INFORMATION SYSTEMS OUTSOURCING: A LITERATURE REVIEW AND AGENDA FOR RESEARCH

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ABSTRACT

This article examines the current state of understanding of outsourcing by organizations, especially as it applies to information systems (IS). Both supporting and opposing arguments are presented, along with the relevance of this practice for the public sector. Finally, a research agenda to study the impact of outsourcing on employees and organizations is proposed.

INTRODUCTION

Corporate America's enthusiasm for outsourcing is transforming the workplace in a most profound way: The notion of permanent, full-time employment is giving way to more temporary staffing arrangements. Contract employment is on the rise\(^{(1)}\) as traditional workers are gradually being supplanted by outside firms,
independent consultants, and part-time help.\(^{(2)}\) Careers are fast becoming "portfolios of jobs."\(^{(3)}\)

Although it has been dubbed both a management fad and trend of the 1990s,\(^{(4, 5)}\) the outsourcing concept is not in any way new. The concept has been around a long time under the guise of a variety of different aliases such as organizational decentralization,\(^{(6)}\) alternative staffing arrangements,\(^{(7)}\) commodities management,\(^{(8)}\) and contracting out,\(^{(9)}\) not to mention a dizzying array of related concepts, including out-tasking,\(^{(10, 11, 12, 13)}\) rightsourcing\(^{(14)}\) and insourcing.\(^{(15, 16)}\)

So, what is outsourcing? Definitions abound—each reflecting specific business nuances and individual contract arrangements; each purporting to pinpoint this practice that has taken public and private organizations by storm. In its most vanilla, operational terms, outsourcing is synonymous with contracting out, any or all of an in-house function to a third party. In a more whimsical sense, it is business that moves from in-house to (the) out-house!

Outsourcing occurs for a number of reasons that are typically related to cost containment, however, more recently it has become a practice that "brings strategic value to an organization."\(^{(17)}\) As such, more and more corporations are outsourcing to improve business focus, free up resources, share risks, and gain access to top-shelf capabilities.\(^{(18)}\)

With the 21st century on the near horizon, many organizations are looking to outsourcing as a way to effect organizational change.\(^{(19, 20)}\) Promises of cost savings and strategic alliances along side visions of virtuality and networked enterprises have ignited the collective imaginations of government and business alike; as each strives to reshape, redesign and otherwise reinvent itself for future success in the much anticipated global information society. Unfortunately, in the rush to jump on the outsourcing bandwagon,
the employee seems to be a forgotten concern. Organizations and researchers have paid little attention to the effects of outsourcing on in-house workers,\(^{(21, 22)}\) particularly once the decision to outsource has been made.

The purpose of this paper is to examine the current state of understanding of outsourcing, especially as it applies to information systems (IS). Both supporting and opposing arguments are presented, along with the relevance of this practice for the public sector. Finally, a research agenda to study the impact of outsourcing on employees and organizations is proposed.

**LITERATURE REVIEW**

**Towards A Definition and Theory**

All the enthusiasm for the outsourcing concept is tied to its promise to yield more for less. The question is, more _what_ for less _what_? This is precisely where the difficulty lies when trying to define outsourcing. While the literature usually defines outsourcing as "contracting out," this mechanical aspect alone does not impart enough meaning to provide theoretical and empirical answers _why_ an organization should outsource any part of itself. Closer examination of the literature reveals that outsourcing subsumes several distinct kinds of contractual relationships, about which there is a lack of clarity concerning antecedents and outcomes. This consequently diminishes the usefulness of the proliferating body of literature on the subject. While it may attest to a growing interest in outsourcing, our understanding of the concept is still in its infancy. An overarching theory of outsourcing is needed to link all the anecdotes, reports and competing commentaries.

**Something Old, Something New.** One element of a theory relates to its beginnings—_to wit_, when did the phenomenon first occur?
Interestingly, this is an oft contested point and seems to depend on the context in which outsourcing is being employed. While some consider outsourcing a "relatively new phenomenon," others recall its other aliases and earlier forms, such as organizational decentralization, privatization and contracting out.

One estimate approximates that outsourcing has been around since the very inception of data processing (about 25 years) and its early ascendants include contract programming, time-sharing, facilities management and service bureaus. Another estimate suggests that the outsourcing idea is considerably older than that. According to Johns, "Manpower has been in the business of outsourcing for 50 years."

