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UNDERSTANDING E-PROCUREMENT SYSTEM BENEFITS USING ORGANISATIONAL ADOPTION MOTIVATION LENS: A CASE STUDY

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Abstract

Adoption of e-procurement systems and the likely benefits that organisations can achieve have been widely discussed. However, what still remains puzzling is the variation in benefits that organisations experience from the adoption of even the same e-procurement system. A few e-commerce scholars applied the factor-based approach to help explain difference in e-procurement benefits, but with limited success. In this paper, we propose an alternative theoretical framework (known as EPAMS) that draws inspirations from the notion of 'organisational motivation' for Inter-Organisational System (IOS) adoption context. Our framework relates organisational adoption motivations for e-procurement systems with three types of benefits. We further report the outcomes of analysing e-procurement benefits experience of a large municipality located in a state capital city of Australia. We explain the municipality's attainment of e-procurement benefits in terms of motivation it had established for adopting the e-procurement system in the first place. The case study data provide preliminary support for our assertion of an association between an organisation's e-procurement systems adoption motivation and the benefits these systems can offer. This finding has implications for the IS/e-commerce scholars and practitioners alike.

Keywords: E-commerce, e-procurement, adoption, motivation, benefits, municipality, case study, Australia

1 MOTIVATIONS FOR THE RESEARCH

Electronic procurement (E-procurement) systems represent the application of e-commerce technologies to support an organisation's purchasing activities (Garrido-Samaniego et al. 2010). Many e-commerce gurus advocate that organisations can expect to experience various types of benefits (e.g. operational, tactical, strategic) when these systems are carefully implemented. Empirical literature however indicates that organisations may not necessarily experience all types of benefits from the adoption of e-procurement systems (Massa and Testa, 2007; Williams and Hardy, 2007). Hence, there is a challenge for better understanding the variations in e-procurement systems benefits experienced by organisations. Addressing this challenge is important because future growth in e-procurement systems market can be slower than expected when organisations fail to understand the reasons contributing to the variations in attaining benefits from their investments made in these systems. A few scholars (e.g. Rahim et al. 2006; 2011a) have used a factor-based approach to help explain the variation in e-procurement benefits. Although such efforts are praiseworthy and contribute to knowledge, they had limited success in discussing the variations in benefits. Thus, the research question addressed in this study is: what influences variations in e-procurement systems benefits? To answer this research question, in this study we propose an alternative explanation that draws on the notion of 'organisational motivation' for adopting an e-procurement system, and relates it to the attainment of benefits when such a system is adopted. More specifically, because e-procurement is arguably inter-organisational in nature, we refer to the notion of 'organisational adoption motivation' for IOS (Rahim et al. 2007; 2011b), adapt it for e-procurement adoption context, and suggest the existence of a correspondence between various motivations organisations establish while adopting an e-procurement system, and the likely types of benefits organisations can experience from adopting those systems. In particular, an Electronic Procurement Adoption Motivation Scenarios (EPAMS) framework is proposed that identifies three categories of e-procurement system adoption motivation scenarios and associates different types of benefits for each scenario. We further provide preliminary empirical evidence in support of one particular scenario of adoption motivation by examining the e-procurement adoption experience of a large Australian municipality. By addressing this research question, we expect to contribute to the current understanding and literature of e-procurement benefits and adoption motivation. Our findings also have important implications to the scholars and practitioners alike as they can be used to better manage the expected benefits from the adoption of e-procurement systems.

2 RELATED LITERATURE

E-procurement systems: These are web-enabled solutions designed at automating and streamlining the key activities involved in an organisation's procurement process (Ilhan and Rahim, 2013). A range of technologies qualify as e-procurement systems (Tatsis et al. 2006): Electronic Data Interchange (EDI), online auctions, procurement modules of Enterprise Resource Planning (ERP) systems, and packaged e-procurement solutions and e-marketplaces. In this study, we are concerned with those e-procurement systems which are initiated by the buying organisations, operate from their own IT infrastructure, automate procurement process and send procurement related documents to suppliers over the Internet. Thus, EDI, online auctions and third party marketplaces are outside the scope of our definition as they do not support order requisition activities associated with purchasing. However, packaged e-procurement solutions (e.g. SAP EBP, Starightbuy) and procurement modules of Enterprise Resource Planning (ERP) systems are included.

Adoption motivation in the empirical e-procurement literature: There exists a rich body of literature on e-procurement adoption. Much of the literature however focuses on identifying various categories of factors that influence organisational decisions to adopt e-procurement systems. This has been acknowledged by Schoenherr and Tummala (2007) and Pani et al. (2011) in their structured literature review on e-procurement. Adoption motivation too has received attention from several scholars who identified two types of organisational motives for adopting an e-procurement system: economic motive and soci-political motive. For example, McManus (2002) examined the rate of e-procurement implementation in the US public sector, and remarked that motivation for implementation was based

on expectations of lower purchase prices, reduced transaction costs, and increased speed. Likewise, Croom and Brandon-Jones (2005) reported for the UK public sector the significant motivation for e-procurement adoption was considered to be the economic benefits. Similar observations are also noted by Chang and Wong (2010), who in a survey noted two major types of economic motivations of Chinese companies to adopt an e-procurement system: lowering cost and conforming to a standard procurement process. In contrast, Rahim and As-Saber (2009) analysed the experiences of an Australian city municipality and found that economic motives were not the only driving forces influencing e-procurement adoption in that municipality. The municipality's desire to meet governmental service targets through improved relationships with suppliers was also found to have influenced the municipality's adoption of e-procurement. Thus, the presence of economic and socio-political (e.g. compliance) motives has been identified for e-procurement adoption context.

