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e-Procurement Drivers and Barriers

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E-Procurement: drivers, barriers and practices

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Abstract

The trend towards globalisation and increased competitiveness across markets has meant that many businesses are looking at solutions to increase efficiency. Businesses have previously focussed on workforce levels and streamlined internal operations to achieve efficiencies. Increasingly businesses are now looking at the supply chain and more specifically procurement to provide additional efficiencies. Many companies are looking at e-Procurement to increase efficiencies and decrease the bottom line. E-Procurement is evolving as one of the shining lights in the evolving e-Business story and this paper will look at a research survey of Australian organisations to determine what is driving and hindering e-Procurement. A model of e-Procurement drivers and barriers is presented with an analysis of the views of 38 organisations. The main outcomes of the survey show that cost based factors are driving e-Procurement whilst technology issues are the main barriers to e-Procurement.

Key words

Procurement, Survey Research, B2B, Supply Chain Management

INTRODUCTION

Globally, businesses spend over $20 trillion (Aberdeen, 2001) on procurement and any reduction will have a significant affect on their bottom line. Strategically a superior supply chain (Cooper *et al.*, 1997) will increase a business' responsiveness and competitive advantage. There has been a plethora of hype associated with the potential of business-to-business transactions over the Internet and there is a promise that e-Procurement will play a role in the realisation of these benefits. But very little research has been conducted on the role e-Procurement plays in the Australian marketplace. This paper examines the procurement process from a business perspective and identifies the drivers and barriers and procurement practices in a sample of major Australian organisations.

E-COMMERCE, B2B AND PROCUREMENT

The term "electronic commerce" has evolved as innovative applications of the Internet and similar technologies are applied to existing business functions. The Office for the Government Online (OGO, 1999) defines electronic commerce as:

> *Any electronic communication that facilitates the exchange of goods, services or other assets between suppliers and buyers (OGO, 1999).*

The use of electronic communication in this definition could include phone, fax, EDI and the Internet. This broad definition is further refined when defining e-Procurement.

> *The use of electronic technologies to streamline and enable the procurement activities of an organisation (OGO, 1999).*

The supply chain and supply chain management has become the focus for software vendors developing large software suites that span entire organisations. Definitions of supply chain management are varied and can be based on the process, management philosophy or management process (Tyndall *et al.*, 1990). Mentzer *et al.* (2001) defines the supply chain as:

> *A set of three or more entities directly involved in the upstream and downstream flows of products, services, finances and or information from a source to a customer (Mentzer et al., 2001:3).*

Just as the supply chain definition can have different focuses so can the extent of the supply chain. It has now evolved from the original "*direct supply chain*" to the "*extended supply chain*" and then to the "*ultimate supply chain*". These evolutions provide organisations with greater potential to utilise their supply chains for strategic purposes but at the same time provide increased complexity (Cooper *et al*., 1997). In developing a supply chain model Mentzer *et al*. (2001) include purchasing, logistics and procurement as inherent supply chain processes and goes further by extolling the advantages of superior supply chains being cost control, improved customer value and competitive advantage.

E-Procurement

Companies have been selling products and services to each other as long as recorded history. For most large manufacturing companies the purchasing of materials and services can represent fifty five to seventy five percent of the cost of goods sold (Monczka *et al*., 1998). Due to the increasing expenditure on external goods and services, companies are now focussing on the supply chain and more specifically procurement to increase efficiency and reduce costs (Aberdeen, 2001). The Internet has been viewed as an avenue whereby many of these efficiencies can be achieved. Business-to-business (B2B) is the term used to describe a range of procurement functions that incorporate Internet technology (Diba, 2000). Many research organisations predict massive growth in the B2B market. Bowles (2002) sees the global B2B market growing to US$968 million in 2002 and then US$1551 million in 2004 but these figures pale into insignificance when considering other market analysts predictions; Gartner: $US2.9 trillion by 2003 AMR: $US5.7 trillion by 2004, Forrester: $US7.29 trillion by 2004 (Regan 2001; Hersch, 2000). Whilst these predictions should be accepted with caution there does seem to be a "sea change" in how procurement is being conducted in organisations. B2B promises (McGarvey, 2000) to drive costs down and streamline procurement operations. Metcalfe *et al*. (2001) predicted that European companies could achieve a 50% productivity increase through Internet enabled B2B processes by 2010.