In all likelihood, however, outsourcing is more ancient than its employment in either data processing or manpower. For instance, the use of subcontractors by a primary contractor is a strategy that is frequently employed in construction. Construction companies typically let secondary contracts for the electrical and plumbing work in a new building or home. Thus, the contractor-subcontractor relationship is an outsourcing arrangement because parts of the total job are being completed by workers not in the direct employ of the original contractor.

Public and private organizations alike have long engaged outside firms to perform in-house work functions—jobs that run the gamut from the mundane to the strategic. Everything from the company cafeteria to a complex weapons system has comprised the raison d'être for a contract. Even a Chicago law firm has been able to employ the outsourcing concept to do more work with less (fewer) lawyers on staff. According to Corbett, the firm of Bates, Mecler, Bolger and Tilson has been able to triple their operations from 16 to 45 lawyers through outsourcing contracts.

In sum, outsourcing is any change in the provision or production of goods and services from in-house capability to a
third-party. For each case above—data processing, manpower, construction, etc.—there is a secondary contract undertaking the terms of a previous contract. Although its exact origin is unclear, the outsourcing concept has a long pedigree that varies in form and degree across many different disciplines.

Despite the apparent widespread, time-honored use of outsourcing, outsourcing theory is still in its infancy. There is a lot we do not know about the antecedents, outcomes, characteristics, and mediators of outsourcing. For one thing, the results reported in the literature are inconsistent, thereby limiting the generalizability of findings from one setting to another. Furthermore, outsourcing subsumes several distinct types of contracts. Therefore, to say that outsourcing and “contracting out” is one and the same thing does not add clarity to the concept or enhance our understanding of it.

What we do know is that many different organizations are devising a variety of different outsourcing schemes to cope with environmental complexity, uncertainty, and constant change. For the remainder of this paper, however, the discussion is limited to a single discipline and its contractual arrangements. Thus, outsourcing will be used in the context of information systems and outsourcing contracts. Accordingly, outsourcing is loosely defined as “the transfer of all or part of an organization’s information systems (IS) resources to a third party.”

WHAT IS INFORMATION SYSTEMS (IS) OUTSOURCING?

From a computing perspective, IS outsourcing is an “umbrella term” that covers the entire gamut of information services, from the development of a simple applications program to the leasing of an entire computer department. Consequently, it is hard to find just one definition or consensus about its relative benefits and pitfalls in the literature. Apte’s “definition,” which appears below, provides
a useful breakdown of IS services and at the same time illustrates quite beautifully the diversity and breadth of services to be covered under an outsourcing agreement. Included under this umbrella term are the following:

- **Information processing** services include, data entry, transaction processing, and back-office clerical tasks.

- **Contract programming** services include software development and maintenance activities such as systems analysis, design, programming, testing, implementation, and support.

- **Facilities management** services include the operation and support of a system or a data center's functions (e.g., hardware, software, networking, and personnel).

- **Systems integration** involves development of a fully integrated system (hardware, software, and/or networking) from design through implementation. Once the system is implemented, the vendor usually turns the system over to the customer.

- **Other support operations** include maintenance/service, disaster recovery, training, telephone support, and PC support.

As already pointed out, it is because of this expansive scope that the literature is painted with legions of definitions for outsourcing. In the information systems world, there are also a number of derivative terms that scholars, techie and journalists propound; all in an attempt to add some clarity to this amorphous concept. Examples include: out-tasking, the act of selective or piecemeal outsourcing,\(^{38, 29, 40, 41}\) crisis outsourcing,\(^{42}\) outsourcing to get around bureaucratic constraints, drop-dead dates, and employee skill deficits; rational outsourcing,\(^{43}\) outsourcing with hindsight and foresight; rightsourcing /rightsizing,\(^{44, 45}\) a kind of strategic outsourcing for near-term and long-term objectives; alliances,
partnerships and other strange bedfellows,\(^{46, 47, 48}\) strategic associations to take advantage of economies of scale; the “new” subcontracting,\(^{49}\) networks and relationships among equals; and finally, insourcing,\(^{50, 51}\) keeping work in-house. The literature is also replete with metaphors—everything from marriage\(^{52}\) to new math, or as Spee\(^{53}\) calls it, “Addition by Subtraction.” As Slaughter\(^{54}\) points out, there is so much ado about outsourcing, that it cannot be ignored. A discussion of some of these arguments follows in the next section.