E-procurement system benefits: The benefits of e-procurement systems among organisations are widely recognised (Ronchi et al., 2010). Scholars have classified these benefits in various ways. For example, Kalakota and Robinson (2001) identify two types of benefits: efficiency and effectiveness. In another study, Puschmann and Alt (2005) adopted the classification of benefits proposed by Kalakota and Robinson (2001) and validated it using a survey. According to Wen and Wei (2007), e-procurement benefits can be ideally classified into two broad categories: operational and strategic. In a more recent year, Caniato et al. (2011) distinguish between two types of e-procurement systems benefits: organisational benefits and process benefits. Using the information systems perspective, Piotrowicz and Irani (2010) drawing on the work of De Boer et al. (2002) discussed e-procurement benefits in terms of three categories which are also broadly in line with that of: operational, tactical, and strategic. At the operational level, benefits include categories related to procurement process efficiency and effectiveness, it also includes transaction process cost savings. Tactical benefits include improved faster payments, improved monitoring and control, and increased efficiency. Strategic benefits include improvements in customer supplier relations, enhanced reputation. To the best of our knowledge, no study has explored why those organisations adopting e-procurement systems have experienced different types of benefits and what drives the achievement of particular types of benefits.

Gap in the background literature: In summary, we argue that current discussion on e-procurement adoption motivation is quite fragmented. Likewise, although various types of e-procurement benefits have been reported, existing literature does not explain the variations in those benefits. Our framework developed in this paper is intended to address these gaps in the literature by linking e-procurement adoption motivations with the types of benefits that organisations expect to achieve from adoption.

3 RELATED THEORETICAL BACKGROUND

In the IS/e-commerce literature streams, the theory of organisational motivations to help explain e-commerce systems adoption is a relatively new and under-utilised theory (Molla, 2012). We argue that a motivational perspective could provide useful insights particularly for inter-organisational context as the influence of internal and external stakeholders could help establish sources from which motivations may be conceived (Eklm and Rahim 2008). As e-procurement is concerned with the automation of business processes which facilitate electronic connectivity between buyers and suppliers (which are fundamentally inter-organisational in nature) we find literature on adoption motivation of inter-organisational systems (IOS) to be relevant for the purpose of our research. We believe it can provide a suitable theoretical foundation to understand e-procurement adoption motivations. Rahim's (2004) work represents the first known study that systematically operationalises the construct 'motivation' for IOS adoption context. He argues that organisational adoption motivations influence IOS implementation process, which in turn affects the benefits an adopting organisation can experience from IOS adoption. Drawing on his prior work, Rahim et al. (2007) provided empirical evidence in support of organisational motivation construct for IOS adoption and related it to IOS implementation process. At a later stage, Rahim et al. (2011b) empirically validated the IOS adoption motivation model using case studies chosen from two large Australian automotive and pharmaceutical companies and through their findings reinforced the significance of organisational adoption motivation as a predictor to explain variations in IOS implementation process. The

pioneering work of Rahim and his colleagues in using organisational motivation as an important construct to explain IOS adoption is receiving acceptance by other IS scholars. For example, drawing on the work of Rahim et al. (2007), Jagielska et al (2010) reported development of a taxonomy of adoption motives for business intelligence systems. In another study, Molla (2012) developed an adoption motivation framework for green IT context by using the notion of organisational adoption motivation proposed by Rahim et al. (2007; 2011b). In recent years, Oseni et al. (2013; 2014) have extended organisational IOS adoption motivation concept to ERP post-implementation context, and empirically demonstrated that instances of ERP post-implementation in organisations differ by organisational motivations for post-implementation. Additionally, they have reported existence of a relationship between ERP post-implementation types and business process outcomes (i.e. impacts of post-implementation). Thus, a recognition is slowly emerging among a segment of IS scholars about the merits of applying organisational motivations for understanding adoption of complex IT systems context (e.g. IOS, business intelligence systems, ERP systems). In the next section, drawing on the ideas of Rahim et al (2007; 2011b), and discussion in the e-procurement literature on various types of e-procurement systems adoption motivations and benefit types, we propose a research framework. In developing the framework, we have relied on the e-procurement benefits classification reported by Piotrowicz and Irani (2010). This classification identifies three types of benefits (e.g. operational, tactical, and strategic) that are drawn from the popular IS perspective.

4 RESEARCH FRAMEWORK AND PROPOSITIONS

We now propose a high level conceptual model (Figure 1) that relates ‘e-procurement benefits’ that a buying organisation can expect to experience as a function of ‘motivation’ which that organisation forms when deciding to adopt an e-procurement system. This assertion is shown in Figure 1 as an arrow linking ‘e-procurement adoption motivation scenarios’ with ‘e-procurement systems benefits’. We define motivation scenario as a situation in which an organisation adopts an e-procurement system by taking into consideration two motivational characteristics (i.e. type of motive and locus of motive) which are discussed later in this section. We suggest this link to be associative in nature that should not be considered to have a direct causal effect. This is due to the possible influence of internal and external factors (e.g. IT maturity, supplier IT readiness) which in certain situations may have a moderating effect on how benefits arising from a given e-procurement systems adoption project are demonstrated within a given organisational context. This aspect is reflected as a dotted arrow in Figure 1. Our proposed conceptual model thus implies that, when adoption motivations vary between organisations then the corresponding benefits would vary as well. This is because certain activities involved in e-procurement implementation process which are normally undertaken by an organisation (under the influence of a particular adoption motivation) may not be performed by another organisation that is prompted by a different adoption motivation. This argument is in agreement with the core belief expressed by Rahim et al. (2007; 2011b) in their study of IOS adoption when they explain IOS adoption phenomenon from organisational adoption motivation perspective. Our assertion is further supported by Oseni et al (2013, 2014) as they report empirical evidence confirming an association between organisational motivations for initiating various types of ERP post-implementation initiatives and the variations in business process outcomes these initiatives have triggered in organisations.

