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Jahyun Goo

State University of New York

Raghav Rao

State University of New York

Rajiv Kishore

State University of New York

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A CONTENT-ANALYTIC LONGITUDINAL STUDY OF THE DRIVERS FOR INFORMATION TECHNOLOGY AND SYSTEMS OUTSOURCING¹

Jahyun Goo

Rajiv Kishore

H. Raghav Rao

School of Management

State University of New York, Buffalo

U.S.A.

Abstract

This research addresses the question, what are the key drivers for information technology and systems (ITS) outsourcing? ITS outsourcing drivers are examined in this research in light of several underlying organizational and economic theories in order to generate a comprehensive and enduring ITS outsourcing drivers taxonomy. A preliminary taxonomy has been developed using qualitative content analysis of 49 articles, which has been triangulated using an internal/external drivers model developed from systems-theoretic notions. Quantitative content analysis technique is being used to analyze outsourcing reports publicly available in the PR Newswire database published over the last 11 years to further develop the ITS outsourcing drivers taxonomy.

1. INTRODUCTION

Information technology and systems (ITS) outsourcing has grown to become a multi-billion dollar industry since the watershed event of Kodak outsourcing in 1989. It has gained a further shot in the arm with the advent and growth of the e-business paradigm. The traditional outsourcing services market that typically included data center, telecommunications infrastructure, and desktop outsourcing has developed into a highly specialized marketplace of ITS services. Several new outsourcing services, such as application renting services provided by Application Service Providers (ASPs), business process outsourcing (BPO), e-business hosting, etc., have emerged over the last decade. Moreover, outsourcing vendors now operate in highly specialized vertical markets focusing on specific industries such as healthcare, financial services, and logistics industries.

2. THE NEED FOR A TAXONOMY OF ITS OUTSOURCING DRIVERS

As the ITS outsourcing services market evolves and grows to keep pace with the burgeoning e-business paradigm, it is reasonable to expect that the drivers for ITS outsourcing will also evolve and change. The typical drivers of ITS outsourcing that were prevalent during the 1990s, such as cost savings, access to cash, gaining IS efficiency, etc., may not be as applicable in this era of "Internet time." Competitiveness, time-to-market, innovativeness, round-the-clock customer service, agility, and access to world-class technology and skills are some of the sentiments that are commonly echoed in the context of ITS outsourcing in the current business press, indicating that the drivers for outsourcing today may be quite different from what they were in the early 1990s.

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For example, the two classical drivers for ITS outsourcing—cost control and cash infusion—identified by Lacity and Hirschheim (1993) based on Williamson's (1975, 1979) transaction cost economics and Pfeffer's (1978, 1981; Pfeffer and Salancik 1974; Pfeffer et al. 1976) political model, may not be as relevant in the context of today's ITS outsourcing arrangements in the Internet economy (Terdiman 2000) as the traditional rationale of vendor economies of scale and specialization is becoming less convincing. Companies such as Dupont and British Petroleum, with well-run and innovative IS departments that are large enough to accrue the same scale and specialization benefits as an IT vendor, are nevertheless engaged in ITS outsourcing. They seem to use outsourcing to gain access to the capabilities and skills necessary to realize the potential of new and novel information technologies. Further, outsourcing, once used mainly for "recovery-oriented" purposes such as downsizing and cost reduction at major corporations, is now becoming a growth-oriented strategic tool that has a powerful impact on future corporate innovativeness and profitability (Ozanne 1997). This is all the more true now than ever before as firms establish strategic partnerships through syndication (Werbach 2000) in the e-business arena to gain access to specialized expertise and highly focused and customized information content.

While we intuitively understand that the drivers of ITS outsourcing are changing, the academic and popular press only provides conjectures and anecdotal evidence concerning the "true" drivers for ITS outsourcing in the current era. Empirical studies that systematically study this phenomenon from the perspective of the current outsourcing drivers are few and far between. The recent research by DiRomualdo and Gurbaxani (1998), based on a study of 50 companies worldwide that have outsourced their IT operations, suggests that companies outsource their ITS portfolio with one of three underlying strategic intents: IS improvement, business impact, or commercial exploitation. While this intent classification schema is parsimonious, its parsimony is its weakness as well. These three intents provide only a coarse level of granularity as far as outsourcing drivers are concerned. For example, a company that is planning to acquire another firm may choose to outsource its ITS infrastructure so that it can transfer the impending systems integration risks from itself to its outsourcing vendor. However, such a driver for ITS outsourcing will have to be force-fitted in one of three strategic intents in the DiRomualdo and Gurbaxani taxonomy. A similar problem is faced when we look at the example of a company that outsources some or all of the information content creation and customization by pursuing the strategy of syndication in the information goods area (Werbach 2000). Such a case will have to be necessarily classified either under the Business Impact or the Commercial Exploitation category in the DiRomualdo and Gurbaxani model, even though it does not fit either of these two intents quite neatly.

