning of history and context is considered in the multiple case studies by Hirschheim and Lacity (2000). They focus on fourteen cases where companies either (1) evaluated a choice between outsourcing IS services or retaining them in-house, or (2) decided whether to continue outsourcing or to bring the outsourced functions back in-house (back-sourcing). Even though this study is cross-sectional in nature, it sheds light on the historical background of the outsourcing decision and therefore provides insight into the process of how the decision evolved. They found evidence for firms not only in- or back-sourcing due to higher costs than originally expected, but also because of insufficient quality standards and the vendors' failure or unwillingness to keep up with technological change.

The impact of history on the sourcing decision is also addressed in the single case study by Fowler and Jeffs (1998). They find some evidence for outsourcing being seen as a vehicle for change: "It is therefore suggested that companies may too often seek to make structural changes [through IS outsourcing] in order to compensate for the strategy failures of the past or to correct existing perceptions of dysfunction" (p. 122). "It is also postulated that although managers claim rational economic benefits when making outsourcing decisions, they may, in fact, be bounded in their rationality by their perception of the quality experienced as users of IS/IT" (p. 111). Moreover, they find situations where the internal IS department is perceived as an inhibitor of change, often associated with a culture gap in respect to the user departments, or the shortage of hybrid management skills and business knowledge. As in Reponen (1993), they found the failure to provide an adequate internal chargeback mechanism to be a driver of IS outsourcing. This meant that managers did not possess an adequate degree of control over their IS/IT spending which, in turn, prevented them from managing their IS/IT costs. In addition, in-house development of applications was often seen as taking too long, being too costly, exceeding its budget, and often failing to produce systems that matched the real requirements. The perception of in-house failure and the expectation that outsourcing would overcome these problems, however, was found illusory, especially when companies that outsource find themselves supported by the same personnel as before (Fowler & Jeffs, 1998, p. 121). One dimension that is frequently overlooked within the IS outsourcing decision is the strategic impact of IS. Fowler and Jeffs (1998, p. 119) conclude, that "... the accurate assessment of IS's strategic dimension is central to the outsourcing debate. Although it often was not seen as a core business activity it was considered a core support activity. Overall, there was consensus that the company should not relinquish its control over IS or its strategic planning activities."

Contrary to Fowler and Jeff's observation that the strategic impact of IS is often overlooked when making sourcing decisions, DiRomualdo and Gurbaxani (1998) argue that firms outsource because of strategic reasons. Based on their multiple case study analysis, they differentiate three strategic intents of IS outsourcing which in turn impact the contract type with respect to the degree of ownership and the kind of relationship building. In the case of (1) "*IS improvement*" the intent is to amend productivity, upgrade and transform existing IS resources and skills, and introduce new IS resources and skills. The appropriate outsourcing mode would be selective outsourcing, multiple suppliers, and eventually strategic alliances. When the goal is (2) "*business*

*impact*", the market is used for help on the premise that outsourcing vendors' state of the art skills, capabilities, and proficiency at recruiting and managing technologists make them better than internal IS organizations at using and deploying IS to improve business results. However, realizing this goal requires an understanding of the business, the link between IS and business processes, and the ability to implement new systems and business change simultaneously. The authors claim the most effective approach involves jointly developed complementary skills and capabilities, rather than simply relying on those of the vendor. The suggested outsourcing mode in this case would be strategic alliances or joint ventures. The third strategic intent is (3) "*commercial exploitation*". It aims to improve the return on IS investment by generating new revenue and profit or by offsetting cost. The appropriate mode would be joint ventures or spin-offs. The study by DiRomualdo and Gurbaxani shows that the spectrum of choices within the outsourcing decision goes beyond insourcing versus selective or total outsourcing of IS functions.

Currie and Willcocks (1998) take a similar point of view. Their in-depth case studies propose four distinct approaches to sourcing: total, multiple-supplier, joint venture/strategic alliance, and insourcing. They found an organization's choice of a particular type to be influenced by a complex mix of market, business, technical, and political issues. The major motivations in the case of *total outsourcing* were to reduce IS costs, focus on core business, eliminate an IS (problem) function, gain access to managerial/technical expertise, and retain strategic control. The rationale behind *joint venture/strategic alliance* sourcing was to develop sector specific knowledge, generate new business opportunities, and gain access to specialized technical expertise. *Multiple supplier outsourcing* was seen as an opportunity to focus on the core business, to standardize/coordinate operations, and to transform fixed costs to variable costs. *Insourcing* was driven by a lack of trust about supplier motivation and the need to retain up-to-date technical expertise. In addition, IS was seen as a core competence.

The interpretive results of the multiple case studies of Lacity and Willcocks (1995) suggest that political factors may influence the outsourcing decision. IS managers were found to manipulate or instrumentalize the evaluation of IS outsourcing in order to prove the efficiency of in-house IS, justify new resources for in-house IS, expose exaggerated outsourcing claims, or demonstrate their willingness to be business oriented and therefore enhance their chance to achieve senior executive status. Hirschheim and Lacity (2000) found evidence for IS managers taking charge for the outsourcing evaluation for the same "political reasons"

(p. 102). On the other hand, non-IS senior managers in some cases perceived IS outsourcing as a possibility to eliminate a troublesome function (Lacity and Willcocks, 1995). Thus political actions are taken on both sides; within as well as outside the IS function.

In addition, multiple stakeholders often create conflicting expectations for IS (Hirschheim & Lacity, 1998; Lacity & Willcocks, 1995; Reponen, 1993). Senior level executives favor low-cost solutions, whereas users only see their part of the IS world and demand quick and effective service. IS managers develop a regulatory role by trying to prioritize IS requests. IS personnel subsequently feel pressured by different stakeholder demands. Thus experiences of different stakeholder groups with the existing governance choice often result in varying pressures on the decision to outsource or insource IS. Potential negative consequences of outsourcing – market failure – are often overlooked due to an over-emphasis on perceived internal weaknesses (firm failure) or vendor strengths (market superiority).

#### **4.1.6 Summary “Why”**

This section is divided into subsections that summarize the different research approaches to “why to outsource” (sections 4.1.6.1 – 4.1.6.5), followed by a subsection that provides an overall summary (section 4.1.6.6).

##### **4.1.6.1 Summary Positivist “Why”**

Within the stream of positivist research several themes/conclusions emerged. First, a general tenet seems to be that no single theoretical lens is appropriate to comprehensively describe why organizations choose to outsource. The papers of Nam et al. (1996) and Poppo and Zenger (1998) underline this tendency by attempting to integrate different theoretical perspectives.

Second, all the positivist studies reviewed are on the macro level. Not a single study considered the individual level; the motivations, preferences or attitudes of individual stakeholders and their impact on the IS outsourcing decision. Although power theory, which in general is considered to be an individual level theory (Pfeffer, 1982), has occasionally been applied, the determinants are conceptualized in such a way that they remain at the group or firm level. This is also the case when agency theory was used. One might speculate that employing either power or agency theories at the individual level in outsourcing research could result in a heightened understanding of the motivation and incentives that influence individual attitudes and behaviors in an outsourcing context. Within the macro level there is a shift of focus from the

social system to the firm and functional IS-level. To explain the observation of heterogeneous behavior regarding the functions to be outsourced (selective outsourcing) authors tend to study the relationship between independent and dependent variables on the level of individual IS functions (see section 4.2).

Third, two groups of outsourcing factors emerged from our analysis. While one group of explanatory factors reflects certain attributes of the IS function itself (e.g., its asset specificity), a second group of determinants is directly related to outsourcing behavior. This second group of factors are comparative in nature, reflecting either criteria that are thought to be important when deciding on insourcing versus outsourcing IS functions (e.g., comparative production costs), or perceptions of potential positive or negative consequences associated with the provision of IS services by an external vendor (e.g., high transaction costs) (cf. Ang & Slaughter, 1998).<sup>24</sup>

Lastly, we recognize that there is an apparent shortcoming in positivist research. Much of it tests hypotheses such as ‘the higher the production cost advantage of an external supplier in performing a particular IS function, the more likely it will outsourced’. Whilst such a consideration is important – especially when compared to other evaluative criteria – what would also be interesting to know is why, or under which circumstances, an external supplier is perceived to be superior or inferior to an in-house provider in terms of costs or other comparative decision criteria. It is very likely that the actual characteristics of an organization’s IS functions would be an important predictor of such comparative advantages or disadvantages of outsourcing. A more serious consideration of the attributes and the nature of an organization’s IS function(s) – that is, the nature of the task as well as the profiles and roles of those that complete particular IS tasks – has the potential to go beyond the “nominal view of technology” (Orlikowski & Iacono, 2001, p. 128), where IS are merely treated as a passive object or “black box”<sup>25</sup>.

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<sup>24</sup> In this case, it is implicitly assumed that transaction costs only occur in the market and not in-house. This assumption needs additional empirical support however before being taken as correct.

<sup>25</sup> The first step towards building a coherent theory of IS outsourcing would include: (1) identifying the main comparative criteria in evaluating insourcing versus outsourcing options; (2) elaborating on those factors that impact these perceptions; and (3) considering those factors that go beyond a rationalistic view of decision making. In doing so, different reference theories should be considered and inter-theoretical linkages and overlaps clearly outlined (cf. Dibbern, 2004). A mixture of variance and process theoretic arguments, however, should be approached with caution (cf. Markus and Robey, 1988). Of the papers reviewed, only Loh and Venkatraman (1992b) and Hu et

#### 4.1.6.2 Summary Conceptual "Why"

The conceptual papers add some interesting concepts and ideas to explain and guide the IS outsourcing decision. Five themes emerged from our analysis: One, the IS function may be treated as a portfolio, with different characteristics leading to different sourcing decisions. Two, the combined evaluation of different criteria (e.g., strategic significance and relative efficiency) is associated with heterogeneous outsourcing arrangements. Accordingly, employing multiple criteria derived from multiple theoretical lenses may be beneficial. Three, IS outsourcing may be considered as a decision under risk. For that reason the potential negative outcomes of IS outsourcing need to be identified and evaluated when deciding on IS outsourcing. Four, in addition to the risks, the opportunities and potential upside of IS outsourcing should not be overlooked. Five, both methods to minimize risks and take advantage of opportunities should be taken into consideration. This naturally leads to questions about "how to outsource" (i.e. implementation issues). When making an outsourcing decision each formal or informal intervention to either lower risks or to increase the likelihood of realizing potential benefits results in additional costs. These costs likely reduce the advantages of IS outsourcing.

While the logical structure of the conceptual papers may serve as a basis for other research, looking at the level of analysis reveals that IS is often treated very globally. Indeed, authors often operate at the overall firm level instead of considering specific IS features in their analysis. This needs to be taken into account when using some of their concepts as a basis for subsequent studies on IS outsourcing.

#### 4.1.6.3 Summary Mathematical "Why"

The common feature of the mathematical papers is that they study the outsourcing decision from an aggregated perspective. While each study may look at a certain domain (e.g., the governance of the production function, or software development projects), such domains may easily be substituted for, as they merely underline the assumptions on which their particular models are based. Thus the main role of these studies is to add an important element of scientific rigor to outsourcing research in general. This is reflected in the preferred publication outlets of these studies. However, beside their analytical maturity, they raise some important issues that, for whatever reason, have been largely ignored in other types of research. The first of these is the assumption of *information*

*asymmetry* between client and vendor. Little research has been done so far to explicitly study the sources and consequences of such asymmetries in the context of IS outsourcing. The same is true for the second issue; the notion of *risk neutrality*. Firms in general, and the individual managers of both clients and vendors, generally differ in their risk attitudes, and this likely impacts the IS outsourcing decision (see the conceptual studies). The third issue is that of *incentives*. Incentives to do the job 'right' (i.e., in the interest of the principal) are more than likely different within the client organization as opposed to the vendor. Consequently, the necessity and the costs for setting incentives will probably differ according to the perspective employed and the specifics of the sourcing arrangement.

#### 4.1.6.4 Summary Descriptive "Why"

Descriptive studies are often underestimated among academics, but highly appreciated by practitioners. Their focus is not on theorizing or testing theories on why companies outsource IS, but on identifying and describing phenomena associated with the IS outsourcing decision that are new and for which no explanation or theory has yet been developed. Descriptive studies often serve as a source for subsequent research. Three phenomena that have not been explained so far emerged from our analysis of descriptive studies.

First, there are differences in the perceptions of advantages and disadvantages of global (offshore) versus domestic outsourcing. The reasons for these differences need to be examined to facilitate the decision to select one option over the other. A promising approach might be to begin with a general theory on why a firm chooses to outsource IS functions, and to then analyze how such a theory might be modified in the special case of global IS outsourcing. This could include an analysis of the limits of the general theory, and then proceed to identify new explanatory factors. Cultural and institutional differences will likely serve as valuable concepts to be considered.

The same research strategy might be worthwhile in exploring a second phenomenon: different countries outsource IS to varying degrees. Again the question is why such differences exist.

The third phenomenon addresses the personal attitudes and characteristics of IS managers and non-IS senior level executives, as well as their relationship to each other. These factors appear to have an influence on the IS outsourcing decision that is currently neglected by researchers, but may well have a significant yet unexamined, or at least underestimated, impact.

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al. (1997) applied a process perspective (Innovation Diffusion Theory).

#### 4.1.6.5 Summary Interpretivist “Why”

With interpretivist research generally viewed as orthogonal to positivist research, it may be worthwhile to summarize the stream of interpretivist research in comparison to positivist research. A first observation is that positivist research is strongly based on reference theories from other disciplines, while interpretivist research mostly ignores such theories. It is unclear as to whether interpretivist research in our survey viewed such theories as inappropriate for studying IS outsourcing, or simply did not wish to be guided or influenced by any dominant perspective. Theoretical lenses like transaction cost theory are explicitly considered in only two cases. They are applied either *ex ante* to guide the research and evaluate its explanatory power in subsequent cycles of revision (e.g., Lacity & Willcocks, 1995) or taken *ex post* to interpret the observed patterns in IS outsourcing behavior (e.g., Heiskanen et al., 1996).

It is interesting to note that in many ways, the studies provide complementary empirical evidence to the main causal agencies that were identified in the positivist stream of research. This may be seen in a comparison of the constructs found in Tables 7, 9, and 14.

Moreover, the results of interpretivist studies also indicate that there might indeed be some limitations of positivist research in explaining differences in IS outsourcing behavior. These limitations may be due to a too strict and context-independent application of reference theories, an oversimplification of the dependent variable, a monistic client stakeholder perspective, or the neglect of the temporal dimension within the dominant variance theoretic reasoning.

Interpretivist studies generate additional perspectives on the sourcing decision that on an aggregated level can be described as follows:

- Different IS sourcing arrangements, such as spin-offs, joint ventures, strategic alliances or traditional outsourcing, are associated with different motivations and intents.
- The sourcing decision is influenced by the organization's history. Experiences within an existing sourcing arrangement (e.g., success or failure) likely lead to new decision processes with different outcomes. It is important to understand how such experiences came about as they likely have a strong impact on the evaluation of the IS function within the current sourcing arrangement, in comparison to previous or alternative options.
- The evolving and changing paradigms within and around the IS functions (e.g., technological, social, or business driven) are associated with the

evolution and changes concerning the IS sourcing arrangements.

- Different stakeholders have different, and in some cases partially or completely opposing interests regarding the IS functions. These interests influence their preferences for certain sourcing arrangements.

As with positivist research, the level of analysis in interpretivist research often reflects a very global treatment of IS/IT. IS-related concepts such as the specificity of IS functions, as well as the distinctions of physical and human assets (e.g., knowledge) incorporated in IS functions deserve more intensive study.

#### 4.1.6.6 Overall Summary “Why”

Viewed as a whole, there are some noteworthy themes that emerge from the “why” body of work. First is the fact that nearly all the papers utilize economic or strategic management concepts, drawing attention to the implicit assumption that the outsourcing decision is approached rationally and logically. Similarly, most of the papers adopt a macro level view of the firm as the level of analysis. Interestingly enough, it is the non-empirical papers – the conceptual and descriptive ones – that introduce the notion of the IS function as a portfolio of activities, products, and resources, along with the use of different levels of analysis. The interpretivist studies serve to highlight the complexity of the IS function and the practice of outsourcing.

Early research into outsourcing focused almost exclusively on reducing the cost of IT as the primary motivation for firms to outsource. As the practice gained momentum, interest began to grow in the strategic aspects of the outsourcing decision. At the same time, researchers began investigating the potential risks of outsourcing. This represents a subtle shift in research objectives from *why* an organization outsources to *should* an organization outsource.

Although there remain a number of unanswered questions in this area (e.g., a closer examination of the role that factors related to power, politics, and interpersonal relationships play in the sourcing decision), the decrease in recent years of the number of papers aimed at understanding the outsourcing decision (see Table 29) indicates that researchers have moved on to other aspects of the outsourcing process.

## 4.2 Decision Phase: “What to Outsource”

The relationship between “why to outsource” and “what to outsource” as illustrated in Figure 1 is most obvious in the positivist studies. In these studies the

**Table 15. Overview of “What to outsource”**

Research Approach	Focus	Reference
Positivist	Firm level – the degree of outsourcing (total outsourcing vs. outsourcing of selected IS functions) IS function level – how to measure the degree of outsourcing (functions, percentage outsourced, degree of ownership, control, personnel replacement)	Section 4.2.1
Interpretive	Single IS functions Spin-off organizations	Section 4.2.2
Conceptual	Modes, ownership, internal markets	Section 4.2.3

central dependent variable is operationalized to measure the variance in IS outsourcing observed in the field. They reflect the range of options that can be chosen when asking “what to outsource”<sup>26</sup>. But one can find research taking an interpretivist or conceptual perspective on the issue of ‘what to outsource’ as well. In this section we explore the spectrum of how this issue has been addressed in the literature. Table 15 provides an overview of this section.

#### 4.2.1 Positivist “What”

The variance in IS outsourcing (i.e. range of options) is measured on different levels of analysis. On the ‘social systems level’, e.g., the country or the industry, the variance in IS outsourcing *implicitly* is reduced to the question *all or nothing*. Researchers *a priori* focus on those cases that were identified as having outsourced significant portions of their IS resources. Their primary objective is to identify general patterns either by explaining the variance of the sample itself over time (Hu, et al., 1997; Loh & Venkatraman, 1992b) or of the sampled cases in comparison to the average industry (Smith, et al., 1998).

The majority of studies focus on the ‘firm level’ *explicitly* distinguishing between outsourcing and insourcing (or in-house) IS. However, the demarcation between both extremes is taken either as a *strict line* or along a *continuum*.

The *strict line* option was chosen by Ang and Cummings (1997). They focus on the way computer data processing facilities are managed in the banking industry. Insourcing alternatives (0 = in) subsume the management by internal IS personnel and by an IS subsidiary at the parent bank or the holding. Outsourcing alternatives (1 = out) cover services by other banks, external service bureaus, facilities management (control and management external) and joint ventures or cooperative computer service

arrangements. In Ang and Straub (1998) this measure is complemented by applying it to the management of different banking applications and to eight different IS functions. Slaughter and Ang (1996) gathered data from employment advertisements for IS job positions from 1984 to 1994. They labeled ads as insourced when they included offers of permanent employment and rated them as outsourced when they indicated offers of a short term nature or indirectly through employee leasing, outsourcing or temporary employment companies.

The *continuous* measure can be differentiated through the level of analysis and according to criteria that determine its values or degrees.

On the *aggregated level* the IS/IT function is perceived as a whole. Loh and Venkatraman (1992a) measure the variance in IS outsourcing behavior as the percentage of total outsourcing expenditure from total assets.<sup>27</sup> In this case, the choice of options is reduced to different percentages without information on how they come about. To overcome this limited informational content Loh and Venkatraman (1992a, p. 9) suggest a *functional perspective*. They argue that “[s]everal modes of the IT infrastructure have been commonly outsourced to firms. These include applications development, data center, systems integration, systems design/planning, telecommunications/network, and time sharing. The modes of IT outsourcing vary through different levels of contribution of physical and human resources by user and the vendor”.

They take into consideration that different IS functions (segmentation) can be outsourced to third parties to varying degrees. The functional perspective is considered in a variety of studies which differ in the range of IS functions chosen and in the way the degree of outsourcing is measured. Most studies present multiple functions that are believed to cover all the IS/IT activities that can separately be outsourced

<sup>26</sup> The preconceptions of the different ways of operationalization have already been outlined in Section 2.2 where we presented our definition of “sourcing arrangements”.

<sup>27</sup> Currie (1996) looked at the extent to which companies used outsourcing as a viable option for IT.



to third parties and in sum represent the whole IS/IT function (Ang & Slaughter, 1998; Apte et al., 1997; Arnett & Jones, 1994; Grover et al., 1994a; Grover et al., 1994b; Poppo & Zenger, 1998).<sup>28</sup> Others focus on selected IS functions (e.g., applications development, data center, telecommunications/networks) (Loh, 1994; Loh & Venkatraman, 1995), one specific IS activity or function (Nam et al., 1996), or focus on a bundle of tasks (e.g., those related to either packaged software implementation or development of customized software) (Nelson et al., 1996).

De Looff (1995) takes a differentiated view on the IS function. He argues that the IS function can be conceptualized along three dimensions: the *functional information system* (e.g., human resource IS, financial IS), the *analytical components* (hardware, software, personnel, procedures, data) and the *temporal IS activities* (planning, development, implementation, maintenance, and operation of IS). "An organization can, for example decide to outsource the *development of the software for a financial IS*" (p. 284).

In the positivist literature, the degree of outsourcing within different IS functions has been measured in a variety of ways:

- the *approximate percentage* per IS function that is currently outsourced (Apte et al., 1997; Poppo & Zenger, 1998; Sobol & Apte, 1995) or the overall degree of outsourcing with respect to one specific IS function (Loh, 1994; Loh & Venkatraman, 1995);
- the *change* in IS outsourcing per IS function, through determining the difference of percentage of each function's *budget* allocated for outsourcing currently and three years ago (overall IS outsourcing is measured as the weighted sum of the outsourcing percentages per function) (Grover et al., 1994a; Grover et al., 1994b; Teng et al., 1995) or through the *change* in outsourcing of IS requirements of one specific IS function within the last three years (Loh, 1994; Loh & Venkatraman, 1995);
- the degree to which *decision rights or responsibilities* for an IS activity are located at the vendor side (Loh, 1994; Loh & Venkatraman, 1995; Nam, et al., 1996) or the *locus of decisions* concerning IS management and operational control of IS functions (Ang & Slaughter, 1998);

- the degree of *ownership* that the vendor has over the system's hardware and software with respect to one specific IS function (Nam et al., 1996);
- the degree of *replacement* of in-house IS *personnel* through the vendor with respect to one specific IS function (Nam et al., 1996);
- the degree to which the vendor *controls* the rules/procedures with respect to one specific IS function (Nam et al., 1996).

Reviewing the literature reveals that the decision on what to outsource is dependent on the specific situation within the individual organization and the perceptions and preferences of the main decision makers. The results regarding the IS functions being outsourced are mostly inconsistent, with one exception: IS planning and management most often remained in-house.

The fact that the individual context – including the whole environment in which the organization is imbedded – matters greatly in the decision on what to outsource becomes even more obvious in studies that compare outsourcing behavior between different groups (e.g., different cultures, public versus private organizations, small versus big companies). Apte et al. (1997) conducted an early (and rare) cross-cultural study on IS outsourcing. As noted before, the descriptive results of their survey show that the degree of IS outsourcing within Finnish, Japanese and US firms varies across the IS functions (e.g., the degree of outsourcing of software development is 33.3 % in the USA, 61.6 % in Japan and 47.5 % in Finland). Cultural differences might play a role: "...the importance of property right violation was considered an important risk in the USA and Japan, but was not given as much importance in Finland due possibly to its open and trusting culture" (p. 298). However, the different behavior of Finnish firms could also be a result of their size, as most of the companies could be categorized as small.

The complexity of the sourcing decision becomes even more obvious considering that it is not limited to selecting different IS functions. It can be extended through asking for the *ownership* of the IS assets incorporated within the IS functions. The degree of ownership in IS outsourcing was found to vary across countries: "[I]n Japan and, to a certain extent, in Finland outsourcing relationships are primarily with a subsidiary of the outsourcing company, whereas in the USA the outsourcing partners are typically independent vendors" (Apte et al., 1997, p. 293). The question of "who has the ownership" over the IT/IS assets, however, is one that has to be contractually settled. It might be considered as a matter of implementation. However, it is of an objective nature, it

<sup>28</sup> The functional segmentation can also be observed in services outside the IS context, e.g. Goodstein et al. (1996) differentiate 62 ancillary services in hospitals that separately could be outsourced.

can be measured objectively, and therefore *a priori* be perceived as an alternative governance choice within the decision process.

