Flexibility Maneuvers in Outsourcing: An Empirical Assessment

Chengxun Tan
Nanyang Technological University

Siew-Kein Sia
Nanyang Technological University

Christine Kuan
Nanyang Technological University

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FLEXIBILITY MANEUVERS IN OUTSOURCING: AN EMPIRICAL ASSESSMENT

Social, Behavioral and Organizational Aspects of Information Systems

Chengxun Tan
Nanyang Technological University
p149563999@ntu.edu.sg

Siew Kien Sia
Nanyang Technological University
asksia@ntu.edu.sg

Christine, Koh Siew Kuan
Nanyang Technological University
askkoh@ntu.edu.sg

Abstract

In recent years, outsourcing has gained considerable management attention. However, the benefits of outsourcing are not without concessions. One major risk is losing the flexibility to change the extent, nature, or scope of the outsourced business services. Tan and Sia (2006) conceptualized outsourcing flexibility as robustness, modifiability, new capability, and ease of exit, and proposed a portfolio of pre-emptive, protective, explorative, and corrective maneuvers to manage flexibility in outsourcing. In this paper, we seek to develop empirical insights on their proposed framework by operationalizing the conceptual constructs and carrying these propositions into empirical validation. A survey of 171 outsourcing projects in Singapore was conducted. The findings bear evidence of the importance of flexibility in outsourcing, given its strong association with outsourcing success. The results also suggest a need for organizations to be clear about their desired flexibility profiles as different flexibility maneuvers contribute differently to different dimensions of outsourcing flexibility. The findings also indicate the relative effectiveness between traditional contractual provision and the various flexibility maneuvers for robustness, modifiability, new capability, and ease of exit. We hope the deeper understanding will not only contribute to the effectiveness of outsourcing management but also spawn a new research agenda on outsourcing flexibility.

Keywords: flexibility, outsourcing, coordination theory, outsourcing success

Introduction

The continued growth of IT and business process outsourcing over the last two decades is a testament of its value to organizations. Outsourcing is now a strategic option that firms cannot ignore. However, though outsourcing can offer many strategic, economic and technical benefits, these must be balanced against the associated risks as well.

One such issue is the potential loss of flexibility, in terms of the ability of the firm to change the extent, nature, or scope of the outsourced services. Such flexibility is particularly crucial in today’s competitive and dynamic environment, in order to respond to uncertainty or changing needs and requirements (Suarez et al., 1995). The outsourcing literature has emphasized primarily the importance of contract provisions to facilitate adaptations to changing circumstances (e.g. Fitzgerald and Willcocks, 1994; Lacity et al., 1995; Saunders et al., 1997), using a variety of bilateral adjustment mechanisms such as variable pricing, short contract duration, modular contract structure, renegotiation/ arbitration clause, premature termination conditions and innovation incentives (Harris et al. 1998). While such contract provisions are essential and critical, reliance on them alone is insufficient, as all contracts are necessarily incomplete, and the cost of creating contracts with complete contingencies is prohibitively high. Hence, firms need to look beyond contractual provisions to explore a broader portfolio of strategic maneuvers to achieve such flexibility. In that regard, Tan and Sia (2006) developed a comprehensive strategic maneuvers
framework for managing outsourcing flexibility. Their paper puts forward a set of propositions hypothesizing the relationships between the various strategic maneuvers and the different dimensions of outsourcing flexibility, and discusses the moderating impact of such maneuvers on outsourcing success. However, the paper stops short of operationalizing the conceptual constructs and carrying the framework into empirical validation. Our objective, therefore, is to build upon Tan and Sia (2006) to develop empirical insights and push forward the existing understanding on managing flexibility in outsourcing.

**Maneuvering for Outsourcing Flexibility: A Conceptual Framework**

For the benefits of readers who are not familiar with Tan and Sia (2006), we have provided in the following paragraphs an overview of the conceptual framework and a summary of the key propositions. Readers are referred to the original paper for more detailed discussion.

Adapted from Bahrami and Evans (2004)’s synthesis of the flexibility literature, Tan and Sia (2006) developed a conceptual model of outsourcing flexibility that comprises four dimensions: robustness, modifiability, new capability, and ease of exit (see Table 1).

<table>
<thead>
<tr>
<th>Flexibility Dimension</th>
<th>Meaning in outsourcing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Robustness</strong></td>
<td>Variability of service capacity</td>
<td>The ability of an outsourcing relationship to allow operational changes exceeding projected capacity on existing service delivery, i.e., service volume fluctuation, variations in standard user requests, urgent or special case processing, and exception handling</td>
</tr>
<tr>
<td><strong>Modifiability</strong></td>
<td>Alternation of service attributes</td>
<td>The ability of an outsourcing relationship to allow alternation of attributes of its existing services in addressing changing business requirements, e.g. new configuration setup, alternation of processing workflow or business rules, new reporting requirements, and reference data updates.</td>
</tr>
<tr>
<td><strong>New capability</strong></td>
<td>Addition of innovative capability</td>
<td>The ability of an outsourcing relationship to allow the addition of entirely new services to address radical changes or shifts in business paradigms, e.g. new government regulations, technological revamps, functional breakthroughs, and process innovations.</td>
</tr>
<tr>
<td><strong>Ease of exit</strong></td>
<td>Switch to another vendor or in-sourcing</td>
<td>The ability of an outsourcing relationship to allow transfer of services to other vendors, or to be brought in-house, e.g. premature termination, vendor instability, or pricing disagreement or dispute.</td>
</tr>
</tbody>
</table>

Further, they proposed a portfolio of pre-emptive, protective, exploitive and corrective maneuvers that firms can use to achieve flexibility. The flexibility maneuvers (see Figure 1) can be classified based on two dimensions: temporal (i.e., before versus after the outsourcing) and intentional orientations (i.e., offensive attempts to anticipate and control changes in the environment, versus defensive attempts to minimize or recover from the impact of those changes) (Evans 1991).
Tan and Sia (2006) also argued that different maneuvers have different impacts on the four flexibility dimensions.

**Pre-Emptive (Loose Coupling) Maneuvers and Outsourcing Flexibility**

Specifically, preemptive maneuvers such as minimizing customization, enhancing processing maturity, and leveraging on vendor interoperability enable firms to achieve loose coupling, by reducing the interdependences between tasks and reducing the need to coordinate information exchange in the relationship. This enables firms to disentangle and recombine task components into new configurations, making it easier for firms to deal with change (Gosain et al., 2004; March and Simon, 1958).