**BENEFITS, CHALLENGES AND RISKS**

The upsurge in outsourcing agreements is explainable by at least two trends\(^{55}\)—(1) reported successes in the press, most notably perhaps when Kodak outsourced its data center operations to IBM in 1989; and (2) the changing perception of IS as a commodity service. The former trend elevated the corporate impression of outsourcing from one of crisis management to one of strategic partnering. Prior to the Kodak deal, the universal perception of outsourcing was that only smaller companies who could not manage in-house operations resorted to outsourcing.\(^{56}\) The Kodak-IBM arrangement gave outsourcing respectability and spawned a myriad of similar dealings between other companies and vendors, an effect now known as the “Kodak effect.”\(^{57}\)

The latter phenomenon is an outgrowth of economic considerations. Essentially, the argument is this: If there is no strategic value in performing the function internally, outsource it!\(^{58}\) Professional IS service providers can essentially do more for less than an organization where information systems are merely a support function—that is, the professional IS firm enjoys substantial economies of scale\(^{59}\). By letting someone else provide the IS utility, executives can focus on being “business managers rather than technology managers,” a view that presumes information not information systems is mission critical.\(^{60, 61, 62}\)
Traditionally, companies outsourced to quickly improve performance and reduce operating costs. Today, however, companies are looking past such tactical objectives and are concentrating on more strategic outcomes, including improved business focus, shared risks, extending technical capabilities and freeing resources for other purposes.

Ender and Mooney contend that institutions need to view outsourcing not just as contracting out services, but as "partnering." The idea of partnering is that institutions work in cooperation with the private sector or other institutions to share the responsibility for service delivery rather than relinquishing substantial responsibility for that service to others (i.e., unloading a burdensome operation). They suggest the benefits of partnering include: Reduction in labor and benefits costs; a single point of accountability; implementation of a standard level of service programs; predictable costs; and an increased ability to focus resources on core operations.

Along these same lines, Peters posits that the supreme challenge of the 21st century will be the ability to manage projects that transcend all the conventional boundaries. The way to accomplish this feat is through outsourcing. The "new subcontracting" (his term for strategic outsourcing) is about networks and relationships among equals. The more important a "core competence" area is, the more important it is to inject that area with powerful subcontractors, to whom the in-firm experts must listen. Unlike conventional wisdom that dictates thou shalt not outsource a core competence, Peters maintains that you should subcontract everything because that keeps new blood and new ideas flowing in the organization.

According to McConnell, outsourcing has two beneficial side effects. First, it can give staff a break. If your staff has been working on one rush project after another, they might welcome the
opportunity "to get out of the kitchen and let someone else feel the heat for a while." Second, outsourcing can provide a welcome change in routine, and your developers can benefit from exposure to another software development organization.

One of the most comprehensive assessments of the benefits of IS outsourcing is offered by Conklin and McLellan.\(^{(71)}\) They suggest that its benefits are as follows:

- Freeing up management resources
- Sharing costs
- Getting rid of obsolete mainframes
- Creating integrated networks
- Building new organizational structures
- Avoiding costs overruns
- Accessing new value-added services
- Training staff
- Reducing costs
- Spreading costs over many years
- Continually innovating
- Reducing staff levels

Not everyone writes so enthusiastically about it, however. Lacity\(^{(72)}\) has tried to dispel some "myths" about outsourcing based on her research. For example, she does not agree with the notion of outsourcer as strategic partner. Based on her investigation she found that outsourcing vendors are not partners because the profit motive is not shared. Another "myth" that she debunks with her research is that outsourcing vendors are inherently more efficient
than internal IS departments. Despite the ubiquity of that claim, there is no empirical evidence to support it.