In the positivist stream of research, only two studies explicitly recognize the ownership dimension. Ang and Cummings (1997, p. 241) label the provision of IS services through a subsidiary as insourcing. Nam et al. (1996) consider it as one measure of the degree of outsourcing. Thus a spin-off would be rated as total insourcing. It must be noted, however, that when choosing other criteria, such as the locus of decision rights or control, a spin-off would likely be rated as total outsourcing.

#### **4.2.2 Interpretivist “What”**

In parallel to positivist studies, the functional perspective was recognized in interpretivist studies as well (Lacity & Hirschheim, 1993b; Lacity et al., 1996; Willcocks et al., 1996). In addition, some researchers focused on single IS functions such as software acquisition and implementation (Beath & Walker, 1998), or software development (Heiskanen et al., 1996). However, Lacity and Willcocks (1995, p. 240) argue that the focus on individual IS functions as the unit of analysis likely leads to oversee the complementary nature of IS activities (transactions). This is especially important when evaluating the value of IS. Often it is the sum or interconnectedness of various IS functions that creates value for the business.

The special case of spin-offs that were founded as a separate service organization based on the company's former data processing department was investigated by Reponen (1993). However, he perceived this arrangement as a type of outsourcing, as opposed to insourcing. A similar view is taken by DiRomualdo and Gurbaxani (1998) and by Currie and Willcocks (1998). They perceive spin-offs and joint ventures as one alternative external governance mode. The choice of it is dependent on the expectations associated with the IS functions(s).

#### **4.2.3 Conceptual “What”**

In his illustrative conceptual paper Venkatraman (1997) identifies four different modes which can be chosen to (re)arrange IS assets internally so that they add value to the business. These are (1) the cost center, (2) the service center, (3) the investment center and (4) the profit center. The major characteristic of the profit center entails that IS products are delivered to the external market. It is an arrangement that replicates the business model of the outsourcer. However, there are different options to organize the profit center, which represent different

degrees of ownership of the assets: (1) as a separate unit within the company (total in-house ownership, e.g., operating as a licensor); (2) as a joint venture with an external supplier manifested through a cross-equity deal (joint-venture, shared ownership) or (3) as a subsidiary, in which controlling equity is held by the parent firm (spin-off, total in-house ownership).

King and Malhotra (2000) focus on internal markets in general without explicitly distinguishing between different degrees of ownership. They broadly define internal markets as a “... setup in which internal units are enabled to act autonomously by *exerting self-control* in conducting *transactions* with *other internal units* and with *external entities* within a framework of an *overarching corporate vision, values and precepts*” (p. 325). The primary focus within their conceptual paper is on developing hypotheses about the various impacts of internal markets versus outsourcing.

#### **4.2.4 Summary “What”**

Our review of the literature indicates that the answer to the question “what to outsource” depends on how IS outsourcing is defined and operationalized, because these aspects impact the spectrum of choices that are taken into consideration. In particular, two parameters of the dependent variable – IS outsourcing – must always be defined carefully: (1) the level of analysis, and (2) the degree of outsourcing.

Within the *level of analysis* there is a tendency to treat the overall IS function as a portfolio of different sub-functions that may be subject to different sourcing arrangements. However, treating IS functions independent of each other also bears the potential to overlook important interdependencies. According to Thompson (1967), different kinds of task interdependence (sequential, pooled, and reciprocal) should be associated with certain preferable organizational arrangements. While the concept of interdependence has primarily been applied to study intra-organizational settings, it may be very useful in studying the alternative of insourcing versus outsourcing particular IS functions. In addition, functions should be characterized as a combination of task and worker. Currently, the focus has primarily been on delegating tasks internally or to an external supplier. However, in the same manner one might say that a task is performed by an in-house as opposed to an outsourced worker. Viewed in this vein, the question of “what function to outsource” can be restated as “what worker(s) to outsource.” This individual-level thinking has been mostly ignored in the studies reviewed, with the exception of Ang and Slaughter (1998).

The *degree of outsourcing* has been conceptualized very differently among the studies. There is no agreement on the one best way to measure the degree of IS outsourcing. However, one point deserves special mention. While some authors have treated the degree of ownership as equal to the degree of outsourcing, there is some evidence suggesting it may be more appropriate to treat the dimensions separately. The degree of ownership has the characteristic of an implementation issue that is taken into consideration in the outsourcing decision process. Based on the theory of property rights, one might argue that "...ownership confers residual rights of control over the firm's assets" (Hart & Moore, 1990, p. 1120). Hence ownership (e.g., a joint-venture or a spin-off) may be perceived as a safeguard against the risk of losing control, or of opportunistic behavior of the other party. It therefore has a profound impact on theories that are based on the assumption that vendors in general behave more opportunistically than in-house agents (Dibbern, 2004).

#### 4.3 Decision phase: "Which process"

The questions on "why" to outsource and "what" to outsource are tied together in a logical way. This combination inevitably leads to the question "why to outsource what". But how does this actually get applied in practice? What criteria are used to decide what to outsource? Who participates in determining and evaluating the criteria? How is the evaluation done? Who makes the final decision? Even if the decision makers are perfectly aware of the various sourcing options and the main evaluation criteria, how do they determine the instances of the criteria within their company? What does the decision process look like? And finally, what is the appropriate way to design the decision process? These all are questions that are addressed within the "which process" (choice) stage. Table 16 provides an overview of this section.

Looking back at the positivist and the non-empirical streams of research that deal with the question on "why" and "what" to outsource, the decision process itself is generally assumed to be of a "rational choice" nature, or to be of an adaptive nature driven by external forces (Markus & Robey, 1988, p. 587; Pfeffer, 1982, p. 6). Little emphasis is given to how the

decision actually takes (or should take) place. However, some of the descriptive and interpretivist studies shed light on this issue.

Some of the major issues addressed in the literature looking at the 'which' choice stage are:

- identification of the initiators and decision makers (Apte et al., 1997; Sobol & Apte, 1995) or decision sponsors (Hirschheim & Lacity, 2000), including the role of external consultants within the decision process and their impact on the perceptions and reactions of internal employees (Huber, 1993, p. 125-126; Lacity & Willcocks, 1997; Palvia, 1995);
- the need, methods, and necessary conditions to evaluate the internal IS function before deciding on IS outsourcing (Cross, 1995; Huber, 1993, p. 125-126; Lacity & Willcocks, 1995; Lacity et al., 1996; Willcocks et al., 1996);
- the role of benchmarking and external comparison (Willcocks et al., 1996);
- the role of committees in the evaluation process (Huber, 1993, p. 125-126; Lacity & Willcocks, 1997; Palvia, 1995);
- whether the process is formal or informal, and whether there is a decision process at all (De Looft, 1995; Huber, 1993, p. 125-126; Palvia, 1995);
- the role of different stakeholder perspectives (Lacity & Willcocks, 1997; Palvia, 1995); and
- the role of politics and tactical behaviors within the decision process (Lacity & Willcocks, 1995; Lacity & Willcocks, 1997; Palvia, 1995).

##### 4.3.1 Descriptive, Interpretive and Conceptual "Which process"

Papers in the "which process" stage are mostly descriptive in nature and not grounded in theory. In general, they report on the decision and evaluation process, focusing on its participants as well as on applied procedures and techniques.

The whole process can be subdivided into three phases: (1) the initiation; (2) the analysis or evaluation; and (3) the actual decision making.

**Table 16. Overview of "Which Process" to outsource**

Research Approach	Focus	Reference
Descriptive, Interpretive, Conceptual	Decision process: Initiation, analysis/evaluation, decision making Decision roles: Decision initiators, decision framers, decision makers	Section 4.3.1

Accordingly, three groups of participants can be distinguished. These are: (1) the decision initiators; (2) the decision framers (analyzers, evaluators); and (3) the decision makers. In the following we present the results based on the roles of the three types of decision participants and the actions they take. We also discuss the procedures and techniques that could be identified in the three phases.

*Decision initiators.* The results of the cross-cultural survey by Apte et al. (1997) show that IS executives were the primary initiators of outsourcing decisions in almost all cases in the USA (95%) (see also Sobol & Apte, 1995) and in the great majority of cases in Japan (82%). In comparison, they were involved in only approximately half of the cases in Finland (52%). However, most of the companies in Finland were small in size as opposed to the US and Japanese firms. In 45% of the cases in small and medium sized firms outsourcing decisions were initiated by top management.

In a US and UK based study, Hirschheim and Lacity (2000) found evidence for top management being the decision initiator in most of the 14 cases on IS insourcing. They were found to encourage an (re)evaluation of the existing sourcing arrangement (either in-house or outsourced) with a clear focus on reducing overall IS costs. A more equal distribution among top and IS management initiators can be found in the studies by Lacity and Willcocks (1995), which is based on an extended data set of 61 sourcing decisions in 40 US and UK organizations, and the multiple case study by Willcocks et al. (1996). One exemplary case shows that the awareness of IS outsourcing at the top management level can be initiated by an aggressive vendor letter that promises significant cost reductions (p. 154).

*Decision framers.* In the multiple case study by Hirschheim and Lacity (2000), the preparation of the decision, which entails the evaluation of different sourcing options, was most often delegated to IS managers. The outsourcing case of Continental Bank illustrates how different stakeholder groups within the firm take different roles in the evaluation process (Huber, 1993). In the early stages, the bank engaged an external consultant to "... measure internal sentiment and identify potential landmines" (p. 125). The involvement of consultants in the evaluation phase without communicating to employees the purpose and necessity caused uncertainty among the IS employees about their jobs, and consequently lead to a decrease in productivity during the evaluation process (Huber, 1993, p. 125). When consultants are involved in the evaluation process, the client firm should ensure that the consultants are truly objective and that they are not associated with potential vendors. The case of a U.K. public organization shows that a biased consultant

necessitated the hiring of another firm to comment on the validity of the consultant's report (Lacity & Willcocks, 1997). Including a specialist from a national CPA firm can be beneficial to maintain objectivity, as described in the single case by Palvia (1995, p. 272).

Another approach to evaluation is presented in the case of Continental Bank (Huber, 1993). The bank created two internal councils. The business council was made up of managers of the bank's most important lines of business. It was responsible for the strategic view. The technical council consisted of a group of the bank's top technical people drawn from the bank's business units. They were responsible for conducting a detailed technical analysis and selecting vendors. Participation by the bank's internal IS unit was minimal. In fact, the CIO was consciously excluded as a leader of the technical council. The exclusion of or even discrimination against the existing internal IS group within the evaluation phase comes to light in the case study by Lacity and Willcocks (1997) as well. They describe a situation where the internal IS group of a governmental unit – a county – was neither given the time nor the resources to prepare a serious internal bid. Only after several interventions by an oversight body (the Citizen's Budget Advisory Committee) was an internal bid allowed.

These cases illustrate that companies seek to formalize the decision preparation process. The formalization mainly consists of building committees and teams that are selected to undertake the evaluation (Huber, 1993, p. 125-126; Lacity & Willcocks, 1997; Palvia, 1995). However, the building of these teams often was found to be politically driven, and consequently introduces a power/politics factor into the evaluation process and its subsequent outcome. This raises the question "what is evaluated?" Our review shows that a rigorous analysis of the internal IS situation against the diverse market options is not the rule. Situations where no internal bid is performed (or allowed) as well as where the market options are heavily limited *a priori* are common.

The literature has identified various procedures/guidelines of how to overcome these limits based on 'best practice' analysis. Concerning an internal bid, Lacity et al. (1996) remark: "The successful companies we studied compare vendor bids not against current IS offerings, but against a newly submitted bid from the internal IS manager" (p. 20). This newly submitted bid should entail those actions that vendors typically take to reduce costs or improve services (e.g., data center consolidation) (Hirschheim & Lacity, 2000; Lacity et al., 1996). However, "... internal users often resist the cost reduction tactics that IS managers propose ... IS typically lacks the clout to implement the unpopular tactics of outsourcing vendors" (Lacity, et al., 1996, p. 16).

In the case of British Petroleum, possible reorganization of the internal IS department was not only taken into consideration in the evaluation phase, but actually implemented before analyzing outsourcing (Cross, 1995). This was seen as a necessary step to be prepared for outsourcing: "First we had to put our own house in order" (p. 96). The conclusion, that in-house improvements should be pursued first, before outsourcing, is also drawn by Willcocks et al. (1996). The preparation entails the implementation of effective measurement instruments to evaluate the internal IS services.

In his illustrative conceptual paper, Venkatraman (1997) differentiates between four types of internal organizational arrangements that represent different ways of measuring the value of IS. Within the (1) *cost center*, "... the firm has external comparison standards on relevant performance metrics – like cost per million instructions per second (MIPS), maintenance cost per workstation, or training cost per employee on a new operating system" (p. 53). The (2) *service center* applies measures that are driven by business unit objectives, e.g. the contribution of IS to specific business processes. When IS takes the role of an (3) *investment center*, the objective is to maximize business opportunity from IS resources. Thus its role is to identify the likely obsolescence of the current business model and to proactively create the new business platform. The performance is measured through the investment payoff reflected in business capability creation. The focus of the (4) *profit center* is on delivering IS products and services to the external market place. Its outcome is measured through realized profit levels, market experience, and internal credibility.

Venkatraman states that "[P]rofileing the value center in terms of the relative emphasis on the four components of value allows managers to systematically evaluate different sourcing options" (p. 61). Different IS functions can be associated with different types of value center approaches, which imply different measurement methods. Such a detailed analysis, however, is rarely reported in the empirical studies.

There is limited information about the actual techniques that firms use to evaluate the different sourcing options for distinguishable IS functions. The *first prerequisite* for such an analysis is the break down of IS into its separate elements, which is described as the necessity to disaggregate (Huber, 1993). Based on their multiple case analysis, Willcocks et al. (1996) note: "... treating IT as a portfolio helps to identify outsourcing candidates by analyzing an IT activity's contribution not only to competitive strategy but also to business operations" (p. 20). Palvia (1995) reports on the use of extensive spreadsheets to document and analyze all IS activities and their requirements.

The *second prerequisite* is to identify the relevant measures to evaluate the performance of the identified IS activities. The measures reflect the criteria that are important for the organization. However, the importance of these criteria (e.g., costs, service, strategic contribution, profit generation) might vary across different stakeholder groups (Hirschheim & Lacity, 2000). Top management might favor cost criteria for a specific IS function; users might focus on service quality; business unit managers might concentrate on strategic importance; and IS managers might be caught in the middle – perhaps tending to focus on a high level of service to satisfy users, or attempting to transform the IS function into a profit center to enhance the credibility of IS within the company. One instrument to capture a variety of different measures and to recognize their different importance is the balanced score card. Willcocks et al. (1996, p. 150) reported on one exemplary company that used this approach to evaluate the total IS contribution.

Moreover, preferences can change over time, as described in the case of British Petroleum: "In 1994, we shifted the emphasis from costs to service responsiveness, quality, and customer satisfaction" (Huber, 1993, p. 100).

The role of benchmarking within the evaluation process should be carefully considered. It serves as a complementary function, at best. "Benchmarking fails to recognize the differences in the value center profiles across the companies within the benchmark pool" (Venkatraman, 1997, p.58). The respondents of the multiple case study by Willcocks et al. (1996, p. 153) indicated that external comparison becomes difficult the further one moves from traditional IS functions like data center operations towards more complex functions like systems development. This observation shows the limits of benchmarking in those functions, where quantitative measures are inappropriate. Another more general problem is to get access to the appropriate external databases (Willcocks et al., 1996).

*Decision makers.* The results of the study by Apte et al. (1997) indicate that in the majority of cases, MIS executives were the primary decision makers in the USA (82.5%) and Japan (80.8%), whereas in Finland top management most often made the decision (56.1%). However, as previously mentioned, the US and Japanese subjects were large firms, while the Finnish sample consisted of small and medium sized enterprises. Lacity and Willcocks (1998) conclude that senior executives and IS managers should make decisions together.

However, little evidence is found on how the decision is actually made. Some studies reject the general assumption, that "decision makers select an outcome *only after* analyzing alternatives" (Lacity & Willcocks,

1995, p. 233). They show cases where the decision was made early on and that the rest of the process was merely an exercise in justification. Many of the cases had little or no open communication with employees, and were conducted under conditions with a high degree of uncertainty, resulting in a lengthy process and attendant poor productivity. In fact, the entire decision process on average was equivalent to 13 percent of the contract's duration (Palvia, 1995). In some cases "... participants selected an outcome before the decision process and merely selectively gathered information to justify their preferences" (Lacity and Willcocks, (1995, p. 233). De Looft (1995) could not identify any formal method of IS outsourcing decisions in his examination of 23 outsourcing arrangements within six Dutch organizations. Often the decision was made in an early stage of the decision process, compelled by constraints from higher authorities.

#### 4.3.2 Summary "Which process"

In summary, the analysis of the research on "which process" has shown that there is a gap between the mostly rationalist view of decision-making among academics and the actual behavior in practice. However, there is one conclusion that may be drawn from the few cases where academics have attempted to replicate the decision process of companies: when applied in practice, the rational model is apt to result in more sophisticated, informed, and subsequently more successful sourcing decisions. The research on 'which' has been mostly descriptive and interpretivist in nature. Within the interpretivist research, there is a tendency to apply a critical perspective. However, as the reflection of the decision process often has been a by-product of other primary research objectives, critical research (cf. Orlikowski & Baroudi, 1991) has not yet been applied consciously and rigorously.

In general, no conceptual frameworks have been applied in studying the "which" decision process. It may be helpful to use stage models that separate the entire decision phase into sequential periods. Research utilizing such models is scarce, but this approach has the potential to serve as a valuable tool to analyze the process (Witte, 1972). Our own separation of research into the decision initiation, evaluation and implementation phases may be viewed as a first step in this direction. Another promising avenue is investigation of the various stakeholder roles in the decision-making process.

Critical research, however, should always be accompanied with research that gives insight on how to improve the decision process. For such insight, the variance theoretic models that examine why to outsource might serve as a basis for enhanced understanding (e.g., applying the logic of transaction

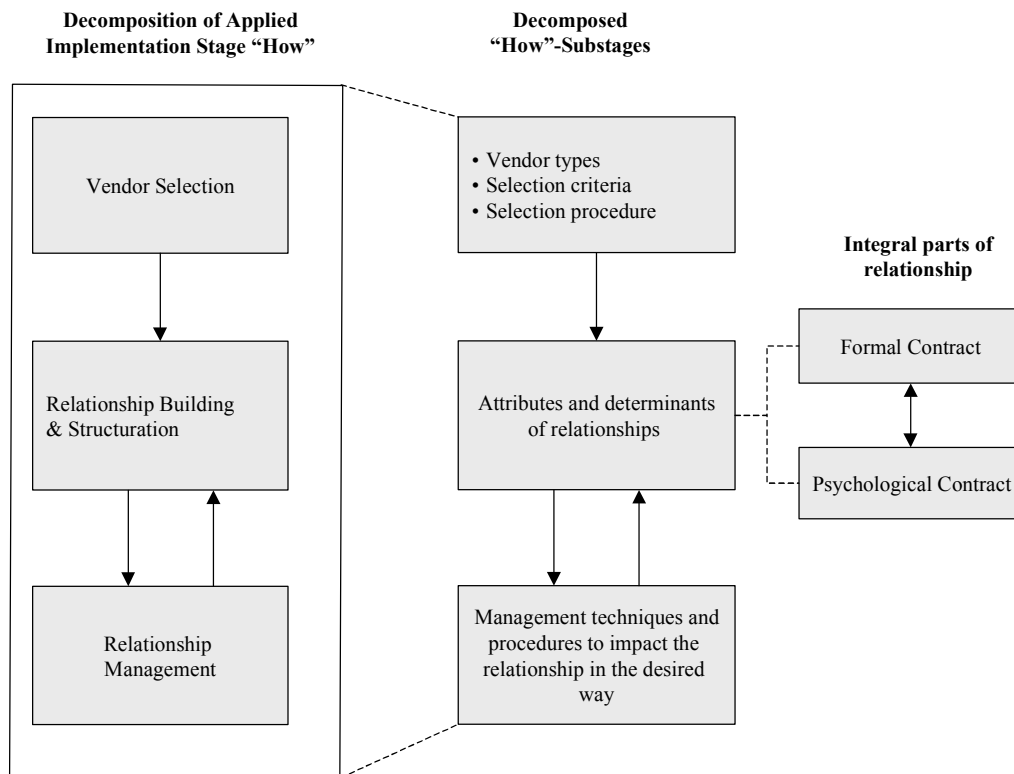
cost theory in real-world situations). Until recently there has been little prescriptive research that gives examples on how practitioners can actually apply a variance theoretic model. As a precondition, variance theoretic models need to be transformed into a practitioner-oriented variance theoretic language that helps practitioners to understand and apply the logic of academic theories (see e.g. Dibbern et al., 2002).

#### 4.4 Implementation Phase: "How"

Implementing an outsourcing arrangement comprises three main activities (see Figure 2): (1) selecting one (or more) vendor(s), (2) building and structuring the outsourcing relationship, and (3) managing the resulting relationship.

**(1) Vendor selection.** The vendor selection includes choosing among at least two different vendors. The range of options has already been illustrated in Table 2. Issues such as which type of vendor (one or multiple vendors), which criteria to consider when selecting a vendor, and how the selection process might be structured are addressed. There is a close link to the decision stage "which". When it comes to a competitive bid, the in-house performance is evaluated against one or more vendor offers. However, there also is the possibility of a company not considering the in-house option for certain reasons (e.g. in-house resource gaps may serve as an overriding contingency) (Dibbern et al., 2003).

**(2) Building and structuring the relationship.** The building and structuring of the relationship is constructed around two main elements: (a) the *formal contract* that specifies the task requirements and obligations of each party in written form, and (b) the *psychological contract* (Sabherwal, 1999) that is based on the parties' mutual beliefs and attitudes. These elements lead to anticipations and expectations that in turn impact how the parties interact with each other (i.e., their actual behavior during the life of the outsourcing relationship). As an example, the belief of trustworthiness of a vendor might lead to the attitude of trust regarding the vendor. This attitude in turn might lead to the actual behavior of disclosing sensitive critical data to the vendor, or inviting the supplier to participate in the strategic planning process of the customer. Both formal and psychological contracts can take different instances and can be dependent on each other. Depending on the way the formal and psychological contracts are arranged, and the behaviors that the parties show during the relationship, one might speak of a partnership, an alliance or a transactional style relationship. This resulted in research issues such as how to characterize a particular relationship (e.g., a partnership) through its main *attributes*, the factors that



**Figure 2. Implementation: "How" sub-stages**

impact the instances of these attributes (*determinants*) and the *process* of how a relationship is formed over time.

**(3) Management of the relationship.** The management of the relationship includes all conscious *activities* of the parties to impact the relationship during its life in their desired way, e.g. controlling the supplier's performance based on the contractual agreements or building mixed project teams of employees from the customer and the vendor in order to enhance the exchange of knowledge between both groups. The management of the relationship might lead to modifications and adjustments of both the formal and the psychological contracts. This impact is illustrated by the reversed arrow pointing back from relationship management to relationship building and structuration in Figure 2.

Figure 2 depicts relationship structuring and building as separate from relationship management. However, in the accompanying tables we have grouped papers dealing with these three processes together. Although conceptually they are three distinct processes, there is a high degree of interaction between them. For example, trust has been viewed as a significant factor associated with structuring contracts (Clark et al., 1995; Marcolin & McLellan, 1998), laying a basis for building a relationship (Grover et al., 1996), and managing an ongoing relationship (Kern, 1997;

Willcocks & Kern, 1998). This interaction between structuring, building, and managing is not always acknowledged in the literature, possibly because of a lack of longitudinal studies.

Moreover, there is a natural link between how an outsourcing arrangement is structured and managed, and the subsequent outcomes. While some of the papers discussed in this section address only the "how" question, others include an assessment of the outcomes. This section presents 'how to outsource' separately from outcome evaluation. The focus is on the three sub-stages illustrated in Figure 2. Table 17 provides an overview of these sub-stages as they

are covered in this section. The influence of "how" on the success or failure of IS outsourcing will be the subject of the next section on "outcome" (cf. sections 4.5.1 through 4.5.5).

#### 4.4.1 Positivist "How"

The bulk of the positivist papers shed light on structural and procedural aspects of an outsourcing relationship. For the most part, their focus is on the determinants and attributes of relationships that form a partnership-style cooperation<sup>29</sup>. A summary of the concepts used and their relationships is presented in Table 18.

<sup>29</sup> It should be noted that the terms partnership, alliance, and relationship are loosely defined in the outsourcing literature. For example, Grover et al. (1996) suggest a connection between the presence of certain elements of 'partnership' and outsourcing success. However, they go on to note that other researchers (Lacity and Hirschheim, 1993; Fitzgerald and Willcocks, 1994) believe the relationship between an outsourcing vendor and its customer should not be characterized as a partnership unless there is a true sharing of risks and rewards. In another example, Lacity and Willcocks (1998) state that the term "partnership" was commonly used by firms when referring to fee-for-service contracts. The vague and inconsistent use of these terms contributes to the difficulties in comparing results among studies.

