WHEN IS IT BENEFICIAL FOR A FIRM TO PURSUE A UNIFIED PROCUREMENT STRATEGY FOR ENTERPRISE SOFTWARE SOLUTIONS?

Robert J. Kauffman and Juliana Y. Tsai
W. P. Carey School of Business, Arizona State University, Tempe, AZ 85251
{rkauffman, juliana.tsai}@asu.edu

Abstract. The underlying structure of the enterprise software marketplace during the past ten years suggests that the arrangements that firms make with respect to the acquisition of such software capabilities will become increasingly concentrated. This article explores the multiple theoretical rationales and business cases for the move to a unified procurement strategy for enterprise software, reflecting some differences in terms of what might be expected from the predictions of the well-known move-to-the-middle hypothesis. Our central argument is that a “move-to-the-middle” with more than just a single vendor is the likely outcome in unconsolidated industry markets. In industries experiencing consolidation, firms and managers recognize shifts in the structure of the marketplace and industry competition, and they are more prone to make decisions that reflect their rational expectations about the outcomes of the competition regarding their procurement of enterprise software acquisitions. We present a unified procurement adoption process based on relevant theory to support this general argument, and provide analyses of several industry case studies that yield more specific findings relative to our knowledge of IT services management and service science.

Keywords: Enterprise software, industry consolidation, IT services, move-to-the-middle theory, vendor management.

1. INTRODUCTION

Enterprise software vendors have quickly expanded through mergers and acquisitions. By increasing their technology stack, software vendors are able to branch into new markets and better serve their customers by offering a wider selection of products. As software vendors continue to gravitate towards consolidation, the selection of vendors for enterprise software solutions is quickly shrinking. This is an important problem in the emerging area of IT services management and services science. There have been discussions regarding the shift of firms from using a larger group of vendors to a much smaller group. The move-to-the-middle hypothesis of Clemons et al. [14] supports the idea that organizations are increasing their software assets but doing so through fewer vendors and building long-term relationships with these vendors. But the vendors’ current movement towards consolidation in the industry has introduced a new procurement strategy where a firm can elect to purchase all compatible products and services from a single vendor. This strategy we call unified procurement. In settings where firms are affected by industry consolidation, they are able to explore unified procurement of enterprise software solutions as an alternative IT strategy.

Despite the availability of unified procurement for enterprise software, adoption in industry has been limited [17]. Theories that can be used to explain the reluctance in adoption include equity theory [2], agency theory [19], and the cognitive dissonance theory [20]. With equity theory, fairness comes into play because there is the notion that suppliers will behave opportunistically in a unified procurement environment. Agency theory, in contrast, illustrates the difficulties associated with managing a vendor, with the magnitude increased when coordination with a large and complex vendor is required. Cognitive dissonance theory, on the other hand, is useful in helping to explain the seeming inability of IT managers to quickly adopt a new strategy, particularly one in which the industry believes will result in vendor lock-in.

Although discussions of unified procurement are abundant in industry publications, it has not been around long enough to have data or take stock of the long-term effects. Our research leverages customer case studies published by the software vendors to shed some light on unified procurement adoption of enterprise software solutions and reaffirm the importance of knowledge in aiding IT managers to derive rationale expectations that will move them towards technology adoption. This provides new knowledge on services science, management, and engineering (SSME), which has been championed during the past several years by Chesbrough and Spohrer [12], Horn [22], Maglio et al. [31] and Spohrer et al. [37]. In addition, Brown et al. [11] and Demirkan and Goul [18] have specifically suggested that there is a need for understanding the management issues associated with mission-critical aspects of service-oriented enterprises. Software vendor management is a key aspect of these issues [26].

From the vendor case studies, the observed primary adopters of unified procurement have been small to medium-sized enterprises. We classify them as early adopters since application of unified procurement for enterprise software solutions is still in its infancy due to recent industry shifts. The industry first observed a trend toward consolidation of enterprise software vendors in the early 2000s [27]. Our research shows that rational expectations about the likely outcome have driven firms toward early adoption despite the barriers identified. Our research questions are: What expected outcome is motivating firms to partner with a vendor to achieve unified procurement? Under what conditions do we observe a firm to select unified procurement? For firms that have adopted the new procurement strategy, what were the realized values achieved?

 §2 explores earlier works to help explain the benefits
and reasons why a firm would elect this procurement strategy. In §3, we define a process to assist firms in understanding conditions under which unified procurement of enterprise software may be optimal. In §4, we discuss our exploratory case analysis method. Thereafter, we present mini-cases from banking, healthcare, and communications in §5. We use these cases to promote an in-depth understanding of the reasons behind the transition and explore the benefits that firms achieved. In §6, we conclude with contributions, limitations, and extensions.