**Minimal Customization.** Outsourcing firms may request customization due to incompatibilities between their requirements and the vendor’s offerings, to differentiate their processes from the vendor’s generic offerings (Quinn and Hilmer, 1994; Zaheer and Venkatraman, 1995). However, minimal customization can increase the firm’s flexibility in several ways. First, minimal customization reduces potential problems in future maintenance and upgrades, analogous to the oft-recommended approach of “plain vanilla” adoption of package software such as ERP and CRM systems (Holland et al., 1999). Adhering to the vendor’s standard offerings enables the firms to leverage on the vendor’s economies of scale or scalability to cater to transaction variations (Levina and Ross, 2003; Ybarra and Wiersema, 1999), thus enhancing robustness. Second, minimal customization allows for more effective management of interdependencies. By adhering to the vendor’s generic offerings, the vendor can make any future modifications based on its existing technical platform without having to understand and keep track of the client’s unique requirements and specific past customizations. As such, this simplifies the modification effort in the outsourcing relationship and makes the infrastructure more capable of supporting future changes. Third, minimal customization reduces the dependency on the vendor, and reduces the scope for moral hazard, shrinking and opportunistic behavior (Williamson, 1985). This reduces switching costs, and therefore, makes it easier for the outsourcing firm to exit the outsourcing relationship. As such, the hypotheses are:

*Hypothesis H1a: Lower customization is positively associated with an organization’s outsourcing flexibility in terms of robustness.*
Hypothesis H1b: Lower customization is positively associated with an organization’s outsourcing flexibility in terms of modifiability.

Hypothesis H1c: Lower customization is positively associated with an organization’s outsourcing flexibility in terms of ease of exit.

**Process Maturity.** Reflecting the capability maturity model in software development (Paulk, 1993), Tan and Sia (2006) conceptualize process maturity as the extent to which embedded knowledge in managing, operating, and controlling a process has been captured or made explicit. High process maturity facilitates the management of flexibility in an outsourcing relationship. A mature process with established practices and parameterized variance tends to be more robust to external disturbances, as the clarity of operational rules makes it easy to adjust while remaining optimal. A well-understood process is also easier to modify because the vendor can learn about process routines with less difficulty. In addition, greater process maturity also facilitates knowledge exchange with outsourcing vendors, making it easier for a process to be readily disconnected from an existing relationship and reconnected to a new one.

Hypothesis H2a: Higher process maturity is positively associated with an organization’s outsourcing flexibility in terms of robustness.

Hypothesis H2b: Higher process maturity is positively associated with an organization’s outsourcing flexibility in terms of modifiability.

Hypothesis H2c: Higher process maturity is positively associated with an organization’s outsourcing flexibility in terms of ease of exit.

**Vendor Interoperability.** Interoperability represents the ability of IT infrastructure to match and adjust to multiple operating needs (Chung et al., 2003), and is usually achieved through high modularity, connectivity and compatibility (Byrd and Turner, 2000; Gosain et al., 2004). High interoperability is often enabled by advanced integration technologies or adoption of industry standards that minimize component interdependence, maximizes functional reusability, and enhances changeability (Humphrey, 1989; Levina and Ross, 2003). Vendor interoperability enhances a firm’s robustness and modifiability in several ways. The vendor is often better positioned to make operational changes, due to the ready scalability, wide compatibility, and standard connectivity among applications. The reusable and modular architecture also makes it easier and faster for change requests on existing applications to be handled. An interoperable infrastructure, based on common technical standards, also reduces specificity and broadens the pool of available vendors (Gosain et al., 2004; Sanchez, 1995). Firms can more easily re-establish interface linkages across various delivery platforms (Alexander, 1995), making it easier for firms to exit the outsourcing relationship and change vendors.

Hypothesis H3a: High vendor interoperability is positively associated with an organization’s outsourcing flexibility in terms of robustness.

Hypothesis H3b: High vendor interoperability is positively associated with an organization’s outsourcing flexibility in terms of modifiability.

Hypothesis H3c: High vendor interoperability is positively associated with an organization’s outsourcing flexibility in terms of ease of exit.

However, these pre-emptive maneuvers are not likely to contribute to flexibility in terms of new capabilities. Loose coupling only facilitates adaptation within the context of the current system. New capabilities, on the other hand, arise from radical or “competence-destroying” discontinuous changes, and as such, require significant departures from the existing paradigm (Govindarajan and Trimbel, 2005). As such, actions and knowledge accumulated through current processes are likely to be irrelevant.
Protective (Dependency Diversification) Maneuvers and Outsourcing Flexibility

Protective maneuvers such as multiple sourcing and retention of in-house competence seek to reduce potentially damaging consequences caused by unforeseen events. These maneuvers aim to diversify or reduce dependency on other organizations, by maintaining alternative sources for services (Alexander, 1995; Thompson, 1967).

Multiple Sourcing. Resource-dependence theory suggests that firms that acquire scarce and critical resources from the environment are, inevitably, dependent on these external vendors, since the vendors own and control these resources (Pfeffer and Salancik, 1978; Thompson, 1967). Outsourcing firms are thus dependent on their vendor for the provision of these IT resources (Kern and Willcocks, 2000). Outsourcing to a single vendor often makes the firm heavily reliant and dependent on the vendor, giving the vendor little motivation to accommodate unanticipated changes, and limiting the firm’s choices in adverse situations (Currie and Willcocks, 1998; Saunders et al., 1997). Contracting with multiple vendors reduces dependency, and therefore, makes it easier for firms to exit the outsourcing relationship (Emerson, 1962; Currie and Willcocks, 1998; Lacity and Willcocks, 2001).

However, the use of multiple vendors brings with it significant coordination costs, arising from the difficulty in managing the work and relationships among the network of vendors (Lacity et al., 1995; Cross 1995) and the diffusion of accountability and responsibility (Loh and Venkatraman, 1992; Huang et al., 2004). As such, multiple sourcing are typically tapped not for routine operational issues (e.g. transaction fluctuation), but only to provide fallback if there is a need to exit an outsourcing arrangement. Further, resources spread across multiple vendors are generally passive and not available to one another, so multiple sourcing is not likely to facilitate the vendors’ ability to respond to changes in the contract.

Hypothesis H4: Multiple sourcing is positively associated with an organization’s outsourcing flexibility in terms of ease of exit.

In-house Competence. Outsourcing firms can also reduce dependency on their vendor by retaining a “buffer” of internal technical skills (Gainey and Klass, 2003). For example, firms can segment their processes into two logical sections, with one team of in-house staff retained to perform one section, while outsourcing the other. This enables the firms to keep abreast of process knowledge and stay on top of changing technology, as well as preserve internal competence to prepare for unpredicted variations and even backourcing in case of vendor non-performance (Lacity and Willcocks, 2001). However, similar to multiple sourcing, retaining a team of in-house staff is costly; as such, organizations typically do not deploy purely idle or slack resources (e.g. maintaining a dedicated hot site to back up a data center) just for routine operational issues. It is only activated when there is a need to switch vendors.