**Table 17. Overview of “How to outsource”**

Research Approach	Focus	Reference
Positivist	Vendor selection; Relationship structuring, building and managing; Controlling risk exposure	Section 4.4.1 – Table 18
Interpretive	Vendor selection; Relationship structuring, building, and managing; Building trust	Section 4.4.2 – Table 19
Descriptive	Vendor selection; Relationship structuring, building, and managing	Section 4.4.3 – Table 20
Mathematical	Vendor selection; Relationship structuring, building, and managing	Section 4.4.4 – Table 21
Conceptual	Relationship structuring, building, and managing	Section 4.4.5 – Table 22

**Table 18. Positivist “How”, Part 1 of 2**

Level	Construct Focus		Construct(s)	R <sup>30</sup>	Author(s)
Vendor Selection					
Firm	Vendor characteristics and capabilities		Attraction	S	Klepper (1995)
Relationship Structuring, Building, and Managing					
Firm	Structuring of Contract and/or Service Level	Performance and return	Product/service exchange	S	Kern (1997); Willcocks & Kern (1998)
			Asset/staff transfer	S	Willcocks & Kern (1998)
			Financial exchange	S	Kern (1997)
		How to deal with each other	Key contact points	S	Kern (1997); Willcocks & Kern (1998)
			Reports and information exchange	S	Kern (1997); Willcocks & Kern (1998)
			Service enforcement and monitoring	S	Kern (1997); Willcocks & Kern (1998)
Firm	Relationship Characteristics	Vendor behavior	Good treatment of client's transferred staff	S	Willcocks & Kern (1998)
			Understanding client's business	S	Kern (1997); Willcocks & Kern (1998)
		Client evaluation of relationship	Satisfaction	S	Grover et al. (1996)
			Commitment	S	Lee & Kim (1999)
			Conflict (reversed)	S	
		Client's perception of vendor behavior	Communication of problems	S	Grover et al. (1996)
			Trust	S	Kern (1997); Lee & Kim (1999); Grover et al. (1996)
		Client and vendor interaction	Cooperation	S	Grover et al. (1996); Willcocks & Kern (1998)
			Trust in each other	S	Kern (1997); Willcocks & Kern (1998)
			Social/cultural adaptation	S	Kern (1997); Willcocks & Kern (1998)
			Social and personal bonds	S	Kern (1997); Willcocks & Kern (1998)
			Shared vision	S	Kern (1997)
			Communication	S	Kern (1997); Klepper (1995); Willcocks & Kern (1998)

<sup>30</sup> R = Results; S = Supported; NS = Not Supported; RV = Reversed, MR = Mixed Results



**Table 18. Positivist “How”, Part 2 of 2**

Level	Construct Focus		Construct(s)	R <sup>31</sup>	Author(s)
Firm	Relationship Characteristics	Client and vendor interaction	Developing expectations and norms	S	Klepper (1995)
			Fair bargaining	S	Klepper (1995; Willcocks & Kern (1998)
			Judicious exercise of power	S	Klepper (1995)
			Business understanding	S	Lee & Kim (1999)
			Benefit and risk sharing	S	Lee & Kim (1999)
			Non-reliance on contract / Flexibility	S	Willcocks & Kern (1998)
Firm	Building relationship	Objectives	Degree of business and technical uncertainty	S	Marcolin & McLellan (1998)
		Contract type	Tight to less detailed	S	Marcolin & McLellan (1998)
		Contract interpretation	Alignment with degree of uncertainty and contract type	S	Marcolin & McLellan (1998)
	Partnership Quality Determinants	Dynamic	Participation (+)	MR	Lee & Kim (1999)
			Joint action (+)	NS	
			Communication quality (+)	MR	
			Coordination (+)	NS	
			Information sharing (+)	MR	
		Static	Age of relationship (+)	RV	
			Mutual dependency (+)	RV	
		Contextual	Culture similarity	NS	
			Top management support	MR	
IS Function	Risk Exposure		Sequential contracting (+)	S	Aubert et al. (1999)
			Guaranteed rates	S	
			Penalty for underperformance (+)	S	
			Conditional payments (+)	S	
			Let own employees participate in each stage of the project	S	

Klepper (1995) considered the development of long-term relationships as a partnering relationship: “This paper explores the mechanisms for the development of long term relationships between clients and vendors in outsourcing, or what are sometimes called partnering relationships” (Klepper 1995, p. 23). He summarizes partnership models from IS and management literature that are based on transaction cost theory and *social exchange theory*. Some of these models explain the continuation of relationships while others explain development of partnerships. From the pool of applied exchange theories he chooses the sequential stage model of partnership development from Dwyer et al. (1987) to derive management actions in support of IS outsourcing partnering.

The four stages in the model are (1) awareness, (2) exploration, (3) expansion and (4) commitment. During the last three stages the sub-processes of attraction, communication and bargaining, power, norm development, and expectation development occur. The first case shows the partnering development with contract programming vendors and the second case illustrates the partnering development with hardware and software vendors. The analysis of the cases using the model structure enhances the understanding of the dynamics leading to partnerships. In the exploration and expansion stages of the partnership, expectations should clearly be communicated between potential partners, and fair bargaining and the judicious exercise of power should be emphasized. In addition the importance of

<sup>31</sup> R = Results; S = Supported; NS = Not Supported; RV = Reversed, MR = Mixed Results

established norms to guide partnership behavior should be recognized.

Similar to Klepper (1995), Grover et al. (1996) initially considered the *temporal property* of a relationship when defining partnerships (i.e. partnerships imply a long-term relationship). However, in their quantitative empirical study, Grover et al. defined partnership by means of attributes of seller-buyer interactions only. The measures for partnership were derived from the marketing field (Anderson & Narus, 1990). The indicators used were trust, communication (let customers know of unexpected problems), cooperation (help each other), and satisfaction (happy with relationship). The length of relationship was not a metric of a partnership. Like Klepper (1995), Grover et al. performed an organizational level analysis. In their variance type model partnership was investigated as a variable mediating the relationship between the extent of outsourcing various IS functions and success of outsourcing.

Important questions relative to the vendor-client relationship are raised by Kern (1997). He developed a model that extended the structural determinants of an outsourcing arrangement from a focus solely on the contract to include the operationalization of the contract and the emergence of normative exchanges external to the contract. His conceptual model was based on *Social Exchange and Contract theories*. The model was empirically explored using case studies that included both customer and vendor perspectives. It was found that outsourcing success did not solely depend on the service levels; the relationship between clients and vendors was also important. Although the case data was not used to explain the model completely, the model provides a way to view the relationships for further explorations. Research on best practices could focus on the relationships after the decision is made to outsource or it could focus on determining what to outsource.

Building on Kern (1997), Willcocks and Kern (1998) employed a case study approach to investigate process and management issues related to the contract and relationship between an outsourcing vendor and its client. They analyzed the case of Inland Revenue using two separate analytical frameworks. The first analysis consists of decision factors and risks related to outsourcing decision-making. Specific issues in this area that Willcocks and Kern felt deserved mention include the political and technical uncertainties inherent in public sector outsourcing projects, the necessity of addressing risks associated with outsourcing, and a potential concern over the development of asymmetries of dependence over time.

The second analysis discussed the mitigation of the risks highlighted in the first analysis. This takes place at two levels; the contractual level, and the cooperative level (the cooperative level may be viewed as akin to a relationship or partnership). At the contractual level, a continuous exchange of information (i.e., communication) helps both sides fulfill their obligations, avoid conflicts, achieve expectations, and become satisfied. Flexibility at the contractual level is also critical in allowing for adjustments and changes in the contract due to unforeseen events. In addition, social adaptations occur that help develop cooperation, commitment, and trust. These elements pave the way for the evolution from the contractual level to the cooperative or relationship level.

At the cooperative level, communication once again underlies an increase in trust between the parties, which in turn can lead to more effective communication. This also contributes to avoiding conflicts, facilitating solutions to problems, reducing uncertainty, and managing expectations. Another benefit of communication is the development of mutual goals and objectives, which influences the commitment (investment of resources) to the relationship by both the client and the vendor. Commitment is facilitated by the process of social and cultural adaptation, and the formation of social and personal bonds between individuals from the client and vendor firms.

The overall conclusion drawn by Willcocks and Kern (1998) is that structuring the contract properly is necessary but not sufficient for outsourcing success. Effective interaction between the parties at the cooperative level appears to be necessary as well for a "strategic partnering" outsourcing arrangement to succeed.

Marcolin and McLellan (1998) studied the conditions under which certain types of relationships should be used. The authors based their study on a conceptual framework developed by Fitzgerald and Willcocks (1994), which assumes that strategic partnerships can exist in outsourcing arrangements. It suggests that differences between the degree of *uncertainty* and *contractual definition* (loose or tight) will determine ideal combinations of strategic partnerships and buyer/seller relationships. The case data was gathered from six banks. The analysis was done at an organizational level. The banks were placed in the framework and the prominent phenomena in them were discussed in a descriptive manner. The interpretation of the data suggests that a third dimension called *interpretation strictness* should be included in the framework. Hence, the cases examined were placed in a three-dimensional framework, with contractual strictness, interpretation of strictness and uncertainty as defining dimensions.

Each position in the framework was found to possess a prominent characteristic (e.g., when uncertainty exists, the contractual strictness is low, and the interpretation strictness is high, eventual conflicts occur). The paper is a useful extension of the Fitzgerald and Willcocks' (1994) framework since it shows the necessity to study the behavioral aspects associated with formal written contracts.

Lee and Kim (1999) took an extended view on the set of partnership metrics. The concepts used for understanding the factors influencing partnership were derived from *political and social exchange theory*. Instead of investigating partnership as a single construct, they distinguished between the attributes and the determinants of partnership quality.

As attributes of partnership quality they used the variables trust, business understanding, benefit and risk sharing, conflict, and commitment. The determinants of partnership quality are classified into three groups: dynamic, static and contextual factors. The dynamic factors tested were participation, joint action, communication quality, coordination, and information sharing. Furthermore, the ages of the relationships and mutual dependency were classified as static factors. Whereas culture and top management support were considered to be contextual factors. The hypothesized relationships between the determinants and the partnership quality were empirically tested using quantitative data from 36 organizations in Korea. Their organizational level analysis of the relationships showed that participation, communication quality, information sharing, and top management support were positively related to partnership quality. From the analysis they did not find support for a positive relationship between several other factors (such as joint action, coordination, age of relationship, mutual dependency, and cultural similarity) and partnership quality. Although Lee and Kim (1999) acknowledged influence that could occur over time from the partnership quality and success on determinants of partnership quality, only a variance model was developed and tested.

While the aforementioned studies on IS outsourcing relationships were done at the organizational level, Aubert et al. (1999) performed a single case study at a project level (or group level) by focusing on the risks inherent in outsourcing relationships. They defined risk exposure as the product of (1) probability of an undesirable outcome and (2) the importance of potential loss. These two dimensions of risk exposure serve as the basis for constructing a 2 by 2 framework that identifies four fundamental strategies for managing the tasks of an outsourcing relationship: monitoring (low/low), prudence (high/low), tolerance (low/high) and mixed strategy (high/high). Although the single case

study does not test all the risk exposures equally, it adequately illustrates the usefulness of the framework.

Ang and Slaughter (1998) is a rare example of examining outsourcing at the individual level. They looked at differences in the organizational psychology and performance of insourced and outsourced workers within the same organization. Using an approach based on individual-organization linkages and psychological contracts, they surveyed both insourced and outsourced workers in the IS Development Division of a large international organization. Their constructs are related to psychological profiles and workplace attitudes, individual behaviors, and supervisor assessments of individual performance. Their findings indicate that insourced workers differ in perceptions of work relationships and psychological contracts between insourced and outsourced workers.

#### **4.4.2 Interpretivist "How"**

While the bulk of positivist research primarily focused on factors related to building and managing relationships, the main body of interpretive studies complements that focus by also examining structuring issues related to crafting the contract and laying the foundation for building and managing the relationship. In addition, interpretivist papers expand the scope of research topics to shed light on vendor selection, formal contract issues, and the work practices of outsourced IS professionals. The focus of the papers, along with their findings, may be found in Table 19.

Lacity and Hirschheim (1993c) conducted a series of in-depth interviews with multiple informants at fourteen Fortune 500 companies. Their findings revealed that the outsourcing relationship is often portrayed as a 'strategic partnership or alliance'. This is at odds with the actual contractual relationship, which usually does not contain provisions for sharing risks and rewards associated with outsourcing. The authors also included a number of 'negotiation strategies' geared towards equalizing the balance of power between customers and vendors. In the typical instance, the vendor has the advantage because of its experience and expertise in negotiating outsourcing contracts. The customer needs to improve its negotiating skills and position to reach parity with the vendor.

Currie and Willcocks (1998) described case histories of four outsourcing decisions at four different organizations. The specific outsourcing arrangements discussed were total outsourcing, multiple-supplier outsourcing, insourcing and a strategic alliance arrangement. These four types of outsourcing arrangements were placed in a framework by considering the client/supplier interdependency and scale of IT market use of each type. The rationale

**Table 19. Interpretivist “How”, Part 1 of 2**

Level	Construct Focus	Findings/Conclusions/Constructs		Author(s)
Vendor Selection				
Firm	Consideration of in-house IS shops as a potential vendor	Outsourcing vendors must make a profit; internal IS departments do not.		Lacity & Hirschheim (1993c)
		Internal IS departments can often achieve some of the same hardware and software cost efficiencies as vendors.		
		Internal IS departments can often match vendor cost savings attained by standardization and consolidation (when organizational interests permit).		
	Selection criteria	Vendor's long term financial stability		McFarlan & Nolan (1995)
		Vendor's willingness to continuously modernize its technology and train its staff.		
		Compatible management culture and style of vendor		
Relationship Structuring, Building, and Managing				
Firm	Contract Negotiation Strategies	Fourteen specific contract negotiation strategies for customers are presented to help level the playing field.		Lacity & Hirschheim (1993c)
Firm	Negotiation Prerequisites	Customers should fully understand the function(s) being outsourced.		Currie & Willcocks (1998)
	Client management abilities	Contract management ability		Currie & Willcocks (1998)
		Ability to build and manage relationships		
		Ability to oversee service delivery		
Firm	Contract length:	Short to medium term contracts		
Firm	Differences and similarities in public vs. private organizations	Most of the contracts were outcome-based, so behavioral monitoring was minimal		Hancox & Hackney (1999)
		Both public and private organizations expressed doubt about the notion of vendors as partners.		
		In general, public organizations were more concerned about potential conflict with the vendor, were more skeptical about the benefits of outsourcing, and were more skeptical about the notion of vendors as partners than were private organizations. This may be due to differences in culture between public and private organizations, particularly in regard to perspectives on accountability and the profit motive.		
Firm	Leadership	Necessary capabilities for managers responsible for outsourcing	Strategic thinking	Useem & Harder (2000)
			Deal making	
			Partnership governing	
			Managing change	
		Leveraging the effectiveness of lateral leadership through top management support in ...	... identifying, developing, and rewarding these skills	
			... defining and measuring performance metrics	
			... pinpointing responsibility and accountability	
Firm	Relationship Management	The customer must retain the responsibility and capability to plan and oversee the provision and allocation of IS resources to the customer's business units.		McFarlan & Nolan (1995)
		Define and measure performance standards that are linked to the customer's success.		
		Manage the mix and coordination of tasks.		
		Manage the customer-vendor interface at all levels.		

**Table 19. Interpretivist “How”, Part 2 of 2**

Level	Construct Focus	Findings/Conclusions/Constructs		Author(s)
IS Function	Tactics to build ...	... calculus-based trust	Expected long-term relationship	Sabherwal (1999)
			Structural control and penalty clauses	
		... knowledge-based trust	Previous joint projects	
			Courtship	
			Prior acquaintance among key employees	
		... identification based trust	Emphasis on shared goals	
			Team building	
		... performance-based trust	Celebration of key intern deliverables	
			Periodic demos and pilots	
Indi-vidual	Work practices of outsourced systems administrators whose work is viewed as a commodity that adds no value to the client company	Social construction of place and space	Contractors have no fixed place in client company	Schultze & Boland (2000)
			Contractors need to be as mobile as technology	
		Internalized ‘habitus’	Consultants add value by staying objective	
			People are to blame for breakdown in technology	
			Contractors are set up as fall guys	
		Enacted practice by contractors in response to internalized ‘habitus’	Maintaining three types of documentation: - task database (daily activity) - system guide (policies, standards, procedures) - project database	

behind the four approaches to outsourcing pertains to the client/supplier relationship and client perceived benefits. The form of client/supplier relationship and the ‘attributes of a contract’ can depend on other organizational dimensions (determinants) such as uncertainty. Uncertainty in an organization might make it necessary to have more flexibility in an outsourcing contractual arrangement. Hence, flexibility of the contract or the tightness of contractual definitions could be related to the uncertainty within an organization. In order to mitigate the risks associated with outsourcing, from a client perspective, the firm should (1) understand the nature of the function being outsourced, (2) use short to medium term contracts to avoid “contract stranglehold” and (3) develop and maintain management capabilities and skills to achieve value-added benefits from outsourcing arrangements.

Hancox and Hackney (1999) compared IS outsourcing in private sector organizations and public organizations in the UK.<sup>32</sup> As opposed to conflicts caused by conditions of uncertainty and contractual nature (Marcolin & McLellan, 1998), Hancox and Hackney

found that public organizations are more prone to conflicts with vendors due to the public organizations’ suspicious perception of the vendors’ profit motives. In addition, public organizations were more skeptical about the concept of partnerships with the vendor than were private sector organizations. The type of IS function being outsourced was also found to impact perceptions of partnership. Partnership-type relationships occur more often in systems development activities than in operations and infrastructure support. Hancox and Hackney’s findings help explain the ‘partnership attributes’ rather than a process of developing or managing a partnership. Furthermore, cultural compatibility was found to be an important factor in partnership-type relationships. This led Hancox and Hackney to comment that when partnership-type relationships did occur, they usually existed “as a collection of ... intangibles ... rather than as a formalized arrangement”.

Sabherwal (1999) investigated the complementary nature of trust and structural controls. In his research, data from 18 outsourced IS development projects in five countries were collected. The data revealed four different types of trust; calculus-based, knowledge-based, identification-based, and performance-based. Sabherwal states that outsourced IS development projects proceed through cycles that involve trust, structure, and performance.

<sup>32</sup> In Table 29 (Appendix) we classified the Hancox and Hackney paper as “positivist”. This is because the positivist elements are indeed dominant in this paper and primarily refer to the question on “why” to outsource (see 4.1.1.3.1 and 4.1.1.3.2). On the other hand, the paper’s case analysis reveals some interesting findings on the relationship that emerged from the data and therefore we recognize these aspects under ‘interpretivist how’.

When a balance is struck between trust and structure, good performance results. Similarly, when trust is lacking (distrust), or when an inappropriate structure is coupled with a specific type of trust (over or under control), poor performance results. Sabherwal also suggests that a 'psychological contract' exists in outsourcing relationships. This contract, which consists of unwritten and often unspoken expectations, is supported by the level of trust between the parties, and plays a role in resolving unanticipated problems or changes in the accomplishment of outsourced activities.

Useem and Harder (2000) combined interviews with 54 managers and a survey of 423 managers from different firms to uncover leadership capabilities required for successful outsourcing. What emerged from their research is the broad finding that, although outsourcing may reduce or streamline certain day-to-day management tasks, it introduces new challenges and demands on managers. In order to deal with this new management environment, a new blend of 'management and leadership qualities' is required. The first capability is the ability to think strategically – to determine how to utilize outsourcing to add value to the organization, support the firm's strategic objectives, and gain competitive advantage. The second new management capability is deal making; the ability to find common ground between parties with different but hopefully somewhat compatible interests and objectives. This may involve two separate firms, or different individuals or units within a single firm. The third capability is the ability to 'effectively manage the outsourcing relationship' by overcoming stress and conflict, and developing the skills necessary to work actively and closely over time in a partnership-type environment. The fourth capability is the ability to manage change – both large amounts of change, and ongoing change.

Useem and Harder (2000) go on to note that there is an organizational component of leadership that is often overlooked but nonetheless necessary to nurture the preceding capabilities in individuals. The organization's culture and incentive system must foster and encourage the growth and exercise of individual leadership that demonstrates those four capabilities.

Finally, there is one rare exception of a study that examines the outsourcing relationship primarily from the vendor perspective and at the individual worker rather than purely at the firm level. It is the ethnographic study by Schultze and Boland (2000). One of the researchers worked as a participant observer at one US case company for eight months. This study primarily reports on the work experiences of three outsourced systems administrators. Based on the theory of practice by Bourdieu (1992), the social construction of the place-space relationship is

interpreted from the perspective of the IS workers. The findings show that systems administrators, whose work is seen as a commodity that adds no value to the client organization, have a low position at the client field. They are treated equally to a commodity technology that is perfectly transportable and substitutable. The internalized 'habitus' regarding the outsourced IS professionals is to blame them for technology breakdowns and to set them up as "fall-guys". The only recognized value that they add to the client is their objectivity. The contractors respond to these client perceptions by enacting intensive documentation of their activities, work procedures and projects. This increases their perception of objectivity and protects them against accusation, blame and finger pointing. At the same time however, these practices perpetuate their status and value proposition as objective commodity workers in the eyes of the client.

In relation to the other interpretivist relationship studies, the study from Schultze and Boland shows that relationship building and managing severely depends on the task that is being outsourced and on the expectations of the client company. If commodity work is outsourced, the practice of building partnership style relationships is not critical, instead, it is important to meet the operational expectations of the client and to act accordingly.

#### 4.4.3 Descriptive "How"

Descriptive papers illustrate a series of events without the positivist's *a priori* expectations or the interpretivist's imposed understanding and exposition of them. Descriptive papers usually are case-based, and often contain prescriptive advice or conclusions. The papers in this section fit that mold, in that they offer suggestions on how to transform the decision to outsource into reality (see Table 20).

Two of the papers in this section, Huber (1993) and Cross (1995), appeared in the *Harvard Business Review*, a practitioner-oriented publication. Both papers were written by an individual who was heavily involved in the decision-making and implementation stages of moving a single firm from an internal IS function to an outsourcing arrangement (Huber at Continental Bank, Cross at British Petroleum). Beyond these similarities there is one substantial difference. Huber (1993) discusses how Continental Bank engaged a single vendor to provide all its IS needs (total outsourcing), while Cross (1995) presents British Petroleum's experiences related to multiple-supplier sourcing. One situation British Petroleum encountered that Continental bank did not was managing multiple contracts with subsequent problems of resource allocation and conflict between vendors. These

**Table 20. Descriptive “How”, Part 1 of 2**

Level	Construct Focus	Findings/Conclusions/Constructs	Author(s)
Vendor Selection			
Firm	Proposal evaluation	Evaluate vendor proposals against specific criteria that reflect the firm's strategic objectives and desired benefits.	Huber (1993)
		Retain consultants experienced in all aspects of outsourcing.	
	Vendor evaluation	Widely broadcast a Request for Information (RFI).	Cross (1995)
		Assess the responses to the RFI using both IT and business personnel to compile a short list of prospective vendors.	
		Rather than ask the short list of vendors to reply to a traditional detailed Request for Proposal, bring them in for an interview/workshop session.	
		Benchmark the vendor against the market.	
	Selection criteria	Vendors differ in capabilities and culture/management style. Customers should research not only vendor skills and compatibility with customer needs, but also their management style and values.	Michell & Fitzgerald (1997)
		Vendor's long term financial stability	McFarlan & Nolan (1995)
		Vendor's willingness to continuously modernize its technology and train its staff.	
Compatible management culture and style of vendor			
Relationship Structuring, Building, and Managing			
Firm	Contractual provisions	Insist that the vendor open its books.	Cross (1995)
		Insert an annual renegotiation process into the contract.	
		Provide incentives for outstanding performance or cost reductions.	
		Keep contracts short.	
Firm	General lessons about how to transform the concept of outsourcing to a functional alliance	"Tighter" contracts (fixed price, fixed term) are preferred by IT managers over "looser" (more flexible, time-and-materials contracts).	Currie (1996)
		Service level agreements should be used.	
		IT managers should analyze instances of outsourcing failures as well as success when evaluating options.	
		Business managers should realize that there is more to outsourcing than cost reduction.	
		Make the contract as explicit as possible.	Michell & Fitzgerald (1997)
		Be as detailed as possible when defining and measuring service levels.	
		The customer should strengthen its relationship management capabilities.	
		It is critical for customers to fully understand the nature of the functions being outsourced.	Currie (1998)
		Short-term contracts contribute to a better understanding of costs and a more equitable balance of power.	
		Customers should retain and develop in-house capabilities related to managing vendors.	
		Focus on business issues, not technical ones.	Huber (1993)
		Keep preliminary activities quiet. Once the yes/no decision is made, create a visible and open process to make the "how" decisions.	
		Define the structure and process for managing the customer/vendor relationship before the contract is signed.	
		Establish responsibility for owning and managing provision of IT services at the business unit level.	
Use consultants.			