The above discussion indicates the need for development of a taxonomy of ITS outsourcing drivers that is current and that is at a finer level of granularity so that it can capture the realities of the present times. This need is further exacerbated because contracts, service level agreements, compensation plans, measurement systems, etc., can only be aligned more closely to yield successful outsourcing results when objectives and drivers are more clearly understood and articulated, rather than when only an amorphous outsourcing intent is stated.

3. RESEARCH QUESTION

This research-in-progress, therefore, addresses the key question raised in the above paragraphs: what are the key drivers for ITS outsourcing? In other words, why do companies really outsource their ITS portfolio? Answers to this question should not be just fleeting glimpses about the outsourcing drivers pertinent currently, but should rather provide insights about the outsourcing phenomenon at a deeper level that are more enduring. With this in mind, the ITS outsourcing drivers are examined in this research in light of several underlying organizational and economic theories in order to generate an ITS outsourcing drivers taxonomy that is more comprehensive and longer-lasting. Moreover, as discussed above, the intent is also to provide a taxonomy that provides a sufficiently finer level of granularity of ITS outsourcing drivers in order that a variety of outsourcing arrangements and configurations can be neatly captured by the taxonomy.

While the above question is the central theme of this research, it covers several other related questions as well. As was discussed earlier, it is natural to expect a shift in the outsourcing drivers over time. This research, therefore, plans to study the evolution of the ITS outsourcing drivers over the last decade. While past evolutionary patterns of ITS outsourcing drivers may not be good predictors of future trends (due to paradigm shifts currently taking place with the growth of the ASP model), they will undoubtedly provide a new understanding about whether organizations and industries go through a life cycle in which they evolve in terms of their outsourcing motives and drivers.

Also, there is a great possibility that different industries have different motives for outsourcing. For example, it can be argued that information intensive industries, such as the financial services industry, may have different motives for ITS outsourcing than industries that are more physical product-oriented, such as the manufacturing industry, as the former may be facing more severe skill shortages than the latter. It is, therefore, planned to study the patterns of outsourcing drivers across four major industry types to be classified based on the information content of the product they produce (high or low) and the information intensity of their value chain (high or low) (Porter and Millar 1985).

The taxonomy of outsourcing drivers and their evolution over time, as well as industry trends, will not only be useful for the practitioner community, which can use these results for crafting effective and successful outsourcing strategies. They will also lay the foundation for conducting subsequent research in the area of outsourcing measurement and performance evaluation. For example, given a mix of particular outsourcing driver(s) and environmental conditions, what should be the optimal mix of insourcing and outsourcing as part of the overall ITS governance strategy? It is hoped this research will provide the initial groundwork for addressing such a question in subsequent research.

4. RESEARCH METHOD

It is pertinent to describe what a taxonomy is before delving further into the research method. A *taxonomy* is a classification system, which may be defined “as a set of specified rules for describing the structure and relationships among a set of objects drawn from some domain that permits similar units to be assigned to a smaller number of categories or classes” (Fleishman and Mumford 1991). Although the terms are often used interchangeably by social scientists, a *taxonomy* is not the same as a *typology*. Typologies are generally derived *theoretically* and tend to contain a relatively small number of monothetic classes (i.e., groups that are identical on all relevant characteristics), whereas *taxonomies* are generally derived *empirically* and contain multiple polythetic classes (i.e., members of a given group are similar on most, but not necessarily all, of the relevant characteristics) (Bailey 1994; Rich 1992).