2. THEORY

Au and Kauffman [4] state that IT investment decisions should not be based on past results unless they serve to develop expectations about the future. But IT managers commonly form decisions based on past experiences, especially if limited information is available.

2.1. Move-to-the-Middle Theory

Firms have decreased costs by moving to fewer vendors and establishing partnership with them. This method for outsourcing has enabled firms to operate efficiently; however, this business paradigm requires evaluation. Vendor selection is often based on production cost and the transactions cost, which can be further decomposed into coordination cost, operations risk, and opportunism risk [14]. Due to complexities in implementing multiple software solutions, a firm can eliminate some of these costs by reducing its number of vendors to one.

In the past, firms focused on vertical integration by producing software solutions in-house as a means to establish stronger control over operations and costs. But in-house development has done little to improve costs due to the complexity of software solutions. Software vendors realized their customer’s challenges, and as a strategic move, a number of enterprise software vendors made investments to build out their software assets and ensure that these assets integrate easily. Pre-integrated solutions enable customers to drive down implementation time and cost. The consolidation strategy placed these vendors as strong partners for unified procurement. Clemons and Reddi [13] have argued that the customers’ shift to fewer suppliers incentivizes them to improve product quality.

On the other hand, vendor consolidation has also enabled firms to lower their transaction costs as there is little search involved in locating vendors with a comprehensive software stack. In the enterprise software industry, there are a limited number of vendors that have the capital and resources available to expand beyond the traditional model of in-house R&D to gain new technology assets through acquisitions. For that reason, the dominant players (IBM, SAP, Microsoft, Oracle, etc.) are extremely transparent. In addition, a firm gains negotiation power as a result of the volume of assets it purchases. This is contrary to Bakos and Brynjolfsson’s [5] idea that reducing the number of suppliers decreases a buyer’s bargaining power. The vendors and buyer firms understand that the established partnership secures the vendor future revenue from the firm through expanded licenses and up-selling new products so the vendor is more inclined to lower its prices and offer additional incentives during negotiation. The vendor’s increased motivation to form long-term partnership with the buyer reduces operations and opportunism risks.

2.2. Equity Theory

Equity theory has served as the basis for fairness in many IT decisions. One idea associated with the theory is that any level of perceived unfairness will result in distress, which affects decisions made by the parties involved. The distress for IT managers surrounding unified procurement is the belief that the strategy creates a setting where it is easy for the vendor to behave opportunistically. As a result, they feel safer working with multiple vendors, despite the possible advantages from partnering.

Joshi [24] states the importance of perceived fairness (equal inputs and outputs) in establishing equity. We compare the risks and gains for the vendors and buyer firms in Tables 1 and 2. They illustrate the potential inputs and risks, and outputs and gains that both firms experience during unified procurement partnership.

Table 1. Risks for Vendors and Buyers

<table>
<thead>
<tr>
<th>TYPE OF RISK</th>
<th>VENDOR FIRM</th>
<th>BUYER FIRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased costs</td>
<td>To meet the demands of its partnered buyer who now has a stronger influence, the vendor runs the risk of having to increase and enhance its assets.</td>
<td>Assuming the relationship does not succeed, the buyer’s switching cost is very high; so the buyer runs the risk of high cost in the future.</td>
</tr>
<tr>
<td>Loss in revenue</td>
<td>Since the buyer has the potential to represent a large share of the vendor’s revenue, any swap out from the buyer can result in huge revenue loss for the vendor.</td>
<td>If the vendor was to experience any type of catastrophic event such as loss of key employees, this would impact the buyer’s overall business.</td>
</tr>
<tr>
<td>Decreased control</td>
<td>Implementation failure and bad press from the buyer can easily influence vendor perception in the marketplace and affect future business opportunities.</td>
<td>Buyer runs the risk of limiting their competitiveness and the growth of their business to the technologies provided by the vendor.</td>
</tr>
</tbody>
</table>

The comparison illustrates that perhaps IT managers’ apprehension of being treated unfairly is unjustified in this case and, thus, alleviates some of the distress so they can begin to consider unified procurement as an option. Both parties face some level of risk in unified procurement partnership. Although the types of input differ, both firms risk increased costs, loss in revenue, and decreased control. Examples of benefits that can be
gained from the unified procurement strategy consist of increased profits, reduced risk, and non-contractible benefits. Vendor exclusivity creates a stronger level of non-contractible benefits than what is experienced by firms in other partnered relationship environments.