Hypothesis H5: Retaining in-house competence is positively associated with an organization’s outsourcing flexibility in terms of ease of exit.

Exploitive (Proactive Sensing) Maneuvers and Outsourcing Flexibility

Exploitive maneuvers are ex-post strategies designed to develop an organization’s ability to sense market uncertainty in a rapidly changing environment. Exploitive maneuvers emphasize proactive sensing through feedback, quick learning and constant environmental scanning, consistent with notions such as “alertness to opportunity” and “proactive learning” (Sambamurthy et al., 2003; Miller, 1983).

Outsourcing firms need to maintain vigilance by constantly scanning the environment, assimilating and leveraging the business intelligence, to innovate and keep abreast with dynamics in vendors’ markets (e.g. for new and alternative vendors, new possibilities in offshoring, or opportunities for collaborative development). This will enable the firm to anticipate the need to create new capabilities, and to quickly improvise and reconfigure their operations to do so. Such proactive sensing also keeps management vigilant about the performance of their vendors. The heightened awareness of alternative opportunities and management’s openness to assimilate new market practices will enhance the ease of exit in an outsourcing relationship. However, since proactive sensing maneuvers are strategic and external in orientations, focusing on information feedback outside routine operation, they are not expected to affect robustness or modifiability.

Hypothesis H6a: Proactive sensing is positively associated with an organization’s outsourcing flexibility in terms of new capability.
Hypothesis H6b: Proactive sensing is positively associated with an organization’s outsourcing flexibility in terms of ease of exit.

Corrective (Reactive Adaptation) Maneuvers and Outsourcing Flexibility
Corrective maneuvers are ex-post strategies employed by firms to quickly react to and recover from external shocks. Central to such quick adaptation is the firm’s ability to build close relationships with its vendors (Poppo and Zenger, 2002). Similar to other inter-organizational exchanges, a strong relationship facilitates the firm’s adjustment to changing environmental demands or unintended problems (Gargiulo and Benassi, 2000; Ybarra and Wiersema, 1999). Through developing shared goals and mutual trust, the vendor will be more likely to view the relationship as a social exchange involving “give-and-take” (Blau, 1964), and consequently, be more willing to accommodate requests to cope with transactional fluctuations, to modify existing operations, and to collaboratively create new capabilities spurred by radical changes. However, the embedded mutual obligations of a cohesive partnership can also become a liability, hindering an organization’s ability to pursue new opportunities outside the relationship (Portes and Sensenbrenner, 1993). The expectation of continuity may minimize the parties’ motivation or preparation to exit an outsourcing relationship (Gupta and Goyal, 1989; Kern and Blois, 2002). Thus, we argue that strong partnership, as a corrective maneuver, enhances outsourcing flexibility in terms of robustness, modifiability, and new capability, but inhibits ease of exit.

Hypothesis H7a: Strong partnership is positively associated with an organization’s outsourcing flexibility in terms of robustness.

Hypothesis H7b: Strong partnership is positively associated with an organization’s outsourcing flexibility in terms of modifiability.

Hypothesis H7c: Strong partnership is positively associated with an organization’s outsourcing flexibility in terms of new capability.

Hypothesis H7d: Strong partnership is negatively associated with an organization’s outsourcing flexibility in terms of ease of exit.

Table 2 summarizes the series of our research propositions about the relationships between the strategic maneuvers and the different dimensions of outsourcing flexibility.

Outsourcing Flexibility and Outsourcing Success
The above propositions highlight the different ways to achieve flexibility in outsourcing. However, the impact of outsourcing flexibility on outsourcing success remains ambiguous. Few formal outsourcing studies have empirically investigated their relationship (Clark et al., 1995; Lacity and Willcocks, 2001). Indeed, the notion of flexibility is often indiscriminately seen as a “good thing” in the outsourcing literature (Avison et al., 1995; McFarlan and Nolan, 1995). Other studies simply include flexibility as one of a few dimensions (e.g. as responsiveness) to measure outsourcing success, typically defined as an organization’s satisfaction with benefits gained from outsourcing (e.g. Lee and Kim, 1999; Grover et al., 1996).
### Table 2. Strategic Maneuvers and Dimensions of Outsourcing Flexibility

