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A REVIEW OF RESEARCH ON E-MARKETPLACES 1997-2007

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A REVIEW OF RESEARCH ON E-MARKETPLACES 1997-2007

Abstract

Electronic marketplaces are an important theme of research on the information systems landscape. In this paper we examine eleven years of research on electronic marketplaces in leading journals. The research articles are classified according to whether they focus on electronic markets theory; whether they take a system perspective and focus on the technology or functionality of the system; whether they investigate adoption and implementation issues, or organisational issues. The analysis of the literature highlights two distinct issues that researchers in the discipline need to address. The first is the lack of research on the fundamental questions on the nature of electronic markets and their efficiency. If information systems research does not address this question then it will not be seen as tackling critical issues by those outside of the discipline. The second is the relative lack of papers on the organisational implications of adopting and managing electronic marketplaces. These include, the organisational benefits, costs and risks of trading through e-marketplaces and strategies and methodologies for managing organisational participation. Both issues can be addressed by increasing the number of macro studies examining efficiencies in electronic markets.

Keywords: electronic marketplaces, review, context analysis.

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1 INTRODUCTION

Considerable research has been conducted on electronic marketplaces over the past eleven years. This topic has been a prominent feature of the information systems research landscape over this period reflecting the rapid growth and later consolidation in e-marketplace numbers. Today, e-marketplaces have a significant role to play in business and continue to be a vibrant research topic. Given the decade of e-marketplace research, we argue that it is timely to take stock of the wealth of research on e-marketplaces and analyse the need for future research within this field.

E-marketplaces have made a major impact on the business world both from a firm and consumer perspective. Their importance has not diminished since the dot.com crash and the subsequent consolidation of many minor e-marketplaces between 2001 and 2003. Those e-marketplaces that remain offer a more viable and sustainable business model for organisations to consider (Andreoli, 2007; Glassberg and Merhout, 2007). There are many successful B2B e-marketplaces which are still growing in transactions, such as, ChemConnect, cc-hubwoo and Quadrem. ChemConnect, for example, has established itself as a leading independent and neutral 3rd party commodity exchange, auctions provider, bulletin-board, back-end fulfilment service and market information source for chemicals, feedstocks, polymers, fuel oil, and other items. Its membership includes more than 9,000 companies from over 150 countries worldwide. cc-hubwoo is the leading global provider for Source-to-Pay electronic solutions and Supplier Network Management. The company manages the largest B2B e-procurement community in the world with more than 60 buying corporations and over 12,000 connected suppliers in 44 countries worldwide. cc-hubwoo's trading hub processes 2 million purchase orders representing €5 billion in customer spend value annually. Quadrem is a Global e-marketplace for the mining industry that connects more than 47,000 suppliers and 700 buyers; handles more than US\$13 billion in order throughput annually; and grows transactions at a cumulative rate of 21 percent per month. Currently Quadrem has 47,000 suppliers connected to nearly 700 purchasing locations.

The purpose of this paper is to analyse research papers on e-marketplaces from 1997 to 2007 to identify the major areas of research on this topic and highlight the research gaps and research questions that need to be addressed. From this we identify a research agenda on e-marketplaces and its implications for the discipline.

2 E-MARKETPLACE DEFINITION

An electronic marketplace provides opportunities for conducting business in the same way as a traditional market except that the transactions are executed via electronic channels usually an Internet based platform. In its simplest form an e-marketplace (sometimes referred to as an exchange, auction, e-hub or catalogue aggregator) can be defined as an inter-organisational information system that allows the participating buyers and sellers in some market to exchange information about prices and product offerings (Bakos, 1997). An e-marketplace should enable potential trading partners to be identified and a transaction executed (Choudhury et al., 1998). Further segmentation of the e-marketplace in the literature concerns governance structure, market focus (Premkumar, 2003), products traded and trading mechanism used (Kaplan & Sawhey, 2000).

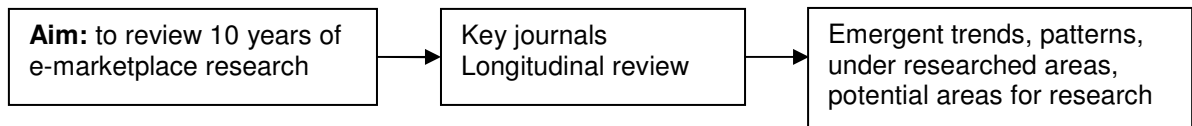
3 RESEARCH METHODOLOGY

The research approach for this study consists of a meta-analysis of the research literature. Papers for analysis were gathered from leading information system journals for the 11 year period 1997-2007. This time frame covers the development of e-marketplaces research from its early stages to the present time and is extensive enough to identify the emergence of literature on a range of research themes within the e-marketplace domain. The longitudinal nature of the review enables trends, patterns and themes to be identified and any gaps in the literature to become apparent. The journals selected for