Table 2. Benefits for Vendors and Buyers

<table>
<thead>
<tr>
<th>TYPE OF GAIN</th>
<th>VENDOR FIRM</th>
<th>BUYER FIRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased profits</td>
<td>With the buyer purchasing multiple products, the vendor is generating more sales from the one customer than they would normally generate.</td>
<td>Buyer firm has the opportunity to minimize costs through its increased negotiation power based on the volume of products purchased.</td>
</tr>
<tr>
<td>Reduced risk</td>
<td>By establishing a long-term relationship with the buyer, the vendor can count on repeat business (upgrades, new purchases, etc.).</td>
<td>Advanced R&amp;D investments made by the vendor on product integrations reduce the buyer’s risk during implementation.</td>
</tr>
<tr>
<td>Non-contractible benefits</td>
<td>Vendor obtains collaboration from buyer to develop strategies and ideas for future products enhancements and developments.</td>
<td>Buyer has the opportunity to drive product innovation and obtain insight to future product offerings, enabling advance planning.</td>
</tr>
</tbody>
</table>

2.3. Agency Theory

Vendor management presents challenges to firms due to the contrasting goals of vendors and buyer firms. Agency theory helps to understand these goals. A barrier to unified procurement adoption is the belief that working with a large vendor firm will increase the overall complexity of vendor management, raise market transaction costs, and reduce a firm’s control. On the contrary, moving to a single vendor simplifies vendor management by reducing the number of contracts. What this enables the firm to achieve is reduced market transaction costs and risks because of one vendor accountability. In a complex project, it becomes difficult to isolate problems due to the number of parties involved. Imagine a problem has occurred in a project with solutions from three different vendors. How do you begin to determine who is at fault? Unified procurement enables the firm to reduce the number of agents involved, thus simplifying the principal and agent relationship. Bakos and Kemerer [6] indicate that agency cost arises due to the absence of ideal conditions such as compatible goals between principals and agents. With unified procurement, common goals between vendor and firm become a major factor in solidifying the long-term partnership. Since the stakes for both firms are high, this decreases the motivation for them to behave opportunistically and thus reduce overall agency costs, which includes monitoring costs, bonding costs, and the residual loss [23].

Firms also face the fear that a unified procurement partnership will decrease a firm’s control, making the firm heavily dependent on the vendor. Because the firm is dependent on one vendor for its entire technology stack, it runs the risk of limiting its competitiveness to the technologies provided by the vendor. Many IT managers believe that “best-of-breed” offers a firm maximum strategic advantage since it enables development of a solution based on industry’s strongest applications. It is impossible for a single vendor to have the strongest applications for all business functions. This may be true, but a question IT managers must ask is: Does the value obtained from “best-of-breed” justify the increased spending required? Some IT managers who adopt the unified procurement strategy will say they have the best of both worlds. They are able to lower operational costs and still have a solution that is composed of an industry’s leading applications since vendors capable of supporting unified procurement are commonly the market leaders.

There is a general agreement that information system development remains a major concern for large firms due to the rising costs, a combined result of increased implementation and maintenance costs [7]. Complexity increases overall cost, which firms often experience when they choose the best-of-breed strategy. Knowing that a major strategic advantage for firms is to drive down costs, why do so many firms still prefer this approach? As noted by Attewell and Rule [3], we witness IS managers who suffer from “empire-builder” syndrome where they act in their interest at the expense of the shareholders. Unified procurement of enterprise software helps a firm achieve operational efficiency through a scaled down infrastructure which is clearly not desirable for an IT manager seeking to build an empire.

2.4. Cognitive Dissonance Theory

Firms are reluctant to explore unified procurement because there are individuals in the software industry who define vendor exclusivity as the “lock-in” model. Vendor lock-in refers to the situation in which customers are dependent on a single supplier for their product or services and cannot move to another vendor without substantial costs. While this definition seems to define vendor exclusivity, it fails to present how partnerships decrease the risk for lock-in. There have been several debates in the industry regarding “lock-in” versus “best-of-breed.” The term, “best-of-breed,” has a positive ring to it. But to elect this option, a firm will experience increased risks and costs involved in integrating complex solutions from multiple vendors.

Festinger [20] discusses three ways to overcome cognitive dissonance: (1) change beliefs, (2) change actions, and (3) change perception of action. We focus on changed perceptions of action. If IT managers can set aside the idea that unified procurement equates to lock-in, they can begin to rationalize the two approaches, multi-vendor versus unified procurement, and make an informed and objective IT decision in the best interest of the firm. Despite the common industry belief that vendor
exclusivity increases overall risk, there are IT managers who have consolidated their IT assets and elected unified procurement. Later we will look at the value they received to understand the drivers behind the change.