Just as electronic commerce is evolving, the business activities that are classified as part of the e-Procurement process are also evolving. These activities can include: advertising tenders; electronic submission of tenders; electronic ordering; internet sourcing via third parties; electronic mail between buyers and sellers; electronic mail in contract management; research into supplier markets and integration of procurement within the financial and inventory systems. Information systems that support e-Procurement can be classified into four major segments; buy-side applications, sell-side applications, e-Marketplace applications and content applications (IDC, 2001a). But as software vendors struggle to position themselves for a share of the e-Procurement application market a range of new functionality and terms to describe their solutions are appearing (Konicki, 2002). The major vendors in the e-procurement market include the leading ERP vendors (SAP, Oracle, Peoplesoft) and a number of specialist procurement vendors (Ariba, Commerce One, i2). The Australian market is expected to grow to $99 million in 2005 (IDC, 2001b).

E-Procurement Drivers and Barriers Model

An Aberdeen report (Aberdeen, 2001) divides procurement and e-Procurement technologies into three categories:

- Indirect Procurement: This includes the procurement of non-production goods and services such as office supplies, printing, advertising and casual labour.
- Direct procurement: This includes the procurement of raw materials; parts and assemblies used supply chain (i.e. organisation and management of raw materials, parts and assemblies).
- Sourcing (i.e. identification, evaluation, negotiation of products and supplies for both the indirect and direct supply chain).

There is a plethora of literature espousing the benefits of the e-Procurement solutions (Aberdeen, 2001; NOIE, 2001; 2000a; 2001b; IDC, 2001a; Konicki, 2001). These benefits could be identified as drivers for any implemented solution. They include:

- Price reduction
- Improved contract compliance
- Shortened Proc cycle times
- Reduced administration costs
- Enhanced inventory management
- Improved visibility of customer demand
- Improved visibility of supply chain capacity
- Reduced op and inventory costs
- Shortened proc cycle times
- Negotiated unit cost reduction
- Increased accuracy of production capacity
- Enhanced decision making
- Improved market intelligence

A recent survey (Tomorrowfirst, 2000) of fifty of the leading United Kingdom companies identified the benefits of e-Procurement as; better resource usage, adding value through leveraging, eliminating maverick buying. The majority of the respondent companies (76%) believed that the implementation of an e-procurement solution was critical to the success of their business in the future. Governments around the world have also recognised the potential benefits of an e-Procurement solution. In Australia both the federal and state governments have established websites to facilitate e-Procurement (OGO, 2001; PRC, 2001; NSW, 2000). These sites include strategy documents, resources, research, links and tools related to e-Procurement.

Whilst drivers usually form the basis of business cases and provide a measure for success it is important to consider the possible barriers companies may experience when adopting an e-Procurement solution. A summary of these barriers as identified in the literature appear below (Table 1).

Factor	**Reference**
Security of transactions	Gebaur *et al.*, 1998; PWC, 2002; Boston Consulting, 2001
Lack of Supplier e-procurement solution	PWC, 2002; Gebauer *et al.*, 1998; Boston Consulting, 2001
High cost of technology	PWC, 2002
Lack of legal framework	PWC, 2002
Lack of technical expertise	PWC, 2002
Lack of e-Procurement knowledge	PWC, 2002; Gebauer *et al.*, 1998; Boston Consulting, 2001
No real business benefit identified	PWC, 2002; Gebauer *et al.*, 1998; Boston Consulting, 2001
Data exchange standards lacking	PWC, 2002
Lack of business relationships with suppliers	PWC, 2002

Table 1: e-Procurement Barriers

The identified drivers and barriers focus on different aspects of the procurement process. They can be classified as having a Cost focus (C), Strategic focus (S), Supplier Relationship focus (R), Internal Organisational focus (I), Technological focus (T), Enhanced internal company efficiency focus (E), or External focus (Ex). A summary of the drivers and barriers and their corresponding focus appears below (Table 2).