Likewise, Palvia\(^{(73)}\) notes the under-representation of outsourcing failures in the press. He suggests that most current reports contain an inherent positive bias due to the source of information—namely, vendors, consultants and surviving senior executives from one outsourcing organization or another. Common sense, of course, dictates that there is another side to the story. Accordingly, Palvia endeavors to tell the other side of the story with his seminal case study, "A Dialectic View of Information Systems Outsourcing: Pros and Cons." Within that piece, he notes that the most negative and visible effect of the outsourcing process is a decline in employee morale and productivity.\(^{(74)}\)

One of the most cynical accounts is provided by Strassman,\(^{(75)}\) who has unveiled one of its seedier sides. In his article, "Outsourcing: A Game for Losers," he argues:

Outsourcing is in reality only one aspect of a currently popular downsizing trend among troubled corporations. It is executed under another label, just as re-engineering is usually a euphemism for cutbacks. It just happens that the information technology (IT) community has consistently ranked in surveys as one of the least admired corporate functions. IT therefore becomes an attractive target when there is a quota on how many bodies must leave.

Determining alternatives to in-house software development has become a pressing necessity. A successful software development project delivers a software system on time, within cost and meets the user’s requirements. Unfortunately, due to cost containment initiatives, many organizations find themselves in a precarious position: They have downsized to the point that they no longer have the staff resources to perform development projects. Goldsmith\(^{(76)}\) points out:
Finding alternatives to in-house software development has become increasingly important. Many companies have downsized to the point where they no longer have IS staff to perform development projects. Some companies have found that their existing IS technical personnel lack the skills necessary to build systems that employ today's current technologies, such as client/server computing and graphical user interfaces. In other companies, end-users are bypassing IS, regardless of its capabilities, and acquiring their own systems.

Another painful reality is offered by Rosenberg who suggests that outsourcing has burgeoned because of the failure of in-house computing professionals to provide timely service to customers. He writes:

One reason we're experiencing a revolt by managers and users against DP is that we've failed in servicing them. Outsourcing is management's way of saying the process costs too much and is out of control. They view DPers in the organizations as less than pros, and think that by hiring experts they won't have to worry about DP, and can go back to the business of running the corporation.

Thus, the two most common reasons that management considers outsourcing are cost and frustration with in-house capability, or a perceived lack thereof.

Many authorities have written that outsourcing is fine if it is done for the right reasons. Even so, that does not remove oversight responsibility. Outsourced work is "not someone else's concern," as some managers believe. It still remains the responsibility of the outsourcee. Abdication of management responsibility is dangerous for it undermines the very strategic objectives that many of its proponents tout.

One big issue that has gotten much attention in the literature is
the loss of control that occurs when you outsource the IS function to an outside vendor.⁸⁰, ⁸¹, ⁸², ⁸³, ⁸⁴ As DeRose and McLaughlin⁸⁵ describe, “Outsourcing is turning over the heart and soul of an operation to an external provider.” This is one reason that the contract is such an important document. A discussion of contracts follows in the next section.

THE ALMIGHTY CONTRACT

The basic kinds of contracts are time-and-materials, fixed-price, and no-cure, no-pay. Contract type determines many characteristics of the relationship between outsourcer and outsourcee.⁸⁶

Time-and-Materials Contracts

Time-and-materials contracts provide the most flexibility, and “you don’t have to know much technically”.⁸⁷

... You simply say, I want a widget, and the vendor will keep working on the widget until it gets it right or you run out of money. You can change your mind what you mean by a widget, as long as you keep the money flowing.

The downside with time-and-materials contracts is that they often overrun their estimates. Furthermore, vendors usually require a substantial down payment before they begin work. Consequently, if they start to overrun their estimates, pulling out of the contract is not a desirable option. Too much time and money has been invested.

Fixed Price Contracts

An alternative to the time-and-materials contract is the fixed-price contract. With fixed-price, there is a guarantee that the vendor
will not overrun its estimate, and if the outsourcer does, (s)he will soak up the cost. According to McConnell, that guarantee can add as much as 50% to the cost of an equivalent time-and-materials project. Fixed-price contracts also require that the outsourcee specify in detail what is meant by a widget (using the example from above). Requirements changes will require negotiation for more time and money. Moreover, fixed-price contracts typically require a substantial down payment, so pulling out of them can be very costly as well.\(^{(88)}\)