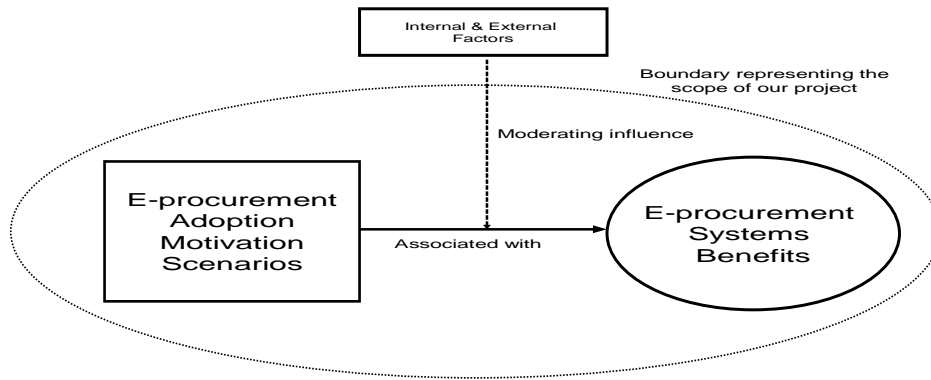


Figure 1. The conceptual model

In keeping with the works of Rahim et al (2007), Molla (2012), Oseni (2013, 2014) and drawing on the existing empirical findings on e-procurement adoption motivations discussed in Section 2, we now propose that for e-procurement adoption motivations too can be understood in terms of two attributes: type of motive and locus of motive. Two types of motive can be observed: economic and socio-political. Likewise, locus of motive can be internal or external. Drawing on these attributes, for e-procurement context we now develop a framework (known as EPAMS as shown in Figure 2) that espouses three distinct e-procurement adoption motivation scenarios.

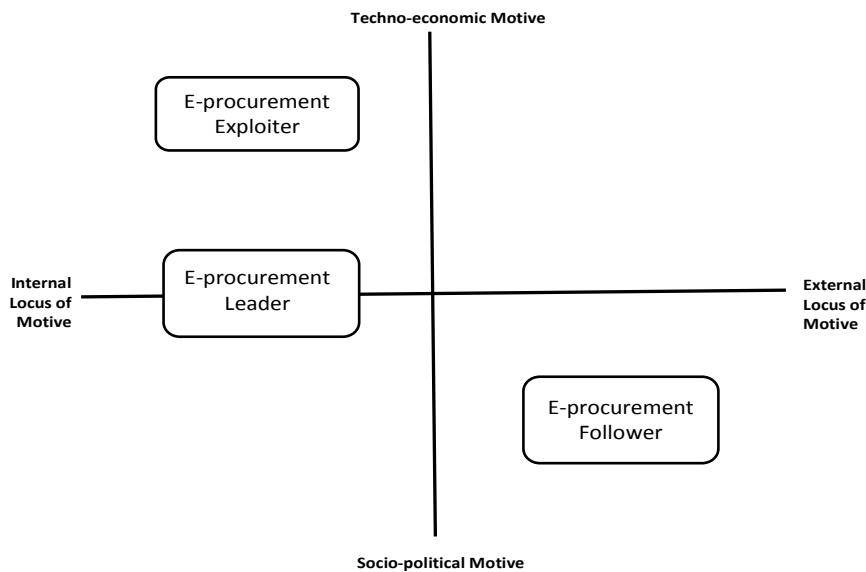


Figure 2. E-procurement adoption motivation scenarios (EPAMS)

We now describe each scenario and derive a set of three research propositions (Table 1) that predict those e-procurement benefits which are likely to be experienced by organisations representing those scenarios.

Propositions	E-procurement adoption motivation scenarios			Benefits
	E-procurement Follower	E-procurement Exploiter	E-procurement Leader	
P1	(a) is likely to	(b) is likely to	(c) is likely to	experience operational benefits
P2	(a) is unlikely to	(b) is likely to	(c) is likely to	experience tactical benefits
P3	(a) is unlikely to	(b) is unlikely to	(c) is likely to	experience strategic benefits

Table 1. A list of propositions linking e-procurement adopter categories with e-procurement systems benefits

E-procurement Followers: This represents an adoption scenario in which organisations introduce an e-procurement system in response to a socio-political motive that is formed due to influences arising from sources outside organisational boundaries (thus have an external locus of motive). This scenario may possibly occur when adoption of e-procurement systems is not intended to address a well-defined organisational efficiency problem. Rather, adoption decisions are prompted by socio-political aspirations (e.g. compliance, imitation, norms) of organisations. For example, in their study Rahim and As-Saber (2011) noted the existence of relationship improvement motive within an Australian city council for deciding to adopt an e-procurement system. We argue that e-procurement followers consider e-procurement systems adoption as a defensive measure. The primary aim is to minimise the social expectations gap between buying organisations and their business partners. Being seen to adopt an e-procurement system is more important than economic considerations. Hence, an imitation motive could also be observed for adopting an e-procurement system. These lines of arguments are shaped by the empirical observations of other IS scholars who have reported occurrences of socio-political aspirations for adopting various types of IT-enabled information systems. For example, DiMaggio and Walter (1991) suggested that in uncertain conditions organisations sometimes tend to mimic the technology adoption practices of other successful organisations. The influence of imitation motive on IT adoption has also been observed by Santos and Peffers (1998) who reported that, in the banking sector, information obtained regarding the adoption of ATM systems by rivals had helped the formation of the imitation motive which prompted managers in deciding to adopt proprietary ATM systems. Therefore, e-procurement followers do not deliberately want to use e-procurement systems to materialise the economic potential of these systems to their full extent. In this scenario, e-procurement adoption and its associated processes have some resemblance to the mandated processes described by Keen (1997) where electronic systems linking multiple organisations are adopted to satisfy external obligations (e.g. legal requirements), and are not seen to be a contributor to an organisation's economic value.