A major benefit of a unified procurement partnership is the unique non-contractible benefits experienced by the vendor and buyer firms. Bakos and Brynjolfsson [5] offer reasons as to why buyer firms have reduced their number of suppliers and limit their options and decrease their bargaining power to obtain non-contractible advantages such as innovation, responsiveness, and information sharing from their suppliers. By limiting the number of suppliers, a buyer firm establishes greater ex post bargaining power and greater ex ante incentives as a result. In a unified procurement partnership, these advantages extend beyond standard advantages received in a firm partnership. Exclusivity enables two firms to establish trust, creating a new level of partnership.

In the software industry, this strengthened partnership opens up the opportunity for the buyer firm to help drive innovation and contribute ideas to its vendor’s R&D, thus allowing them to actively participate in future product roadmaps. The commitment to success from both parties also builds tighter collaboration between the firms. By sharing future product plans and working with customers to achieve their goals, the vendor enables the customer to develop IT strategies in advance of their competitors. Customers-as-partners also experience a stronger level of responsiveness and support from the vendor as its success is dependent upon their success. Growth on the customer’s end implies future license expansions and business opportunities for the vendor.

**Overall Comments.** We have shown the rationale for unified procurement adoption via the relevant theory. See Table 3. But are the fears behind unified procurement rational? Or are IT managers letting their past knowledge and others’ beliefs impact their decision-making processes, as suggested by herd behavior [9]? Lucas’ [30] rational expectations hypothesis asserts that economic agents optimally utilize information available to derive their expectations. Expanding resources available and providing an evaluative framework for determining unified procurement fit will enable IT managers to develop alternative views.

### 3. PROPOSITIONS AND MODEL

While the unified procurement strategy can be adopted by firms of all sizes, primary adopters have been small to medium-sized enterprises (SMEs). A report by Forrester Research showed that 18% of 66 supply-chain decision-makers surveyed use a pre-integrated supply chain management suite [40]. Firms, as a result of competitive pressure, seek alternative strategies to maintain competitive advantage [1]. Porter [35] notes the importance of cost leadership in sustaining competitive advantage. The opportunity to lower costs makes the unified procurement strategy attractive to SMEs, firms that need to continuously seek cost-cutting measures to maintain a competitive edge [10]. With unified procurement, SMEs are no longer at a disadvantage when buying from large vendors; the magnitude of their investment makes the size of the firm irrelevant. To the vendor, it is possible for a smaller firm to experience risk equal to a larger firm based on the volume of its purchases.

#### Table 3. Key Concepts from the Theory

<table>
<thead>
<tr>
<th>THEORY</th>
<th>BARRIER</th>
<th>ALTERNATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move-to-the-middle theory</td>
<td>Partnering with a small group of vendors offers a buyer the strongest benefits.</td>
<td>Vendor exclusivity boosts the benefits enjoyed in a typical vendor partnership.</td>
</tr>
<tr>
<td>Equity theory</td>
<td>The strategy favors the vendor, which results in an unequal relationship between supplier and buyer.</td>
<td>Both vendor and buyer firm must contribute equal risk in order to reap the benefits.</td>
</tr>
<tr>
<td>Agency theory</td>
<td>Managing one large vendor will increase overall complexity of vendor management, raise market transaction costs, and reduce a firm’s control.</td>
<td>The unified procurement strategy simplifies vendor management with one vendor accountability.</td>
</tr>
<tr>
<td>Cognitive dissonance theory</td>
<td>Despite the unique benefits, unified procurement partnership creates a lock-in and as a result, should be avoided.</td>
<td>Unified procurement partnership should be considered since the non-contractible benefits outweigh the risks involved.</td>
</tr>
</tbody>
</table>

#### 3.1. Propositions

We propose that four conditions must exist for unified procurement partnerships to be beneficial for a firm. Most firms that move to unified procurement of enterprise software solutions are entering into it for the first time. For a transition of this scale to occur, an organization must see the compelling arguments behind the fit of the unified procurement strategy. This leads to:

- **Proposition 1 (The Strategy Fit Proposition). With the adoption of any new strategy, there must be an appropriateness of fit.**

  In addition to strategy fit, lower costs are a significant goal for most firms, as we noted earlier. Individual firms need to assess what are the sources of the benefits that are unique to them. We assert:

- **Proposition 2 (The Low Cost Driver Proposition). Firms that adopt a unified procurement strategy are driven by different factors leading to lower costs.**

  Another consideration is related to the relationship between the benefits that are obtained from software solution fit and the value of a long-term relationship with a single vendor. These considerations need to be evaluated and measured, if possible, as a basis for a sound
decision by the firm. Our next two propositions are:

- **Proposition 3 (The Vendor Selection Proposition).** When purchasing an IT solution, a firm typically focuses on choosing one with the strongest fit; but in the case of unified procurement adoption, the vendor becomes a key consideration due to the long-term partnership established with the buyer firm.