<table>
<thead>
<tr>
<th>Robustness</th>
<th>Modifiability</th>
<th>New capability</th>
<th>Ease of exit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimize customization</strong></td>
<td>(+)</td>
<td>(+)</td>
<td>N/A</td>
</tr>
<tr>
<td>- Standard process allows organization to leverage vendor’s economy of scale/scope</td>
<td>- Standard process reduces the need for knowledge exchange in modification</td>
<td>- Standard process is irrelevant to new innovation or out-of-the-box thinking in “competence-destroying” discontinuity</td>
<td>- Standard process reduces switching costs and speeds up transition process</td>
</tr>
<tr>
<td>- Standard process reduces opportunistic vendor behavior to hold organization ransom for process specificity</td>
<td>- Standard process reduces opportunistic vendor behavior to hold organization ransom for process specificity</td>
<td></td>
<td>- Standard process reduces opportunistic vendor behavior to hold organization ransom for process specificity</td>
</tr>
<tr>
<td><strong>Enhance process maturity</strong></td>
<td>(+)</td>
<td>(+)</td>
<td>N/A</td>
</tr>
<tr>
<td>- Parameterized process enables easy scalability</td>
<td>- Well-documented and codified routines simplify knowledge exchange between parties</td>
<td>- Accumulated routines impose knowledge inertia on process change</td>
<td>- Well defined process interface enables loose coupling with vendor operation</td>
</tr>
<tr>
<td>- Well-defined process facilitates routine adjustment and knowledge transfer</td>
<td>- Process rationalization, standardization and consolidation facilitate modification of service delivery</td>
<td>- Knowledge about matured process is irrelevant to new innovation or out-of-the-box thinking in “competence-destroying” discontinuity</td>
<td>- Ease of knowledge transfer enables nimble “unplug and replug” in case of unfavorable development</td>
</tr>
<tr>
<td><strong>Leverage vendor interoperability</strong></td>
<td>(+)</td>
<td>(+)</td>
<td>N/A</td>
</tr>
<tr>
<td>- Common platform and interface reduce interdependence and coordination costs</td>
<td>- Common platform and interface simplify knowledge exchange between parties</td>
<td>- Vendor interoperability is irrelevant to new innovation or out-of-the-box thinking in “competence-destroying” discontinuity</td>
<td>- Common platform and interface reduces specificity in outsourcing partners and broaden the pool of available vendors.</td>
</tr>
<tr>
<td>Practice multiple sourcing</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>• Resources across multiple vendors are passive and not available to one another for operational fluctuations, due to high coordination costs</td>
<td>• Resources across multiple vendors are passive and not available to one another for service modifications, due to high coordination costs</td>
<td>• Resources across multiple vendors are passive and not available to one another for “competence-destroying” innovation or creation of new capabilities, due to high coordination costs</td>
<td>• Multiple sourcing mitigates resource dependency on single vendor and reduces lock-in hazard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Retain in-house competence</th>
<th>N/A</th>
<th>N/A</th>
<th>N/A</th>
<th>(+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Given the high cost of dedicated redundancy, in-house competence is a passive resource for operational fluctuations. It is triggered only in extreme situation of exiting outsourcing</td>
<td>• Given the high cost of dedicated redundancy, in-house competence is a passive resource for service modifications. It is triggered only in extreme situation of exiting outsourcing</td>
<td>• Given the high cost of dedicated redundancy, in-house competence is a passive resource for “competence-destroying” innovation or creation of new capabilities. It is triggered only in extreme situation of exiting outsourcing</td>
<td>• In-house competence builds up buffer mechanism to reduce dependency, hence easing exit in case of non-performance by vendors</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Promote proactive sensing</th>
<th>N/A</th>
<th>N/A</th>
<th>(+)</th>
<th>(+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The strategic and external orientations focus on information feedback outside routine operation; hence, are not expected to contribute to operational fluctuations</td>
<td>• The strategic and external orientations focus on information feedback outside routine operation; hence, are not expected to contribute to service modifications</td>
<td>• Proactive sensing develops organization alertness to new opportunities and innovative technologies</td>
<td>• Proactive sensing keeps management vigilant on performance of outsourcing vendor</td>
<td></td>
</tr>
<tr>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
<td></td>
</tr>
<tr>
<td>• Strategic, external, and open mindset is conducive to experimentation with new ideas</td>
<td>• Strategic, external, and open mindset is conducive to experimentation with new ideas</td>
<td>• Strategic, external, and open mindset is conducive to experimentation with new ideas</td>
<td>• Strategic, external, and open mindset is conducive to experimentation with new ideas</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Foster partnership quality</th>
<th>(+)</th>
<th>(+)</th>
<th>(+)</th>
<th>(-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Willingness to accommodate operational fluctuations or transactional variations based on shared goals and mutual trust</td>
<td>• Willingness to accommodate requests for modifications based on shared goals and mutual trust</td>
<td>• Willingness to accommodate requests for new capability based on shared goals and mutual trust</td>
<td>• Relational investment leads to expectation of business continuity, reducing incentives to exit</td>
<td></td>
</tr>
<tr>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
<td>(-)</td>
<td></td>
</tr>
<tr>
<td>• Social embeddness increases switching cost and inhibits the parties from exiting</td>
<td>• Social embeddness increases switching cost and inhibits the parties from exiting</td>
<td>• Social embeddness increases switching cost and inhibits the parties from exiting</td>
<td>• Social embeddness increases switching cost and inhibits the parties from exiting</td>
<td></td>
</tr>
</tbody>
</table>
These flexibility maneuvers are not free. They always involve additional costs, unnecessary complexity, excessive coordination, or “wasted” idle resources. But in today’s dynamic environment, outsourcing flexibility is crucial for outsourcing success, as it avails alternative options or buffers against unexpected changes.

Hypothesis H8a: In today’s dynamic business environment, robustness in an outsourcing relationship is positively associated with outsourcing success.

Hypothesis H8b: In today’s dynamic business environment, modifiability in an outsourcing relationship is positively associated with outsourcing success.

Hypothesis H8c: In today’s dynamic business environment, new capability in an outsourcing relationship is positively associated with outsourcing success.

Hypothesis H8d: In today’s dynamic business environment, ease of exit in an outsourcing relationship is positively associated with outsourcing success.

The research model proposed by Tan and Sia (2006) is reproduced in Figure 2.
Research Design

Data Collection Procedures

We empirically tested these hypotheses through a large-scale survey of outsourcing organizations in Singapore. Our target population consists of organizations that are currently outsourcing their IT operations or business processes (specifically, finance and accounting, and HR). We started by telephoning all organizations listed in the database of Singapore Top 1000 organizations, the Association of Banks in Singapore, and Government Directories of Singapore. From this, we identified a total of 310 organizations that are engaged in outsourcing, and questionnaire surveys were mailed to each of these organizations. Three survey forms were sent to each organization, in order to target the different potential respondents: the CIO/outsourcing manager (for IT outsourcing), the CFO/financial controller (for finance and accounting outsourcing), and the HR director/manager (for HR outsourcing).

A total of 198 questionnaires were returned, out of which 171 were deemed complete and valid, corresponding to an effective response rate of 18.4%. Chi-square analysis showed no significant differences between early and late responses in terms of job designation (χ² = 25.27, p = ns), organization type (χ² = 36.92, p = ns), and type of outsourced processes, suggesting that response bias is not a severe problem. The majority of the outsourced processes were IT functions (68%); HR outsourcing accounts for 20% while Finance & Accounting constitutes the remaining 12%. On average, the outsourcing contracts in the sample lasted for 3.19 years (s.d. = 2.26). The contract value represents a wide spectrum of contract size (mean = 2.32, s.d. = 1.42), with 42% of the contracts costing less than 0.5 million Singapore dollars, and 3% ranging up to more than one billion.

Measures

The questionnaire survey was developed to measure respondents’ perception of the outsourcing success, the outsourcing flexibility dimensions, as well as the strategic maneuvers. Whenever possible, items from existing measures were used. The survey were refined after pilot tests with three IS faculty members and five outsourcing managers in local organizations.

Dimensions of Outsourcing Flexibility. In developing the scales for the four flexibility dimensions, we drew heavily on existing flexibility concepts in other disciplines, and adapted these to the outsourcing context. Robustness was measured with five items (α = .91), developed based on the transaction variation concepts in manufacturing flexibility (Braglia and Petroni 2000) and software system flexibility (Nelson and Cooprider 2001). Drawing on the aspects of alliance flexibility in inter-firm relationships (Narasimhan and Das 1999) and strategic flexibility in alliances (Nidumolu and Knotts 1998) that assess the efforts in accommodating changes in service composition and the capability to deliver innovative service, we developed three items to measure modifiability (α = .85) and new capability (α = .90) respectively. We measure ease of exit using three items (α = .85) adapted from Johnson (1999)’s work on vendor dependency.