Organisations representing e-procurement follower scenario are generally characterised by their intentions to make minimal investments in e-procurement systems. They are not keen to reengineer their internal procurement processes. To minimise cost investments, these organisations exhibit reluctance for investing in e-catalogues, are unlikely to link the e-procurement system with back-end applications, and simply prefer a somewhat superficial automation of the existing procurement process. Adopting e-procurement systems in this way is associated with a phenomenon that Fichman and Kemerer (1999) refer to as the assimilation gap, a situation where a technology is acquired by many but only partially implemented. Hence, these organisations are likely to experience only some process oriented operational benefits (e.g. reduction in transaction costs, cost savings due to elimination of paper and postage used for sending purchase orders) arising due to procurement process automation (P1).

These followers are not keen to establish external integration with suppliers because of their desire to avoid any process reengineering needed to support external integration. Hence, they would not establish a direct access to the internal databases of the suppliers' order fulfilment systems. The lack of direct access to suppliers' internal databases implies that these organisations are not able to make

improved business decisions with regard to planning order fulfilment. Moreover, adoption of e-procurement system does not bring substantial changes in organisations' procurement policies, procedures, and guidelines. Hence, despite the reporting capability of the e-procurement system, these followers fail to develop an improved understanding of purchase order consolidation. Therefore, the tactical benefits are unlikely to be achieved (P2).

As e-procurement systems are not used in an innovative way with full internal and external integration with suppliers, it is unlikely that suppliers would receive many benefits. Hence, it is quite likely that mere superficial adoption of e-procurement systems would neither invite an improvement in relationship with suppliers, nor would they contribute to the establishment of an innovative and supplier caring image. E-procurement systems are not used by these organisations to explore finding new suppliers as well. Hence, these organisations do not experience a greater choice of suppliers. Thus, long-term strategic benefits too are unlikely to be experienced (P3).

E-procurement Exploiter: According to this scenario, organisations make adoption decisions prompted by economic motive which is conceived from internal sources. This scenario may occur when organisations intend to use an e-procurement system as a tool to enhance their internal procurement related efficiency. These organisations are driven by resource efficiency motives (Schermerhorn, 1975). Adopting an e-procurement system can help them obtain transactional efficiency. Hence, adoption of e-procurement systems is justified based on financial grounds. This line of argument draws inspirations from the empirical IS literature. For instance, scholars like Clark and Stoddard (1996) and Maingot and Quon (2001) highlight the economic motive of organisations for initiating EDI systems. However, e-procurement adoption under this scenario is not directed at improving relationship with suppliers, rather it is purely internal focused and aimed at enhancing the effectiveness of the procurement function of an organisation.

Organisations representing e-procurement exploiter scenario would design and implement appropriate mechanisms for efficiently conducting procurement related transactions which is in line with the views expressed in Transaction Cost Economics theory (Williamson, 2005). This would mean that these organisations would participate in such activities as streamlining procurement processes and backend integration. This in turn is expected to contribute to cost savings by replacing manual printing and dispatch of purchase orders to suppliers. Efficiency can also be increased by improving data quality via avoiding multiple data entry. In particular supplier and invoice related data are often stored in backend financial application system. Without such information, the users of e-procurement systems would need to re-enter those data which would result in increased processing time and introduction of potential purchasing errors. Hence, organisations representing this scenario can expect operational benefits (P1).

As automation and streamlining procurement processes allows for the better allocation of responsibilities and authority to employees involved in the procurement process, overall greater control can be exercised by managers through the adoption of such e-procurement systems. Moreover, adoption of e-procurement system would bring substantial changes in organisations' procurement policies, procedures, and guidelines. Furthermore, by streamlining procurement processes and centralising data, timely and more frequent procurement reports can be produced which is likely to contribute to an improved understanding of corporate wide procurement practices. Therefore, tactical benefits are likely to be achieved (P2).

The sole focus on transaction efficiency means that the e-procurement systems are unlikely to represent a strategic investment DiRomualdo (1998), and those changes which are made to business processes are directed towards internal process transformation (efficiency and effectiveness) only and are not intended to rejuvenate relationships with suppliers. This scenario is consistent with the examples cited by Chen and Williams (1998) and Kheng and Al-Hawamdeh (2002) where companies invest in B2B e-commerce infrastructure being motivated by the potential to improve efficiency (i.e. fewer data entry errors and lower labor costs). E-procurement exploiters may not be seen by suppliers as being proactive in improving relationships. Therefore, the image of these organisations as being a willing and supportive business partner may not be established in the minds of the suppliers. As such, strategic benefits are unlikely to be experienced (P3).

E-procurement Leader: This represents an adoption motivation scenario in which organisations are likely to be inspired by both economic and socio-political motives (unlike previous two scenarios discussed earlier). However, these motives originate from internal sources only. This scenario can be observed when organisations (upon initiating a market research conducted often with inputs from suppliers) seek not only an improvement in their own internal efficiency and effectiveness, but also are concerned with reinforcing their leadership image among the supplier community. As a result, they would consider the potential benefits perceived by the suppliers from joining the e-procurement connectivity. Therefore, in this scenario, organisations seek to play a leadership role by advocating a win-win strategy which they deliberately use to further assert their leadership image in the marketplace while still addressing their own economic benefits. This conceptualisation of e-procurement leadership has been acknowledged by scholars like Rahim et al. (2011) and Smith et al (2008) for the context of EDI adoption within supply chains.