In line with the above definition, this research will utilize the quantitative content analysis technique for analyzing publicly available outsourcing reports published over the last 11 years to develop a taxonomy of ITS outsourcing drivers. Content analysis affords the researcher the opportunity to objectively and systematically make inferences about the intentions, attitudes, and values by identifying specified characteristics in a large body of textual documents (Insch et al. 1997; Morris 1994). It is well suited for the present study as it can be fruitfully utilized for making inferences about intentions, which is the prime objective of this research: to study drivers and intentions behind ITS outsourcing. To collect longitudinal data pertaining to ITS outsourcing drivers for a period spanning more than a decade through other means such as interviews and longitudinal case studies will not only be an arduous undertaking, such an endeavor will be fraught with the risk of various kinds of biases creeping into the collected data. Predominant among such biases will be the recall and recency biases emanating from retrospective accounts of respondents (Alwin 1977; Horvath 1982; Hufnagel and Conca 1994).

As a first step toward the planned quantitative content analysis, we have created a dictionary of various terms and their synonyms pertaining to ITS outsourcing drivers. This dictionary was created using qualitative content analysis of scholarly and practitioner articles published in the top IS and management journals and magazines since 1990 dealing with the topic of ITS outsourcing. A total of 49 articles pertaining to ITS outsourcing issues were identified in these 11 journals as shown in Table 1.

A careful review of these 49 articles revealed 243 ITS outsourcing drivers addressed within these papers. Interestingly, many drivers are described by different expressions although the underlying semantics of these expressions is the same. These 243 drivers provided the first set of data from the qualitative analysis. To collapse these into a smaller number of manageable dimensions and in order to create a theoretically-grounded categorization, we developed categories supported by various theoretical perspectives including: (1) efficiency (of market transactions and of governance forms), (2) uncertainty/opportunism supported by transaction cost economics (Coase 1988; Williamson 1979, 1989), incomplete cost theory (Hart 1989, Hart et al. 1990), and agency theory (Fama 1980; Jensen and Meckling 1976), (3) exchange conditions/resource flows in task environment supported by social exchange theory (Levinthal and Fichman 1988; Van de Ven 1976) and resource dependence theory (Pfeffer and Salancik 1978; Thompson 1967), (4) internal and external pressures for outsourcing supported by inertial theory (Hannan and Freeman 1984) and institutional theory (DiMaggio and Powell 1983; Scott 1987, 1995), (5) access to knowledge and skills supported by organizational learning theories (Argyris and Schon 1978; Attewell 1992; Cohen and Bacdayan 1994; Huber 1991; Levitt and March 1988; March 1991; Revans 1982; Schein 1984, 1993; Weick and Roberts 1993), and (6) managing change supported by theories of organizational change management (Barley 1986; Burkhardt and Brass 1990; Johnson 1995; Markus and Benjamin 1996; McHugh 1997; Orlikowski 1993; Pettigrew 1985; Worley et al. 1996). This preliminary categorization leads to 14 different ITS outsourcing drivers and is shown in Table 2. This categorization is being used as the basis for developing a comprehensive dictionary of search terms that will be used in subsequent quantitative content analysis.

In parallel, we also developed a set of eight outsourcing drivers—four external environmental and four internal organizational—drawing from the classical systems-theoretic notions about organizations (Beer 1974; Katz and Kahn 1966) and the balanced scorecard literature (Kaplan and Norton 1992, 1996). This model provides the third data plane for triangulation of ITS outsourcing drivers. Subsequently we mapped the 14 ITS outsourcing drivers shown in Table 2 with the eight ITS outsourcing drivers and this is shown in Figure 1. This mapping not only ensures that we are not missing any crucial drivers that may be active in any particular cell of the eight-celled internal/external drivers model shown in Figure 1, it also enhances the exhaustiveness of coverage of the various outsourcing drivers.