Driver	**Focus**	**Focus**	**Barrier**
Price Reduction	C	T	Inadequate Technological Infrastructure
Negotiated Unit Cost reduction	C	T	Lack of Skilled Personnel

Driver	Focus	Focus	Barrier
Improved Visibility of Customer Demand	S	T	Inadequate Tech Infrastructure of partners
Reduced Administration Costs	C	T	Lack of Integration with Business Partners
Improved Market Intelligence	S	C	Implementation Costs
Reduced Operational and Inventory Costs	C	I	Company Culture
Enhanced Decision making	S	I	Inadequate Business Processes to support e-Procurement
Improved Contract Compliance	R	Ex	Regulatory and Legal Controls
Shortened Procurement Cycle Times	I	T	Security
Improved Visibility of Supply Chain Management	R	R	Co-operation of Business Partners
Increased Accuracy of Production Capacity	E	I	Inadequate e-Procurement Solutions
Enhanced Inventory Management	E	I	Upper Management Support

Table 2: Drivers and Benefits e-Procurement Model

Using the drivers and barriers identified from the literature we classified them according to their primary focus and then used them in the development of the model depicted in Figure 1. Cost is the primary focus of drivers whilst technology is the main focus of barriers. From Table 2 and the model a master list of drivers and barriers was developed and used in the survey research.

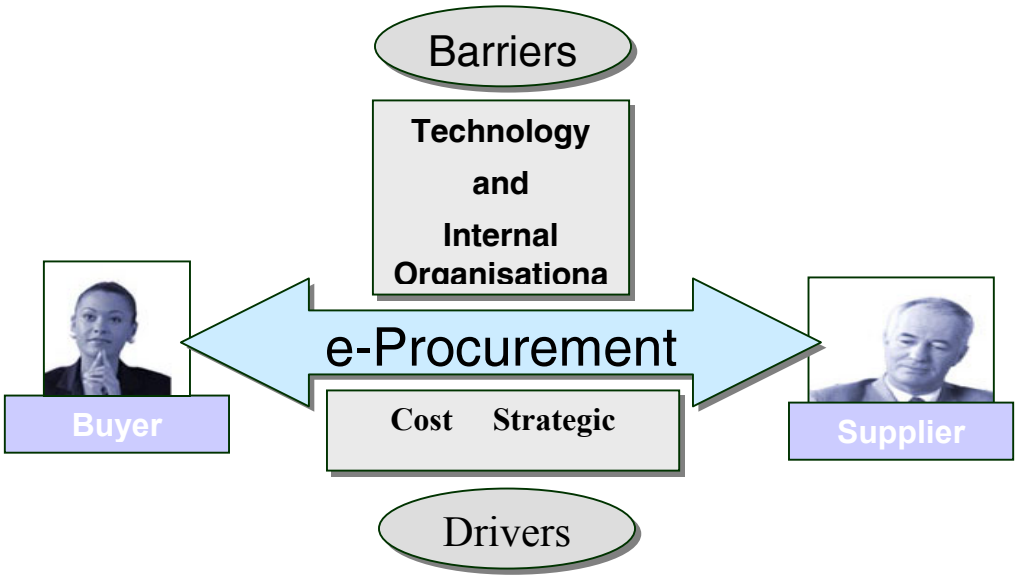

Figure 1: e-Procurement Adoption Model

RESEARCH QUESTIONS

The primary objective of the study was to survey a range of information system professionals and seek responses to issues including the drivers and barriers of current e-Procurement practices and to further refine those drivers and barriers. The first part of the study as presented in this paper provides an analysis of the views of information systems (IS) professionals from 38 Australian companies. The second stage of this research is to look at a major Australian global company and report on its e-marketplace activities. This will be presented in a case study. More specifically the research questions of the paper are:

RQ1. What are the current direct and indirect procurement practices in the respondent's organisations?