These organisations contribute a great deal of assets into implementing an e-procurement system and believe in long term strategic partnership development with their suppliers by agreeing to share procurement related information (e.g. budget, scheduling and forecasting), knowledge (e.g. procurement, metrics, benchmarks), and even tangible resources (e.g. interface source code) with them. As a result, these organisations are more likely to establish external integration and introduce necessary changes within internal procurement processes and policies in support of facilitating relationship improvements with suppliers. This means that implementation approach selected by these organisations would favour proactive knowledge and resource sharing with suppliers through procurement related joint planning to ensure smooth purchasing and reduce uncertainty involved in purchasing items from suppliers. In order to gain trust from the suppliers, and convince them of the merits of joining electronic relationships with the buying organisations, these organisations would cooperate with suppliers for building e-catalogues and will establish external interface by integrating the e-procurement systems with suppliers' back-end IT systems. As suppliers tend to receive greater attention and information from these organisations, they are likely to develop a positive view of these organisations which will contribute to the attainment of strategic benefits (P3).

These organisations pay enormous attention to improve internal efficiency and effectiveness. As a result, procurement processes are streamlined, back-end integration is performed, and e-catalogs are built to avoid data reentry which should lead to operational benefits (P1). These organisations are also driven by a desire to reduce uncertainty related to their procurement function, they share procurement related information, knowledge and even resources with their suppliers. This should in turn improve municipalities' decision making ability by jointly working with suppliers. Thus, tactical benefits are to be expected (P2).

4 RESEARCH APPROACH

Research approach: An exploratory case study research approach was chosen because of our intentions to discover the existence of a possible relationship between two sets of theoretical constructs (i.e. e-procurement adoption motivations and e-procurement systems benefits) discussed in Section 3. Our choice is in line with the recommendations provided by Yin (2003).

Selection of case organisation: Ideally the participation of at least three case organisations is required because drawing on the notion of "theoretical replication" (Yin 2003), we need to evaluate at least one e-procurement adoption experience representing each of the three scenarios indicated in Figure 2. In this paper, we however report the experience of a single case organisation from the Australian municipal sector to explore the applicability of one particular adoption motivation scenario.

The case organisation, which is a large municipality, was chosen because of its rich experience (over 5 years) in using an e-procurement system and therefore is in a position to reflect on the attained benefits from e-procurement systems adoption. We acknowledge that use of a single case organisation does not enable us to evaluate the existence of all three scenarios shown in Figure 1 which then restricts generalisability of our findings. Despite this, as our research is still in the formative stage, we have made a deliberate choice to restrict our attention to a single case organisation to explore the existence of core constructs for the context of one particular motivation scenario. Certainly, additional

studies would be required for complete evaluation of the proposed framework; this aspect is discussed later in Section 8.

Unit of analysis: The unit of analysis is an individual organisation because each organisation is likely to have one single e-procurement system implemented in support of its procurement process.

Data collection and analysis: Data were gathered from multiple sources, including semi-structured interviews, e-mail communications, e-procurement related documents maintained by the municipality and information posted on the municipality website. Three senior managers who had involvement with the e-procurement systems implementation initiative at the municipality were interviewed: Purchasing manager, IT manager, a senior business manager (Administration officer). An interview protocol was developed which included questions on the background of interviewees, motivation types, and locus of motivations, benefits. A set of principles and indicators were then devised to operationalise type and locus of motivations. Likewise, a set of indicators too were created to help identify presence of different types of e-procurement benefits. We have used a coding scheme (Neuman 2003) to extract themes from the interview transcripts and data sources (e.g. emails, interview transcripts), to match those indicators. In order to evaluate the research propositions (Table 1), data collected from the municipality were analysed using the pattern matching logic described by Yin (2003).

Methodological rigour: Established methodological guidelines provided by Yin (2003) and Sarker and Lee (2000) were applied to generate reliable and valid findings. Details could not be provided due to page limitations.

5 CASE ORGANISATION DESCRIPTION

A large municipality located in a state capital city of Australia was chosen as a case site because it is a pioneer in introducing an e-procurement system within the local government sector. The municipality offers over 100 types of services to about 150,000 residents. Its annual expenditure was A\$60 million (A\$1 = US\$.95). On an average, the municipality produces 20,000 purchase orders (POs) and receives about 60,000 invoices per annum. In 2005, the municipality introduced Trans AXS e-procurement system from a US-based vendor. The system is integrated with its back-end financial management system. Currently, information about 2500 suppliers is stored in the e-procurement system which sends purchase orders electronically in two formats: internet-fax and e-mail. This is done because the suppliers are primarily small companies and lack IT sophistication and financial capability to be fully integrated through XML technology. At present, about 180 employees use the e-procurement system at the municipality office.

6 CASE STUDY FINDINGS AND DISCUSSION

Classifying e-procurement adoption motivation: Guided by a set of principles and indicators, and using pattern-matching technique (Yin, 2003) discussed in Section 4, we have identified empirical evidence from interview transcripts in support of establishing ‘Locus of motive’ and ‘Type of motive’ relating to the Trans AXS e-procurement adoption initiative at the participating municipality. Drawing on the evidence, for the municipality we find ‘Locus of motive’ to be internal and the ‘Type of motive’ to be economic in nature. We therefore suggest that the e-procurement adoption initiative undertaken by the municipality reflects ‘E-procurement Exploiter’ scenario. As a result, in this study we only focus on P1(b), P2(b) and P3(b) which are the propositions relevant for this particular scenario. In Appendix A, we illustrate examples of how various principles and indicators were applied for classifying adoption motive in this scenario. The municipality was fundamentally influenced by the economic motive to adopt the AXS e-procurement system. In particular, evidence was found which suggests that the municipality had desire to improve internal efficiency by saving processing time and simplifying communications with suppliers. According to the procurement manager:

“We wanted an e-procurement system that would help our municipality’s objective of improving internal efficiency.... We also wanted to save time by simplifying the way we communicate with our suppliers.”

In addition, the municipality wanted to reduce order processing costs by eliminating paper and postage expenses associated with preparing and dispatching purchase orders. This view is supported by the procurement manager as follows:

“The other motive we had at that time was that we thought it [the e-procurement system] would reduce paper costs. It would be an easier way to communicate electronically with them [suppliers]. So, rather than producing hard copy PO we wanted to send them electronically. So rather than doing cheque we want to do EFT.”