Table 1. MIS Journals and Articles Used for Qualitative Content Analysis

Journal Title	# of Papers	Citation
<i>California Management Review</i>	1	Saunders et al. 1997
<i>Communications of the ACM</i>	6	Gurbaxani 1996 Hirschheim and Lacity 2000 Nam et al. 1996 Rao et al. 1996 Sabherwal 1999 Slaughter and Ang 1996
<i>Decision Sciences</i>	2	Chalos and Sung 1998 Teng et al. 1995
<i>Harvard Business Review</i>	10	Cross 1995 Huber 1993 Kiely 1997 Kurtzman 1993 Lacity et al. 1995 Peisch 1995 Quinn et al. 1990a Semler 1994 Venkatesan 1992 Werbach 2000
<i>Information Systems Research</i>	2	Hu et al. 1997 Loh and Venkatraman 1992
<i>Journal of Management Information Systems</i>	6	Chaudhury et al. 1995 Clemons et al. 1993 Grover et al. 1996 Lee and Kim 1999 Loh and Venkatraman 1992 Smith et al. 1998
<i>MIS Quarterly</i>	2	Ang and Straub 1998 Lacity and Willcocks 1998
<i>Management Science</i>	5	Apte and Mason 1995 Gable 1996 Klotz and Chatterjee 1995 Sridhar and Balachandran 1997 Van Mieghem 1999
<i>Organization Science</i>	1	Ang and Cummings 1997
<i>Sloan Management Review</i>	13	Barney 1999 DiRomualdo and Gurbaxani 1998 Earl 1996 Feeny and Willcocks 1998 Gebhart 1996 Lacity and Hirschheim 1993 Lacity et al. 1996 Lyons et al. 1990 McFarlan and Nolan 1995 Quinn and Hilmer 1994 Quinn 1999 Quinn et al. 1990b Venkatraman 1997
<i>Strategic Management Journal</i>	1	Poppo and Zenger 1998
Total	49	

Table 2. A Preliminary Taxonomy of ITS Outsourcing Drivers
(Based on Qualitative Content Analysis of Literature Cited in Table 1)

Category	Definition	Grounded Theory	Various Expression of Objectives
1. Technical considerations	Intention of firm's procurement of lacked technical capabilities and skills through vendors rather than through building up internal technical capabilities and training internal staff	Resources and skills scarcity supported by theories of resource dependence and organizational learning	<ul style="list-style-type: none"> • access to advanced facilities • access to cutting-edge technologies • access to higher IT professionalism • acquiring new IT related skills • access to new ideas and technologies • access to best technologies and talent, etc.
2. Risk management considerations	Purpose of risk management regarding internal IT investment in rapidly changing marketplace and technology	Uncertainty supported by TCE/IC	<ul style="list-style-type: none"> • transfer risks and problems to vendor • avoid the risk of technical obsolescence • eliminate an IT burden • hedge/reduce risks of investing IT • risk reduction in rapidly changing marketplace and technology, etc.
3. Service quality considerations	Intention to increase the level of service through outside IT expertise that is already provided	Satisfaction supported by social exchange theory	<ul style="list-style-type: none"> • improve technology and technical service • aggressive management of service and response time • obtaining more integrated services • better responsiveness to customer needs • increasing IT service levels, etc.
4. Human resource considerations	Intention to be flexible to IS work arrangements and manage IS skills dynamically	Costs absorption mechanism supported by resource dependence theory	<ul style="list-style-type: none"> • downsizing • adequate staffing for workload • aggressive use of low-cost labor pool • control seasonal workload • eliminate inflexibility and fixed overhead, etc.
5. Costs control considerations	Company's intention to reduce IT costs by both eliminating waste wherever possible and managing cost structure through outside specialization and economies of scale	Efficiency of market transaction supported by TCE/IE and resource dependence theory	<ul style="list-style-type: none"> • facilitate core flexibility • improve costs control • IS cost reduction • cost efficiency • cost-effective bulk purchase and lease hardware and software, etc.
6. Financial and accounting considerations	Free up financial resources by liquefying IT assets and adjustment in accounting	Resource flows supported by resource dependence theory	<ul style="list-style-type: none"> • liquefy firm's intangible IT assets to provide seed money for the new IT infrastructure • facilitate management of divestiture • cash infusion • free up financial resources • get aging IT/IS off the balance sheet, etc.
7. Shift (transform) IT roles and capabilities	Shifts the role of the IS function from acquiring and maintaining operations of computers to providing higher value work/capabilities	Importance of IT activities supported by resource dependence theory	<ul style="list-style-type: none"> • shifts the role of the IS function • create a new IT capability • an ability to refocus in-house staff on higher-value work • align IT resources with business needs