**Table 20. Descriptive “How”, Part 2 of 2**

Level	Construct Focus	Findings/Conclusions/Constructs	Author(s)
Firm	Critical factors associated with vendor governance	Tradeoffs between tight controls/ monitoring and relying on the good will of the vendor.	Clark et al. (1995)
		Contracts, while important, “are not panaceas.” (p. 233)	
		Flexibility	
		Governance mechanisms should be based on mutual awareness and understanding	
Firm	Critical factors in structuring an outsourcing arrangement	Contract flexibility	McFarlan & Nolan (1995)
		Establish and monitor performance standards	
		Understand the functions to be outsourced	
		Realistic and objective assessment of projected cost savings	
		Manage the transition process to the outsourcer	
		Contracts, while important, “are not panaceas.” (p. 233)	
		Flexibility	
Firm	Relationship Management	Governance mechanisms should be based on mutual awareness and understanding	Cross (1995)
		Constantly monitor the processes involved in: 1) managing conflict; 2) managing change; and 3) managing expectations.	
		Be creative and flexible.	
		Customers should strengthen their ability to manage vendors.	Michell & Fitzgerald (1997)

problems were managed through shifting the contractual emphasis from cost to service quality, responsiveness and satisfaction.

Cross (1995) takes a unique approach to the process of vendor selection. He advocates widely distributing a Request for Information (RFI), as opposed to the traditional method of distributing a detailed Request for Proposal (RFP) to a limited number of potential vendors. He argues that this may attract smaller or less well-known, but no less competent, vendors. After the RFIs are reviewed by a joint IS/business unit team, those vendors who make the short list are invited for a week-long interview/workshop session, in lieu of submitting a RFP. Cross contends that this gives the customer a better feel for how well it can work with each potential vendor.

Both Huber (1993) and Cross (1995) recommend involving business managers along with IS managers in the outsourcing discussions and evaluation of proposals. Huber (1993) and Cross (1995) also agree on the importance of defining and monitoring the structure and process for managing the outsourcing relationship on an ongoing basis.

Unlike Cross (1995) and Huber (1993), data in Clark et al. (1995) Currie (1996) and Currie (1998), McFarlan and Nolan (1995), and Michell and Fitzgerald (1997) are from more than one organization.

The study by Currie (1998) is based on case studies of two different firms. Her findings are similar to Cross (1995) in that the companies studied used multiple suppliers. Both companies in Currie (1998) were attempting to encourage competition between the suppliers, while Cross (1995) discussed problems that arose due to competitiveness among the suppliers. However, both Currie (1998) and Cross (1995) agree that short-term contracts are preferable to long-term ones.

In their study, Clark et al. (1995) collected data from 63 in-depth interviews of IS executives. Their analysis was done at the IS divisional and organizational level. No *a priori* theoretical guidance was used in analyzing the data. They developed a framework for the governance structure of contracts consisting of three dimensions: (1) length of the contract (2) governance cost and (3) governance mechanism. *Length of the contract* ranges from short to long contracts and correspondingly the contracts can be general or detailed. The related *governance costs* can range from high to low. Detailed and long contracts cost more and vice versa. The authors match the governance mechanisms with the cost and the contractual attributes. According to Clark et al., *governance mechanisms* can range from compliance monitoring to intent monitoring. The former costs more and is associated with lengthy and detailed contracts. Although Clark et al. point out the fact that writing long



and detailed contracts can be costly, the arguments for higher governance costs are not given in the paper. The costs incurred in actually managing the contract could be higher irrespective of the length of the contract. Due to changing IS requirements and technologies, it becomes necessary to have contractual flexibility. Therefore, governance mechanisms based on mutual awareness and understanding are preferable. Clark et al. present possible governance mechanisms or management models such as user managed, IS managed, vendor managed, committee managed and mixed managed.

Clark et al. found that critical factors in managing what they term an alliance (i.e., strategic partnership) were flexibility and governance mechanisms based on mutual awareness and understanding.

McFarlan and Nolan (1995), drawing on case research encompassing more than fourteen organizations over a four-year period, address several topics associated with 'vendor selection', structuring the outsourcing arrangement, and managing the relationship. When assessing potential vendors, they point out the importance for a vendor to be financially stable, and to be dedicated to keeping pace with technological advances in terms of hardware, software, and personnel. Potential vendors should also be evaluated in light of mutual interests, shared approaches to problem solving, and a compatible management culture and style. Once the customer has been satisfied in this regard, he should turn his attention to structuring the relationship.

Moreover, they present factors to be considered when structuring and managing an alliance. Although their study is more prescriptive in nature than Clark et al.'s, it discusses some of the same factors, such as costs and sensitivity of customer-outsourcer interface, which are similar to trust, mutual awareness and understanding issues. Their analysis of the case material suggests that vital factors to successfully *structuring* an alliance are contract flexibility, and standards and control. In terms of the 'contract', McFarlan and Nolan stress the need for 'building' in the flexibility to respond to evolving technology, shifting economic conditions, and changing competitive circumstances. Performance standards and control mechanisms should be clearly defined, as should plans, processes, and responsibilities for the transition from an in-house to an outsourced environment. When it comes to 'managing the relationship', McFarlan and Nolan argue that it is critical for the customer to maintain capabilities that enable it to deal with contractual issues in a constantly evolving technical and competitive environment. This includes not only monitoring emerging technologies, but establishing and interpreting meaningful benchmarks, and structuring and coordinating tasks and activities

between the parties. Finally, while McFarlan and Nolan acknowledge the importance of the contract, they point out that contracts cannot anticipate every contingency. Thus the customer/vendor relationship becomes critical. It is a complex and sensitive interface between the parties at many levels, from senior management down through operational areas, which must be continuously and effectively managed. Critical areas in *managing* an alliance were found to be management functions normally performed by the CIO (planning, organizing, controlling, and leading).

Currie's (1996) analysis was done at the sector level. She collected and analyzed data from several (the exact number is not given) organizations in both the public and private sectors using a combination of surveys and semi-structured interviews. The most difficult issue faced by organizations in all sectors studied was structuring the contract. Four types of contracts were studied: (1) time and materials (2) fixed term, fixed price (3) mixture (4) contracted service levels. Her findings indicate both private and public sector organizations were looking to negotiate more fixed-term and fixed-price contracts, rather than flexible ones. This finding is at odds with those of Clark et al. (1995) and McFarlan and Nolan (1995), who concluded that flexibility was a key outsourcing success factor. This may be partially explained by the fact that Currie recommends short-term contracts, which may provide a *de facto* element of flexibility through the frequency of renewal.

The Michell and Fitzgerald (1997) study is particularly noteworthy in one sense, in that it compares vendor and customer perspectives. Besides interviewing over 600 IT outsourcing customers, surveying over 150 IT managers, and performing 25 case studies, the authors also interviewed 16 outsourcing vendors. First, they detail the characteristics of different types of outsourcing vendors. According to Michell and Fitzgerald, vendors can be categorized in terms of types and services offered. Types include (1) IT consultants/solutions providers (e.g., EDS); (2) systems houses (small to medium sized shops that traditionally focus on systems development activities); (3) hardware vendors that have moved into operations or network management outsourcing; (4) ex-IT departments; and (5) generic outsourcers. Services offered include strategic IT planning, system design, system development, IT operations and management, and IT infrastructure support and management. They then describe the vendor selection process from a customer perspective. Customers should take care to match actual vendor capabilities against their marketing claims. Often, a vendor with strengths in one area will offer to provide services in another area where it may not be as qualified (e.g., a hardware vendor may offer systems development services).

**Table 21. Mathematical “How”**

Level	Construct Focus	Constructs/Findings/Conclusions	Author(s)
<b>Vendor Selection</b>			
Firm	Cost	Use of the “carrot and stick” approach (preferential strategies and subsidies) will induce lower bids.	Chaudhury et al. (1995)
		In addition to the bid amount, vendor reputation and service quality should also be considered.	
	Contract renewal	Sourcing from two suppliers is a means to offset potential contract lock-in in subsequent contract renewal periods.	Klotz & Chatterjee (1995)
	Vendor evaluation	A probabilistic model is developed to reduce the uncertainty inherent in determining a pool of qualified vendors.	Sarkar & Ghosh (1997)
<b>Relationship Structuring, Building, and Managing</b>			
Firm	Contract structuring	Using game theory, a mathematical model is derived that incorporates incentive and information issues to produce an outcome that is in equilibrium with in-house development.	Whang (1992)
		The customer must ensure that benefits derived from improved managerial incentives are not negated by an increase in coordination costs.	Chalos & Sung (1998)
		The contract with a privately held vendor is more likely to be a cost-sharing contract than one with a publicly held firm. Publicly held firms are more likely to engage in fixed-fee contracts.	
		In some cases, customers are better off leaving some contract parameters unspecified and negotiating them after the fact.	Van Mieghem (1999)
		A purely price-based contract may have a negative effect on performance.	

Michell and Fitzgerald also found that approximately one-third of the customers surveyed had cancelled contracts with their vendors. The major problems were either the failure of the contract to clearly (1) define expectations, or (2) anticipate future changes, or the failure of the vendor to meet designated service levels. This illustrates the need for better-written contracts, better vendor selection, and better customer/vendor management skills.

One telling finding is that what customers saw as significant problems and disputes were viewed by the vendor as common occurrences in the normal course of business. This argues for a better vendor understanding of the customer’s viewpoint, in order to head off a potential crisis.

#### **4.4.4 Mathematical “How”**

The highly theoretical papers in this section are, in large part, based on a rational, mathematical/economic view of the world. Consequently, they confine themselves to studying those types of problems that are best addressed by a rational and structured approach. There are, for example, no mathematical papers that address relationship issues. They are concerned with vendor selection and contractual issues that can be more neatly bounded

than the messy intricacies of organizational, social, and personal interactions (see Table 21).

How can a contract on software development with an external supplier be constructed that aligns the incentives of the contracting parties and produces the same equilibrium outcome as an in-house development? Whang (1992) provides one answer with a game-theoretic model that emphasizes the economic aspect (i.e., the payment) of software contracting. By incorporating certain incentive issues into the model, a mathematical structure is developed that results in an equilibrium state between outsourced and in-house software development efforts. While this offers a beneficial theoretical perspective into contract structuring, there are some discrepancies between theory and practice. For example, the model does not take into account factors such as design changes during the project, or uncertainty related to the original estimates of the project’s cost and value.

Similar to Whang (1992), Chaudhury et al. (1995) address the question of how to minimize the cost of outsourcing. Chaudhury et al. use a mixed integer programming approach to model the contract bidding process. The model indicates the use of incentives to encourage low bids and the use of penalties to punish high bids will result in a lower-cost contract to the customer. As in the case of Whang (1992), this paper provides constructive theoretical insights that can be

applied to real-world situations. Also similar to Whang (1992), however, is the use of assumptions that help in building the model, but that may raise some questions in its application. For example, Chaudhury et al. employ the *ceteris paribus* principal; that is, "all things being equal." While this helps to construct the model, it also excludes factors such as vendor quality.

Klotz and Chatterjee (1995) used game theory to examine the effect of dual-sourcing (sourcing from two suppliers) on the overall expected costs of outsourcing. They determined that dual-sourcing can be used to partially offset the competition-reducing effects of entry costs and production learning, thereby encouraging more competition (except perhaps in the case where suppliers can be directly reimbursed for entry costs). Since previous studies of dual sourcing have tended to ignore entry costs, this study indicates that dual sourcing may be more effective than previously believed.

Sarkar and Ghosh (1997) utilize a probability model to help overcome the uncertainty associated with the selection of qualified vendors. It incorporates historical data to estimate performance probabilities, and draws inferences by comparing a new vendor's similarity with previous instances. This reliance on historical data is in contrast to many vendor selection methods that use subjectively weighted criteria. One caveat in the use of this model is that it is only as good as the data it draws on. Another is that it is not specifically designed for use in outsourcing situations. As several other researchers have pointed out, a match of management style and culture between vendor and customer is desirable. This model's disregard of subjective measures makes such evaluations problematic.

Agency theory is employed by Chalos and Chung (1998) to construct a mathematical model that views outsourcing as a means to improve managerial incentives. When managers have multiple tasks to oversee, marginal returns to managerial effort is maximized when that effort is focused on a core competency. Since one of the benefits of outsourcing is to allow managers to focus on the firm's core competencies, this has the effect of improving the return on the manager's efforts. Managerial incentives can then be restructured to emphasize the firm's core activities. The gains from outsourcing, however, are partially offset by increased coordination costs. The model is based on the argument that incentive intensity is the primary motivation for outsourcing. Other assumptions include the position that all activities are independent, there are no information asymmetries between external and internal suppliers, and the supplier market is perfectly competitive.

Van Mieghem (1999) analyzed different subcontracting approaches (price-only contracts, incomplete contracts, and state-dependent contracts) to determine their effect on financial performance. Relevant findings include: reliance solely on a price-based strategy for managing vendors is not always the best approach; outsourcing increases when market uncertainty increases; when explicit contracts cannot be made, firms may be better off leaving some contract parameters unspecified and agree to negotiate them later; and state-dependent contracts may reduce coordination costs (that is, contracts that specify variable prices, depending on contingencies, and in which costs/prices are verifiable by a third party, can result in reduced costs). Note that these findings are for the broad category of subcontracting, of which outsourcing is a subset. Thus care must be taken when applying these findings to an outsourcing situation.

#### **4.4.5 Conceptual "How"**

The majority of conceptual papers offer opinions and advice on outsourcing based on the authors' knowledge and expertise. The exceptions are Gallivan and Oh (1999), and Lee et al. (2000). These two papers synthesize existing concepts and research to produce frameworks for organizing the body of outsourcing knowledge. Table 22 provides an overview of these papers. Quinn and Hilmer (1994) approached outsourcing from a strategic management perspective. Their paper popularized the notion of strategic outsourcing; focusing on the core competencies of the firm, while contracting with other companies for ancillary activities and support services. Quinn and Hilmer framed the decision not in terms of whether or not to outsource, but rather how to structure the outsourcing arrangement. Suggested techniques for better outsourcing include; align goals and values, build a professional and highly trained procurement and contract management group, develop an enhanced strategic and operational monitoring capability, measure all costs and benefits (including opportunity costs and coordination costs), develop feedback systems to leverage and share knowledge and innovation, and create a three-level contract system; top managers, champions of the relationship, and operating-level personnel. Quinn and Hilmer also articulated structural concerns, such as the trade-off between control and flexibility, and risk concerns, such as the loss of critical skills. A particularly salient point, and one which has been echoed in other studies, is the need to develop new skills for managing the outsourcing arrangement. Their underlying argument is that outsourcing is a strategic and therefore top management issue, not a technical or operational one.

**Table 22. Conceptual “How”**

Level	Construct Focus	Constructs/Findings/Conclusions	Author(s)
<b>Relationship Structuring, Building, and Management</b>			
Firm	Combinations of multiple vendors and/or multiple customers.	The contextual and implementation details are critical when analyzing outsourcing arrangements.	Gallivan & Oh (1999)
		Managers should be aware that there is more than one option – the traditional dyad – when outsourcing.	
		Researchers should likewise be aware that so-called “multiple contingency” frameworks may offer more insight into understanding various outsourcing arrangements.	
Firm	Strategic outsourcing (concentrating on core competencies)	The issue is not buy (outsource) vs. build (insource), but rather how to structure the sourcing arrangement. This is a trade-off between control and flexibility.	Quinn & Hilmer (1994)
		Risks associated with outsourcing: 1) include loss of critical skills, and 2) loss of control over the supplier.	
		Firms need new skills to manage outsourcing.	
Firm	Contract Structuring	The risk of contract lock-in can be mitigated through the transfer of assets to the vendor, use of renegotiation clauses, and the use of flexible contract terms.	Elitzur & Wensley (1997)
		Establish common interests in the structure of the outsourcing arrangement.	
		Tailor fee structures to match the nature of tasks and information shared between the parties.	
		Provide for the transfer of knowledge between the parties.	
Firm	Relationship Building	Take into account all costs associated with the outsourcing relationship, including often-overlooked internal transaction costs.	Quinn (1999)
		Build a skilled and professional contract management group.	
		Pay close attention to strategic and operational performance indicators.	
		Ensure customer and vendor goals and values are congruent.	
		Share knowledge and innovation in both directions.	
		Build contacts into the relationship at multiple levels.	
Firm	Control issues in outsourcing relationships	Organizations providing professional services, such as outsourcers, often have more power in the relationship than do their customers.	Sharma (1997)
		There are elements of community and peer control as well as market control that affect organizations providing professional services.	
		Organizations providing professional services and their customers co-produce the services in question.	
Firm	Integrates outsourcing research and proposes future trends.	The relationship between vendors and customers is evolving from buyer-seller to a partnership.	Lee et al. (2000)

Elitzur and Wensley (1997), in a theoretical essay, use game theory to examine and explain certain characteristics of IS outsourcing, including asset transfer, risk sharing, technology upgrading, contract duration, relationship management, and fee determination. They focus on the role of incentives and fees as tools to help shape the structure of outsourcing arrangements. These aspects can be analyzed using strategies and payoffs, providing the capability to model complex outsourcing arrangements.

Sharma (1997), in an interesting application of agency theory, asks “what are the restraints on potential opportunism by professional agents (outsourcers), especially considering knowledge asymmetry in the agency exchange?” The answer, in a series of untested propositions, may be summarized as follows. The vendor is less likely to behave opportunistically when the customer demonstrates some level of trust in the vendor, and is actively involved in the co-production of the outsourced services (vendor self-

control). The vendor is less likely to behave opportunistically when taking advantage of the customer could harm its reputation (community control). The vendor is less likely to behave opportunistically when the vendor has an appropriate organizational control structure in place (bureaucratic control). The vendor is less likely to behave opportunistically when knowledge asymmetries are reduced, the competitive and institutional context permits client firms to require asset-specific investments from the vendor, or the possibility of repeat or expanded business exists.

Quinn (1999) closes the circle of prescriptive conceptual papers by revisiting the notion of strategic outsourcing. He takes the concept a step further by arguing for the outsourcing of knowledge-based activities and services by outsourcing functional specialties (e.g., accounting), integrating and outsourcing similar, complementary, or duplicate activities across divisions (e.g., telecommunications, desktop support, or web site design functions), and outsourcing activities requiring a highly diverse set of skills (e.g., acquiring or developing a new product or service). Quinn goes on to suggest a set of management techniques for better outsourcing, many of which have been recommended by other researchers: ensure goal and value congruence; enhance relationship management skills; enhance performance-monitoring capabilities; consider all costs, including often-overlooked opportunity and coordination costs; share knowledge and innovations both ways in the relationship; and develop customer/vendor contact points at multiple levels throughout the relationship.

On the framework side, Gallivan and Oh (1999) developed a taxonomy of four types of outsourcing arrangements: (1) simple (one client, one vendor); (2) multi-vendor (one client, many vendors); (3) co-sourcing (many clients, one vendor); and (4) complex (many clients, many vendors). A combination of various enabling and constraining forces work together to influence a customer's choice of a particular outsourcing type. Gallivan and Oh make the point that contextual forces and implementation details can have a profound impact on outsourcing arrangements, but are often overlooked when they are examined and analyzed. This homogenization of heterogeneous situations can mask critical elements that make a difference in individual situations.

Lee et al. (2000) created an integrative framework that incorporates the research areas, evolution, and theoretical models of outsourcing research. Not only does this serve as a guide for organizing current knowledge, it draws attention to the evolution of the outsourcing phenomena. The first step was the realization that competitive advantage is derived from how IT is used, not by who owns it. The second step was recognition that contracts cannot provide for every

contingency, and so an interactive relationship is necessary to attain the benefits associated with outsourcing. Finally, vendors are expanding the nature and scope of their outsourcing offerings as technology and the business market become more and more dynamic. The starting point for the next round of IS outsourcing research, according to Lee et al., is the acknowledgment that outsourcing arrangements are moving towards tightly-coupled win-win relationships between vendors and customers. This should lead researchers to take a more social perspective, utilizing concepts such as trust and culture, as opposed to past and current reliance on economic-based theoretical perspectives. Future research should also take into consideration the service provider's point of view.

#### **4.4.6 Summary "How"**

Due to the large volume of literature that addresses how to outsource, this summary section has been broken down into subsections that summarize the different research approaches to "how" (sections 4.4.6.1 – 4.4.6.5), followed by a subsection that provides an overall summary (section 4.4.6.6).

##### **4.4.6.1 Summary Positivist "How"**

The majority of papers with a positivist approach examine the social and psychological aspects of an outsourcing relationship. Only Kern (1997) and Willcocks and Kern (1998) considered contract structure issues. The notion of vendor selection has not been the focus of positivist studies. The studies have in common that they attempt to first identify the factors present within an outsourcing arrangement, and then to define a logical structure that portrays the linkages amongst those factors. Three different approaches can be identified in positivist research.

The first is to subdivide the development of an IS outsourcing relationship into temporal sub-stages. This facilitates examination of the relationship's evolution. A second approach is to concentrate on classifying the factors of a relationship. The two main classes are either related to the contract, or to the social relationship between client and vendor. The third approach is to concentrate on one of these two foci *a priori*, and to study the relationships between the corresponding groups of factors more intensively. The emphasis is on those factors that are present in a partnership-type relationship. It is interesting to note that the contractual level is mostly ignored in this type of research.

Primarily based on social exchange theory, many researchers argue that a partnership is the ideal type of relationship, in that it will result in a higher level of success. Accordingly, it is important to identify the main attributes of a partnership to understand its meaning.

The factors that determine or impact these attributes need to be identified as well. The determinants and attributes of a partnership, as well as the relationship between them, result in a structural model that serves as the basis for empirical investigation. The study of Lee et al. (1999) may be viewed as the most mature attempt to build and test a partnership model. It is also important to understand how the magnitude of these determinants can actually be impacted through management actions to influence a relationship in the desired way. This clear distinction between management actions, determinants and attributes, however, has not consistently been applied.

Other than a general acknowledgement that the relationship plays a critical role in the ultimate success or failure of an outsourcing arrangement, it is difficult to aggregate findings or discern clear trends. This is in part due to inconsistent definition and operationalization of constructs. A case in point is the overlap between constructs used by Klepper (1995), Grover et al. (1996), Kern (1997), Willcocks and Kern (1998), and Lee and Kim (1999). For example, the concept of communication is included by all five. However, its definition is not consistent, and it is viewed variously as an element of both contract structuring (Willcocks and Kern, 1998) and relationship building (Kern, 1997; Willcocks and Kern, 1998), as a determinant of relationship quality (Lee and Kim, 1999), and as an attribute of relationship quality (Klepper, 1995; Grover et al., 1996). Other constructs overlap as well, as shown in Table 18. This highlights one of the complications under which outsourcing research labors – the inconsistent definition and use of numerous closely related constructs, which makes the comparison of studies and results difficult.

Lastly, it is worth noting that nearly all of these studies take place at an overall firm level, abstracting from the IS level. The study by Grover et al. (1996), however, shows some evidence that the characteristics of the IS functions should also be taken into consideration when building and managing an outsourcing relationship. In addition, the study of Ang and Slaughter (1998) suggests that the characteristics of individual IS workers should not be neglected.

#### 4.4.6.2 Summary Interpretivist “How”

The papers classified as having interpretive approaches deal with a wide variety of implementation issues. As opposed to positivist studies that tended to ignore contractual issues, all of the interpretivist research examined this issue in more or less detail. Indeed, many of the studies see the contract as the ultimate foundation upon which the relationship is based. Accordingly, many of the studies give advice in how to structure a contract. This is done by identifying the parameters of contract building, the conditions on when

to choose certain types of contracts (e.g., loose versus tight), and the interpretation and ongoing management of the contract. Social aspects of the relationship are often viewed as complementary to the contract. They enable the smooth management – the realization – of the contract, especially given that it is impossible to specify all of the outsourcing objectives, and the associated vendor and client obligations in a contract. In this light, it is critical to develop and maintain appropriate management capabilities.

While interpretivist studies as a whole discuss contracts, the concepts and reasoning are often abstracted from the IS functional level, but applied at an overall firm level of analysis. In addition to the level of analysis, outsourcing relationships were studied from the perspective of different types of organizations (public versus private) and different relationship stakeholders (client versus vendors). While this allows for a wide-ranging scrutiny, it also results in limited generalizability. An argument might be made that this supports the contention of some researchers that outsourcing is such a complex phenomena that context plays a much more significant role than in other areas of IS research.