inclusion in the analysis were considered on their ranking within the discipline (www.isworld.org/csaunders/rankings.htm) and their impact factors (see table 1 for list of journals). The number of journals selected was limited to 16 to maintain the level of quality. Leading research journals were chosen to represent the leading research in the area as those journals subject papers to an intensive review process. Journals which are more computer science focused, narrow in focus (niche), or management focused with traditionally few information systems papers were excluded from the list. One management journal, Management Science, was included as it is present in many information systems journal rankings.

Journal title	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	No of articles	% of total
Communications of the ACM		2	1	2	1	1	1		3	1	1	13	8.13%
Communications of the Association for Information Systems			1							2		3	1.88%
Decision Support Systems				1			2	1	2	2	8	16	10.00%
European Journal of Information Systems								1	1	1	2	5	3.13%
IEEE Transactions on Engineering Management							1	1		1	2	5	3.13%
Information and Management		1				2	1	2	1	2	1	10	6.25%
Information Systems Research		1			1		2	3	4	3		14	8.75%
Information Technology and Management					1							1	0.63%
Information Technology and People			1	1			1		1			4	2.50%
International Journal of Electronic Commerce	1	1	6			2		2	2	3	1	18	11.25%
Journal of Information Technology			1	1					1	2		5	3.13%
Journal of Management Information Systems	1			1			2		1	1	1	7	4.38%
Journal of the Association for Information Systems						1						1	0.63%
Management Science	1	1				2	7	4	16	2	8	41	25.63%
MIS Quarterly		1	1			1		1		2	3	9	5.63%
The Journal of Strategic Information Systems		1			1	1	1	2		1	1	8	5.00%
Total each year	3	8	11	6	4	10	18	17	32	23	28	160	