Flexibility Maneuvers. We measured extent of customization with four items (α = .88), adapted from Ang and Cummings (1997)’s notion on asset specificity, i.e., the extent to which the customization are unique. We measured vendor interoperability with four items (α = .89), adapted from measures of IT infrastructure flexibility from Chung, Rainer and Lewis (2003) and Byrd and Turner (2000). Lacking standard scales, we developed three items to measure process maturity (α = .86) and in-house competence (α = .92) respectively. Multiple sourcing (α = .87) measures were adapted from Huang et al (2004) work on dual sourcing. Proactive sensing was assessed with four items (α = .90) adapted from Covin and Slevin (1988)’s measure of entrepreneurial innovation. We measured partnership quality using four items ((α = .91) from Lee (2001) that assess mutual business understanding in inter-organizational relationship.

Outsourcing Success. We measured outsourcing success in terms of satisfaction and perceived benefits achieved, using eight items (α = .84) from Lee and Kim (1999).

Controls. Research has emphasized the importance of contractual provisions in achieving outsourcing success and flexibility. We define contractual provision as the extent to which a contract contains clauses that allows adjustments based on changing circumstances of the parties. We coded for five commonly-used mechanisms (Fitzgerald and Willcocks 1994; Kern and Willcocks 2000; Harris et al. 1998) for flexibility (1=flexible, 0=inflexible) - contract duration (1=less than 3 years, 0=three years or more), pricing structure (1=variable pricing, 0=fixed pricing), dispute resolution mechanism (1=third party arbitration or joint steering committee, 0=litigation), renegotiation provision (1=negotiable, 0=non-negotiable), and provision for continuous improvement (1=periodic review, 1=no review). We averaged these to create a single index reflecting the average number of such flexibility provisions in the contract. We also controlled for the contract value, since this can affect the relative bargaining power between the outsourcing client and vendor (Zaheer & Venkatraman, 1995). We measured contract value as a categorical variable ranging from 1 (less than S$ 500k) to 8 (more than
S$ 1 billion). We also controlled for contract type (0=IT outsourcing, 1=business process outsourcing), since BPO is typically viewed as more complex and risky.

**Analyses**

We assessed discriminant validity of our measures (outsourcing success, the four flexibility dimensions, and the seven strategic maneuvers) with principal component analysis, using varimax rotation and eigenvalues > 1.0. Results showed a 12-factor solution which accounted for 79% of the variance, with all items loading on their expected factors (loadings ranged from .71 to .92 and cross loadings were less than .40).

To assess the impact of the strategic maneuvers on outsourcing flexibility (Hypotheses 1-7), we conducted separate hierarchical regressions on the four flexibility dimensions (robustness, modifiability, new capability, and ease of exit). In each case, we entered control variables (contractual provision, contract value and outsourcing type) in step one, and the seven strategic maneuvers (minimal customization, process maturity, vendor interoperability, multiple sourcing, in-house competence, proactive sensing, and partnership quality) in step two. We interpreted results by examining the change in $F$ ($\Delta F$) at step two and by assessing individual parameters based on t-values.

To assess the impact of the four flexibility dimensions on outsourcing success (Hypothesis 8), we conducted a linear regression with the four flexibility dimensions (robustness, modifiability, new capability, and ease of exit) as predictors and outsourcing success as the dependent variable. We interpreted results by examining the $F$-value and by assessing individual parameters based on t-values.

**Results**

Table 3 reports descriptive statistics, correlations, and Cronbach’s alpha. Outsourcing success across the respondent organizations averages at the mean of 4.50 (SD= 1.14). The various dimensions of outsourcing flexibility also ranges, with the respective mean of 4.54 (SD= 1.03) for robustness, 4.12 (SD= 1.02) for modifiability, 3.31 (SD= 1.09) for new capability, and 4.39 (SD= 1.35) for ease of exit. The deployment of the various flexibility maneuvers is also different. Except for multiple sourcing (mean= 3.20, SD= 1.63), the means of other maneuvers all ranges 4.15 and above (with SDs spanning 0.97 to 1.48). Table 4 summarizes the hierarchical regression results for the four flexibility dimensions.
### TABLE 3: Means, Standard Deviations, Scale Reliabilities, and Inter-Correlations

<table>
<thead>
<tr>
<th>Scales</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Outsourcing Success</td>
<td>4.50</td>
<td>1.14</td>
<td></td>
<td></td>
<td>(.84)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Robustness</td>
<td>4.54</td>
<td>1.03</td>
<td>.52**</td>
<td></td>
<td>(.91)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Modifiability</td>
<td>4.12</td>
<td>1.02</td>
<td>.52**</td>
<td>.56**</td>
<td>(.85)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4 New Capability</td>
<td>3.31</td>
<td>1.09</td>
<td>.49**</td>
<td>.49**</td>
<td>.54**</td>
<td>(.90)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5 Exit of Exit</td>
<td>4.39</td>
<td>1.35</td>
<td>-.05</td>
<td></td>
<td>.00</td>
<td>.08</td>
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<td>(.85)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Minimal Customization</td>
<td>4.51</td>
<td>1.31</td>
<td>.11</td>
<td>.26**</td>
<td>.26**</td>
<td>.02</td>
<td>.22**</td>
<td>(.88)</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7 Process Maturity</td>
<td>4.95</td>
<td>0.97</td>
<td>.37**</td>
<td>.34**</td>
<td>.22**</td>
<td>.19*</td>
<td>-.05</td>
<td>.02</td>
<td>(.86)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Vendor Interoperability</td>
<td>4.19</td>
<td>1.34</td>
<td>.13</td>
<td>.25**</td>
<td>.20*</td>
<td>.10</td>
<td>.03</td>
<td>.20**</td>
<td>.16*</td>
<td>(.89)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Multiple Sourcing</td>
<td>3.20</td>
<td>1.63</td>
<td>.09</td>
<td>.16*</td>
<td>.09</td>
<td>.09</td>
<td>.12</td>
<td>.01</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10 In-house Competence</td>
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<td>1.48</td>
<td>-.01</td>
<td>.06</td>
<td>.07</td>
<td>.03</td>
<td>.39**</td>
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<td>.07</td>
<td>.09</td>
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<td>(.92)</td>
<td></td>
<td></td>
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<tr>
<td>11 Proactive Sensing</td>
<td>4.15</td>
<td>1.17</td>
<td>.15</td>
<td>.15*</td>
<td>.13</td>
<td>.27**</td>
<td>.38**</td>
<td>.14</td>
<td>.06</td>
<td>.16*</td>
<td>.17*</td>
<td>.25**</td>
<td>(.90)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Partnership Quality</td>
<td>4.57</td>
<td>1.24</td>
<td>.32**</td>
<td>.32**</td>
<td>.32**</td>
<td>.26**</td>
<td>-.01</td>
<td>.18*</td>
<td>.15*</td>
<td>.20*</td>
<td>-.01</td>
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<td>.10</td>
<td>(.91)</td>
<td></td>
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<tr>
<td>13 Contractual Provision</td>
<td>0.69</td>
<td>0.22</td>
<td>.23**</td>
<td>.24**</td>
<td>.33**</td>
<td>.34**</td>
<td>.05</td>
<td>-.06</td>
<td>.06</td>
<td>.06</td>
<td>.17*</td>
<td>.12</td>
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<td>.19*</td>
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<td></td>
</tr>
<tr>
<td>14 Contract Value</td>
<td>2.14</td>
<td>1.44</td>
<td>.21**</td>
<td>.23**</td>
<td>.24**</td>
<td>.31**</td>
<td>-.03</td>
<td>.06</td>
<td>.18*</td>
<td>.05</td>
<td>.20*</td>
<td>.05</td>
<td>.15</td>
<td>.05</td>
<td>.23**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>15 Outsourcing Type</td>
<td>0.32</td>
<td>0.47</td>
<td>-.24**</td>
<td>-.28**</td>
<td>-.23**</td>
<td>-.15</td>
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<td>.00</td>
<td>-.11</td>
<td>-.22**</td>
<td>-.11</td>
<td>-</td>
</tr>
</tbody>
</table>