As far as the methodology is concerned, no details about the assumptions and specific methodologies adopted when interpreting the case studies were presented (with the notable exception of Schultze & Boland 2000). An interesting observation about the general body of interpretive research concerns its publication outlets. Three of the papers appeared in publications with a strong practitioner theme (Lacity & Hirschheim, 1993c; McFarlan & Nolan, 1995; Useem & Harder, 2000) in *Sloan Management Review*; and Sabherwal (1999) in *Communications of the ACM*. Two others appeared in European journals, Clark et al. (1995) in *Journal of Information Technology*; Currie and Willcocks (1998) in *Information Systems Journal*, while the final one (Hancox & Hackney, 1999) was in the proceedings from the *Hawaii International Conference on Systems Sciences*. Without being overly judgmental, it is reasonable to state that, in general, the interpretive papers appeared outside the mainstream of what is often viewed as ‘traditional’ IS research. This makes them no less rigorous or relevant, but it does raise some interesting issues regarding research and publication outlets.<sup>33</sup>

#### 4.4.6.3 Summary Descriptive “How”

There are three general themes that emerge from the descriptive papers. The first is an emphasis on flexibility,

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<sup>33</sup> The issue of research method and publication outlet is an interesting one where many in the IS research community have particularly strong views. But such discussions are, unfortunately, outside the scope of this paper.

either through an annual renegotiation process built into the contract (Cross, 1995) or the use of short-term contracts (Currie, 1998). Although the finding by Michell and Fitzgerald (1997) that customers desired tighter contracts would seem to run counter to this theme, a second finding of the study points out that disputes also arose concerning unforeseen changes. One interpretation is that contracts should do a better job of defining what is known at the time the contract is written, while allowing for the flexibility to re-stipulate or redefine requirements as situations change.

The second general theme is recognition that outsourcing is both a business issue, as well as a technical one. There was near-universal agreement that business managers should be involved in outsourcing decisions and activities (Huber, 1993; Cross, 1995; Currie, 1996; Currie, 1998). Finally, there was also general agreement that an outsourcing arrangement is a work-in-progress that requires forethought and follow-up (Huber, 1993; Cross, 1995; Currie, 1998).

Although all these papers provide valuable insight into outsourcing decision-making and its aftermath, from a purely academic viewpoint, the lack of any theoretical perspective may raise questions concerning their validity, reliability, and generalizability by subsequent researchers. This is exacerbated by the context-dependent aspect of the papers. Nevertheless, these papers make a significant contribution to the overall body of outsourcing knowledge.

#### 4.4.6.4 *Summary Mathematical "How"*

It is difficult, if not impossible, to map all of the real world's complexities into a theoretical model. Therefore these models (and, in fact, all models) employ certain restrictive assumptions. These models also have an underlying view of the world as a place where actors are rational, and for the most part risk-neutral. The strength of these models is to offer an enhanced understanding of the principles underlying aspects of outsourcing decision-making and activities. Often they look at particular trade-offs that decision makers are faced with in case of a make-or-buy decision. It is interesting to note that these trade-offs often have been overlooked in other types of research; for example, the use of incentives as opposed to penalties in the bidding process, and the benefits of subcontracting and dual sourcing (e.g., reducing entry costs) versus coordination costs are unique to these studies. One must keep in mind, however, the constraints and assumptions inherent in the models. One must also keep in mind the fact that most of these mathematical models were designed for use in a general supplier-customer context, not an outsourcing-specific one.

#### 4.4.6.5 *Summary Conceptual "How"*

In general, while the conceptual papers are very heterogeneous in their specific research foci they have one commonality. All of their reasoning is based on the assumption that no matter what IS objectives an organization has, they can be met through appropriate outsourcing arrangements. Strategic objectives can be reached by appropriate relationship structuring, the danger of vendor opportunism is offset by other factors, and even cultural and social natural differences between client and vendor can be managed effectively. A critical perspective on how to outsource IS, especially taking into account the costs and limitations of outsourcing implementation techniques and procedures, may serve to complement this research stream.

#### 4.4.6.6 *Overall Summary "How"*

As mentioned in section 4.4, there is a marked interdependence between "how" and "outcomes" of outsourcing. The papers that most clearly show this interdependence are the positivist papers. However, less than 25 percent of the papers on "how to outsource" can be rated as positivist. This is in marked contrast to IS research in general, which is predominately positivist (Walsham, 1995). This may be explained by the fact that the theoretical maturity of explaining the building and management of relationships is still quite low. There is little preexisting theory that can be readily applied to investigate the phenomenon of relationship building and management. In addition, the dominant variance theoretic basis of positivism has its limits in investigating relationship issues that require a process perspective of social interaction. Thus positivist research tends to study the factors involved in implementing an outsourcing arrangement, as opposed to the processes involved. They do so for the most part at an organizational level of analysis. Interestingly enough, however, they tend to use a social/organizational theoretical base, implicitly recognizing the significance of relationship issues.

Interpretive research is a means to understand the phenomena of interest in its context; the findings 'emerge' from the data. Results from this body of research tend to highlight the structuring phase of 'how to outsource.' In particular, interpretivist research illustrates how the process of negotiating a contract begins to lay the foundation for the ensuing customer/vendor relationship. The line between contract negotiation and relationship building becomes blurred, as the parties exchange information, learn more about each other's management style and values, and modify their expectations. This lays the foundation for the psychological contract referred to earlier. The contract itself lays the ground rules for governance and structure that guide the formal interaction between the parties.

This emphasis on contract structuring and relationship building also appears in the descriptive papers. That both interpretive and descriptive research focuses on the construction and maintenance of the relationship is telling, in that both research approaches are based on an intimate study of outsourcing arrangements in their context. While the details may vary, the fact that this theme is consistent across studies lends weight to the observation that relationship issues are critical. However, researchers to this point have not always clearly delineated between different processes of building, structuring, and managing the relationship. While these activities are certainly interrelated, a more precise focus on the differences and interdependencies would clarify the overall process by which the relationship is created and maintained. In this realm, a more intensive consideration of the individual worker level may prove valuable. Only two studies have examined differences between the psychological profile of in-house versus outsourced IS workers and situation-dependent work practices of outsourced IS professionals.

Several interpretive and descriptive papers also touch on vendor selection. This topic is covered by research based on a mathematical approach as well, along with issues related to the formal contract. These studies often are based on game or agency theory, and use the firm as the level of analysis. However, a majority of the mathematical papers are not specifically related to IS outsourcing, but rather to general customer-supplier situations.

There is no common thread uniting the conceptual papers. A number of different issues are examined, ranging from strategic issues to frameworks to future trends. Several of these papers have normative or prescriptive elements that can serve as a springboard for future predictive research.

#### 4.5 Implementation Phase: "Outcome"

Once the outsourcing decision is implemented (i.e., "how"), the resulting experiences need to be documented and understood. Much of the outsourcing literature focuses on such 'outcomes' and this is the topic addressed by this section. It should be noted that the notion of 'outcome' is value-laden and often vague, as can be seen in the broader IS evaluation literature (Smithson & Hirschheim, 1998). Most researchers focused on the factors that impact the success of outsourcing. However, these factors are heavily dependent on how one defines 'outcome' or 'success'. Based on this, we have attempted to identify and synthesize the main concepts used in the literature. These concepts are typically referred to as "types of variances in outcome", and there are three types: (1) satisfaction; (2) expectations and their realization; and

(3) performance. Table 23 provides an overview of this section.

Similar to the research on implementation ("how"), the majority of papers on outcomes are empirical adopting either a positivist, an interpretive or descriptive, approach. In the non-empirical category only conceptual papers could be identified. We will discuss each of these in sequence.

**Table 23. Overview of "Outcomes"**

Research Approach	Focus	Reference
Positivist	Types of outcomes: Satisfaction Realization of expectations Performance (IS function, and individual)	Section 4.5.1 – Table 24
	Outcome Determinants: Contract and contract management Relationship/partnership attributes and management Service Quality IS function characteristics and activities Individual worker characteristics	Section 4.5.1 – Table 25
Interpretive	Firm level: Realization of expectations; IS Function level: Satisfaction Performance Stakeholder preferences	Section 4.5.2 – Table 26
	Outcome Determinants Relationship Contract IS attributes Decision analysis	Section 4.5.2 – Table 27
Descriptive	Case studies of IS outsourcing at a specific organization	Section 4.5.3
Conceptual	Risk factors of IS outsourcing Guidelines for evaluating IS outsourcing using the concept of internal markets	Section 4.5.4



#### 4.5.1 Positivist “Outcome”

Seven research papers that have taken positivist approaches were reviewed. The studies of Grover et al. (1996), Lee et al. (1999), Saunders et al. (1997) and Poppo and Zenger (1998) focused on *satisfaction* with the outsourcing arrangement and its determinants. Heckmann and King (1994) developed a measurement model of satisfaction without looking at its driving factors. Grover et al. (1996), in addition, used the construct of service quality to reflect the degree of *realization of various expectations* regarding the quality of the service provided externally. Aubert et

al. (1999) looked at the risk inherent in IS outsourcing arrangements. They differentiated between various *undesirable outcomes* that are impacted by risk factors. On the other hand, Ang and Slaughter (1998) concentrated on the *performance* of the vendor's employees as opposed to the in-house staff.

In the following, the different concepts and their operationalization will be analyzed in detail. An overview of the different conceptualizations of “outcome” is presented in Table 24. Table 25 shows the main determinants used by the authors to explain the different outcomes.

**Table 24. Positivist outcome types, Part 1 of 2**

Level	Outcome Type	Construct focus	Construct	Author(s)
Firm	Satisfaction (with)	Strategic benefits	Focus on core business	Grover et al. (1996), Lee & Kim (1999), Saunders et al. (1997)
			IS competence	Grover et al. (1996), Lee & Kim (1999)
		Economic benefits	Management of cost structure, Control of IS expenses	Grover et al. (1996), Lee & Kim (1999), Saunders et al. (1997)
			Economies of scale in human and technological resources	
		Technological benefits	Access to leading edge IT	Grover et al. (1996), Lee & Kim (1999), Saunders et al. (1997)
			Avoiding risk of technological obsolescence	
			Skilled personnel	Lee & Kim (1999), Saunders et al. (1997)
		Outsourcing implications	Satisfaction after and before outsourcing	Marcolin & McLellan (1998)
		IS recognition	IS importance	Marcolin & McLellan (1998)
		Overall relationship	Overall satisfaction	Lee & Kim (1999), Saunders et al. (1997)
	Expectations and their realizations	Costs	Unexpected transition and management costs	Aubert et al. (1999)
			Costly contractual amendments	
			Increased costs of services	
			Cost savings	Marcolin & McLellan (1998)
		Dependency	Lock-in	Aubert et al. (1999)
		Quality	Service debasement	Aubert et al. (1999)
		Relationship	Disputes and litigation	Aubert et al. (1999)
			Avoidance of conflicts, frequency of disputes	Marcolin & McLellan (1998)
			Trust	Marcolin & McLellan (1998)
		In-house competencies	Loss of organizational competencies	Aubert et al. (1999)
	User Satisfaction (with)	Information Quality	Reliability of information	Lee & Kim (1999)
			Relevancy of information	
			Timeliness of information	
			Accuracy of information	
			Currency of information	
			Completeness of information	
		Overall evaluation (of)	System	Heckman & King (1994)
			Vendor	
			System cost	

**Table 24. Positivist outcome types, Part 2 of 2**

Level	Outcome Type	Construct focus	Construct	Author(s)
Firm	Performance	Organizational impact	Ability to transform the organization	Marcolin & McLellan (1998)
Individual	Performance	Performance of insourced versus outsourced workers	Fulfillment of responsibilities and meeting quality	Ang & Slaughter (1998)
	Characteristics of in-house versus outsourced workers	Treatment of workers	Support from organization	Ang & Slaughter (1998)
			Workplace justice	
			Alienation	
		Behavior of workers	In-roll behavior	Ang & Slaughter (1998)
			Organizational citizenship behavior	
		Attitude towards workers	Trustworthiness	Ang & Slaughter (1998)

**Table 25. Positivist determinants of outsourcing success, Part 1 of 2**

Determinants of outcome				R	Author(s)	
Level	Construct focus	Construct				
Industry	Market	Number of suppliers (+)		NS	Aubert et al. (1999)	
Firm	Partnership	Partnership quality (+)		S	Lee & Kim (1999)	
	Vendor competence	vendor has high competency and already experimented with outsourcing (+)		S	Aubert et al. (1999)	
	Client management competence	Client's Lack of experience and expertise in managing the contract (-)		S	Aubert et al. (1999)	
	Client Contract Management	Sequential contracting (+)		S	Aubert et al. (1999)	
		Guaranteed rates (+)		S		
		Penalty for underperformance (+)		S		
		Conditional payments (+)		S		
		Let own employees participate in each stage of the project (+)		S		
	Contract	Contract deepness (-)		PS	Marcolin & McLellan (1998)	
		Interpretation strictness		PS	Marcolin & McLellan (1998)	
	Relationship Management	Post contract management (+)		PS	Marcolin & McLellan (1998)	
	Relationship attributes	Buyer seller versus strategic partnership		PS	Marcolin & McLellan (1998)	
IS Function	Characteristics of IS functions / activities	Client's lack of experience and expertise with activity (-)		S	Aubert et al. (1999)	
		Uncertainty regarding the work (-)		S	Aubert et al. (1999)	
		Technological uncertainty (+)		NS	Poppo & Zenger (1998)	
		Measurement problems (-)		S	Aubert et al. (1999)	
		Measurement difficulty (-)		S	Poppo & Zenger (1998)	
		Asset specificity (-)		S	Poppo & Zenger (1998)	
		Activity is a core competency (-)		S	Aubert et al. (1999)	
		IS viewed as core competency (+)		S	Saunders et al. (1997)	
	Extent of outsourcing	Degree of outsourcing (+)	Overall IS		S	Grover et al. (1996)
			Systems operation		S	
			Applications development		S	
			End-user support		S	
			Systems planning and management		S	
			Telecommunications management and maintenance		S	

**Table 25. Positivist determinants of outsourcing success, Part 2 of 2**

Determinants of outcome				R	Author(s)
Level	Construct focus	Construct			
IS Function	Service quality	Service Quality SERVQUAL increases (+) (mediator) positive impact of outsourced IS functions on success:	Overall IS	NS	Grover et al. (1996)
			Systems operation	NS	
			Applications development	NS	
			End-user support	S	
			Systems planning and management	S	
			Telecommunications management and maintenance	NS	
	Partnership	Partnership attributes communication, trust, cooperation and satisfaction increase (+) (mediator) positive impact of outsourced IS functions on success:	Overall IS	S	Grover et al. (1996)
			Systems operation	S	
			Applications development	NS	
			End-user support	NS	
			Systems planning and management	NS	
			Telecommunications management and maintenance	NS	
		Partnership arrangement (+)	S	Saunders et al. (1997)	
	Contract	Tight contracts (+) – especially when applied to partnership relationships	S	Saunders et al. (1997)	
Individual	Differences between outsourced versus in- house IS professionals	Workplace attitudes	Individualism (higher)	S	Ang & Slaughter (1998)
			Support from organization (lower)	RV	
			Workplace justice (lower)	NS	
			Alienation (higher)	NS	
		Behavior of workers	In-role behavior (same)	NS	
			Extra-role behavior (lower)	S	
			Obedience (-)	S	
			Loyalty (-)	S	
		Perception of workers	Trustworthiness (-)	S	
			Performance (-)	S	

**Satisfaction.** Heckmann and King (1994) examined the behavioral consequences of vendor-provided information services. They developed and tested a measurement model of customer satisfaction which is grounded in the *Theory of Reasoned Action* (Fishbein & Ajzen, 1975) and the *Theory of Planned Behavior* (Ajzen, 1985). Instead of examining the antecedents of satisfaction, they explored positive and negative indicators of satisfaction using factor analysis. Two important findings resulted from the study: (1) the positive behaviors were consistent indicators of satisfaction, while negative behaviors were less consistent indicators of dissatisfaction; and (2) behaviors that are good indicators of satisfaction were those associated with the relationship (termed as “relational” behaviors). Customers’ uses of the systems were not found to be good indicators of satisfaction. Among the limitations of the study was the source of the sample data, which is from medium sized banks. Since the study focuses on satisfaction with vendor-provided IS in general, it does not examine the influences of different types of contracts. From a purely outsourcing

point of view, formal contracts would stipulate some of the negative or positive behaviors related to satisfaction. On the other hand, being one of the early works on vendor satisfaction behavior the paper is useful in understanding the behaviors that could lead to better outsourcing contracts. Heckman and King tested only one indicator related to monetary aspects of a relationship; delaying payments. However, cost reduction or escalation could become an important factor that determines the satisfaction with an outsourcing arrangement, a point that was further investigated by Poppo and Zenger (1998).

Poppo and Zenger (1998) studied satisfaction with market as opposed to firm performance using quantitative data at the organizational level. They distinguished between three performance goals; (1) the overall cost, (2) the quality of output or service, and (3) responsiveness to problems or inquiries. Using a multitheoretical approach they hypothesized that various factors – each being related to different IS functions – have different impacts on satisfaction with market and firm performance. Consistent with

*transaction cost* theory, satisfaction with the performance of outsourced services decreases with rising *asset specificity*. However, contrary to *resource-based theory*, managers did not become more satisfied with performance when in-house services were highly specific. *Measurement difficulty* has a stronger negative effect on market performance than on firm performance. High technological uncertainty was not found to influence market or firm performance. Poppo and Zenger's results indicate that the factors impacting satisfaction are related to different IS functions. However, firms differ in the manner and extent to which they outsource different IS functions. Poppo and Zenger's work did not encompass the connection between the scope of an IS function's outsourcing and satisfaction.

Grover et al. (1996) tested the direct relationship between the *extent of outsourcing* different IS functions and success, along with the moderating influence of *service quality* on this relationship. Success was defined as the satisfaction with strategic, technological and economic outsourcing benefits. In particular, satisfaction was measured as the extent to which the vendor contributes to the following factors (Grover et al., 1996, p. 98): (1) focus on core business; (2) increasing IS competence; (3) increased access to skilled personnel; (4) economies of scale in human and technological resources; (5) control of IS expenses; (6) avoidance of obsolescence risk; and (7) increased access to key information technologies. *Service quality* was measured using two dimensions based on the SERVQUAL instrument (Parasuraman et al., 1988): tangibles (physical facilities), and reliability (ability to perform service dependably and accurately). The results of their study confirmed the mediating role of *partnership* on the strength of the relationship between the degree of outsourcing certain functions – telecommunications management and systems operations – and success, but was much weaker in the case of outsourcing other functions. An interpretation of these results, on the one hand, suggests that success is dependent on the character of the activity being outsourced (i.e., the decision on “what” to outsource). On the other hand, it shows that a positive effect of IS outsourcing only leads to satisfaction with the arrangement if accompanied by partnership-style behavior. From a more theoretic point of view it has to be noted, however, that it might be more appropriate to measure success related to an individual task (IS functional level) rather than through the overall IS or even organizational level when the independent variable is measured at the functional IS level.<sup>34</sup>

<sup>34</sup> The same is true for determinants of IS outsourcing. If the dependent variable “degree of IS outsourcing” is related to different IS functions, then the independent variables that explain

Lee and Kim (1999) extended the business success measures of Grover et al. (1996) by adding the perceptions of the users, along with overall business success. User satisfaction was decomposed into the (1) reliability, (2) relevancy, (3) timeliness, (4) accuracy, (5) currency, and (6) completeness of information from the perspective of the users or end customers of the service. The independent variables used to predict satisfaction differed from Grover et al. (1996). Lee and Kim (1999) tested the impact of different attributes of *partnership quality* on satisfaction with the vendor's IS services. Partnership quality is represented by the degree of trust, business understanding, benefit and risk sharing, commitment, and conflict. Of these factors – with the exception of conflict – partnership quality significantly influenced outsourcing success. However, some differences could be observed between the impacts of the particular partnership quality attributes on user versus business satisfaction. For example, trust has a positive impact on business satisfaction, but not on user satisfaction. This result suggests that the perceived outcome and its influencing factors differ between the management and the user perspective.

Saunders et al. (1997) used a case research approach to investigate the determinants of outsourcing success. Somewhat similar to the study of Grover et al. (1996) and Lee et al. (1999), four concepts were used to measure outsourcing success; (1) economic, (2) technological, (3) strategic, and (4) overall *satisfaction*. The study relates three influencing factors to outsourcing success, which reflect the client's perceptions towards the outsourcing arrangement. The factors are the (1) nature of the contract (tight vs. loose), (2) perceptions towards the vendor (as a supplier vs. partner) and (3) the role of IS (commodity vs. core). Although Saunders et al. defined success using multiple dimensions, a composite measure of success was developed which analyzed the influence of determinants on the individual dimensions. Their results showed that supplier type relationships are much more likely to be economically and strategically successful when a tight contract has been written for the agreement. Overall, partnership arrangements were more successful than pure supplier relationships, especially when combined with tight contracts.

In addition to the tightness of contractual definitions, Marcolin and McLellan (1998) examined outsourcing arrangements within two other dimensions, uncertainty and interpretation strictness, using case studies at six banks and two corresponding vendor companies. Their

the variance in outsourcing of the individual IS function should be related to the particular IS function as well. One of the few studies that recognizes this, and explicitly matches the level of analysis between independent and dependent variables is Poppo and Zenger (1998).

analysis of the data showed that outsourcing encompasses a wide variety of choices, which can result in widely differing types and forms of outsourcing arrangements. Five banks stated that they had a strategic partnership with the vendor. However, only three actually exhibited behavior to support the partnership label. Although each contract could be defined as tight or detailed, the way management used these contracts differed among companies (interpretation strictness). In spite of these differences, *strategic partnerships* (less detailed contracts, high uncertainty) were found *not* to be better than buyer/seller relationships (tight contracts, low uncertainty) regarding overall *satisfaction*. In fact, buyer/seller relationships achieved greater satisfaction through more control and certainty in their relationships, and were better in avoiding conflict, achieving cost reductions, and developing trust. However, in relationships with 'looser' contracts the banks showed a higher ability to transform their organizations (adjusting to an uncertain environment) and to increase the level of trust over time.

Satisfaction, as investigated by the above research, is a reasonable surrogate for a successful outcome because it allows the subjects to respond based on the criteria most relevant to them. A similar measure of outcome, but one that is more closely tied to predefined criteria and actual results, is the degree to which a customer's *expectations* are realized.

**Expectations and their realization.** The focus of the study by Aubert et al. (1999) is on identifying appropriate strategies to mitigate the risk inherent in IS outsourcing contracts. The prerequisite for reducing risk is its identification. Aubert et al. define risk as the product of the probability of an undesirable outcome and the loss due to the undesirable outcome. Based on a literature review they identify seven undesirable outcomes of an outsourcing relationship: (1) unexpected transition and management costs, (2) potential loss associated with a lock-in, (3) costly contractual amendments, (4) costly dispute and litigation (5) services debasement, (6) cost escalation, and (7) loss of organizational competencies. The probability of these negative outcomes was determined by a variety of determinants.

Based on their analysis of interview data obtained from two cases, the authors conclude that the main factor that causes high transition and management costs is the lack of experience and expertise of the client with the IS activity (in this case systems development). The danger of lock-in is minimized when there are many suppliers in the market. Costly contractual amendments have a low probability when the uncertainty regarding the work required is low. If client and vendor have low expertise in outsourcing this likely leads to high dispute and litigation costs as well as cost escalation. Service

debasement is unlikely if the vendor has high competency and is experienced with outsourcing IS activities. Finally, the loss of organizational competencies is low if the activity outsourced does not belong to the core competencies of the client. It should be noted, however, that Aubert et. al only mentioned those determinants that actually were found to have the expected impact on the different undesirable outcomes.

Overall, the study of Aubert et al. (1999) shows that many of the undesirable outcomes of an outsourcing relationship can be prevented when the decision of IS outsourcing is well-founded, taking into account the characteristics of the IS functions to be outsourced as well as the client and vendor capabilities. The "left over risks" of IS outsourcing can effectively be mitigated by structuring the contract and managing the relationship (see the section on "How").

Satisfaction and realization of expectations are 'final' outcomes of outsourcing that occur as a consequence of organizational behavior. Another perspective on outsourcing outcomes attempts a more precise measure of organizational behavior – *performance*.

**Performance.** Ang and Slaughter (1998) conducted a multi-method study on eleven workgroups in the IS development division of a large international transportation company using questionnaires and interviews to collect their data. Their study can be rated as unique in that they focused on the individual worker level by comparing outsourced and insourced workers in eleven mixed work teams. Three types of measurements were applied. First, the psychological profiles and workplace attitudes were assessed through the self-perceptions of the workers. Second, peer evaluations were used to determine in-role and organization citizenship behaviors. Finally, the supervisors evaluated the insourced and outsourced subordinates on individual performance and trustworthiness. However, even though the workers' performance is measured and compared by the extent to which individuals fulfill responsibilities and meet quality standards, performance is not treated as a dependent variable. Indeed, the other constructs are treated as dependent "outcome" variables, with the only independent variable being bipolar – whether the workers are in-house personnel or employed by the vendor.