- **Proposition 4 (The Potential and Realized Value Proposition).** The firm must prospectively determine that potential value will be added for an investment in unified procurement of enterprise software solutions to occur, and retrospectively document that value has been realized after implementation for a continued commitment.

Our propositions suggest that for the unified procurement strategy to be implemented by a firm, the procurement option must: fit the organization; have a recognizable set of value drivers; support implementation decisions by balancing strategic and operational performance; and support effective assessment of potential value and realized value.

### 3.2. Unified Procurement Adoption Process

We propose a four-stage process to show the steps and thought processes that occur during unified procurement adoption. During each of the stages defined, we note organizational characteristics that illustrate why the business model will be a strong fit for certain firms.

**Stage 1: Determine the strategy’s fit.** In the first stage, the IT manager determines if the unified procurement strategy is a fit for the firm. What are the expected benefits? Does the firm display characteristics that would enable it to maximize benefits from unified procurement adoption? Porter [35] identifies firm strategies to control costs: construction of efficient-scale facilities, tight control of costs and overhead, avoidance of marginal customer accounts, minimization of operating expenses, reduction of input costs, tight control of labor costs, and lower distribution costs. Unified procurement works best for firms that are motivated to reduce cost and experience challenges in the following areas.

**Scale.** Unified procurement enables a firm to effectively and efficiently scale during the project without requiring expansion of its existing operation. This results in tighter control of resource costs. Scaling is often a challenge for SMEs. Firms backed by abundant financial resources, less exposed to risk, and holding an informational lead can justify an increased scale of operations [21]. This explains why large firms often exercise the “best-of-breed” strategy when it comes to software procurement. SMEs generally have smaller IT departments so it is a major benefit for them to easily tap into their vendor’s resources.

**Time.** Firms faced with time constraints cannot take years to launch a new IT solution. Decreasing the duration of an IT project minimizes a firm’s risk and total costs over time. Vrana [39] explains the value of buying into Gartner Group’s smart enterprise suite from a single vendor: real integration of the services, standardization of the vertical specialized applications, and reduction of overall costs and implementation time. A pre-integrated solution offered by a single vendor cuts down the complexity of the overall solution and shortens the launch time that is normally required to integrate applications from multiple vendors.

**Operations.** The unified procurement strategy is a strong one for firms looking to reduce the complexity in their IT operations and achieve operational efficiency. Large enterprise application software vendors offer pre-packaged solutions composed of standard business practices for different industries. Pre-integrated, industry-specific solutions decrease the customizations required. The bundled approach enables a firm to simultaneously retire all of its legacy applications and further simplify its operation with a uniform architecture and solution.

**Stage 2: Evaluate the firm’s state.** With unified procurement, the majority of a firm’s technology assets are procured through one vendor so a firm with an established IT infrastructure is unlikely to pursue the strategy due to the high switching cost. Three states can be identified as ideal states for transitioning to a unified procurement strategy. They offer a firm the opportunity to explore the strategy.

A firm in its first stages of establishing a new IT infrastructure can elect unified procurement right from the start. Planning an IT transformation is another opportunity for firms to transition to the new strategy. During the transition process, a firm can decide to move from a multi-vendor to a unified procurement strategy. Also, industry consolidation offers the firm an opportunity to alter its existing IT strategy. Consolidations can occur internally within a firm or externally by the vendor. Under internal consolidation among systems, a firm normally will retire redundant assets. During this time, a firm can choose to retain all assets from a single vendor, which moves them toward a unified procurement strategy. Another scenario is external consolidation among vendors. Enterprise application companies are consolidating fast. In the instance of vendor consolidation though, a firm may discover that there is no opportunity for internal consolidation: that is beyond its control since the

---

1 Lamont [29] notes that the “smart enterprise suite” is a relatively new category of software, defined by Gartner two years ago. It is comprised of an integrated set of software solutions, including content management, collaboration and business process management in a portal framework. Few vendors have integrated all of the components into a seamless product, but many are scrambling to acquire the pieces either through acquisition or internal development. At stake is the ability to address the full range of customers’ needs for business services.”
firm’s IT assets are now provided by one vendor. During industry consolidation, a firm can migrate from a multi-vendor to a unified procurement strategy.

**Stage 3: Adopt the unified procurement strategy.** During this stage, the firm decides to adopt the unified procurement strategy and goes through the process of selecting the solution. Contrary to the normal selection process where attention is focused on the technology, the vendor becomes the key consideration in the decision process since the benefits increase in the partnered model. When a firm elects to purchase all complementary products and services from one vendor, a significant investment is made up front so certain expectations are formed right from the start: (1) the relationship established is built on trust and partnership; (2) responsibilities and risks are shared by both parties; and (3) the partnership will extend beyond the time of the original transformation. In this situation, a firm may evaluate beyond the fit of the solution to include the fit of the firm based on compatibility of culture, work ethic, etc.