a: N = 171. Reliability coefficients are in parenthesis along the diagonal.

b: Contractual Provision measured on 0-1 basis (1 = flexible contract, 0 = inflexible contract). The rest items measured on a 7-point Likert scale.

c: Contract value classified into eight categories (1 = < 500K, 2 = < 1 million, 3 = < 10 million, 4 = < 50 million, 5 = < 100 million, 6 = < 500 million, 7 = < 1 billion, 8 = > 1 billion)

d: Outsourcing type measured on 0-1 basis (0 = IT Outsourcing, 1 = Business Process Outsourcing)

* p<.05  ** p<.01  *** p<.001
TABLE 4: Regression of the Strategic Maneuvers on the Flexibility Dimensions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Robustness</th>
<th>Modifiability</th>
<th>New Capability</th>
<th>Ease of Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>Contractual Provision $^b$</td>
<td>.13</td>
<td>.10</td>
<td>.25**</td>
<td>.24**</td>
</tr>
<tr>
<td>Contract Value $^e$</td>
<td>.28***</td>
<td>.19**</td>
<td>.17*</td>
<td>.11</td>
</tr>
<tr>
<td>Outsourcing Type $^d$</td>
<td>-.22**</td>
<td>-.21**</td>
<td>-.15*</td>
<td>-.13</td>
</tr>
<tr>
<td>Minimal Customization</td>
<td>.19**</td>
<td></td>
<td>.21**</td>
<td></td>
</tr>
<tr>
<td>Process Maturity</td>
<td>.26***</td>
<td></td>
<td>.15*</td>
<td></td>
</tr>
<tr>
<td>Vendor Interoperability</td>
<td>.09</td>
<td></td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Multiple Sourcing</td>
<td>.11</td>
<td></td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>In-house Competence</td>
<td>-.08</td>
<td></td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td>Proactive Sensing</td>
<td>.04</td>
<td></td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Partnership Quality</td>
<td>.18*</td>
<td></td>
<td>.18*</td>
<td></td>
</tr>
</tbody>
</table>

$^a$ Model statistics are standardized betas

$^b$ Contractual Provision measured on a 0-1 scale (0 = inflexible, 1 = flexible)

$^c$ Contract value classified into eight categories (1 = < 500K, 8 = > 1 billion)

$^d$ Outsourcing Type measured on a 0-1 scale (0 = IT outsourcing, 1 = Business Process Outsourcing)

$t$ $p < .10$  $^*$ $p < .05$  $^{**} p < .01$  $^{***} p < .001$ (Two-tailed)
In all four models, we first entered control variables (contractual provision, contract value and outsourcing type) in step one. Contractual provision was significantly associated with modifiability (β = .24, p<.01) and new capability (β = .22, p<.01). Contract value was significantly associated with robustness (β = .19, p<.01) and new capability (β = .20, p<.01). Outsourcing type was negatively associated with robustness (β = -.21, p<.01). More importantly, adding the strategic maneuvers in step two significantly increased explained variance in all four flexibility dimensions: robustness 19% (adjusted R² = .34, ΔF = 6.57, p<.001), modifiability 13% (adjusted R² = .24, ΔF = 3.89, p<.01), new capability 9% (adjusted R² = .22, ΔF = 2.56, p<.05), and ease of exit 27% (adjusted R² = .23, ΔF = 7.58, p<.001).

Hypotheses 1 to 3 state that the three pre-emptive maneuvers (minimal customization, process maturity, and vendor interoperability) are positively associated with robustness, modifiability, and ease of exit. Results showed support for Hypothesis 1, with lower customization significantly predicting robustness (β = .19, p<.01), modifiability (β = .21, p<.01), and ease of exit (β = .17, p<.05). Hypothesis 2 was partially supported, with process maturity significantly predicting robustness (β = .26, p<.001), modifiability (β = .15, p<.05), but the relationship with ease of exit was not significant (β = -.07, p=ns). However, the results did not support Hypothesis 3. Vendor interoperability was not significantly related to robustness (β = .09, p=ns), modifiability (β = .07, p=ns), and ease of exit (β = -.06, p=ns). As expected, the relationships between these pre-emptive maneuvers and new capability were not significant (minimal customization: β = -.04, p=ns; process maturity: β = .11, p=ns; vendor interoperability: β = .00, p=ns).

Hypothesis 4 and 5 state that the two protective maneuvers (multiple sourcing and in-house competence) are positively associated with outsourcing flexibility in terms of ease of exit. Contrary to Hypothesis 4, multiple sourcing was not significantly related to ease of exit (β = .00, p=ns). The results showed a significant positive relation between in-house competence and ease of exit (β = .29, p<.001), providing support for Hypothesis 5.

Hypothesis 6 states that the exploitive maneuver of proactive sensing is positively associated with outsourcing flexibility in terms of new capability and ease of exit. As hypothesized, proactive sensing significantly predicted new capability (β = .21, p<.01) and ease of exit (β = .31, p<.001).

Hypothesis 7 states that the corrective maneuver of fostering partnership quality is positively associated with robustness, modifiability, and new capability, and negatively associated with ease of exit. The results showed support for the predicted relationships for robustness (β = .18, p<.05), modifiability (β = .18, p<.05), and new capability (β = .17, p<.05). However, the negative relationship with ease of exit (β = -.05, ns) did not reach significance.