**No Cure, No Pay Contracts**

A few vendors now offer a third kind of contract — no cure, no-pay.\(^{(89)}\) This kind of contract tends to be less expensive than either time-and-materials or fixed-price. Typically the outsourcee pays only 20% down. Additional payment is not due until the vendor reaches a significant milestone. Thus, the outsourcee can define the milestone in such a way that when the vendor reaches it, (s)he can be confident that the project will ultimately succeed. The only drawback of no-cure, no-pay is that the vendor is likely to insist that the outsourcee stay actively involved throughout the project.\(^{(90)}\)

There are many variations on these basic kinds of contracts, including cost-plus contracts—basically, fixed-price contracts with an incentive added for on-time delivery. McConnell suggests that all contracts require that the details be explicitly negotiated and put in writing.\(^{(91)}\)

**Why Do Contracts Fail?**

The literature on outsourcing is filled with the dangers of “sloppy contracting.”\(^{(92)}\) Appleton\(^{(93)}\) suggests that it’s harder to divorce your outsourcer than it is to divorce your spouse. If, for
whatever reason, circumstances go unfavorably, contract termination is a tricky matter without some sort of contingency plan. One critical issue to address regards who owns outsourced assets when the relationship ends? Other important elements to plan for include liability and costs associated with terminating the relationship; the plausibility of reinstating software development in-house; and the feasibility of moving to a new outsourcer.

The chief reasons that outsourcing contracts fail are: (1) Unrealistic customer expectations; (2) the lack of a formal bid process; (3) nonspecific requirements; and (4) failure to manage the relationship after the contract is signed.

In a recent study of four federal agencies that probed how public managers cope with bureaucratic limitations and constraints, Ban found that public managers have mixed sentiments about contractors and outsourcing. On the positive side, advocates see outsourcing as a way to harness additional technical capabilities. In addition, these managers suggest that results are best for projects that are short-term, narrowly focused, and clearly defined.

On the negative side: Some managers feel fettered by staff ceilings and have no other alternative but to contract out to get their work done. Others feel resentment because of mandated pressures to contract out. Their complaints range from concerns about the time required to perform oversight duties to dissatisfaction with the quality of deliverables.

To minimize risks and maintain control of the contract, the US Chamber of Commerce suggests:

1. Don’t outsource functions critical to your operation.

2. Minimize cost fluctuations by outsourcing only functions whose costs do not vary from month to month. This way, outsourcing expenses are predictable.
3. Be wary of extremely low fees. They may have been set to get your business, then increase dramatically the next year. As with any vendor search, meet with more than one firm, and ask for referrals.

4. Share the risk with your vendor. If possible, make his or her fees contingent on meeting the deadlines you set, and include this contingency in the contract.

5. Try to find out if the vendor has a heavy commitment to one large company; if so, your firm may be a low priority.

6. Have a backup plan that includes a list of other vendors in case the company you choose can’t meet its obligations.

7. Stipulate in your contract that you own all data pertaining to your business. This will make it easier to retrieve the information and minimize disruptions if you want to change vendors.

GOVERNMENT OUTSOURCING

The literature suggests that government outsourcing has grown in popularity because it promises to cut costs; governments can avoid paying high public salaries and benefits; government managers have a free hand in the hiring and firing of employees; and it results in better quality government provisioning. There are disapproving aspects of contracting out as well. Notably, contracting out creates greater potential for conflicts of interest; it requires expensive oversight mechanisms; and has a negative impact on affirmative action programs.

The private sector’s penchant for outsourcing has contributed to the public sector’s perception that significant advantages can be gained through contracting out. In keeping with this observation,
Gabig\(^{(98)}\) predicts that the outsourcing of noncore information systems will become even more prevalent in the future.

A major reason for the expected proliferation of more outsourcing arrangements is that "Congress has jumped on the outsourcing bandwagon." Gabig\(^{(99)}\) cites the following passage from Section 2562 of Title 10 of the United States Code (USC) in defense of his argument:

The Secretary of Defense shall procure each supply or service ... from a source in the private sector if such a source can provide such supply or service to the Department at a cost that is lower ... than the cost at which the Department can provide the same supply or service.