RQ2. What are the current drivers and barriers of e-procurement in the respondent's organisations?

METHODOLOGY

The primary objective of the study was to survey a range of information systems professionals and seek responses to issues including the importance of drivers and barriers to the adoption of e-Procurement practices. The first part of the study as presented in this paper provides an analysis of the views of 38 IS professionals. The best method for gathering data was determined to be a survey of those information systems professionals listed as working within a cross-section of the Australian marketplace. A leading Australian software vendor user group provided their member contact database. This database provided contact details of 166 information systems professionals that have worked on large information systems from 1995. The initial survey instrument was developed based on the fields that were identified in the literature and used email and web-based survey as the delivery platform. Several studies (Stanton and Rogelberg, 2000; Dillman, 1998) have compared email and web-based survey methods versus mail information collection methods and have proposed that email and web surveys compared favourably with postal methods in the areas of cost, speed, quality and response rate. The use of an email directing the respondent to a website was used with the initial web direction being sent to the user group members. It was necessary to preen the email address book to remove and amend email that had bounced back.

RESULTS

Survey Instrument

The survey instrument had 30 questions covering three areas; demographics, e-Procurement practices and e-Procurement drivers and barriers. Both open and closed questions were used along with Yes/ No and five point Likert scale responses. The drivers and barriers were formulated from the literature (Table 2) and used a Likert rating for importance to the adoption of e-Procurement. Open-ended questions also sought responses from the sample allowing for qualitative data to be collected. The original email listing contained 166 potential respondents representing many of Australia's major companies. A number of emails were undeliverable due to members of the sample moving positions, having incorrect email addresses, having changed email addresses or automatic out-of-office responses. There were 2 unusable replies leaving a total of 38 usable responses. The overall response rate once removing the undeliverable addresses was 25%. The response rate is presented in Table 3.

Issue	Number	Undeliverable	Answered	Rate
First email prompt	166	5	33	
Second email prompt	161	1	7	
Total			40 (2 unusable)	38/158=25%

Table 3: Response Rate %

Demographics

To gain an understanding of the demographics of the sample the respondents were asked to identify their position within the company, the industry sector, and the organisational size as indicated by company revenue. It was important to assess the level of procurement expenditure and respondents were asked to estimate this amount. A summary of these findings appears in Table 4 and Table 5 (procurement expenditure). The respondents were predominantly high in their organisational structure being either an IS or business manager. The company respondents reflected a broad range of industry categories in the Australian marketplace. Manufacturing, Public Service and Utilities were well represented. Company revenue indicated that respondents ranged from very large companies to small to medium enterprises (SME). The majority of the sample could be classified as SME. A criteria used by the Australian Government to define SMEs in relation to procurement, are companies with annual revenue of less than $250 million. In terms of the level of procurement expenditure, companies in the sample tend to be those with large procurement expenditure. The largest procurement expenditure was predominantly in the Mining, Oil and Gas industry sector while

the smallest was a Public Sector organisation. A significant number of companies (24%) did not respond to this question.

Position of Respondent	No	Industry Sector	No	Company Revenue ($AUD millions)	No
CIO	7	Manufacturing	10	Large (>1000)	13
IS Manager	14	Public Service	8	Large-Medium (750-1000)	5
Support and Services Manager	6	Utility	7	Med-Large (500-749)	6
Procurement Manager	5	Mining Oil and Gas	4	Medium (250-499)	7
Business Manager	6	Chemicals	4	Small (<250)	7
		Education	3		
		Health Services	2		
Total	38	Total	38	Total	38

Table 4: Demographic Breakdown of Sample (N=38)

Procurement Expenditure ($AUD millions)	No
Large (>1000)	3
Large-Medium (101-1000)	14
Med-Large (11-100)	9
Medium (1-10)	2
Small (<1)	1
Not answered	9
Total	38

Table 5: Procurement Spend of respondents (N=38)

Procurement Practices

Organisations reported their current (Table 6) and intended methods of procurement with the traditional mediums of fax and paper/ mail dominating both direct and indirect procurement practices. The more technological advanced mediums of EDI, email and the Internet appeared to be underutilised.