Category	Definition	Grounded Theory	Various Expression of Objectives
8. Create IT based new lines of business	With the vendor's expertise of commercialization, leverage internal IT capabilities in the marketplace through IT-based products and services as a new revenue source	In-house cost efficiency supported by resource dependence theory	<ul style="list-style-type: none"> • commercial exploitation • launching new IT-based businesses • leverage current IT expertise in market • new distribution channels for IT products and services • create new electronic market process
9. Performance of existing overall business process	Improving IT's contribution to company performance with existing lines of business	Internal business process supported by resource dependence theory	<ul style="list-style-type: none"> • enhancing business performance • improving IT's contribution to company performance • improving productivity • extend IT's contribution to critical business process • technology-based BPR, etc.
10. Core competencies/ differentiation considerations	As a way of competitive advantages and differentiations, accessing market efficiency for non-core activities	Competition supported by theories of firm strategy and organizational learning	<ul style="list-style-type: none"> • focus business on core competencies • gain competitive advantage • facilitate management focus • competitive differentiation • off-load responsibility for non-core, etc.
11. Creation/facilitation of alliance, M&A, venture	As a way of facilitating M&A and LBO and creating alliance, partnership, and venture	Efficiency of governance form supported by TCE/IC and agency theory	<ul style="list-style-type: none"> • strategic networks • value-added partnerships • creation of alliances • creation of commercial ventures • facilitate mergers and acquisitions, etc.
12. Change management considerations	As a way of facilitating to pace with changing environment	Competitive isomorphic pressure supported by institutional theory and theories of organizational change	<ul style="list-style-type: none"> • jump on the bandwagon • requalifying staff in leading-edge IT • providing information to respond better to market changes • tap rapid response to changing environment • speed up the transition reliability and cost effectiveness, etc.
13. Time-to-market	As a way of speeding up the presence of market	First mover advantage by competition	<ul style="list-style-type: none"> • speed up new product introduction • cut development time to new IT drive business • decreases design-cycle time • facilitating new product development • rapidly developing new technologies, etc.
14. Enhancements and enrichment of information content using syndication	To create value-added information services by integrating/packaging contents of information goods created and distributed by syndicators from outside the organization	Leveraging abundance, not control over resource scarcity	<ul style="list-style-type: none"> • replace scarcity with abundance • occupy the most valuable niches in syndication network • value added by information manipulation • assemble virtual corporation • syndicated procurement in the Internet architecture, etc.