**Stage 4: Measure the solution’s business value.** During the final stage, the firm measures the overall success of its investment. Prior to its investment, the firm has formed expectations of results. The question is how close did they come to achieving these results? Measuring realized value, in contrast to potential value, as presented by Davern and Kauffman [16], becomes critical. It enables a firm to determine the actual value received post-IT implementation. For unified procurement partnership, the firm should measure the business value of its IT investment along with its vendor partnership.

Though different firms may share the same low-cost drivers, their individual assessments and the realized value obtained will be quite different. Kauffman et al. [25], in research on e-commerce markets, observed that within the same industry (e.g., Internet banking), there were strong variations in individual firms’ assessments. We identified three drivers for unified procurement adoption: scale, time, and operations. The proposed measurement for determining success of the business model thus should be based on Value = f (Scale, Time, Operations). Here, value can represent total cost savings. But how do these variables—scale, time, and operational costs—translate into measurable business value? Ultimately, all three must translate into cost savings.

**Scale.** The firm will measure cost saved via reduced staff. Instead of expanding its IT staff, the firm will leverage vendor resources for the duration of the project.

**Time.** Since faster implementation time can be achieved with a pre-integrated solution, the firm can measure the costs saved by decreasing the length of the project and the additional revenue generated with accelerated time to market, diminishing value latency.

**Operations.** The unified procurement strategy enables a firm to minimize complexity in its operations, eliminating unnecessary hardware and software. In this case, a firm can measure the decrease in cost by simplifying operations and reducing unnecessary assets.

**Figure 1. Unified Procurement Adoption Process**

![Diagram of Unified Procurement Adoption Process](image)

**Note:** The stages of unified procurement adoption are illustrated by the four squares. In Stage 1, the firm determines if the unified procurement strategy is a good fit for the firm based on scale, time, and operational considerations. In Stage 2, the firm evaluates its current state to see if it matches one of the ideal states of new IT infrastructure, IT transformation, or industry consolidation. In Stage 3, the firm adopts the strategy and makes a vendor selection based on fit of vendor solution and firm. In Stage 4, the firm determines the realized value of its IT investment and vendor partnership.

In fast consolidating industries, SMEs run a higher risk of losing to large-sized firms so they must be more creative in the strategies and solutions they pursue. Though it may seem that SMEs are at a disadvantage when competing with larger firms, they can achieve a faster rate of adoption due to the smaller number of key decision-makers. A firm’s size is probably the most important structural factor that affects a firm’s speed and pattern of adopting innovations [15]. Assuming different sized firms equally benefit from unified procurement, it will require less time and effort for a smaller firm to adopt the new strategy.

4. **ANALYSIS METHODS**

We next discuss the methodology we used to test our model. We also explain why we have elected to focus on specific industries as part of this research.

We focus on examples of firms that have succeeded from unified procurement of enterprise software solutions. By studying companies that have gone through the four stages identified, we are able obtain a comprehen-
sive view of the entire adoption process. The firms we chose share similar properties in that they are all SMEs from heavily consolidating industries. To show that there is no bias towards a specific vendor, we gathered examples from different vendors, including SAP, Oracle, and Microsoft. We used secondary data, composed primarily of case studies published by different vendors on their customers’ success in our research. In a corporate case study, all of the information published is fully backed by the approval of the customer so the results revealed in these cases have either been reported or validated by the firm studied.

We chose consolidating industries because these industries are strong candidates for the unified procurement strategy. Vendors over the years have focused on building packaged solutions for industries such as banking, communications, financial services, healthcare, retail, airlines, and utilities. The airline industry is an example of an industry that has adopted and benefited from the unified procurement. Continental Airlines standardized its operations on HP to reduce investment in training, tools, parts and maintenance. Also JetBlue, outside of its reservation system, elected to use only Microsoft programs and attributes its success to standardizing on one system [38].

5. ANALYSIS: THREE INDUSTRY MINI-CASES

The three mini-cases illustrate several aspects of the unified procurement adoption process that we have proposed and its underlying arguments regarding the rationale in some settings for unified procurement of enterprise software solutions. These cases cover the banking, healthcare, and communications industries. They relate to firms that have established partnership with a single vendor and have adopted multiple products from the vendor’s technology stack. We also note the various dimensions of value that these arrangements have resulted in and the differences in the business value outcomes for each of the different industries.

5.1. IT Transformation: Banking Industry

Cap Gemini describes new industry competitors, flexible technologies, and demanding shareholders as the driving forces behind the increased competition and lowering of prices in the banking industry. As a result, an industry publication suggests [8], four major practices implemented by banks to facilitate growth: “ensuring full multi-channel integration and optimization; combining fast time to market, innovation, and local client intimacy; leveraging a multi-brand portfolio to create attractive value propositions for each market segment; and increasing sales productivity through dynamic branch management.”