Current	%	Future (12 Months)	%
Fax	44	Fax	41
Paper/Mail	27	Paper/Mail	25
Telephone	4	Telephone	4
Email	5	Email	6
EDI	7	EDI	9
Internet	4	Internet	6
Unspecified	9	Unspecified	9
Total	100		100

Table 6: Direct Procurement Practices (%)

A report (ISM/ Forrester, 2002) on the procurement practices of 350 U.S. organisations classified their sample into three groups; low level where the tool is used less than 20%, medium level where the tool is used between 21% and 39% and high level usage where the tool is used greater than 40%. A similar classification was applied to the results to illicite a clearer picture of the procurement mediums usage for now and in the future (Table 7). The intended use of direct procurement mediums showed a slight decrease in fax and paper and a slight increase in the web-enabled tools, email, EDI and Internet. The changes are slight and little can be assumed from these small changes. However, there appears to be an

increasing trend in organisations that are intending to use email and Internet to conduct direct procurement. Within 12 months the changes in Internet enabled procurement from 3% medium level usage to 16% medium level usage showed that organisations are flagging an intention to move into e-Procurement possibly via the marketplace channel.

	Current Usage				**Intended Use (12 Months)**			
	Not Used % Users	Low Usage (<20%) % Users	Medium Usage (21-39%) % Users	High Usage (>40%) % Users	Not Used % Users	Low Usage (<20%) % Users	Medium Usage (21-39%) % Users	High Usage (>40%) % Users
Fax	21%	18%	11%	50%	26%	11%	13%	50%
Paper/ Mail	31%	24%	13%	32%	36%	24%	11%	29%
Telephone	58%	34%	5%	3%	60%	34%	3%	3%
Email	71%	18%	8%	3%	66%	18%	13%	3%
EDI	66%	18%	11%	5%	63%	18%	11%	8%
Internet	76%	18%	3%	3%	63%	18%	16%	3%

Table 7: Direct Procurement Practices by Usage Segment (%)

Indirect Current	**%**	**Indirect 12 Months**	**%**
Fax	46	Fax	42
Paper/ Mail	18	Paper/ Mail	14
Telephone	14	Telephone	11
Email	7	Email	8
EDI	2	EDI	6
Internet	10	Internet	15
Unspecified	3	Unspecified	4
Total	100		100

Table 8: Indirect Procurement Practices (%)

Indirect procurement, as shown in Table 8, replicates the direct procurement trend of heavy reliance upon fax and with a decreased reliance upon paper/ mail. There was a definite trend towards Internet enabled procurement over the next 12 months with an increase from 10% to 15%. This trend was further amplified in Table 8, with a significant increase from 8% to 18% of medium level usage and 8% to 16% for high-level usage of the Internet for indirect procurement. There was also a significant decrease in all categories for paper/ mail based indirect procurement.

	Current Usage				**Intended Use (12 Months)**			
	Not Used % Users	Low Usage (<20%) % Users	Medium Usage (21-39%) % Users	High Usage >40% % Users	Not Used % Users	Low Usage (<20%) % Users	Medium Usage (21-39%) % Users	High Usage (>40%) % Users
Fax	11%	13%	13%	62%	12%	11%	24%	53%
Paper/ Mail	32%	34%	21%	13%	35%	39%	18%	8%
Telephone	24%	45%	18%	13%	29%	47%	13%	11%
Email	53%	26%	21%	0%	48%	26%	26%	0%
EDI	91%	3%	3%	3%	84%	3%	5%	8%
Internet	55%	29%	8%	8%	42%	24%	18%	16%

Table 9: Indirect Procurement Practices by Usage Segment (%)