Consistent with their hypotheses, outsourced workers were found to be more individualistic, less trustworthy, perform at a lower level, engage in fewer organizational citizenship behaviors (extra-role, obedience, and loyalty) and show lower in-role behaviors than insourced workers. Contrary to the hypotheses, in-house workers perceived less organizational support than outsourced workers. There were no significant differences between insourced and outsourced workers

regarding perceived workplace justice and alienation. Keeping in mind that the results are based on only one organization, the implications are that organizations should be more active in selecting or approving outsourced workers, as opposed to relying on the contractor. Organizations should also consider designing jobs and work assignments with the differences between outsourced and insourced workers in mind. Finally, organizations may wish to redesign appraisal and reward systems for insourced workers.

#### 4.5.2 Interpretivist “Outcome”

Nine papers could be categorized as having taken an interpretivist approach. They conducted single or multiple case studies to understand the determinants and processes that led to a particular outcome. Five of these papers discussed the consequences of outsourcing as foundations for prescribing better decision-making strategies (Lacity & Hirschheim, 1993c; Lacity & Willcocks, 1995; Lacity & Willcocks, 1998; Lacity et al., 1995; Lacity et al., 1996). In contrast to the positivist papers that mostly focused on outcome in terms of satisfaction, the majority of interpretivist studies concentrated on the expectations associated with IS outsourcing and the extent to which these expectations are realized. In most of the cases, expectations were identified retrospectively via asking client representatives – mostly at the management level –

about their prior expectations (e.g., cost savings). ‘Success’ was evaluated by comparing those expectations to current outcomes.

These expectations partially are codified in the outsourcing contract. However, to a certain extent these expectations are non-existent in a written form. They might be communicated informally or be of a psychological nature, in that they are intrinsically assumed. Often these expectations are related to intangibles that are difficult to measure objectively, such as the belief that the supplier will behave in the client’s interest (trustful behavior).

One of the strengths of the interpretive approaches lies in the consideration of multiple outcomes of IS outsourcing at the same time. For example, a company might expect cost savings from IS outsourcing, and in addition expect the level of service to remain the same as before outsourcing, or to even increase. In addition, the mostly exploratory nature of the studies allows consideration of unexpected outcomes that might impact or even dominate the overall perception of the outcome of an outsourcing relationship.

Table 26 summarizes the main conceptualizations of ‘outcome’ used in the interpretivist papers. Table 27 shows the main factors found to explain these outcomes.

**Table 26. Interpretive concepts of different outcome types**

Level	Outcome Type	Construct focus	Construct	Author(s)
Firm	Expectations and their realization	Costs	Cost savings <sup>35</sup>	Lacity & Hirschheim (1993c)
				Lacity & Willcocks (1995)
				Lacity et al. (1996)
				Lacity & Willcocks (1998)
				Hirschheim & Lacity (1998; 2000)
				Marcolin & McLellan (1998)
			Increased cost control	Reponen (1993)
			Increased costs in the early stages	Reponen (1993)
	Unexpected instances	Organizational Relationship	Unintended turnover	Reponen (1993)
	Satisfaction (with)	IS Performance	User Satisfaction	Reponen (1993)
	Performance	IS performance	Unspecified, loosely speaks of project success	Sabherwal (1999)
	Conflicting stakeholder preferences	Senior management	Cost savings	Hirschheim & Lacity (1998; 2000)
		Users and business unit managers	Improved service levels	
		IS managers	Business reputation – proof competitiveness against market	

<sup>35</sup> In the studies by Lacity and Willcocks (1998) and Lacity et al. (1996) other expectations and their realizations were identified (e.g. maintenance or improvement of service levels, satisfaction of user management, renewal of contract, etc). However, for the purpose of their analysis only the achievement of anticipated cost savings was included, as it was considered the most important indicator for success.

**Table 27. Interpretive determinants of different outcome types**

Determinants of outcome			R	Author(s)
Level	Construct focus	Construct		
Firm	In-house Relationships	User links becoming weaker (+)	S <sup>36</sup>	Reponen (1993)
		Developing relationships with senior management (+)	S	Lacity & Willcocks (1998)
	Contract	Recently signed contracts (+)	S	Lacity & Willcocks (1998)
		Short-term contracts (+)	S	Lacity & Willcocks (1998)
		Detailed fee-for-service contracts (+)	S	Lacity & Willcocks (1998)
		Contract Structure (+)	S	Sabherwal (1999)
	Relationship attributes	Trust (+)	S	Sabherwal (1999)
IS Function	Mapping of Characteristics of outsourced IS activities with contract type	Combination of frequency, asset specificity and contract type (standard, individual, trust based)	NS	Lacity & Willcocks (1995)
	IS attributes	Degree of IS outsourcing (selective (+) vs. insourcing, total outsourcing)	S	Lacity & Willcocks (1998)
		Size of IS function	NS	Lacity & Willcocks (1998)
		Selective sourcing (+)	S	Lacity & Willcocks (1998)
	Sophistication of decision analysis	Soliciting both internal and external bids (+)	S	Lacity & Willcocks (1998)
		Joint decision making by business and IS managers (+)	S	Lacity & Willcocks (1998)
	Competing outcomes	Negative impact of IS cost reduction strategies on IS service quality	S	Hirschheim & Lacity (2000)

**Realization of Expectations.** The findings of two of the earliest papers (Lacity and Hirschheim, 1993c; Reponen, 1993) show that success of outsourcing is not always guaranteed. Lacity and Hirschheim (1993c) conducted a series of in-depth interviews with multiple informants at fourteen Fortune 500 companies. They analyzed the degree to which expectations regarding the client-vendor relationship, the vendors' performance, and the financial outcomes associated with IS outsourcing actually were achieved. Their findings revealed that many of the outsourcing stories in the trade literature presented an inaccurate view of outsourcing arrangements and results. Three specific myths emerged. One, the outsourcing relationship is often portrayed as a strategic partnership or alliance. This is at odds with the actual contractual relationship, which usually does not contain provisions for sharing risks and rewards associated with outsourcing. Viewing a relationship as a partnership can be dangerous because it may lead to a loose or incomplete contract, in part because the client thinks of the outsourcing vendor as a partner when in fact it is not. Consequently, the possibility for "opportunistic behavior" by the vendor exists. Two, outsourcing vendors are often portrayed as more efficient than internal IS departments. This is based on the assumption that vendors can achieve economies of scale, primarily based on the theoretical

economic concepts of mass production and specialization of labor. However, these theoretical concepts are founded on the "all else being equal" principal, which is not always the case in outsourcing. Constant changes in the technological environment, and often-unique contextual factors, combine to make this a questionable proposition. Three, outsourcing contracts are often touted as saving the customer anywhere from 10 to 50 percent of its IS costs over the life of the contract. In actuality, many of these savings are *anticipated* savings, and are not realized as time goes by. In addition, many vendors will underbid to get the contract, with the expectation of making up the difference through additional service fees. Finally, often an in-house IS department could achieve much of the same savings through practices like standardization, consolidation, and charge-backs, but are prevented from doing so by internal politics or organizational culture.

Reponen (1993) studied the outsourcing process and outcomes through case research at six companies in Finland over a period of eight years. The researcher had been an active participant at one of the companies. The data of the other five cases was gathered through interviews and other sources. Overall, the cases showed mixed outcomes, including both benefits and problems resulting from spinning off the previous in-

<sup>36</sup> It should be noted that the success factors in Reponen (1993) are related to spin-offs, a somewhat unique organizational form in the study of outsourcing.

house IS activities to a legally independent company that is linked to the parent company through capital. The 'negative outcomes' experienced by some of the companies led to either bringing the IS services back in-house, or outsourcing them to a different, unrelated external service provider. The objectives and means of outsourcing leading to the outcomes were studied under three broad categories; (1) financial, (2) personnel, and (3) organizational. Companies were able to achieve cost control, more user satisfaction and better organizational skills through outsourcing. However, some problems such as unintended turnover, increased costs due to marketing and sales effort resulting from the spin-offs, and changing business requirements that did not match the vendor's capabilities over time were discovered. The paper provides valuable insight into the problems and issues associated with the special case of spin-off outsourcing, which is rarely studied in the Anglo-American countries. Overall, Reponen (1993) suggested viewing outsourcing as a change process that takes time to stabilize. A similar process view was presented by Lacity et al. (1995) who illustrated that continuous learning in negotiating with an external supplier is necessary for a successful outsourcing relationship.

Lacity et al. (1995) presented their lessons learned from studying 62 outsourcing decisions of 40 European and US organizations. From this rich data set they provide deeper insight into the outsourcing process of one particular fictitious company. The case illustrates the problems that could arise due to the difficulties in interpreting contracts and a process of learning that could occur in a company. Such learning helps negotiating with vendors in later stages of the relationship. Lacity et al. primarily focused on issues that arose in building, structuring and managing the outsourcing arrangement. Specific outcomes of outsourcing were not their major issue.

In another analysis based on the same data as the previous study, Lacity and Willcocks (1995) classified outsourcing contracts based on *transaction cost theory* (TCT) into classic (standard contract), neo-classic (includes special contractual clauses) and relational (based on trust and spirit of partnership). Transactions associated with the outsourced IS activities (e.g., software development) were mapped as occasional or recurrent ("frequency"), as well as idiosyncratic, mixed or non-specific ("asset specificity"). When linking the transaction types with the contract types for each sourcing decision, the authors interpreted 78% of the cases as showing anomalies from the proposed theoretical linkages. Considering failure and success of the sourcing decisions – measured as the degree of realization of anticipated cost savings – the number of anomalies increased to 87.5%. As an example of such an anomaly, many companies in the sample achieved

cost savings, even though they outsourced non-specific transactions using a neoclassical contract rather than a classical contract. It is, however, not clear (or at least debatable) if this really can be rated as an anomaly when looking at today's use of transaction cost theory (see for example Groenewegen, 1996) as opposed to Williamson's original work (Williamson, 1975; Williamson, 1985) to which the authors refer to. Neoclassical contracts might be the rule in today's business. However, the way the authors interpreted these anomalies deserves special mention. Applying the principle of dialogical reasoning (Klein & Myers, 1999) they theoretically explored these contradictions from two different perspectives. On the one hand – from the view of *proponents* of TCT – the anomalies could be explained by not having considered high uncertainty, recurrent idiosyncratic transactions, high switching costs according to small numbers of suppliers, and low client experiences in contracting. On the other hand, *opponents* of TCT could argue that other factors – especially politics within the organization – could significantly have influenced the sourcing decision. In addition, economies of scale could also be achieved internally. Furthermore, the transaction alone may be the wrong unit of analysis, considering that history plays a significant role in valuing the IS function. Finally, it was concluded that the IS department should be treated as a portfolio of activities rather than as a single asset when it comes to an outsourcing evaluation.

In a third analysis Lacity et al. (1996) illustrate how the criteria that primarily drive the organizations' perceptions of sourcing success vary from organization to organization. This supports the notion of high context dependency of outsourcing success. The criteria are categorized into seven general groups: (1) cost savings; (2) service levels; (3) user management satisfaction; (4) client-vendor disputes; (5) vendor responsiveness and attentiveness; (6) comparison of outcomes with objectives; and (7) renewal of contract. Achievement of anticipated cost savings were found to be the criteria used in most of the companies. Using this as the measure of success, Lacity et al. found that selective outsourcing resulted in the highest number of successful sourcing arrangements (37%), followed by total insourcing (16%), and total outsourcing (3%). The remaining cases either failed to meet expected cost savings, or could not determine the financial outcome. In a follow-up paper, Lacity and Willcocks (1998) elaborated on the factors that had the highest impact on realizing cost savings (the *de facto* measure of outsourcing success). Based on their interpretation, seven determinants of success emerged from the data. In particular, a higher relative frequency of achieving cost savings was associated with: (1) selective sourcing arrangements; (2) joint decision making (business and IT managers); (3) soliciting both internal and external bids; (4) short-term contracts as opposed to long term



contracts; (5) detailed fee-for-service contracts as opposed to other types of fee-for-service contracts; and (6) recently signed contracts as opposed to older contracts. The latter was interpreted as an indicator of a firm's learning how to better negotiate contracts and manage outsourcing relationships over time. The seventh determinant, size of the IT function, did not usefully differentiate successful from unsuccessful outsourcing decisions.

Viewing the outcomes of outsourcing arrangements as realization of expectations quite naturally leads to the questions of who sets the expectations, and what happens when different groups within a customer firm have conflicting expectations.

**Conflicting expectations and their realization.** With cost savings being such a dominant factor for companies when deciding to outsource and evaluating the outcomes afterwards, two questions arise: (1) how do vendors actually achieve cost savings; and (2) couldn't the internal IS department be able to achieve the same (or even higher) savings by using the same techniques as the vendor? Answering these questions was the goal of studies by Hirschheim and Lacity (1998; 2000). They collected data from participants of 14 companies that had gone through an evaluation of IS outsourcing but decided instead to insource. In total, eleven tactics for cost reduction emerged out of the data (Hirschheim & Lacity, 1998): (1) automation; (2) chargeback; (3) data center consolidation; (4) departmental reorganization; (5) employee empowerment; (6) hardware negotiations; (7) just-in-time resources; (8) more efficient resource usage; (9) service elimination; (10) software negotiations; and (11) software standardization.

According to clients, these are tactics that routinely are used by vendors to reduce costs.<sup>37</sup> An important finding of the study is, however, that different stakeholder groups have different preferences regarding the performance of IS. Whereas senior management is focused on lowering IS costs, users focus on increasing service quality. Achieving both objectives at the same time is elusive, if not unrealistic. In the cases studied by Hirschheim and Lacity these objectives were found to be conflicting, with most users being unhappy with the cost reduction tactics implemented in their companies. Hirschheim and Lacity call this a general cost/service trade-off that has to be considered in any sourcing decision, regardless of whether it results in outsourcing or insourcing (Hirschheim & Lacity, 2000).

The finding that non-financial outcomes play an important role in the overall evaluation of the outcomes

of IS sourcing is further supported by Marcolin and McLellan (1998) (discussed under positivist "outcomes", section 4.5.1), Sabherwal (1999) (below), and Cross (1995) (discussed under descriptive "outcome", section 4.5.3).

**Performance.** Sabherwal (1999) conducted case studies of 18 outsourced information systems development (ISD) projects in four different countries from both the client and the vendor's perspective. His interpretation of the interview data suggests that a balance between trust and structure improves performance in an outsourced IS development (OISD) context. Performance was loosely defined as project success. Excessive focus on either trust or structural controls has an adverse effect on performance. OISD projects go through cycles of trust and distrust. The author includes a list of tactics for building trust in OISD (see 'how').

#### 4.5.3 Descriptive "Outcome"

Two studies provide purely descriptive, but valuable, insights on outcomes. These are the studies from Cross (1995) and Huber (1993) that illustrate the outsourcing "success stories" of British Petroleum (BP) and Continental Bank, respectively. The case of BP shows that the criteria used to evaluate the outcome of an IS outsourcing relationship can shift over time. In the case of BP it was a shift from "... emphasis on costs to service responsiveness, quality and customer satisfaction" (p. 100). The paper also points out the importance of viewing IS outsourcing as a change process. Managing change related to technological and business issues is an ongoing challenge. One way BP has responded to this challenge is the role-transition of the remaining in-house IT employees from technical specialists to internal consultants. The Continental Bank case underscores the importance of change issues, particularly personnel-related ones. In reflecting on its outsourcing process, Huber (1995, p. 129) notes: "In fact, the personnel transition is probably the project's most striking success story. Continental employees are treated as valued customers by their former coworkers ... Another obvious success is the changed behavior of the bank's business units. They are now active and disciplined participants in the IT process" (p. 129), allowing for better control of IT.

#### 4.5.4 Conceptual "Outcome"

Two papers studied IS outsourcing in a conceptual manner. Aubert et al. (1998) provide a theoretical basis for identifying and classifying the main risk factors that may lead to undesirable consequences in an outsourcing arrangement. Risk exposure is defined as the product of the probability of an undesirable outcome

<sup>37</sup> It should be noted that from a research point of view it is very difficult to find cooperating vendor companies to validate these findings.

and the loss due to this undesirable outcome (p. 686). Based on a literature review they identify four broad categories of undesirable consequences of IS outsourcing: (1) hidden costs; (2) contractual difficulties; (3) service debasement; and (4) loss of organizational competencies. The factors that drive these negative outcomes are associated with the agent (e.g., vendor opportunism), the principal (e.g., customer or client lack of experience), and the transaction (e.g., asset specificity). It should be noted that these factors could also be treated as determinants of IS outsourcing, which result from asking “why” an organization should or should not outsource. Aubert et al. (1998) use them as predictors of the probability of different kinds of undesirable outcomes. By developing a theoretical understanding of the conditions under which undesirable outcomes are most likely, they laid the foundations for empirically studying management techniques to overcome these risks through appropriate contract management techniques (see Aubert et al., 1999 – reviewed earlier).

King and Malhotra (2000) develop a framework on the multiplicity of comparative advantages of using internal ‘markets’ as opposed to outsourcing. They state a number of propositions that might be used as guidelines for evaluating outsourcing and for conducting exploratory empirical studies. In short, they propose that internal markets can achieve similar or better results compared to outsourcing regarding: (1) short term operational impacts, which can be subdivided into (1a) efficiency, cost savings and productivity, as well as (1b) services; (2) mid-term tactical impacts, which include (2a) reliance on outcome-based performance measures, (2b) the need for monitoring and controlling, and (2c) monopoly practices and threat of opportunism; and (3) long-term strategic impacts, which are subdivided into (3a) developing core competencies, and (3b) organizational learning and knowledge-creation.

Both the studies of Aubert et al. (1998) and King and Malhotra (2000) implicitly show the connection between the determinants of IS outsourcing and its subsequent outcomes. The latter can be conceptualized as the level of realization of reaching the objectives – reflected by the determinants – associated with choosing either in-house or outsourced IS service provision. However, from a theorizing point of view it has to be questioned if treating the multiple objectives as dependent constructs – as done by King and Malhotra (2000) – with the only independent (i.e., explanatory) construct being the choice of internal markets (i.e., insourcing) versus an external vendor is appropriate. The study of Aubert et al. (1998) and the large amount of empirical studies on outcomes show that there are many other factors that result in preventing undesirable outcomes or achieving the desired objectives in the case of both insourcing and outsourcing. Among these factors are (1) the

characteristics of the IS function, (2) the characteristics of the parties involved (e.g., client versus vendor; different stakeholders groups in both parties), and (3) the characteristics of the relationship between those who provide the IS services (internal or external) and the clients/users.

#### **4.5.5 Summary “Outcome”**

In summary, we note that in the positivist papers, all studies tested variance-type models, except for Saunders et al. (1997) – a paper that started with an initial framework and then expanded it based on the results. Outcomes always were assumed to be the dependent variables of the models tested. In the majority of cases outcomes were operationalized as satisfaction with the realization of different IS outsourcing objectives. No study looked at how different outcome types are interrelated. Concerning the independent variables selected to explain outsourcing success, there was a strong focus on the “soft” elements of an outsourcing relationship – often named as partnership attributes. However, other factors were found to impact the outcome of IS outsourcing as well. Contractual issues, for example, should not be neglected. They serve as a solid basis for a successful relationship. In addition, the management capabilities of the vendor and the client, and the characteristics of the IS functions outsourced are of importance. The quality of the decision on ‘what to outsource’ seems to have longer-term impacts on the success of a relationship. The best relationship management techniques might be of little use if IS tasks that should never have been outsourced are delegated to an external vendor, or if that vendor simply is unable to perform them satisfactorily. It also seems promising to consider the end-user perspective more intensively, as opposed to the dominant management perspective, in evaluating the success of an outsourcing arrangement. The fact that the performance of in-house workers as opposed to outsourced workers was found to be higher raises the question on why such differences in outcome do exist at the individual worker level, and if those differences should not be anticipated when deciding why and what to outsource, as well as when building and managing an outsourcing relationship.

In the interpretive stream of research, outcomes mainly revolve around outsourcing success or failure as a precursor for providing prescriptive explanations on decision-making, and outlining the differences in stakeholders’ perceptions of success. It is interesting to note that, as opposed to positivist studies which primarily focused on factors that eventually lead to higher satisfaction with an outsourcing arrangement, several of the interpretivist studies point out factors that lead to outsourcing failure, especially those resulting from unanticipated or underestimated consequences of

IS outsourcing. They provide an important “reality check” when contemplating outsourcing. If the objectives associated with IS outsourcing are unrealistic and of a monistic nature (e.g., only focusing on cost reductions), this increases the likelihood of failure, defined by the non-realization of expectations, or neglect of other stakeholder groups and their expectations (e.g., users and service quality). Balancing multiple outsourcing outcomes is challenging, and should be explored more intensively in future research. Another fruitful research avenue would be to undertake a longitudinal approach in investigating the outsourcing process, especially the longer-term outcomes and implications of IS outsourcing.

Descriptive and Conceptual studies on ‘outcome’ often focus on governance. An interesting question would be under which circumstances different outcomes can be achieved using alternative governance structures. Lastly, our review suggests that choosing several different potential outcome variables at the same time without considering their potential linkages has significant limitations as a research strategy. Dependencies between dependent variables are important to recognize. As an example, the three broad outcome variables identified in our review – (1) realization of expectations, (2) satisfaction, and (3) performance – might not be independent of each other. It can be argued that satisfaction is driven by the realization of expectations and performance. In addition it can be argued that a certain performance level (e.g., quality of work) only becomes part of the overall evaluation of outcomes when it is compared to the expected or desired performance level, which in turn might be impacted by the performance of others, or experience with past performance levels.

#### **4.6 Discussion and Conclusion**

Section 4 has concerned itself with the outsourcing decision and implementation process. A review of the papers in this section reveals several common themes. First, the vague and inconsistent definition and use of terms handicaps the comparison of existing studies. This has negative implications not only for compiling a cumulative body of knowledge, but also for future researchers looking for common ground upon which to build their research efforts. In particular, terms related to interorganizational relationship types, such as partnerships and alliances, should be defined more consistently.

The second theme that became apparent was the relative balance between positivist research, and interpretive/descriptive research. The (resurgent) practice of outsourcing is now well over a decade old. Interpretive and descriptive research has its place. Indeed, it is refreshing to see it so well represented in a

particular stream of research. But one might argue that it is now time for more researchers to undertake predictive studies.

Thirdly, the vast majority of outsourcing research uses the firm as the unit of analysis. There are valuable insights to be gained by analyzing outsourcing using different units of analysis. Analyzing industry or market sectors might reveal trends undetected by existing research. An analysis at a more refined level might provide more information on the role and impact of outsourcing on groups and individuals, or visa versa. A different analytical perspective, such as the stakeholder perspective suggested by Lacity and Willcocks (2000) could open a whole new window through which to view the outsourcing phenomena. The near-total lack of vendor perspectives in outsourcing research only serves to highlight this singular slant of current research.

Finally, there was a clear recognition across all research streams concerning the key role the relationship plays in outsourcing. Using this as a starting point enables the use of a wide variety of theoretical and methodological approaches to usher in a new stage of outsourcing research.

In short, the dynamic nature of outsourcing, coupled with the diverse state and common themes of current research, offer a plethora of fresh opportunities for future outsourcing research. This is explored in more detail in the next two sections.

#### **5 Discussion**

While performing the literature review and analysis, one overarching finding became immediately apparent. There is a great deal of diversity in the study of IS outsourcing; diversity of research objectives, theoretical foundations, and research methods. One reason for this lies in the dynamic nature of the practice of IS outsourcing. In a short period of time it has transformed itself from a relatively straightforward proposition to a complex aggregation of multiple options and permutations. It has expanded from a relative handful of large firms to numerous organizations of all sizes. It is international in scope. Its focus is shifting from reducing IS costs to the strategic role of IS within the firm. All of these changes are reflected in the growth and diversity of research aims, methods, and theoretical perspectives used to study the phenomenon.

In commenting on the diversity of IS research, Robey (1996) used a simplified version of Laudan's (1984) triad of research justification to help structure his paper. In a like vein, we draw on Robey's model to mold our

discussion of IS outsourcing research<sup>38</sup>. Consequently, we first focus on research aims (which we refer to as research objectives), then proceed to research approaches, and conclude with theoretical foundations.

## 5.1 Research Objectives

An analysis of Table 29 (Appendix) shows that initial research into IS outsourcing concentrated on "why" – that is, what are the motivations for and drivers of outsourcing. This is the most mature branch of the IS outsourcing research stream. There are more papers that address this issue than any other, and interest in this topic continues into the present. One explanation for this is an evolution in how outsourcing is viewed. Initially seen primarily as a means to make the organization more efficient by reducing costs and improving IS productivity, over time outsourcing has become part of the firm's overall strategy. This ongoing growth and change in the motivation for outsourcing has continued to stimulate researchers' interest.