One of the most fundamental arguments on behalf of contracting out has to do with competition. By not keeping a function in-house, an organization can shop around and choose the level of quality, cost and quantity it desires. In the public sector, however, this logic is sometimes undermined because competition is limited or nonexistent. For example, weapons procurement is an area where there is not a normal competitive market\(^{(100)}\).

Conklin and McLellan\(^{(101)}\) make the point that the government's unique features require that different emphasis be placed on the benefits most commonly noted in the literature. Of concern to most governments are general concepts such as freeing up management resources, accessing new value-added services, training staff and continually innovating. Outsourcing cost savings for governments will likely come not from the achievement of large scale economies but, rather, from facilitating public restructuring. The advantages relating to cost are particularly important in the context of deficit reduction; elimination of uncertainties about future costs and achievements of specific cost reductions. Faced with fiscal restraint, a government may not be in a position to spend large sums of
money to update and extend its information systems if these costs must be incurred at the outset. The private sector may finance them but the current fiscal position of many governments makes this politically infeasible. Conklin and McLellan\(^{102}\) suggest that each outsourcing decision rests upon a careful analysis of these factors. At the outset, government must decide the conceptual framework within which the analysis will be undertaken.

**AN AGENDA FOR RESEARCH**

Although many organizations use outsourcing, few empirical research studies have attempted to examine the antecedents or consequences of outsourcing. Notable exceptions are Khosrowpour et al.,\(^{103}\) an exploratory study that examined employee perceptions of information technology outsourcing; and Nelson et al.,\(^{104}\) a investigation that examined the impact of outsourcing on employee job satisfaction and well-being. These studies suggest a need for management to understand workers’ attitudes and to develop a plan that addresses both their needs and perceptions, especially in light of the fact that the success of the outsourcing arrangement depends on employee support and cooperation. Productivity losses, low morale, anxiety, the threat of litigation, and employee abdication can severely undermine the organization and the outsourcing plan. Therefore, it behooves management to treat affected personnel in an equitable fashion.

The continued emphasis on the use of outsourcing necessitates that systematic study of outsourcing be undertaken to understand more fully the implications of this practice on employees and the organization. Some questions and topics for future research include:

- How does organizational culture, mission, size, structure, and resource level factor into the decision to outsource?
Does outsourcing negate the service ideal inherent in public service? What impact does outsourcing have on employee commitment in the public sector?

Does the type of outsourcing contract type have an effect on employee perceptions?

What are the long-term effects of outsourcing arrangements on people and organizations?

Does outsourcing success vary according to organization type? For example, are learning organizations more adaptable to these arrangements than non-learning organizations?

How are different types of organizations managing outsourcing?

How do successful and unsuccessful outsourcing arrangements compare in terms of their impact on people and organizations?

**CONCLUSION**

The purpose of this paper was to review the current literature on IS outsourcing and to propose an agenda for future research. Arguments on the virtues and pitfalls of outsourcing were presented, as well as its applicability in the public sector. Most of the debate centers on business reasons—costs, efficiency and the like. There seems to be a gaping hole in the literature with respect to people issues. Questions such as “how does outsourcing affect in-house employees” are left untouched for the most part.

Finding ways to remain viable is problematic for many organizations. Some organizations have downsized to the point where they no longer have the staff to get the work done. In the case of government, public managers do not have the same options...
that their counterparts in the private sector enjoy. Public managers meet with numerous constraints that limit what they can and cannot do. They receive little discretion in how to manage their budgets and are hostages of conflicting goals, unmeasurable outcomes, salary caps, hiring freezes, personnel ceilings, regulations, and political pressures.\(^{(106, 107, 108, 109)}\) George Romney’s witticism about administration provides a fairly close description of the public manager’s plight when he likened his position to “being like the quarterback of a football team chosen by one’s opponents.”\(^{(110)}\)

The way public managers cope with budgetary, legal and political imperatives is a function of organizational culture, mission, size, structure, and resource level.\(^{(111)}\) While some managers have found inside strategies to deal with budgetary, legal and political imperatives, many managers opt for outsourcing.

The continued emphasis on outsourcing in the public and private sectors necessitates that systematic study of outsourcing be undertaken to understand more fully the implications of this practice on employees and the organization. Practitioners and academicians alike need to know more about outsourcing, both to advance knowledge and to push practice forward, and ultimately to improve organizations.

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