Drivers

Respondents were supplied with a list of e-Procurement drivers and were asked to identify the 5 most important and then rank them (5 – most important, 1 – least important). A summary of the results is displayed in Table 10. The drivers that are scored highly include Price reduction (3.70), Unit Cost (3.32), Customer Demand (3.22), Administration Costs (3.21) and Market Intelligence (3.17). All standard deviations are about 1.5 Likert points and show a consistency in the results. Respondents had the opportunity to identify other e-procurement drivers that they considered important. Drivers that were identified were; enhanced service delivery, leveraging the business group, reduce "maverick" purchases, and better management information reports. Respondents had the opportunity to identify other e-Procurement drivers that they considered important. Identified were; enhanced service delivery, leveraging the business group, reduce "maverick" purchases, and better management information reports.

E-Procurement Drivers	Focus	Mean	SD
Price Reduction	Cost	3.70	1.3
Negotiated Unit Cost reduction	Cost	3.32	1.5
Improved Visibility of Customer Demand	Strategic	3.22	1.5
Reduced Administration Costs	Cost	3.21	1.5
Improved Market Intelligence	Strategic	3.17	1.7
Reduced Operational and Inventory Costs	Cost	2.87	1.1
Enhanced Decision making	Strategic	2.75	1.1
Improved Contract Compliance	Supplier Relationship	2.72	1.3
Shortened Procurement Cycle Times	Internal organisational	2.71	1.3
Improved Visibility of Supply Chain Management	Supplier Relationship	2.70	1.4
Increased Accuracy of Production Capacity	Internal company efficiency	2.63	1.3
Enhanced Inventory Management	Internal company efficiency	2.30	1.3

Table 10: e-Procurement Drivers

Barriers

Respondents were supplied with a list of e-Procurement barriers and were asked to identify the 5 most important and then rank them (5 – most important, 1 – least important). A summary of the results is displayed in Table 11. The top four barriers are Technological Infrastructure (3.3), Skilled Personnel (3.2), Partner Infrastructure (3.2), Integration with business partners (3.2). The standard deviation for the barriers varies from one to two Likert points. The means of the top barriers seem to indicate that the complex technological issues both within and between organisations in the procurement process are crucial.

E-Procurement Barriers	Focus	Mean	SD
Inadequate Technological Infrastructure	Technological	3.3	1.4
Lack of Skilled Personnel	Technological	3.2	1.4
Inadequate Technological Infrastructure of Business partners	Technological	3.2	1.5
Lack of Integration with Business Partners	Technological	3.2	1.1
Implementation Costs	Cost	3.1	1.5
Company Culture	Internal Organisational	3.0	1.2
Inadequate Business Processes to support e-Procurement	Internal Organisational	2.9	1.5
Regulatory and Legal Controls	External	2.8	2.0
Security	Technological	2.8	1.3
Co-operation of Business Partners	Supplier Relationship	2.8	1.1
Inadequate e-procurement Solutions	Internal Organisational	2.7	1.6
Upper Management Support	Internal Organisational	2.3	1.2

Table 11: e-Procurement Barriers

DISCUSSION

Sample

The sample was drawn from an enterprise resource planning (ERP) systems user group. The user group includes many of Australia's leading companies as members. It is reasonable to assume that companies who have implemented an ERP systems have realised the role information systems can play in supporting their various business processes and have undertaken a major investment to achieve this. The ERP system that was used by the sample had a comprehensive range of functionality available to support various the e-Procurement practices.

What are the current direct and indirect procurement practices n the respondent's organisations?

The results show that the Internet is currently used for only 4% of direct procurement and 10% for indirect procurement. Looking at the "High Level Users" in Table 9 and 11 we see 8% of the organisations indicated heavy (>50%) usage of the Internet for direct procurement and 3% for indirect. A recent survey of 350 organisations by the Institute of Supply Management and Forrester (2002) in the USA, showed similar results in that they indicated that only 8.9% of the organisations were using the Internet for more than 40% of direct procurement. It would seem that the Australian organisations in the survey group were "in the ballpark" with U.S. organisations in the adoption of e-Procurement. The future intention to use the Internet for direct procurement showed a small (4% to 6%) increase and a larger (10% to 15%) for indirect procurement. These figures are indicative that organisations are planning for increased take-up of Internet e-Procurement and the indirect figures are quite significant. These results also replicate the trends from the ISM/ Forrester (2002) report where organisations reported increased uptake of the Internet for indirect procurement.