To sustain a competitive advantage, Deutsche Postbank AG (www.postbank.com) made the decision to transform its IT infrastructure as a response to the increased competitive pressure from the industry [36]. Postbank implemented a phased transformation program from November 2002 to October 2005 to address these challenges: (1) reduce the number and complexity of back-office processes; (2) eliminate the cost of maintaining and servicing multiple IT systems; and (3) add flexibility for rapid product design, changing business processes, and regulatory demands. Postbank’s goal was to maximize savings, efficiency, and service value. Without the resources available to develop a solution in-house, Postbank partnered with SAP due to the latter’s strength and experience in the banking industry.

Upon its decision to partner with SAP, Postbank purchased five different solutions and services from its vendor. In addition to the products acquired, Postbank leveraged SAP support and consulting organization to perform the entire implementation. Dirk Berensmann, CIO and COO, provided his reason for partnering with SAP: “With SAP solutions, we aim to achieve the lowest processing costs and fastest time to market in retail banking” [36]. Postbank and SAP worked together to develop core banking functionalities that are now part of the standard mySAP ERP solution. As indicated by SAP, this was a joint investment by both firms in developing a replacement for Postbank’s legacy platform. With the collaboration from both firms, Postbank was able to realize business value through reduced time to market, streamlined business processes, improved operational efficiency, and reduced costs. See Table 4.

5.2. New IT Infrastructure: Healthcare Industry

For over a decade, MedAire’s (www.medaire.com) operation composed of second-hand hardware, dated operating systems, incompatible applications, and outsourced network administration services. Different IT systems were used by the Sales, Training, Manufacturing, and Finance departments to support its business. Understanding that MedAire’s fragmented approach was problematic, in January 2003, the company hired CTO, Douglas Payne, to help them to build out an IT department and define a new IT infrastructure [33]. The CTO chose to standardize MedAire’s IT operation around a Microsoft solution.

MedAire elected to partner with ePartners (www.epartnersolutions.com), a Microsoft-certified “gold partner” and the largest suppliers of Microsoft business solu-
5.3. Industry Consolidation: Communication Industry

Industry deregulation in the late 1990s enabled telecom companies to compete in the cable industry, which forced cable operators to increase their service offerings to compete effectively. To build the IT infrastructure needed to support the new business requirements, in early 2004 Cablevision Mexico (www.cablevision.net.mx) purchased two solutions: Siebel’s customer relationship management (CRM) solution and Portal Software’s billing solution [34]. At the time of this purchase, Cablevision had a multi-vendor strategy; it worked with at least three vendors to complete its solution stack.

Around then, the enterprise software industry was undergoing major consolidation. Oracle Corp. (www.oracle.com) was a dominant player during these consolidations. Since 2000, Oracle has expanded its industry portfolio (to banking, communications, etc.) through strategic acquisitions. To expand its communications product portfolio, in September 2005 Oracle announced the purchase of Siebel for US$5.85 billion in cash and in April 2006, Oracle acquired Portal Software for US$220 million in cash. Since then, Oracle has made two more acquisitions in the industry, MetaSolv Software in October 2006 and Netsure Telecom in September 2007.

Cablevision Mexico began to move to a unified procurement strategy as a result of Oracle’s consolidation. When Cablevision sought to replace its IT service fulfillment solutions in 2007, it elected to use more Oracle products because of the strength of its pre-integrated solution and the opportunity to further expand its technology partnership with the vendor. During Oracle OpenWorld 2007, Cablevision Mexico announced that it was using at least five different Oracle products. Juan Jose Colon Carbajal, Cablevision’s CIO, explains the benefits achieved from the new solution: “Cablevision is now in a position to capitalize on the market opportunities that result from the wealth of emerging technologies. We can offer our customers the best bundle of services that meet their needs. That builds loyalty and reduces churn—and that helps our bottom line” [34]. With Oracle’s stack, the company has achieved realized value of increased revenue, reduced debt, reduced cost, error elimination, and expanded service offerings. See Table 6.

5.4. Discussion

The cases illustrate that IT managers from SMEs appear to select unified procurement as a strategic move to establish cost leadership, in spite of the predictions of the move-to-the-middle theory. The cases offer insights and validate the different rationales behind unified procurement adoption. All three companies were in one of the states that we identified related to unified procurement adoption: new IT infrastructure, IT transformation, and industry consolidation. Each case study offered reasons for the vendor the firm chose, affirming the importance of the vendor in the selection process. We observed differences in realized value obtained by each firm and examples of unique benefits received by the firm: the opportunity for customers to contribute to R&D; comprehensive partnerships for products and services; and fast integration of new products due to pre-integrated solutions. Finally, we observe the business value realized by the vendor: a long-term customer partnership and reference are invaluable gains for a vendor. See Table 7.