Furthermore, no socio-political motive was observed for the municipality’s decision to adopt e-procurement systems. In particular, no coercive influence was observed by either the IT vendor or the government agencies on this municipality to force its adoption decisions. This view is confirmed by the IT manager as follows:

“No, there was no pressure from the e-procurement vendor on us to implement this system.”

Hence, only a single motive (which is economic in nature) is found to be relevant for the municipality.

On the matter of locus of motive, we find evidence of a single source from which the motive to adopt the AXS e-procurement adoption was conceived. The e-procurement system was conceived internally within the municipality and was led by the procurement manager. The IT manager rendered full support to the procurement manager in helping him prepare a business case to attract adoption approval from the senior management. This sentiment is expressed by the IT manager as follows:

“The procurement manager led this [e-procurement] initiative and prepared the business case with some inputs from me. So, yes, it is our internal initiative.”

The adoption motive did not originate from external sources. Although government was involved in rolling out e-procurement initiatives at federal and state levels but did not force the municipality to adopt such systems. According to the procurement manager:

“I think at that time there was strong federal and state government initiatives to roll e-procurement across various government agencies. But this e-procurement initiative did not originate from them [federal and state government]; it is purely our internal initiative driven by the procurement team.”

Hence, the locus of motive was not external.

Having identified the adoption motivation scenario of the participating municipality, next we examine the benefits obtained by the municipality from the adoption of e-procurement.

Identifying e-procurement benefits: Drawing on case study data, we have identified indicators for each of the three e-procurement benefits experienced by the municipality to implement AXS e-procurement system. A benefit was considered to have been achieved when evidence for at least one of its indicators was found in the case study data. The municipality has attained a number of operational and tactical benefits. The indicators of each of these benefits are summarised in Table 2. Details of benefits experienced are briefly discussed in the next sub-section below.

Evaluating research propositions: The research propositions for the ‘E-procurement Exploiter’ motivation scenario were evaluated by comparing the benefits predicted by the research propositions proposed in Table 1 with the observed benefits identified from the case study. This is highlighted in Table 2. While making comparisons, we looked at the rich insights from the municipality to better understand the underlying reasons expressed by the municipality for experiencing or not experiencing each of the three types of e-procurement benefits. This in turn helped us to decide the outcomes of research propositions (i.e. supported, partially supported, unsupported) for that scenario. We find a strong agreement between the predicted benefits and the observed benefits experienced by the municipality. We now discuss each of the benefits reported by the municipality with some details and provide our views on the outcomes of research propositions for E-procurement Exploiter’ scenario.

Benefits	Predicted	Indicators	Observed	Outcomes of propositions
Operational	Y	Increased ordering process efficiency	Y	P1(b) is supported
		Paper Cost savings	Y	
		Reduced transaction costs	Y	
		Time savings	Y	
Tactical	Y	Consolidate purchase orders	Y	P2(b) is supported
		Better understanding the purchasing needs	Y	
		Reduced maverick buying	Y	
Strategic	N	Greater choice of suppliers	N	P3(b) is supported
		Improved relationship with suppliers	N	
		Enhanced image among supplier community	N	

Table 2. A comparison of predicted and observed e-procurement benefits

On the matter of operational benefits, we find that the municipality has experienced procurement ordering process efficiency, transaction cost savings, paper cost savings, and a faster processing of purchase orders. The evidence (partial due to page limitation) is included in Appendix-B. Drawing on such evidence, we conclude that proposition P1(b) for the council context (representing an instance of E-procurement Exploiter adoption motivation scenario) is supported.

The municipality was further found to have experienced some tactical benefits, supporting proposition P2(b). In particular, the AXS e-procurement system has helped the municipality to consolidate its purchase orders to some extent, improved understanding of purchasing needs, and reduced maverick buying through inclusion of pre-qualified supplier details in the system. According to the Administrative Officer:

“Yes, I suppose it [e-procurement system] would. Our purchasing needs are really organised through the services we offer. The system has got the catalogs and suppliers information. So, yes - it helped us through reports mapping each service type with procurements orders that we have placed to our suppliers.”

However, in line with the predictions made for ‘E-procurement Exploiter’ motivation scenario, the municipality was not found to have experienced any strategic benefits. The e-procurement system was not used to find new suppliers due to the council policy of dealing with local suppliers. This sentiment is expressed by the procurement manager as follows:

“The whole idea of any e-procurement system is to reduce the number of suppliers that are available. So it helps you manage the number of vendors that you are dealing with. What I mean here is like by using Internet-based e-procurement system, you can find the suppliers globally, or regionally. Well, certainly e-procurement opens up a whole relevant supply that you may not be aware of. But within council, we have pre-qualification of suppliers before we actually add them to the system. So regardless of what they are actually selling, we would still have to qualify them.”

Furthermore, due to the lack of external integration and sharing of knowledge and resources (e.g. training) with suppliers, no improvement in supplier relationship has taken place. As a result, the innovative and supplier caring image was not established as well. This sentiment is expressed by the administrative officer as follows:

“I don’t think e-procurement system has any role in facilitating this. There isn’t any serious dialog happening in between our system and suppliers’ system.”

Thus, all three propositions relevant for E-procurement Exploiter adoption motivation scenario which include P1(b), P2(b) and P3(b) have been supported by our case study with the participating municipality. This suggests that our framework has been useful in predicting the types of benefits that

the participating council can expect to gain from their e-procurement system adoption based on their adoption motivation. This observation is also in line with Rahim (2004) who suggest organisations which are driven internally by economic benefits for adopting an inter-organisational system are likely to realise operational and tactical benefits. Over time, as adopting organisations have improved their internal operations, they may progress further in their adoption by influencing other trading partners to improve their capability so that efficiency can be further enhanced from their IT investment. However, although our case study has provided evidence to support three of the propositions in our EPAMS framework, more case studies representing different adoptions scenarios are required to validate the rest of the propositions. This framework will be potentially useful for organisations in managing their expectations regarding benefits to expect from their investment in e-procurement systems and to devise appropriate strategy to establish the right motivation for adopting such systems.