Table 5 summarizes the regression results for outsourcing success. Hypothesis 8 states that all the four flexibility dimensions are positively associated with outsourcing success. The results showed that only robustness (β = .27, p<.01), modifiability (β = .24, p<.01) and new capability (β = .24, p<.01) significantly predicted outsourcing success. Contrary to our hypothesis, ease of exit was not significantly related to outsourcing (β = -.09, p=ns). Overall, the four flexibility dimensions explained 39% (adjusted R² = .37, F = 25.24, p<.001) of the variance in outsourcing success.
TABLE 5: Regression of the Flexibility Dimensions on Outsourcing Success

<table>
<thead>
<tr>
<th>Flexibility Dimensions</th>
<th>Outsourcing Success $^b$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robustness</td>
<td>.27**</td>
</tr>
<tr>
<td>Modifiability</td>
<td>.24**</td>
</tr>
<tr>
<td>New Capability</td>
<td>.24**</td>
</tr>
<tr>
<td>Ease of Exit</td>
<td>-.09</td>
</tr>
</tbody>
</table>

$^a$ Model statistics are standardized betas

$^b$ Outsourcing success measured on a 7-point scale (1=strongly disagree, 7=strongly agree)

$t$ $p < .10$   $* p<.05$   $** p<.01$   $*** p<.001$   (two-tailed test)

Discussion and Implications

In the following paragraphs, we discuss the empirical findings vis-à-vis the proposed research framework. Concurrences between the findings and the hypotheses suggest a validation of the framework in the outsourcing context. Mismatches, on the other hand, suggest the need to review the theoretical arguments behind the research framework. We first discuss the control variables, and then explore the findings from the perspectives of the respective flexibility maneuvers and each dimension of outsourcing flexibility, before discussing the relationship between flexibility and outsourcing success.

Control Variables

The control variables in outsourcing, i.e., contract value, contractual provision, and types of outsourcing, show significant associations with the different dimensions of flexibility. Although the expectation is that higher contract value can boost an organization’s bargaining ability to negotiate flexibility, the empirical findings only show greater flexibility in robustness and new capability. The findings suggest that big contracts do not necessarily imply easier negotiation for modifiability. Vendors may be more willing to be scalable on the generic platform or even to introduce new capabilities that they can leverage across other clients, but they are reluctant to modify their standard service delivery offerings to meet the firm-specific change requests. As we shall see later, modifiability often has to be explicitly provided in the outsourcing contracts. The value of outsourcing contract also does not seem to bear significant relationship with ease of exit. While high-value contracts may indicate greater complexity in exiting, they also imply stronger bargaining power in seeking alternative vendors.

As shown by the negative coefficients, business process outsourcing (finance/accounting/HR) also seems more demanding. The relative difference is particularly significant for robustness. BPO is generally more complex as it
involves a simultaneous outsourcing of technology, workflow, domain and organizational expertise, thus making it harder to provide for scalability for transaction variations, relative to IT outsourcing.

The empirical findings also suggest that flexible contractual provisions (shorter duration, variable pricing, dispute resolution mechanism, renegotiation provision, continuous improvement clause) are effective in enabling modifiability and new capability. While issues on robustness might be more easily anticipated and could have already been specified in the contract proper or implicitly agreed upon, the same cannot be assumed for modifiability and new capability. Such flexibility has to be carefully built into the contract through flexible contractual provisions.

**Flexibility Maneuvers**

The results for preemptive strategies (minimize customization, enhance process maturity, and leverage on vendor interoperability, i.e., H1 to H3) seem to suggest that minimizing customization to avoid firm-specific investment is an effective means in instituting robustness, modifiability, and ease of exit. Adhering to generic service offerings allows for effective management of interdependencies, enabling greater capability to support change.

Similarly, ensuring that outsourced processes are sufficiently mature helps in ensuring robustness and modifiability in outsourcing. Such processes are understood well-enough to be scalable and modified. The lack of significant relationship with ease of exit indicates that process maturity (with the business rules surfaced, rationalized, and routinized), only offers flexibility within an existing outsourcing relationship. Although the transfer of process knowledge may be easier, significant time and efforts (e.g. in contractual negotiation) may still be required to structure a new outsourcing relationship with alternative vendors. Thus, the contribution to ease of exit may be limited.

Contrary to our hypothesis, vendor interoperability as a preemptive maneuver does not seem effective. It appears that even though vendor interoperability promises to offer easy “plug and unplug,” the open platform is largely just technical inter-operability, which is not sufficient to offer robustness and modifiability. There are probably still many contractual or organizational issues (e.g. people resources) that need to be resolved in meeting the transaction variations and requests for change. The benefits of interoperable platform appear to accrue to the vendors, in facilitating their internal upgrades and future maintenance. But such benefits may not translate down to the client organizations.

Protective maneuver through multiple sourcing also seems ineffective, with no apparent contribution to robustness, modifiability, new capability, and ease of exit. Against our expectation, the hypothesis H4’s proposition that multiple sourcing improves ease of exit is not supported. One possible explanation is that the benefits of risk mitigation with multiple sourcing could be squeezed out through undesirable behaviors by vendors who take advantage of an exit situation by another. Moreover, the division or segmentation of tasks among multiple vendors also makes the realization of “plug/unplug” for ease of exit difficult to achieve. It is also possible that multiple sourcing as a strategy may be adopted by organizations for reasons other than enhancing ease of exit. As seen in prior studies, organizations structure multiple sourcing strategically for competitive cost reduction (Lacity and Willcocks, 1998), acquisition of “best of breed” expertise, or some resource shortfall (Currie and Willcocks, 1998).

In contrast, the empirical findings support H5’s proposition that in-house competence facilitates ease of exit. Its lack of significant relationship with robustness and modifiability affirms that the retention of in-house competence is not deployed as dedicated resources to support outsourcing on an operational basis. The in-house competence is a passive resource but it is effective as an exit strategy for outsourcing flexibility.

Consistent with our predictions in H6a and H6b, proactive sensing as an exploitive maneuver contributes to flexibility in terms of new capability generation and ease of exit. Through constant management vigilance to scan the environment to assimilate business intelligence for innovation, and to keep abreast with dynamics in vendor’s market, organizations are able to capitalize on early indications of new ideas, capabilities, and trends to guard and strengthen their positions continuously in an outsourcing relationship. The strategic and external orientations of proactive sensing maneuver, however, do not affect robustness and modifiability at the operational level, as expected.

Corrective flexibility maneuver by foster strong partnership also seems effective. As hypothesized in H7a to H7c, strong partnership quality contributes to robustness, modifiability, and new capability. However, against our proposition of the negative association in H7d, the social embeddedness of the strong partnership does not seem to
diminish the ease of exiting an outsourcing relationship. It appears that the orientations of organizations towards outsourcing vendors are still relatively “transactional” – while there is good intention to build strong relationship, the mutual commitment is dependent on the basis of fair market deals. Organizations do not seem to feel obligated to continue the relationships with existing vendors.