Within the "why" research objective category, a rational perspective dominates. Not only do more papers in this category take a positivist approach than any other, the majority of them are based on either economic or strategic theories – theories that adopt the assumption that individuals/firms behave rationally.

Closely allied with the question of "why" are the questions of "what" and "which" – that is, what outsourcing option (full or selective) should be utilized, and which functions should be outsourced. In one sense, these research areas grew out of the emergence of selective sourcing. The increase in practice of selective outsourcing and the use of multiple vendors has resulted in a more complex decision process, which in turn has resulted in an increase in research on these topics during the late 1990's. This is an indication of research being stimulated by developments in practice.

Positivist research based on economic and strategic theories continues to prevail in the "what" category. This is understandable, given the predilection towards problem solving in the make-up of most business researchers. Thus the question "what to outsource?" is answered by constructing rational criteria for evaluating the possible alternatives.

For "which decision process" research objectives, however, there is a marked shift to an interpretivist approach, coupled with a predominance of papers that do not refer to any reference theory. This is a reflection of the primary questions addressed in this research

area: what is the process by which the decision is made regarding why and what functions to outsource; who participates in the initiation, evaluation and final decision making; and what are the actual techniques and procedures used by the involved stakeholders? The majority of existing research examines what has occurred in practice and draws conclusions from that, as opposed to developing and testing *a priori* hypotheses. It is interesting to note that no researcher actually tried to map the decision processes observed in reality with well-established decision-making research, e.g., phase models like that of Simon (1960), or other empirically tested and revised models, such as Mintzberg (1976), Witte (1972), or Witte and Zimmermann (1986).

There are a number of observations that can be made regarding research into the "how" question. First, this line of research is gathering momentum. The number of papers addressing this topic in recent years is increasing, both by count and by percentage of total outsourcing research. Second, this is the most 'democratic' line of research. The distribution of papers among research approaches and theoretical foundations is the most widespread of all the categories; no one method or perspective dominates. This may be due in part to the complexity of the topic. Within the deceptively simple question of "how" are the related subtopics of how to select a vendor, how to negotiate and write the contract, how to build a relationship, the important factors that lead to different types of relationships, and how to manage the ongoing relationship. In addition, a temporal element is introduced here. The contractual and governance structure issues arise early in an outsourcing arrangement. However, with the ongoing management of the relationship the contractual and psychological contracts between client and vendor evolve over time, leading to new or adjusted relationships.

Finally, there is a segment of research that evaluates the outcome of outsourcing. Surprisingly, here the interpretive approaches play the dominant role. Not surprisingly, most of the positivist papers adopt a rational theoretical basis (strategic or economic), while most of the interpretivist papers are not strongly linked to any reference theory. The most notable feature of this research stream, however, is how it mirrors overall IS research in the number and variety of measures used to evaluate success.

Viewed collectively, research into the Decision Process questions of "why", "what", and "which" comprises a substantial portion of the total body of work. As shown in Table 29 (Appendix), there are 147 total research objectives in the aggregate body of research (there are 84 papers reviewed in Table 29, but many have more than one research question). Of the 147 research aims, 89 (60%) fall into the Decision Process category.

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<sup>38</sup> It should be noted that Robey used Laudan's triad to argue for a disciplined approach to research diversity. We are using it slightly differently; as a framework for analyzing existing research, rather than as a guide to future research.

**Table 28. Research foci in publication outlets**

Publication Outlets			Outsourcing Stage					Research Approach				
Region / Discipline / Publication Type	Number of Papers	Name	Decision Process			Implementation		Empirical			Non-Empirical	
			Why	What	Which	How	Outcome	Interpretive	Descriptive	Positivist	Conceptual	Mathematical
North American IS Journals	5	CACM	4	2	1	1	2	2	0	3	0	0
	2	ISR	2	0	0	0	0	0	0	2	0	0
	5	JMIS	2	1	0	3	2	0	0	4	0	1
	2	MISQ	1	1	1	0	1	1	0	1	0	0
	<b>14</b>		<b>9</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>
European IS Journals	2	AMIT	1	0	1	1	1	2	0	0	0	0
	4	EJIS	1	2	1	2	0	2	1	1	0	0
	5	I&M	3	5	2	0	1	0	4	1	1	0
	2	ISJ	1	0	1	1	0	2	0	0	0	0
	13	JIT	8	3	2	5	0	1	5	2	4	0
	<b>26</b>		<b>14</b>	<b>10</b>	<b>7</b>	<b>9</b>	<b>2</b>	<b>7</b>	<b>10</b>	<b>4</b>	<b>5</b>	<b>0</b>
Global IS Conferences	9	HICSS	3	2	0	5	4	4	0	1	4	0
	8	ICIS	4	4	0	3	4	3	1	4	0	0
	<b>17</b>		<b>7</b>	<b>6</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>7</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>0</b>
North American Non-IS Management Journals	0	AMJ										
	1	AMR	0	0	0	1	0	0	0	0	1	0
	0	ASQ										
	3	DS	2	1	0	2	0	0	0	1	0	2
	6	MS	3	1	0	3	0	0	0	0	1	5
	1	OS	1	1	0	0	0	0	0	1	0	0
	2	SMJ	2	1	0	0	1	0	0	1	1	0
	<b>13</b>		<b>8</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>7</b>
North American Applied Management Journals												
	1	CMR	0	0	0	1	1	0	0	1	0	0
	3	HBR	3	3	3	2	3	0	3	0	0	0
	10	SMR	5	1	3	6	2	4	1	0	5	0
	<b>14</b>		<b>8</b>	<b>4</b>	<b>6</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>0</b>
<b>Totals</b>	<b>84</b>		<b>46</b>	<b>28</b>	<b>15</b>	<b>36</b>	<b>22</b>	<b>21</b>	<b>15</b>	<b>23</b>	<b>17</b>	<b>8</b>

Research in the Implementation category addressing "how" and "outcome" is less prolific. Rigor and relevance also become issues in Implementation research. How to implement an outsourcing decision, and the outcome of that decision, are of paramount relevance to practitioners, as illustrated by the attention currently given this matter in trade press publications. However, in addition to receiving less attention from researchers than the Decision Process topics in terms of number of papers, the Implementation topics are also treated differently in terms of academic rigor. As Table 29 illustrates, papers addressing these questions are not as likely to have an *a priori* theoretical foundation, and are more likely to appear in practitioner-oriented

publications (e.g., *Harvard Business Review*) than in academic journals<sup>39</sup>.

## 5.2 Research Approaches

An analysis of Table 29 (Appendix) and Table 28 (outsourcing stage and research approach by journal) yields some intriguing observations. Perhaps the most surprising finding is that positivist research does not

<sup>39</sup> By no means is this meant to imply that these papers are not well researched or well written. We only suggest that there are a greater proportion of papers in this category that do not conform to the 'conventional' format of an academic paper.

dominate the IS outsourcing research stream like it does IS research in general (Alavi et al., 1989; Orlikowski & Baroudi, 1991). This may be explained to a certain extent by the fact that we have included European journals in our review, which tend to be more receptive to interpretive and descriptive research than North American journals (Walsham, 1995).

As Table 28 shows, the North American IS journals published 10 positivist papers as opposed to only three interpretive ones, while the European IS journals were almost the opposite, publishing four positivist papers and seven interpretive papers. The applied management journals are weighted towards the interpretive side as well (4 to 1). The IS conferences were practically an even split, with five positivist papers compared to seven interpretive ones. The net result is a very balanced aggregation of research approaches on the positivism-interpretivism continuum. Moreover, it is notable that the majority of descriptive papers were published in European journals (10 out of 14) while at the same time there is not a single descriptive paper in the North American IS and Non-IS (academic-oriented) journals. Considering that descriptive studies place little emphasis on theory development and testing, one may go so far as to say that contributions without empirically substantiated theoretical insights have no place in US academic journals. What is also interesting to note, is that mathematical papers are predominately published in Non-IS North American journals, while being completely absent in European ones. Moreover, if one excludes applied publications, then it is plainly visible that North American outlets are clearly dominated by the positivist paradigm.

The previous section (5.1) touched on the interplay between research objectives and research approaches. A close review of Table 29 (Appendix) uncovers further connections. The large majority of interpretivist papers, for example, address multiple research objectives, as do many of the descriptive papers. Papers undertaking a mathematical research approach, on the other hand, almost exclusively concentrate on a single research objective. Conceptual papers are also more inclined to limit themselves to a single objective, although not to the extent that the mathematical papers do. While these findings seem to conform to the nature of the respective approaches (that is, it is not surprising that descriptive papers cover more than one objective), it is noteworthy that the number of positivist papers addressing more than one research objective is almost double the number that addresses only a single objective. This is yet another indication of the wide-ranging and complex nature of outsourcing.

Within specific research approaches or methodologies, positivist studies were primarily used to investigate “why to outsource” and “what to outsource”. These two categories combined to account for almost two-thirds of

all the positivist papers. Interestingly, the “what” papers seemed to come in waves; that is, the early papers mainly were descriptive and conceptual, followed by a series of positivist papers. Interpretive papers were more evenly distributed over time. The interpretive approach was overwhelmingly favored to study “which process” to outsource; approximately 50% of the papers looking into this question adopted an interpretive approach. By contrast, there was only one positivist paper in this category. The “how to outsource” research category had the most even distribution of research approaches, ranging from 5 to 7 papers for each approach. What is remarkable about the “how” category is that it accounted for a large percentage of the non-empirical (conceptual and mathematical) studies – close to 50%. The final category – “outcome” – is notable for its preponderance of interpretive and positivist studies, and its relative lack of descriptive, conceptual, and mathematical studies.

What other conclusions can be drawn from an examination of the research approaches used to study outsourcing? First, the group of mathematical studies seems to have been conducted in isolation from the main body of literature. They make limited references to outsourcing papers using other research approaches, and are rarely cited in those other papers, possibly because either the mathematical papers do not always focus strictly on IS outsourcing, or because they make certain assumptions necessary for the construction of a mathematical model that are not always valid in reality (e.g., the *ceteris paribus* principal – “all other things being equal”). In contrast, papers in the other research groups freely cite each other, employing ideas, constructs, and results regardless of their methodological roots. These interchanges primarily occur with those having similar research objectives; that is, papers investigating vendor selection, for example, tend to draw from other papers in the “how to outsource” research objective category, regardless of the research approach of those papers. This is a healthy trend, in that it suggests an open-mindedness that facilitates the construction of a broad-based body of knowledge.

Second, there did not seem to be any apparent overall ‘methodological effect’ related to the findings from the individual research approaches, although there were some differences in the findings from each approach within certain of the research objective categories. For example, in the “why outsource” category, most positivist papers treated IS in its entirety, without differentiating between various IS functions. The other empirical research approaches, took a more detailed view of IS by breaking it down into individual functions. We did not see this distinction in the “what” papers. For the most part, they all took a functional perspective on what to outsource. Their findings tended to depend

more on how various outsourcing factors were defined and operationalized (e.g., defining the extent of outsourcing by functions outsourced, per cent of budget outsourced, or division of ownership or decision rights) than on the research approach. Similarly, there was no obvious relationship between findings from the papers in the “which process” category and the research approach. The “how to outsource” research objective is dominated by descriptive and interpretive papers, at the expense of the positivist approach. This could be because “how to outsource” is more process-oriented than variance oriented. It could also be because research in this area tends to draw more from social and organizational theoretical bases, as opposed to the economic and strategic management theories that positivist researchers tend to favor. Another possible explanation is that research in this area is still relatively new and wide-spread, and has not yet coalesced into a generally agreed upon set of findings from which to launch positivist studies. Finally, the “outcome” studies were similar to the “why” studies in that the positivist papers took a more aggregated view (e.g., firm level satisfaction), while the interpretivist, descriptive, and conceptual papers viewed outcome more from the perspective of different stakeholders. In addition, the positivist papers generally conceptualized outcome in terms of satisfaction, while the other papers construed it as realization of expectations.

### 5.3 Theoretical Foundations

#### 5.3.1 Reference Theories

In general, the study of outsourcing is both theoretically eclectic and pluralistic. Table 29 (Appendix) shows that there are numerous different theories used to examine IS outsourcing. As previously discussed, these theories can be broadly grouped into three distinct categories; strategic, economic, and social/organizational. The primary theoretical approach to IS outsourcing is economic, followed closely by a strategic perspective.

While economic theories in general, and Transaction Cost Economics (TCE) in particular, are widely used in outsourcing research, there are a couple of points worth mentioning. The use of TCE is subject to certain anomalies, as discussed by Lacity and Willcocks (1995). Left unquestioned, however, is the argument that vendors can become more efficient in large part due to economies of scale. As a rebuttal against the economy of scale argument, consider the following. In addition to economy of scale, economists recognize the existence of diseconomy of scale. This is not the same as diminishing returns: diseconomy of scale is a rising long run average cost at higher levels of output. This may occur because of two factors; a disproportionate increase in management staff and salary expense as the size of the firm increases, and an increase in

indirect costs such as losses due to delayed or faulty decisions, caused in part by the size and complexity of the organization. Growth in size and complexity may also contribute to problems with control and coordination as the scale of operations increases (McGuigan & Moyer, 1993). In a like vein, what is mostly neglected in studies applying TCE is the fact that transaction costs are not absent within the firm itself. Indeed, transaction costs can be used as an evaluative tool to guide the decision on whether to outsource or to stay in-house only if they are treated in the same comparative manner between market and hierarchy as production costs typically are.

Also left unquestioned by the economic and strategic perspectives is the underlying assumption that individuals and firms are rational. The third theoretical category – social/organizational – takes a more humanistic approach. Although there are only 15 papers in the social/organizational category, there are indications that the adoption of this perspective is increasing. This may be in response to an emerging interest in the relationship between customer and vendor, which in turn reflects heightened interest in the implementation stage of outsourcing.

What is interesting to note here is what theories are used to explain which of the five research objectives. Papers on “why” and “what” to outsource primarily make use of economic theories (transaction cost theory, agency theory, production cost economics, labor market economics) and strategic lenses (resource-based theory, resource dependence theory, strategy types, and strategic analysis). Few papers considered social aspects within the outsourcing decision; for example, organizational culture concepts such as sociability and solidarity (Goffee & Jones, 1996; Klepper & Hoffmann, 2000; Schein, 1992). This is in contrast to the papers on “how”, which strongly focused on social exchange aspects of the relationship between client and vendor (e.g., trust, commitment). A first step in considering the social and behavioral aspects when theorizing about the factors impacting the sourcing decision could be a closer examination of the behavioral assumptions underlying the economic and strategic lenses. As an example, the transaction cost economic assumption of the danger of opportunistic behavior being lower when delegating IS tasks to internal personnel as opposed to an external vendor needs to be examined. In which situations is it possible to safeguard against opportunistic vendor behavior, and how? What is the role of norms and social bonds beside the “authority principle” in carrying out the actual work in an IS function? What are the implications for these “soft” factors if in-house personnel are transferred to an external vendor, or if unknown vendor staff is entering the client company to do their job? Answering these questions might serve as a bridge between the gap in

considering social aspects in both the sourcing decision and subsequent implementation phase.

There is an almost equal split between the number of papers using a single theoretical approach (33) and the number of papers without a well-defined theoretical foundation (34). The number of papers using multiple theoretical perspectives (17) is somewhat smaller. Early research mainly was confined to one, and occasionally two, theoretical perspectives. Over time, however, the use of two or more theoretical lenses in a single paper became more common, with some papers embracing as many as four theories. Once again, this may be seen as a response to the complex and continually evolving nature of outsourcing.

One item of note in cases where multiple theories are used is the varying treatment of inter-theoretical relationships; that is, the linkages, tensions, inconsistencies, and contradictions between theories (Van De Ven, 1989). For example, Loh (1994) deduced a variety of theoretical constructs from agency and transaction cost theory without thoroughly exploring any linkages between these constructs. Similarly, Cheon et al. (1995) developed a theoretical framework based on four different theories without fully delving into their connections and contradictions. On the other hand, Poppo and Zenger (1998) tested competing chains of causality derived from transaction cost and resource-based theories; Jurison (1995) incorporated the concept of risk into transaction cost economics; and Duncan (1998) focused on the different risk perspectives in transaction cost theory and resource-based theory.

Similarly, the treatment of theoretical constructs varies in studies using only one reference theory. For example, Lacity and Willcocks (1995) scrupulously deal with contradictions within one theoretical framework by offering different interpretations of findings based on pro and con views of transaction cost theory. However, in other cases (e.g., Hu et al., 1997; Loh & Venkatraman, 1992b) it is not clear why the researchers concentrated on one aspect of the theory (communication channels) while not taking into account others (innovation attributes and social system, as set forth in Rogers' (1983) classic innovation diffusion model).

Another point that needs to be considered when applying multiple reference theories is the reasoning behind the selection of particular theories. The higher the maturity in a particular stream of research, the greater the necessity to clearly outline the pool of theories from which the selection is made, and the criteria used to distinguish and evaluate the theories. For this purpose it is especially important to explicate the research question(s) as a basis for structuring and proceeding through this selection process. As an example, *theories of the firm* may be used as a basis for selection when answering the question on why firms

selectively outsource IS functions (Dibbern, 2004; Dibbern et al. 2001; Klein, 2002).

### 5.3.2 Variance versus Process Theories

Table 29 (Appendix) shows that out of the 84 studies, only three have taken a process theoretic approach. The majority of papers (40) used a variance theory to explain the dependent variable. There are 40 papers that could not clearly be identified as either using a process or variance theory. (See Mohr, 1982, for discussions of process and variance theories; Newman & Robey, 1992.) The prerequisite for a variance theory is that the dependent variable actually includes alternatives that are predicted by certain factors. If, for example, a case study only looks at a case that either had a high level of outsourcing success or a high level of failure without comparing both alternatives then there is no variance in outcome, and thus its explanation can not be rated as a variance theory. Such studies are more *theory emergent* in that they provide important insight into potential factors that could usefully be incorporated into a variance or a process theory.

The Hu et al. (1997) and Loh and Venkatraman (1992b) papers are rare and commendable instances where a *process* theory (innovation diffusion theory) is used to explain IS outsourcing, as opposed to a variance theory. Viewing outsourcing from a process perspective is especially attractive in light of the dynamic nature of outsourcing and the emerging interest in implementation issues. This is illustrated by the study of Heiskanen (1996), who explained changing governance structures over time based on the evolving maturity of the software in use, and the resulting change in requirements that in turn lead to favoring different sourcing options over time. It has to be noted, however, that the borderline between the pure description of a process over time, and explaining it (i.e., theorizing about how and why the change came about) needs to be strictly drawn and explicated by researchers that seek to develop a process theory.<sup>40</sup> The three papers identified as taking a process theory perspective come close to crossing that line.

Prior research has touched on the relationship between time and outsourcing. However, there has been very little research directed specifically at what role time plays. For example, Lacity and Hirschheim (1993c) mention a "honeymoon phase" that occurs early in an outsourcing arrangement. This raises an interesting but unanswered question: "Is there a life-cycle that

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<sup>40</sup> For example, phase, stage or step models per se are regarded as "... incomplete process models because they generally lack specification of the mechanism by which subsequent stages come about" (Markus and Robey, 1988, p. 592, in referring to Mohr, 1982).



outsourcing arrangements go through?" Studies that incorporate the temporal dimension, including longitudinal studies, would go a long way towards addressing this and similar issues.

### **5.3.3 Level of Analysis**

When looking at the level of analysis (micro vs. macro) (Markus & Robey, 1988; Pfeffer, 1982) it becomes obvious that IS outsourcing has primarily been analyzed on the macro level (industry and firm). However, a deeper analysis of the macro level studies provides a more informed picture. Our analysis revealed that many of these studies tried to explain their dependent variables using constructs abstracted from the IS function level. In addition, the dependent variables often were treated on an overall IS level, not distinguishing between different IS functions. Some of the studies – especially those with a very mathematical orientation – were not specific to IS outsourcing, but rather considered outsourcing issues in general.

Most of the authors that took a general perspective on outsourcing, as opposed to an IS-specific perspective, tended to ignore the broad body of literature on IS outsourcing. In contrast, researchers that studied IS outsourcing in many cases took notice of the studies on outsourcing in other disciplines. What are the implications of this? Does it mean that other disciplines do not understand the object "IS" associated with outsourcing? Does it mean that we cannot apply the lessons learned when using other outsourcing objects; that is, findings from logistics or procurement outsourcing research cannot be transferred to IS? One factor that seems to be missing in IS research is an explication of the differences (if any) between IS outsourcing and outsourcing other business functions. What makes IS unique (again, if it is in fact unique)? Comparative studies between IS outsourcing and outsourcing other business functions – possibly in cooperation with researchers from other disciplines – could help to elaborate the differences. This should be coupled with an intensive attempt to define the special characteristics of IS outsourcing, either by individual IS functions or in its entirety.

Firm-level studies include a plethora of papers that focus on the organization that is outsourcing its IS – the customer – and a comparative scarcity of studies that take the vendor perspective into account. The conclusion to be drawn from scrutinizing the level of analysis is that there is a profusion of firm-level studies from the customer perspective, and a relative lack of research examining outsourcing from industry, vendor, or individual perspectives. A starting point for exploring outsourcing on the individual level might be the behavioral assumptions incorporated in most of the macro-level theories. For example, transaction cost

theory incorporates an assumption of opportunistic behavior, while its critics counter with the argument that transaction cost theory neglects the concept of trust. IS outsourcing research at the individual level may be a fertile field for further investigation into these opposing concepts. Another intriguing research direction is connected to the almost total lack of outsourcing research at the societal level. Might the recent 'boom' in overall productivity attributed to IS be at least partially driven by the growth in outsourcing? This line of reasoning is supported by arguments that outsourcing makes customers more productive by allowing them to focus on core competencies, and makes vendors more efficient by virtue of economies of scale, attainment of a 'critical mass' of specialists and experts, and leveraging the resulting knowledge base.

Lastly, the scope of analysis can be examined along a spatial dimension. The practice of outsourcing is international in scope. It is not uncommon for vendors in one country to service customers in another country, or for a single vendor to service a multinational corporation. However, research to date has mainly been confined to a single-country perspective. This neglects the insight to be gained from multinational or cross-cultural research. Using micro-level variables to explore cultural issues could prove especially illuminating.

## **6 Summary and Conclusions**

### **6.1 The Maturing Domain of IS Outsourcing**

Much like the phenomenon it is studying, IS outsourcing research is dynamic and vibrant. The practice of outsourcing is continually evolving, and the academic community is attempting to keep pace. From its beginnings as a cost-reduction tool, outsourcing has evolved into a vital component of a firm's overall business strategy. Similarly, the research focus has expanded from the decision process components of whether or not to outsource (and if so, which functions), to the wider decision domain which includes implementation and evaluation issues. Reflecting the growing complexity of outsourcing practice, researchers are more prone to use multiple theoretical perspectives to examine what is a multifaceted subject. There is a great deal of diversity in terms of research objectives, theoretical foundations, and methods. These developments indicate a growing maturity in the field of outsourcing research. There are other signs of increasing maturity as well.

One sign of the escalating maturity of IS outsourcing research as a whole is the growing research synergy, as indicated by authors building on prior research. For example, Grover et al. (1996) aggregated prior research in developing a cumulative framework for assessing outsourcing success from a management perspective.

Lee and Kim (1999) subsequently used that to extend research into outsourcing partnership quality including the user perspective on success. Similarly, Earl (1996) compiled and explored risks associated with outsourcing, while Aubert et al. (1998; 1999) followed up by constructing a framework for categorizing and managing them. Additionally, Hu et al. (1997) replicated Loh and Venkatraman's (1992b) study, coming up with differing results.

Another indication of further maturity in the field is the emergence of healthy exchanges between researchers. A paper by Lacity et al. (1995) in the *Harvard Business Review* prompted spirited responses in the subsequent issue from both practitioners (Sullivan, 1995) and academicians (McFarlan and Nolan, 1995). The recent appearance of studies that review and synthesize prior outsourcing research is yet another sign that this body of work is maturing. This may be seen in Lee et al. (2000), who propose an integrative framework for examining the evolution of outsourcing research. In a like fashion, Goo et al. (2000) propose a taxonomy for outsourcing drivers that reflects the evolution of outsourcing practice as well as research.

These developments all speak to the growing maturity of the IS outsourcing research stream<sup>41</sup>. However, there remains plenty of room for improvement. For example, outsourcing research to date consists primarily of studies at the firm level, and from the customer's perspective. Expanding the level of analysis up and down the scale – up to include industries and society, down to include individuals and groups – would provide fresh insights. In addition, the consideration of various stakeholder viewpoints would result in a more well-rounded view. These viewpoints should not be confined to a homogeneous client or vendor perspective, either. There are a variety of stakeholder types, such as IT and business managers, staff, and users on both sides. Furthermore, individual characteristics can impact stakeholder roles (Lacity & Willcocks, 2000). Another opportunity for broadening the scope of outsourcing research is the fact that most studies are snapshots taken at a given point in time. Longitudinal studies would yield a fresh perspective. Finally, the wide variety

of measures to evaluate success raises difficulties in comparing results.