<table>
<thead>
<tr>
<th>Table 5. Healthcare: MedAire’s Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced hardware and software issues on the desktop by 90%</td>
</tr>
<tr>
<td>Saved approximately 900 hours of development time</td>
</tr>
<tr>
<td>Enabled MedAire to enter a new market and generate revenue of US$2.4 million in first year</td>
</tr>
<tr>
<td>Saves $116,000 annually in labor costs</td>
</tr>
<tr>
<td>Saves 200 hours a month in the finance department</td>
</tr>
<tr>
<td>Reduced the month-end closing from 2 to 3 weeks to 3 days</td>
</tr>
<tr>
<td>Reduced bank reconciliation from 3 days to 0.5 hours</td>
</tr>
<tr>
<td>Reduced time to reconcile sales commissions reports from 17 days to 1 day</td>
</tr>
<tr>
<td>Saves one employee 12 to 15 hours a month on solving invoicing issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6. Communication: Cablevision’s Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased revenue by 20.6%</td>
</tr>
<tr>
<td>Reduced bad debt by over 15.3%</td>
</tr>
<tr>
<td>Reduced operational cost</td>
</tr>
<tr>
<td>Decreased billing errors down to zero</td>
</tr>
<tr>
<td>Increased customer satisfaction</td>
</tr>
<tr>
<td>Expanded service offerings beyond two cable and Internet services to include voice, video-on-demand, and high-definition digital contents</td>
</tr>
</tbody>
</table>
Organizational factors impact adoption. Kwon and Zmud [28] introduce organizational characteristics as one of five contextual factors that impact initiation and adoption of IT. During any of the three states—IT transformation, new IT infrastructure, and industry consolidation—the firms have determined that there is a need for IT change. In the instance we have studied, the firms have created opportunities for major changes, enabling them to explore the unified procurement strategy.

Strategic necessities drive early adoption. Many applications of IT have proven to be strategic necessities. The potential payoffs of the business model drive IT managers to take risks, and thus impact decision-making.

The vendor becomes a key decision factor for adopting the unified procurement strategy. Each partner vendor is able to deliver its own unique value, in addition to the technology assets that are offered through its IT stack. Therefore, the vendor’s broader capabilities (non-contracitble benefits, etc.) will impact the final solution that is selected.

Value impacts will affect the duration of the partnership. A firm will continue to invest in the partnership as long as there is value to be obtained at the margin. As the partnership extends into the future, it is important to track realized value to ensure it is achieved.

6. CONCLUSION

In this article, we have argued that there may be circumstances under which the predictions associated with the move-to-the-middle theory do not seem to be borne out in practice. Our focus has been on the unified procurement strategy, and why some buyer firms appear to be willing to employ it, in spite of the risks, lock-in and potential for loss of relationship power that may result. Our research supports development of new knowledge to contribute to the emerging services science, management and engineering arena.

We conducted this research by evaluating what the literature has to say about the reasons why the move-to-the-middle theory may not hold. We found a number of reasons and developed arguments about them. This led us to specify several propositions about why unified procurement of enterprise software has been implemented and the implications for realized business value outcomes. We also presented an adoption process to illustrate the steps involved when a firm pursues unified procurement. We validated our perspectives through the use of published case studies from the software solutions vendors, who have validated them with participating clients. This enabled us to more specify the different dimensions associated with realized business value.

We note a number of limitations of the present work that can be addressed in future research. Since vendors only publish case studies that reflect customer success, this restricts our ability to explore challenges of unified procurement without further probing into firms that have experienced failure. The reader should be clear that our exploratory results offer little in the way of generalizability. An opportunity for future research is to formulate an analytical economic model of decision-making related to unified procurement of software solutions that would represent both the vendor and the client side. Still another opportunity lies in conducting empirical research to test key hypotheses about why we observe unified procurement or multi-vendor adoption under different industry, market and firm circumstances.

REFERENCES


[34] Oracle. Cablevision Mexico increases revenue and competitive advantage with new revenue management system. Customer case study, Redwood Shores, CA, 2006.


Acknowledgments. The authors thank the anonymous reviewers and the mini-track chairs, Michael Goul and Haluk Demirkan, for comments on this article. We also appreciated opportunities to discuss these issues with Eric Clemons, Qizhi Dai, Kevin Zhu and Hamid Mohradian during the past several years. Rob Kauffman acknowledges the W. P. Carey Chair in IS for partial support.