**Dimensions of Outsourcing Flexibility**

Recasting the analysis from the perspective of each dimension of flexibility, we also attempt to surface the relative effectiveness of the various flexibility maneuvers vis-à-vis the control variables (contractual provision, contract value, type of outsourcing) as a means to achieve outsourcing flexibility.

The empirical findings suggest that robustness in outsourcing is largely achieved by outsourcing highly matured processes with minimal customization. Strong partnership also helps. The other mechanisms (vendor interoperability, multiple sourcing, in-house competence, proactive sensing) have no apparent impact on robustness in outsourcing. In particular, the promise of vendor interoperability in enabling robustness in outsourcing service delivery seems to be more of an illusion than a reality.

The empirical findings show a different picture for modifiability. As noted earlier, even high-value outsourcing contracts do not imply easier bargaining with modifiability. Modifiability is only enhanced if there is minimal customization and flexible provisions are established contractually. To a less extent, high process maturity and strong partnership quality also help. The other mechanisms (vendor interoperability, multiple sourcing, in-house competence, proactive sensing) have no apparent impact on modifiability.

Flexibility in terms of new capability requires a different set of flexibility maneuvers. This is affirmed by the empirical findings. Such new capabilities in outsourcing arise largely from proactive sensing efforts by management and careful upfront provisions in the contracts. Strong partnership quality helps to a lesser extent. The other mechanisms (minimal customization, vendor interoperability, multiple sourcing, in-house competence, proactive sensing) have no apparent impact on new capability in outsourcing.

The empirical findings also paint an interesting picture for ease of exit. Ease of exit seems to be boosted by in-house competence and proactive sensing. Such maneuvers facilitate the efforts to “plug” onto a new relationship, given the retained expertise, and superior sensing of the competitive landscape of outsourcing vendors. Minimal customization also helps to enhance ease of exit. The other mechanisms (process maturity, vendor interoperability, multiple sourcing, partnership quality) have no apparent impact on ease of exit. In particular, multiple sourcing seems to be adopted for reasons other than facilitating ease of exit. It is also interesting to note that strong partnership does not have an adverse effect on ease of exit. It appears that the strong partnership is anchored on transactional market exchange, with little ensuing expectation or obligation from each party to continue sustaining a good relationship.

**Outsourcing Flexibility and Outsourcing Success**

The survey results bear evidence of the importance of flexibility for outsourcing success. The three dimensions flexibility – robustness, modifiability, and new capability, are shown to contribute significantly to outsourcing success. The findings suggest the need to ensure careful consideration all three dimensions in managing outsourcing. However, as we noted earlier in the descriptive statistics (respective means: robustness= 4.54, modifiability= 4.12, and new capability= 3.31), the attentions to the different dimensions are unequal. More conscious efforts are perhaps needed to negotiate and provide for issues on modifiability and new capability in outsourcing.

Although ease of exit does not relate significantly to outsourcing success, we are hesitant to conclude that it is unimportant. It seems that the existing measure of outsourcing success is defined within the scope of an existing outsourcing relationship. Yet, an outsourcing relationship can be very successful but highly restrictive in terms of ease of exit. Ease of exit offers flexibility more as a contingent risk management buffer where its value would only be recognized when an outsourcing arrangement fails. The empirical findings suggest that ease of exit may escape management attention, give the apparent lack of relationship with outsourcing success. There may be a need to develop alternative effectiveness measures for ease of exit in outsourcing (e.g. vendor risk mitigation). A more
balanced perspective where ease of exit is assessed in tandem with the rather limited “short-term” notion of outsourcing success may be useful.

Conclusions

Our empirical study validates the framework proposed by Tan and Sia (2006) that flexibility is critical to ensure outsourcing success in today’s dynamic business environment and presents an analysis of the relative effectiveness of the various flexibility maneuvers in achieving different aspects of flexibility in outsourcing. The findings affirm some of the propositions. Minimizing customization, enhancing process maturity, retaining in-house competence, proactive sensing, and fostering strong partnership are shown to be effective flexibility maneuvers as they uniquely contribute to different dimensions of flexibility. Minimal customization, high process maturity, and strong partnership, for example, enable robustness and modifiability. Yet other flexibility maneuvers are more salient for specific aspects, for example, proactive sensing and in-house competence are particularly salient for new capability and ease of exit respectively.

The empirical findings also highlight some proposed flexibility maneuvers that are ineffective in enabling flexibility. Vendor interoperability - in the availability of an open-standard, modular, and compatible IT infrastructure, for example, appears to offer little to boost outsourcing flexibility. While such a flexible infrastructure may facilitate upgrade and maintainability for vendors, the benefits may not necessarily be translated to organizations. Similarly, the strategy of multiple sourcing does not seem to contribute to outsourcing flexibility – highlighting that such practices could be adopted for other reasons such as competitive bidding or best sourcing of specialized expertise which typically accrue to large value outsourcing contracts. Interestingly, strong partnership quality is also found to have no negative effect in hindering ease of exit, suggesting an increasingly non-obligatory transactional market exchange even within a good relationship. Such findings do not invalidate the proposed framework of Tan and Sia (2006), but it suggests that deeper theorizing may be required (e.g. to clarify outsourcing flexibility for organizations and vendors, to differentiate flexibility maneuvers for small and large value outsourcing contracts, etc.)

The empirical findings also noted the importance of other variables that are currently treated as control variables. Contractual provision is still a key mechanism in building in flexibility. Specifically, flexible contract provision seems to enhance modifiability and the development of new capability, which are the two dimensions of flexibility that apparently receive less management attentions than others. Similarly, outsourcing contracts of higher value appears to be better able to negotiate robustness and new capability. These observations suggest it may be useful to take a more holistic perspective and consider the simultaneous deployment of both contractual practices (e.g. contractual provision, accumulating the value of outsourcing contracts) and the framework of preemptive, protective, exploitative, and corrective maneuvers, as a portfolio of strategies to build flexibility in outsourcing. Organizations can then clarify the dimensions of flexibility that they seek, and consider the relative deployment of each maneuver to build a portfolio that best meet the volatility of their business environments. For example, in high-tech industries, the greater rate of change may place a premium on the use of exploitative maneuvers to proactively leverage on new capability for emerging opportunities, as opposed to a stable industry, where contractual provision or pre-emptive maneuvers are fundamental to lay out the often predictable contingencies in advance for high robustness in outsourcing.

Recognizing the need for a portfolio management approach, future research may want to investigate if there are discernible patterns or archetypes of flexibility profiles under different business contexts and the related combination of contractual practices and flexibility maneuvers employed. More could also be done through qualitative case analysis or quantitative survey to expand the outsourcing respondents (to different industries, to regions outside Singapore) to extend the generalizability of the study. In particular, a dual perspective of outsourcing flexibility from the vendors’ perspective may add new and deeper insights.
References