## 6.2 Implications for Research

Outsourcing as a means of meeting organizational IS needs is now a commonly accepted and growing practice. Early research into the outsourcing phenomenon focused on *why* organizations outsourced (determinants of outsourcing, advantages and disadvantages of outsourcing, etc.), what functions they outsourced and *how* organizations outsourced (how to evaluate the vendor, how to structure the contract, etc.). More recent research has started to look at the relationship between the vendor and the customer beyond the contract including issues of its psychological nature. Further advances along this line of inquiry would be facilitated by a better understanding of the characteristics of the client/vendor relationship, a better understanding of the link between that relationship and outsourcing success, and what happens over time to this relationship. Issues associated with the process of outsourcing, how the arrangement tends to change over time, what leads to these changes, and how to best understand them are also necessary. So too is the assessment of risk associated with turning over IS resources to third-party providers. No doubt the increasing numbers of vendors and services available in the marketplace have caused organizations to seriously consider these new opportunities. But these new opportunities also complicate the decision-making, contracting, and management of such arrangements. Given the amount of research done on outsourcing over the past 10 years, we note a number of interesting themes emerging which give rise to a number of future research questions and topics. We believe there are many opportunities for further research in this area.

An analysis of the outsourcing literature brings to light at least five particular areas where gaps in our knowledge of outsourcing exist and hence where further research is critically needed. The first is the still-evolving definition and operationalization of the dependent variable, *outsourcing success*. Outsourcing success is usually viewed as the attainment of economic, technological, or business-related benefits. Satisfaction with the benefits attained is often used as an indicator of outsourcing success. However, different organizations have different reasons for outsourcing. One firm may be driven by a desire to reduce costs, while another firm may want to increase its focus on its core competencies. Furthermore, even within a single firm, success may be defined differently according to different stakeholder expectations and perceptions (Hirschheim & Lacity, 1998). Consequently, results based solely on an assessment of benefits attained may present an incomplete picture of outsourcing success. Further

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<sup>41</sup> It is our position that the field of outsourcing research is maturing. However, during the review process, the question was raised if this is in fact true. The number of studies that work at building a cumulative tradition is not large, leading one to wonder if this is a valid indicator of maturity. Our response is that, given the constantly changing nature and scope of the practice of outsourcing, the related research is evolving as well. In other words, the target is moving, and there is scant time to pause and reflect before one must readjust one's aim. Is this evolution the same thing as maturity? Perhaps not, but our argument is not that the state of outsourcing research is mature, but rather that it is maturing. We agree that there is still a long way to go before it is truly mature. Our thanks to the anonymous reviewer who raised this point.

research is needed to better understand the nature of this dependent variable.

The second is the absence of research undertaken from the *vendor's perspective*. The vast majority of work examines issues of interest to the customer. Determination of success is done using, for the most part, measures of *customer* benefits not *vendor* benefits. But for outsourcing to be effective, both parties need to obtain value from the arrangement. While customers typically look toward financial savings as a key benefit, vendors are thought to seek to make an acceptable rate of return on outsourcing contracts, acquire industry specific knowledge, build a strong reputation in their industry, and such like. But are these supposed vendor benefits accurate, do they vary greatly among vendors, do they change over time, do they change with different cultures? The need to understand vendor benefits is a theme identified as far back as Lacity and Hirschheim (1993c) and Willcocks and Fitzgerald (1994) but by and large has been left under-explored. But see Levina and Ross (2003) and Goles (2001) as exceptions to the rule.

The third is the relative lack of research directed towards an examination of the *relationship between the outsourcer and the customer*. While several studies comment on the importance of that relationship (e.g., Kern, 1997; McFarlan and Nolan, 1995; Saunders, 1997; Willcocks and Kern, 1998) there is a relative lack of positivist work directed towards an examination and analysis of that relationship. The work of Grover *et al.* (1996) and Lee and Kim (1999) only serve to highlight this oversight. Fortunately, researchers are beginning to study this area. Goles (2001), for example, introduces and tests a model that examines the outsourcing customer-vendor relationship. It begins by articulating the basic antecedents to that relationship; the business, technological, and relationship management capabilities of the participants. It then deconstructs the relationship into eleven sub-components, grouped into attributes (characteristics or properties that contribute to the harmony and functionality of the relationship) and processes (the means by which the attributes are developed). The model suggests that the link between the relationship and the dependent variable – outsourcing success – is mediated by various dimensions of quality (systems quality, information quality, and service quality). Success is conceptualized as a multidimensional construct, consisting of benefits attained, equity (the assessment of outcomes with inputs to determine if each party is receiving a fair return for resources provided), and overall satisfaction. In his research, Goles evaluated his model from both the customer *and* the vendor perspective.

A fourth area where research is needed is in the broad area of *outsourcing process*, i.e. how does outsourcing change over time. There is a dearth of research on how

IS outsourcing arrangements change, and what the factors influencing these changes are. One exception is Jayatilaka (2001) who studied outsourcing changes and antecedents to these changes. His study used two alternative lenses (institutional theory and strategic choice) to guide data collection from nine companies in different industries to analyze and construct explanations. The sourcing arrangements he looked at were selective sourcing, total outsourcing, and total insourcing. Selective sourcing and total outsourcing arrangements were noted to possess the possibility of being single-vendor or multi-vendor. He speculated that changes in these possible sourcing arrangements could occur due to changes in contracts, vendors, or in the degree of outsourcing. This led him to consider a number of possible states of outsourcing arrangements. He looked at the various transitions that occurred in total outsourcing and selective sourcing over time, and he offered explanations relating to the types of antecedents and drivers which were the engines of change. Additional research that focuses on what happens to outsourcing arrangements over time is needed.

A fifth area where we see a gap is the general lack of comparative studies on IS outsourcing. First, our analysis reveals that there may be differences in outsourcing behavior depending on the object of outsourcing, e.g. different IS functions (Teng *et al.*, 1995) or the IS function versus other business functions such as logistics, accounting, human resources, etc. Secondly, there are indications that countries behave differently regarding IS outsourcing (Apte *et al.*, 1997; Barthélemy & Geyer, 2001). Thirdly, there are differences between private and public sector organizations (Currie, 1996). Thus, cross-functional, cross-cultural and cross-industry research projects could be fruitful in testing the generalizability of theories on IS outsourcing and in discovering their limitations. As an example, Dibbern (2004) has developed and tested a comprehensive model of the IS sourcing decision and tested it across two different IS functions (applications development and applications maintenance), in two industries (Machinery and Finance), and two countries (Germany and the US).

### 6.3 Emerging Sourcing Issues

Issues associated with new technologies and the management of such, have a habit of maturing very rapidly. Outsourcing is no exception. As the market evolves and long-term contracts mature, our learning about IS outsourcing and the implications for sound practices also evolve. Here we focus on a number of trends which appear to be emerging. Subsequent research will be needed to assess the viability of these new trends.

- **Change in Focus**

Although companies outsource for a variety of reasons, the view that the primary reason is cost savings appears to be falling out of favor. More and more companies appear to be entering into outsourcing 'deals' not so much to reduce costs but for the sake of management focus (Halvey et al., 1996). In other words, they outsource certain parts of IS in order to free up management and IS personnel to work on specific value-added functions; turning their attention to those areas where the internal skill sets add strategic value to the organization. Internal IS departments can no longer expect to continually grow in size by internally acquiring all the skills sets they need to maintain IS in their host organizations. The corporate mandate to downsize affects IS departments as it does all other departments. Focus becomes the key. IS groups are thus determining which areas they provide value-add, with outsourcing vendors being chosen to handle all other areas.

- **The Growth in Alliances/Partnerships**

In the early days of outsourcing, deals were often struck on the basis of 'partnerships'. However, as the outsourcing research of Lacity and Hirschheim (1993b) showed, this concept was fallacious. Outsourcing vendors were not partners because ultimately, these arrangements were simply transactions: the vendor provided a set of services to which it received compensation from the client. Sometimes the deals sounded like a form of 'alliance' because the vendor provided up-front cash (either through low interest loans or stock purchases) to sweeten the deal. This gave the appearance of an alliance because the vendor was acting on the client's behalf. The truth was that these financial sweeteners were simply that: inducements to sign long term outsourcing deals where the vendor would ultimately get back its investment during the life of the contract. Recently however, alliances are being entered into by the vendor and client which seem much more like real alliances. New entities are being formed which offer synergistic skills aimed at specific markets. Such a targeted focus offers the possibility of real gain which hitherto was lacking in previous alliance or partnership deals. One need only look at the partnerships entered into by Kodak and IBM in the formation of Technology Service Solutions (providing multi-vendor PC maintenance and support services to the manufacturing industry); Swiss Bank and Perot Systems in the formation of Systor AG (developing and selling client/server solutions to the banking industry); Telestra and ISSC (now IBM Global Services) Australia (providing IT solutions for companies in the telecommunications industry particularly in the Pacific Rim); AT&T Solutions and Delta Airlines in the formation of TransQuest (providing IT solutions to the airline industry); and Mutual Life Insurance of New York and CSC (marketing software and services to the

insurance industry). Some of these joint ventures already have significant revenue streams: Technology Service Solutions' revenue in 1994 was approximately \$700 million; Systor AG's revenue in 1994 was in excess of \$100 million (Caldwell, 1995). But not all. The TransQuest alliance, for example, ran into financial problems and has been disbanded. But as in any new trend, time is needed to test the viability of these new jointly-owned entities.

- **Equity Holding Deals**

Concomitant with the growth in alliances and partnerships, has been the emergence of a number of large equity holding deals. These include: Vendors taking some stake in outsourcing client; clients taking some stake in the outsourcing vendor; and as noted in the point above, both parties taking stake in the formation of a new entity. Swiss Bank, for example, signed a 25 year outsourcing deal with Perot Systems worth \$6.25 billion (this was subsequently scaled back to a 10 year, \$3 billion deal). In so doing, they also took a 24.9% equity holding in Perot Systems. Perot, in turn, took a 40% stake in the Swiss Bank initiated venture Systor AG. In Australia, Lend Lease outsourced all its information systems to ISSC but took a 35% holding in ISSC Australia. Similarly, Telestra (Australia's telecommunications company) has outsourced its IS to ISSC which in turn outsources its network operations and management to Telestra. Additionally, Telestra took a 26% stake in ISSC. In the US, AT&T and IBM have negotiated a similar kind of deal worth about \$5 billion. Rumors of analogous deals around the globe abound. Of course the real question is: will such equity holding and alliance deals prove successful? Whilst it is too early to pass judgment on such arrangements, the trend is very clear. Future research will need to be done to see if the new wave of outsourcing arrangements and deals offer value to both the vendor and client that were not present in earlier outsourcing deals.

- **Backsourcing**

Research is beginning to show (Hirschheim & Lacity, 2000) that many companies that have gone through large scale outsourcing exercises are finding that their flexibility is not as enhanced as they thought it would be with outsourcing, and that service levels they thought would improve have actually dropped. They are beginning to find that outsourcing is not the panacea they hoped for when they initially outsourced. This development is leading to a large number of contracts being renegotiated and, more recently, contracts being terminated. As the contracts end, many of the companies are pulling their IS functions back in-house (Overby, 2003). This so-called "backsourcing scenario" (Hirschheim, 1998) may well become one of the key trends in the outsourcing arena. This leads us to wonder whether outsourcing is nothing more than a pendulum. It started with companies developing their

own IS departments, then it swung to an environment where the IS service was provided by an external party, and now the pendulum is swinging back the other way.

- **Offshoring**

A somewhat contrary view to back sourcing is the rise of what is often referred to as 'offshoring' or offshore outsourcing. This is where a company outsources its IT to one or more vendors located outside the first world, typically India or China (cf. Morstead & Blount, 2003). While this is a relatively new trend, it is nevertheless, unmistakable. Even the popular press (*Business Week* 2003; *USA Today* 2003) have reported on this issue noting that as much as 50% of IT jobs will be offshored to India and other off- and near-shore destinations in the next 10 years. Such change it is argued is nothing more than the natural progression of first moving blue-collar work (manufacturing, textile production, etc.) overseas followed by white-collar work. Companies look to offshoring largely for cost considerations, as the differences in cost between the first and developing worlds are compelling. Additionally, many offshore IT vendors have more sophisticated skills than those available in the first world. India alone is reported to have over 150 IT software development and maintenance companies possessing the Software Engineering Institute's 'Capability Maturity Model' (SEI CMM) level 4 or level 5 skills. While academic research into offshoring is limited, some articles are beginning to appear (cf. Carmel & Agarwal, 2001; 2002).

- **Application Service Providing (ASP)**

Another area we think researchers need to focus more attention is the emergence of application service providers (ASP). ASPs buy, install, and manage enterprise applications at remote data centers and host them for customers via a broadband connection, usually over the Internet. This service was initially aimed at small and medium-sized business with limited budgets and technologically savvy staffs, but is gaining increasing interest among larger organizations. ASPs represent "a form of selective outsourcing where a third-party organization rents generally available packaged software applications and related services." (Bennett & Timbrell, 2000). Thus, an ASP represents a way for an IS department to deliver an application to users in their organization while allowing the ASP to manage the software vendor, the hardware vendor, and the developers. Given what many feel will be the explosive growth in the ASP market (Dewire, 2000), there is an increased need for academics to respond and direct research efforts toward understanding this phenomenon. Whilst academic research has responded to the growth of outsourcing in general, only a few studies on ASPs can be found in the literature (e.g. Kern et al., 2002; Susarla et al., 2003). Thus, we believe that academics need to begin investigating ASP

solutions more intensively – both in terms of their technical realization as well as in terms of their sourcing implications (Kern et al., 2002).

## 6.4 Reflections

Having analyzed the considerable literature on the topic of outsourcing, and offered our thoughts about gaps in our collective knowledge, where research needs to be done, what implications the research has for practice, and such like, we would like to speculate about where and how the field might grow. And how the research on IS outsourcing might impact other areas.

One of the more interesting outcomes of our review is the fact that current outsourcing research appears to be heavily tied to IS<sup>42</sup>. Of the 84 articles returned from our search process from 1992 to 2000 using the word 'outsourc\$' only eight articles (including two articles by Quinn) were non-IS specific. And our journal search included many non-IS journals such as *Harvard Business Review*, *Sloan Management Review*, *Management Science*, *Academy of Management Journal*, *Academy of Management Review* and *Strategic Management Journal*. This suggests to us that the focus of outsourcing research is, at least for now, closely tied to IS. Moreover, of the eight non-IS outsourcing articles none were empirical. They were either mathematical (5) or conceptual (3). Nor did they cite IS journals in their reference lists; they appeared to have ignored the rather large knowledge base available in IS. Whilst one might believe that in the future this will likely change, it is interesting nevertheless to realize that IS presently is spearheading the current understanding of this topic. Indeed, this could be the first time where other disciplines look to IS as the leader and key resource for knowledge on a subject, viz. outsourcing.

Lastly, we wonder about the staying power of IS outsourcing. Whilst there is no doubt in the need for organizations to consider how to source their IS tasks, we wonder to what extent outsourcing is more a passing fad than an enduring theme. Some suggest

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<sup>42</sup> And the US for that matter. Arguably, our review/analysis of IS outsourcing is very much an Anglo-American perspective. There have been a few studies looking at outsourcing in other countries: Lee and Kim (1999) in Korea; Reponen (1993) and Heiskanen et al (1996) in Finland; Apte et al. (1997) studying Finnish, Japanese and U.S. companies; but in general non-Anglo-American studies are rare. The fact that studies in Germany, France or Japan are rare may partly be attributed to the fact that we only considered papers in the English language. However, it should also be noted that the average and relative amount of money that is spent on IS outsourcing has been significantly smaller in those countries (IDC, 1999) and, therefore, may have been less researched. This, however, will likely change in the future. Further, the studies we reviewed have been dominated by the focus on large scale companies – very few studies look at small to mid-sized companies (Dibbern & Heinzl, 2001; 2002).

outsourcing is nothing more than the age-old question of 'make or buy'; and since more and more organizations choose to 'buy' rather than 'make', outsourcing makes sense. Perhaps. But this metaphor might be misguided. As we noted above, outsourcing may simply be more like the proverbial swinging pendulum, somewhat analogous to the way organizations approach IS centralization-decentralization.

## 6.5 Epilogue

The domain of outsourcing research offers an all-encompassing opportunity to the entire IS field. The practice of outsourcing is spreading throughout a variety of different functional areas of the organization. As it does so, other academic disciplines will likely conduct their own investigations. If we as an academic community can seize the moment to set high standards for rigor and relevance in outsourcing research, we have a rare, valuable, and fleeting opportunity to establish our chosen field as the reference discipline for other fields. Thanks to the efforts of those whose research we have reviewed in this paper, we are well positioned to achieve this goal.

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## Authors

**Jens Dibbern** is an Assistant Professor in Information Systems at the School of Business Administration at the University of Mannheim, Germany. He received his Ph.D. in information systems from the University of Bayreuth, Germany, in 2003. His primary areas of research are information systems sourcing, software development and maintenance productivity, and cross-cultural issues in information systems. His papers have appeared in German IS and management journals such as in international IS conferences. Email: [dibbern@uni-mannheim.de](mailto:dibbern@uni-mannheim.de)

**Tim Goles** is an Assistant Professor at the University of Texas at San Antonio. He earned his Ph.D. from the University of Houston. He has over fifteen years experience in the information technology arena, including the evaluation, development, and implementation of strategic and operational information systems, outsourcing contract management, and IS security. His research interests and publications parallel his work experience. Email: [TGoles@utsa.edu](mailto:TGoles@utsa.edu)

**Rudy Hirschheim** is the Ourso Family Distinguished Professor of Information Systems in the Information Systems and Decision Sciences Department of Louisiana State University. He previously was the Tenneco/Chase International Professor of Information Systems at the University of Houston. He has held Visiting Professorial positions at: Monash University, University of New South Wales, and the University of Bayreuth. He has previously been on the faculties of Templeton College, Oxford and the London School of Economics. His Ph.D. is in Information Systems from the University of London. He and Richard Boland are the Consulting Editors of the John Wiley Series in Information Systems. He is on the editorial boards of the journals: *Information and Organization*; *Information Systems Journal*; *Journal of Information Technology*; *Journal of Strategic Information Systems*, and *Journal of the Association for Information Systems*. He is past VP of Publications for the Association for Information Systems. Email: [rudy@lsu.edu](mailto:rudy@lsu.edu)

**Bandula Jayatilaka** is an Assistant Professor in MIS at the School of Management in Binghamton University, SUNY. He earned his PhD in MIS from the University of Houston. His current research interests are IT outsourcing, and knowledge management. Before joining the academic community, he worked for General Electric Company at the Johnson Space Center in Houston where he developed real-time data systems for the Science Monitoring Area in the space center. Email: [jbandula@binghamton.edu](mailto:jbandula@binghamton.edu)

## Appendix: Diversity of Research in IS Outsourcing

[illegible]

**Table 29. Diversity of research in IS outsourcing, Part 1 of 4**

Study	Outsourcing Stage				Research Approach				Reference Theory								Research Level and Structure*								
	Decision Process		Implementation		Empirical		Non empirical		Strategic				Economic				Social/Organizational				Level of Analysis		Logical Structure		
	Why	What	Which	How	Interpretive	Descriptive	Positivist	Conceptual	Mathematical	Game	Res. Based	Res. Depend.	Strategic Mgt	Agency	Trans. Cost	Other	Exchange	Innov. Diff.	Power-Politic	Other	Macro	Micro	Process	Variance	
Aubert, et al. (1996)	X	X				X									X						F			X	
Currie (1996)				X		X															F				
Earl (1996)	X							X													F			X	
Goodstein, et al. (1996)	X							X											X		I			X	
Grover, et al. (1996)		X		X			X					X		X	X		X				F			X	
Heisekanen, et al. (1996)	X				X																F		X		
Lacity, et al. (1996)	X	X		X	X								X		X						F				
Nam, et al. (1996)	X	X					X								X						F			X	
Nelson, et al. (1996)	X	X					X							X	X						F			X	
Slaughter / Ang (1996)	X	X					X								X						F			X	
Willcocks, et al. (1996)		X			X																F			X	
TOTAL 1996	7	5	2	2	3	1	5	2	0	0	0	1	1	1	5	1	1	0	1	0	4	0	0	1	7
Ang / Cummings (1997)	X	X					X					X			X				X		F/I			X	
Apte, et al. (1997)	X	X	X			X															F				
Elitzer / Wensley (1997)				X				X		X											F			X	
Hu, et al. (1997)	X						X											X		S			X		
Kern (1997)				X	X												X				F				
Lacity / Willcocks (1997)		X			X																F				
Michell / Fitzgerald (1997)			X	X		X															I				
Sarker / Ghosh (1997)			X	X					X												F			X	
Saunders, et al. (1997)			X	X			X														F			X	
Sharma (1997)				X				X						X							F			X	
Sridhar / Balachandran (1997)	X								X					X							F			X	
Venkatraman (1997)		X						X						X							F				
Wang, et al. (1997)	X								X					X							F			X	
TOTAL 1997	5	2	3	6	1	2	2	3	3	1	0	0	1	3	1	0	1	1	0	1	6			1	7

Table 29. Diversity of research in IS outsourcing, Part 2 of 4

Study	Outsourcing Stage			Research Approach				Reference Theory										Research Level and Structure*						
	Decision Process		Implement-ation	Empirical			Non empirical	Strategic				Economic			Social/Organiza-tional			NA	Level of Analysis	Logical Structure				
	Why	What	How	Interpretive	Descriptive	Positivist	Conceptual	Mathematical	Game	Res. Based	Res. Depend.	Strategic Mgt	Agency	Trans. Cost	Other	Exchange	Innov. Diff.	Power-Politic	Other	Macro	Micro	Process	Variance	
Ang / Slaughter (1998)	X		X			X								X					X		—			
Ang / Straub (1998)	X	X				X								X						F			X	
Aubert, et al. (1998)							X					X			X					F			X	
Beath / Walker (1998)	X	X		X						X										F				
Chalos / Sung (1998)	X		X					X					X							F			X	
Currie / Willocks (1998)	X		X	X																F				
Currie (1998)			X		X															F				
DiRomualdo / Gurbaxani (1998)	X			X								X								F				
Duncan (1998)	X	X					X			X				X						F			X	
Fowler / Jeffs (1998)	X	X																		F				
Hirschheim / Lacity (1998)				X																F				
Lacity / Willocks (1998)		X		X	X															F			X	
Marcolin / McLellan (1998)			X	X	X							X								F				
Poppo / Zenger (1998)	X	X								X			X	X						F			X	
Smith, et al. (1998)	X																			F			X	
Willocks / Kern (1998)	X		X	X												X				F				
TOTAL 1998	9	7	1	6	8	1	4	2	1	0	3	0	3	2	3	2	1	0	0	1	6		0	8
Aubert, et al. (1999)			X	X			X					X			X					F			X	
Gallivan / Oh (1999)			X				X						X	X	X					F				
Hancox / Hackney (1999)	X		X		X							X	X	X	X					F				
Lee / Kim (1999)			X	X			X									X		X		F			X	
Quinn (1999)	X		X	X																F				
Sabherwal (1999)																				F			X	
Van Meghem (1999)			X	X					X	X										F			X	
TOTAL 1999	2	0	0	7	3	2	0	2	2	1	1	0	0	3	2	2	2	3	0	1	0	1	0	4

**Table 29. Diversity of research in IS outsourcing, Part 3 of 4**



Study	Outsourcing Stage			Research Approach				Reference Theory							Research Level and Structure*									
	Decision Process	Implementation	How	Empirical			Non empirical	Strategic			Economic			Social/Organizational		NA	Level of Analysis	Logical Structure						
				Interpretive	Descriptive	Positivist		Game	Res. Based	Res. Depend.	Strategic Mgt	Agency	Trans. Cost	Other	Exchange				Innov. Diff.	Power-Political	Other			
Hirschheim / Lacity (2000) King / Malhotra (2000) Lee, et al. (2000) Quinn (2000) Schultze / Bolland (2000) Useem / Harder (2000) TOTAL 2000	Why		What	Which																				
	1	1	1	4	2	3	0	0	3	0	0	0	0	1	0	0	0	1	4	1	1			
TOTAL 1992-2000	46	28	15	36	22	21	15	23	17	8	4	6	3	14	10	16	9	7	2	2	4	35	4	40
Ranking	1st			2nd		2nd		1st						3rd	4th	2nd						1st		1st

Table 29. Diversity of research in IS outsourcing, Part 4 of 4

\*Legend: Macro: S = Society  
I = Industry  
F = Firm  
Micro: G = Group  
I = Individual