7 CONCLUSION

In this paper, we have reported the e-procurement adoption and benefits experience of a large Australian municipality and analysed from a perspective of adoption motivation, employing the EPAMS framework that we have developed. The outcomes of analysis are indicative of the existence of a possible association between the organisational motive an organisation establishes when deciding to adopt an e-procurement system and the specific benefits which that particular organisation can expect to experience from its e-procurement adoption initiative. Due to a single case study undertaken by us, this particular empirical observation is however limited to the 'e-procurement exploiter' motivation scenario.

Despite this limitation, we claim making a modest contribution towards a better understanding of e-procurement adoption motivations and in directing future research in this area. To the best of our knowledge, none has attempted to systematically examine the e-procurement adoption phenomenon from organisational motivation perspective. Our work reported in this paper (although preliminary) involves developing a framework that identifies three adoption motivation scenarios by integrating the notions of 'locus of motive' and 'type of motive' for e-procurement context. This is new to the existing e-commerce literature in general and e-procurement literature in particular. Another contribution is the emergence of an empirical support (although partial) for the assertion that e-procurement adoption motivations may play an important role for explaining the benefits that buying organisations can expect to experience from their e-procurement adoption decisions. Those three motivation scenarios which are highlighted in our proposed EPAMS framework can also help the prospective organisations that are contemplating possible upgrading of their initial investment made in e-procurement systems. In particular, the framework may help guide their journey for migrating to other motivation scenarios when they wish to attain higher level benefits by highlighting that mere automation of e-procurement systems does not lead to all three types of benefits. Appropriate implementation processes associated with each motivation scenario need attention.

Despite such contributions, our study has several limitations. The research findings cannot be generalised due to the partial empirical evaluation of our proposed EPAMS framework. Therefore, additional case studies are to be undertaken to improve the validity of our research findings by empirically investigating all three motivation scenarios. We argue that it may be possible to find some industry segments which, due to distribution of power structure in supply chains, may not exhibit the characteristics of all three types of adoption scenarios proposed in the EPAMS framework. Hence, there is a need to examine the relevance of the EPAMS framework across multiple industry contexts (e.g. service, manufacturing, mining, government). Furthermore, although we argued that e-procurement leadership scenario incorporates two types of motive and a single locus of motive, it may be still possible (at least at a theoretical level) to conceptualise an adoption scenario which is characterised by techno-economic motive arising from external sources. Hence, there is a room for further expansion of the EPAMS framework.

References

- Caniato, F., Longoni, A., and Moretto, A. (2012). Effective eProcurement implementation process, *Production Planning & Control*, 23(12), 935-949.
- Chang, Hsin Hsin, and Kit Hong Wong (2010). Adoption of e-procurement and participation of e-marketplace on firm performance: Trust as a moderator. *Information & Management* 47(5), 262-270.
- Chen, J. C. and Williams, B. C. (1998) The impact of EDI on SMEs: Summary of eight British case studies, *Journal of Small Business Management*, October, 68-72.
- Clark, T. H and Stoddard, D. B. (1996) Inter-organisational business process redesign: Merging technological and process innovation, In proceedings of the 29th Hawaii International Conference on Systems Science (HIICSS-29), January, Hawaii, 190-201.
- Croom, Simon R., and Brandon-Jones, A. (2005) Key issues in e-procurement: Procurement implementation and operation in the public sector. *Journal of Public Procurement* 5(3) (2005).
- De Boer, L., Harink, J., and Heijboer, G. (2002). A conceptual model for assessing the impact of electronic procurement. *European Journal of Purchasing & Supply Management*, 8(1), 25-33.
- DiRomualdo, A. and V. Gurbaxani (1998), Strategic intent for IT outsourcing, *Sloan Management Review*, 39(4), 67-80.
- DiMaggio, P. J. and Powell, W. W. (1991) The iron cage revisited: institutional isomorphism and collective rationality, In *The New Institutionalism in Organisational Analysis*, (Eds. Powell, W. W and DiMaggio, P. J.) The University of Chicago Press, Chicago, pp.63-82.
- Eklim, S., and Rahim, M. M. (2008). A qualitative evaluation of an instrument to measure organisational motivations for inter-organisational systems adoption, *International Journal of Business and Information*, 3(1), 53-85.
- Fichman, R. G., and Kemerer, C. F. (1999). The illusory diffusion of innovation: An examination of assimilation gaps, *Information Systems Research*, 10(3), 255-275.
- Garrido-Samaniego, M.J., Gutierrez-Arranz, A.M., Jose-Cabezudo, R.S., and et al. (2010). Assessing the Impact of E-Procurement on the Structure of the Buying Centre. *International Journal of Information Management*, 30(2), 135-143.
- Hardy, C. and S. Williams (2005). *Public e-procurement in action: Policies, Practices and Technologies*. IFIB International Federation for Information Processing 2005.
- Ilhan, N. and Rahim, M. M. (2013) Understanding E-procurement Systems Benefits: A Theoretical Model with Initial Findings from an Australian Local Council, In *Proceedings of the 24th Australasian Conference on Information Systems (ACIS)*, 4-6 Dec 2013, Melbourne, Australia.
- Jagielska, I., Shanks, G. and Rahim, M. (2010) A taxonomy of motives for understanding business intelligence systems implementation, In *proceedings of the IFIP WG8.3 International Conference on Decision Support Systems*, July 7-10, Lisbon, Portugal.
- Kalakota, R., and Robinson, M. (2001). *E-business 2.0: Roadmap for Success*. Addison-Wesley Professional.
- Keen, P.G.W. (1997) *The process edge*, Cambridge MA: Harvard Business School Press.
- Kheng, C. B. and Al-Hawamdeh, S. (2002). The adoption of electronic procurement in Singapore, *Electronic Commerce Research*, 2(1-2), 61-73.
- Maingot, M. and Quon, T. (2001) A survey of EDI in the top public companies in Canada, *INFOR*, 39 (3), 317-332.
- Massa, S., and Testa, S. (2007). ICTs adoption and knowledge management: the case of an e-procurement system. *Knowledge and Process Management*, 14(1), 26-36.
- McManus, S.A., 2002. Understanding the incremental nature of e-procurement implementation at the state and local levels. *Journal of Public Procurement* 2 (1), 5-28.
- Molla, A., & Abareshi, A. (2012). Organisational green motivations for information technology: Empirical study, *Journal of Computer Information Systems*, 52(3).
- Neuman, W.L. (2003). *Social Research Methods: Qualitative and Quantitative Approaches*. Massachusetts, USA: Allyn & Bacon.
- Oseni, T. (2013), Rahim, M.M., Smith, S., Forster, S. (2013) Exploring ERP post-implementation modifications and their influence on business process outcomes: a theory driven model,