What are the current drivers and barriers of e-Procurement in the respondent's organisations?

The drivers that are scored highly include Price reduction (3.70), Unit Cost (3.32), Customer Demand (3.22), Administration Costs (3.21) and Market Intelligence (3.17). All standard deviations are about 1.5 Likert points and show a consistency in the results. Respondents had the opportunity to identify other e-procurement drivers that they considered important. The results indicated that the main e-Procurement drivers were cost related and were tactical in nature. This is possibly due to the maturity of the e-procurement solutions within the respondent companies. Companies in the early stages of e-Procurement would tend to identify drivers that were cost related, as they are easier to measure and quicker to realise. More strategic drivers such as improved visibility of customer demand, market intelligence and enhanced decision making even though they were rated highly are more difficult to quantify and only really become apparent once companies e-Procurement solution has matured. The drivers that were ranked the lowest were closely related to the supply chain. This would be expected as analysts predict that some of the major benefits with e-Procurement would be attained in relation to indirect procurement. All drivers were ranked by at least one company as being most important.

The top four barriers are Technological Infrastructure (3.3), Skilled Personnel (3.2), Partner Infrastructure (3.2) and Integration with Partners (3.2). The top barriers indicate that there are complex technological issues both within and between organisations in the procurement process. Further investigation is needed into the nature of these technological infrastructure issues as mentioned previously; the company's ERP system has adequate capabilities for e-Procurement. This is reflected by the low ranking of the barrier associated with inadequacy of the e-Procurement solutions. Integration with business partners could also incorporate the non-technological components such as people and process integration. It appears that upper management are willing to support the move to e-Procurement but are hindered by a number of external factors. Previous research (Hawking and Stein, 2001) has reinforced the impact that lack of skilled resources has on Internet related projects.

The range of barriers may also be an indication of the e-Procurement maturity of the sample. It would have been valuable to correlate the level of e-Procurement in each company

against the identified barriers. Do the barriers gain or lessen in importance depending on the maturity of the e-Procurement solution implementation? Companies who at the stage investigating e-Procurement solutions would tend place greater emphasis on technological issues rather than the "soft" barriers as company culture, business processes, and cooperation of business partners. This is an area for further research.

CONCLUSION

The companies sampled represented some of Australia's leading companies. These companies were members of a leading ERP system user group and therefore by implication had made major organisational and financial commitments to the implementation of information systems to support their business processes. It could be assumed that the use of an ERP system would overcome many of the technological and integration barriers associated with e-Procurement. The particular ERP system used by the sample incorporates functionality to support e-Procurement. There are identifiable and quantifiable benefits to support the introduction of an e-Procurement solution. Maybe the fundamental barrier is the lack of skilled personnel. Research indicates that the majority of "e-Projects" are retarded due to this lack of skills (Stuart, 1999). But again as mentioned previously the strength of the identified barriers and drivers could be dependent on the maturity of the companies in regard to their e-Procurement solution.

Future research should attempt to categorise the e-Procurement maturity of the respondents in an attempt to identify if there is a transitional nature to drivers and barriers. Further analysis should also occur with barriers and drivers being cross-tabulated by industry sector, company size and procurement expenditure. The research identified a number of barriers and drivers for e-Procurement and then assessed the strength of these factors in the Australian marketplace. This study was the first stage of a wider research study on e-Procurement in the Australian marketplace. Several additional study areas emerged including the extent that drivers and barriers change of the life cycle of the e-Procurement solution and the extent that e-Marketplaces will impact upon direct and indirect procurement. The emergence of Supplier Relationship Management (SRM) and associated systems should also be studied within an Australian context to see if trends from overseas are effecting Australian organisations.

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