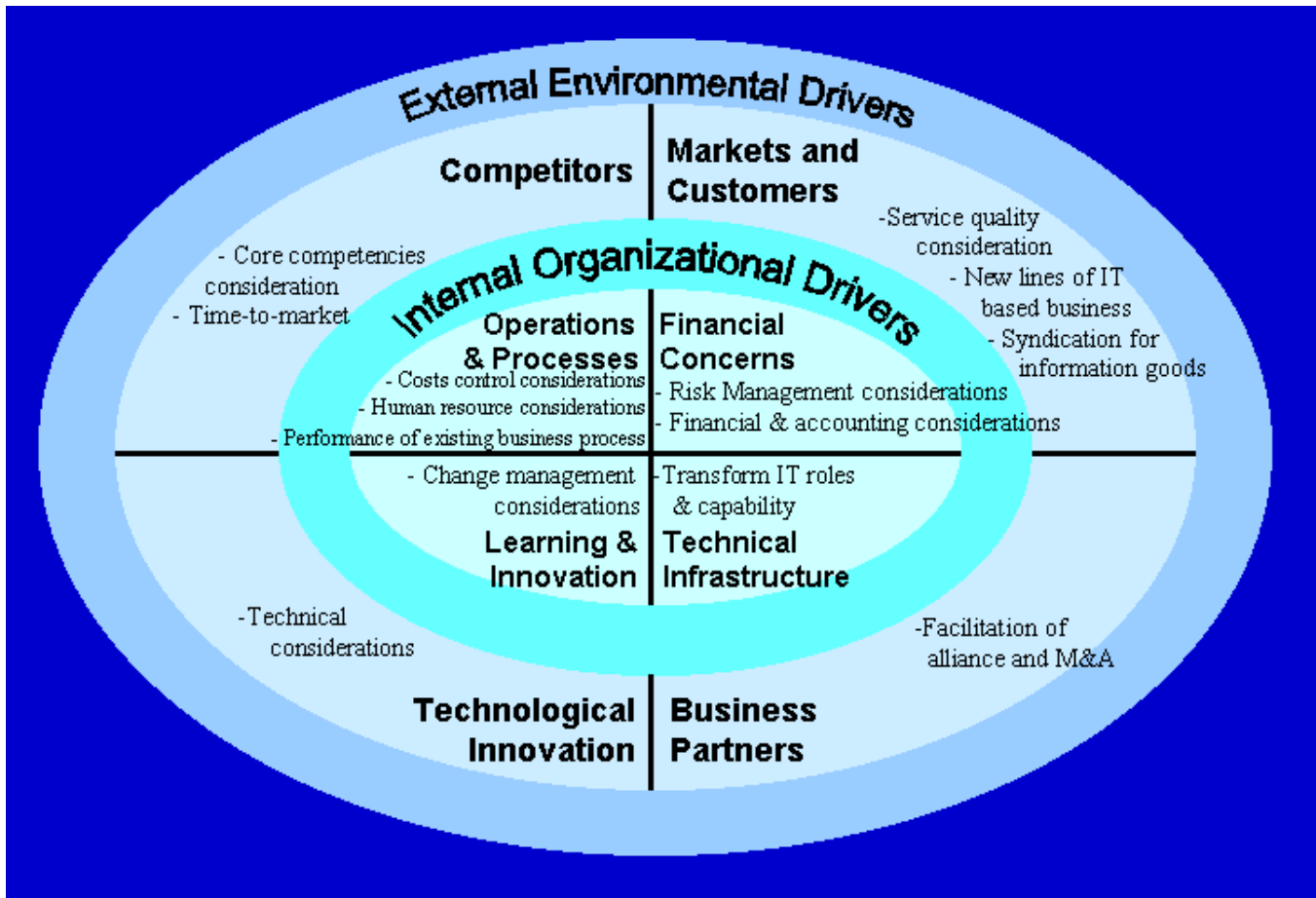


Figure 1. External and Internal Factors Driving ITS Outsourcing

It will be noted that the 14 ITS outsourcing drivers have been drawn up using both a bottom up and a top down approach. While numerous specific outsourcing objectives have been consolidated into higher-level outsourcing drivers using a bottom up approach (see Table 2), eight high-level organizational drivers for outsourcing have been mapped on to 14 ITS outsourcing drivers using the top down approach (see Figure 1). This synthesis of two approaches assures that the ITS outsourcing drivers taxonomy is neither too general nor too specific.

5. PLANNED QUANTITATIVE CONTENT ANALYSIS

Based on the outsourcing drivers that have been identified, we have created a dictionary that will serve as the coding scheme for the quantitative content analysis. To make this dictionary comprehensive (Weber 1985), we have also developed a thesaurus including more specific key words and synonyms.

We plan to collect and perform a comprehensive search of published full-text outsourcing reports and stories from an electronic database, PR Newswire. This includes unedited business and general press releases from companies, government agencies, industry associations, and more. We have generated a sample of articles pertaining to ITS outsourcing announcements using a Boolean search strategy adapted from Loh and Venkatraman (1992). This sample will include articles for the period 1988 to 1999 following Loh and Venkatraman, who identified the first outsourcing contract as occurring in 1988.

A pilot test is currently being conducted to refine and validate the coding scheme (Morris 1994; Tan and Teo 1999; Wimmer and Dominick 1994). For this purpose, we have chosen 69 press releases from the PR Newswire database spanning the time period

from January 1, 2000, to April 30, 2000. Taking news stories from this period for the pilot study will bring out the current ITS outsourcing drivers that will help ensure that they are represented in our coding scheme. These 69 stories were selected using the query “outsourcing near10 (contract OR relationship OR alliance OR partnership OR deal) AND (information OR telecommunications) AND (systems OR technology).” This search query to be used in selecting PR Newswire articles for the content analysis was adopted after repeated refinements by changing the search keywords until we were satisfied that randomly selected articles from each set of the search results were suited to the context of the present research.

Computer-aided content analysis will be performed using the ZyImage text analysis software, which will provide reliable counts of the occurrences of each outsourcing driver found in each published report that will be analyzed (Morris 1994). The frequency of occurrence or “hits” for each search term relating to a particular driver will be used as an indicator of the “intensity” (Morris 1994) of the particular driver. This large number of individual drivers will be collapsed into a smaller number of driver dimensions using exploratory factor analysis techniques (Hair et al. 1998). Finally, other multivariate techniques will be utilized to perform evolutionary trend analyses and industry pattern analyses.

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