- Proceedings of the 24th Australasian Conference on Information Systems, 4-6 Dec 2013, Melbourne, Australia
- Oseni, T., Smith, S. Rahim, M.M., Forster, S. (2014) An initial empirical evaluation of the influence of ERP post-implementation modifications on business process optimisation, Accepted in the Proceedings of the European Conference on Information Systems (ECIS), June, Israel.
- Pani, M. R., Agrahari, A., De, S. K., and Sahoo, G. (2011). Literature Review and Research Issues in e-Procurement. *Management and Labour Studies*, 36(3), 225-246.
- Piotrowicz, W., and Irani, Z. (2010). Analysing B2B electronic procurement benefits: information systems perspective. *Journal of Enterprise Information Management*, 23(4), 559-579.
- Puschmann, T., and Alt, R. (2005). Successful Use of E-Procurement in Supply Chains. *International Journal of Supply Chain Management*, (10:2), 122-133.
- Rahim (2004) Understanding adoption of inter-organisational systems: The role of organisational motivations, PhD Thesis, The University of Melbourne, Australia.
- Rahim, M., Kurnia, S., Shanks, G., and Johnston, R. (2006) Exploring Factors Affecting the Achievement of Different Types of Inter-Organisational Systems (IOS) Benefits, Pacific Asia Conference on Information Systems (PACIS), Malaysia
- Rahim, M., G. Shanks, et al. (2007). Organisational Motivation and Inter-organisational Systems Adoption Process. *Journal of electronic commerce in organizations*, 5(3): 1-16.
- Rahim, Md, Nergiz Ilhan, and Xiaolin Chen (2011a). Factors affecting benefits of e-procurement systems: Experience of an Australian City Council. 11th International Conference on Electronic Business (ICEB 2011), 29 November 2011 to 02 December, Thailand.
- Rahim, Md Mahbubur, Graeme Shanks, and Robert B. Johnston (2011b). A cross industry comparison of inter-organisational systems implementation activities. *Electronic Commerce Research* 11(2), 215-243.
- Rahim, M.M., and As-Saber, S.N. (2011). E-Procurement Adoption Process: An Arduous Journey for an Australian City Council. *International Journal of Electronic Finance*, 5(2), 150–168.
- Ronchi, S., brun, A., Golini, R., Fan, X., and et al. (2010). What Is the Value of an IT E-Procurement System? *Journal of Purchasing and Supply management*, 16, 131-140.
- Santos, B. L. D. and Peffers, K. (1998) Competitor and vendor influence on the adoption of innovative applications in electronic commerce, *Information & Management*, 34 (3), 175-184.
- Sarker, S., and Lee, A.S. (2000). Using a Positivist Case Research Methodology to Test Three Competing Theories-in-Use of Business Process Redesign, *International Conference on Information Systems (ICIS)*, Brisbane, 121-132.
- Schermerhorn, J.R. (1975), Determinants of Interorganizational Cooperation, *Academy of Management Journal*, 18(4): 846-856.
- Schoenherr, T., and Tummala, V.M.r. (2007). Electronic Procurement: A Structured Literature Review and Directions for Future Research. *International Journal of Procurement Management*, (1:1/2), 8-37.
- Smart, A.F. (2010). E-Procurement and Its Impact on Supply Management-Evidence from Industrial Case Studies. *International Journal of Logistics: Research and Applications*, (13:6), 423-440.
- Smith, S. P., Rahim, M. M., Shanks, G., and Johnston, R. B. (2008). How organization goals affect interorganizational system implementation projects: Evidence and implications. *Asia Pacific Management Review*, 13(3), 567-581.
- Tatsis, V., Mena, C., Wassenhove, L., Whicker, L., and et al. (2006). E-Procurement in the Greek Food and Drink Industry: Drivers and Impediments. *Journal of Purchasing and Supply Management*, (15), 63-74.
- Wen, W. and Wei, L. (2007) Decision-making Analysis of E-procurement with the Rough Set Theory, In *Wireless Communications, Networking and Mobile Computing*, 2007. September, WiCom 2007. International Conference on Wireless Communications, Networking and Mobile Computing, IEEE, 3812-3815.
- Williams, S. and Hardy, C. (2007) E-Procurement: Current Issues and Future Challenges, Proceedings of the European Conference on Information Systems, 2–14 June, Göteborg, Sweden, 131–42.
- Williamson, O. E. (2005). *Transaction cost economics*. Springer US, 41-65
- Yin, R.K. (2003). *Applications of Case Study Research*. California: Sage Publications Inc.