Table 1. Reviewed journals and number of papers by year



Method

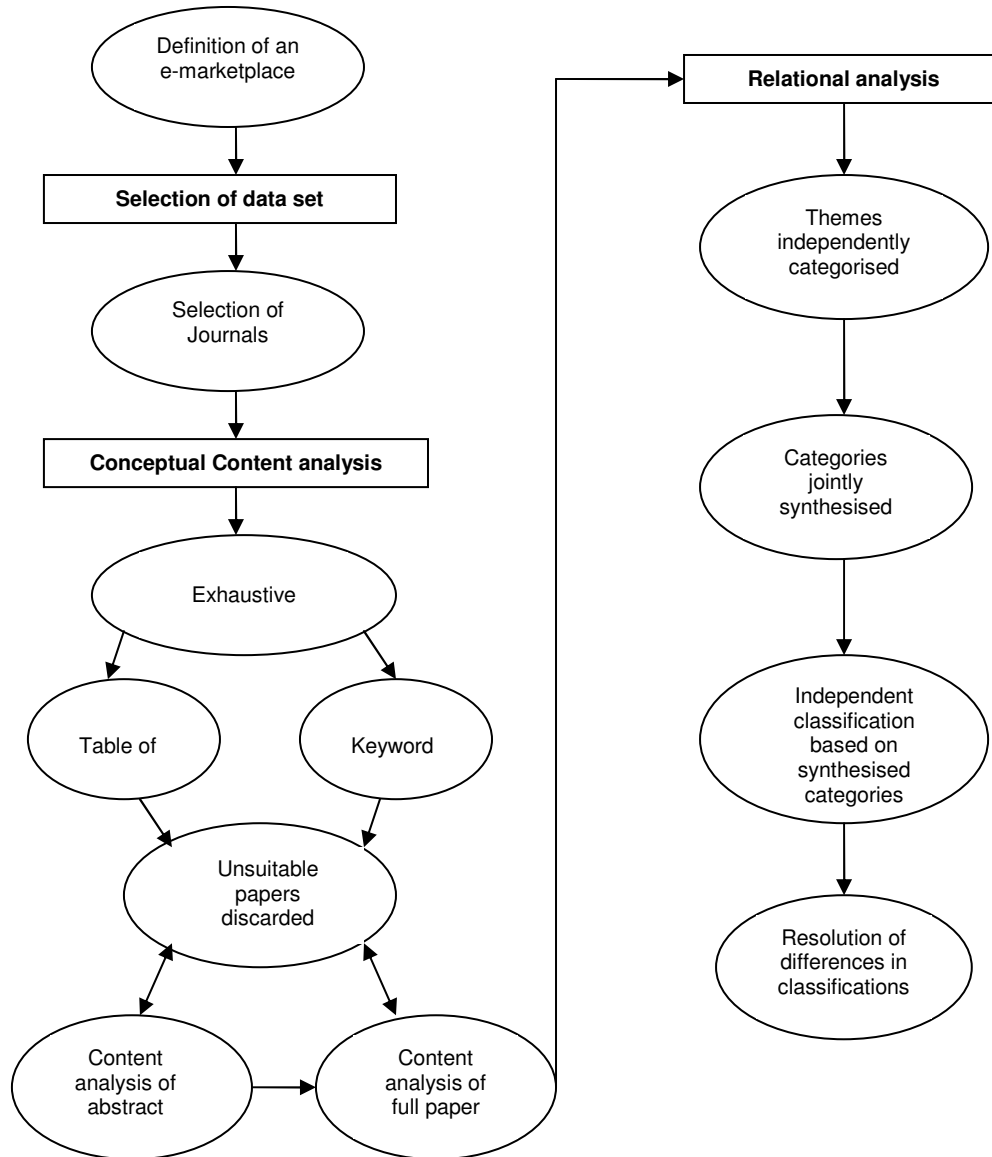


Figure 1. Overview of aims and method for the review of literature

Management science produced a special issue in March 2005 volume 51(3) on electronic markets and this resulted in the publication of 14 papers. Issue 49(11) also contained a high proportion of electronic marketplace research papers.

The inclusion of a paper into the analysis was dependant upon the paper focusing primarily on some aspect of an e-marketplace. Those papers that concentrated solely on e-commerce were not included. E-commerce is a broader term and can be applied to any form of transaction taking place between a buyer and seller (or potential participants) but does not necessarily involve an e-marketplace. However, papers that focused on e-commerce but included a substantial portion of content on e-marketplaces were included.

The identification of papers with the journal list involved keyword searches and an exhaustive search on contents pages of the journals. Papers that appeared to fit into the e-marketplace category were verified by firstly reading the abstract and then the entire paper to extract the main findings and emphasis of the paper. Some of the papers that were initially identified via the title or keywords were discarded in this process if either the abstract or the article itself did not primarily focus on e-marketplaces. This process identified 160 papers for the content analysis.

The paper analysis method involved a grounded approach that examined the main conceptual emphasis of each paper and its stated aims. The purpose of the grounded approach was to develop a conceptual classification from the literature rather than impose a classification framework on to it. Independently, the two researchers developed their classifications from the literature. The content of each article was analysed by examining the title, abstract, keywords, stated aims of the paper and a conceptual review of its full content. The two researchers then brought their independent classifications together and through a matching process and the resolution of inconsistencies reduced these to one classification framework.

Once the classification categories were completed, one of the original researchers and a third researcher, not involved in developing the classification, allocated all of the papers to the framework. Again, these two researchers brought their classifications together and resolved inconsistencies, referring to papers again where necessary. The Cohen's Kappa statistic was used to analyse the correspondence between the researchers allocation of articles to the categories in the classification. There was a high degree of reliability between the researchers (0.93). This was well above the 0.667 level suggested for a minimum strength of agreement and above the recommended level of 0.80 (Krippendorff, 2004).

4 CLASSIFICATION OF LITERATURE

In this section of the article we describe the analysis and classification of the literature. This includes a conceptual breakdown of the literature, articles by journals, articles by year and articles according to focus. The articles breakdown into five high-level conceptual types (table 2):

- 1) E-commerce articles that include a significant contribution on e-marketplaces;
- 2) Fundamental theories related to electronic markets;
- 3) Articles that have a system or sub-system focus (including auctions);
- 4) Adoption issues;
- 5) Organisational implications of participation including strategic implications.

Conceptual Area	Number of Articles	Percentage of Articles
Electronic commerce with significant e-marketplace discussion	10	6
Electronic Markets	20	13
System	86 (including 68 on auctions)	54
Adoption/implementation	25	16
Organisational issues	19	11
Total	160	100

Table 2. Number and percentage of articles in the major e-marketplace themes

Category	Sub category 1	Sub category 2	Author(s) and year	No of articles	
Electronic commerce with significant e-marketplace discussion			Chu, Leung, Van Hui, Cheung & Waiman 2007; Marchewka & Towell 2000; Martinsons 2002 ; Ngai & Wat 2002; Storey, Straub, Stewart & Welke 2000; Wareham, Zheng & Straub 2005; Beaudry & Carillo 2006; Xiao & Benbasat 2007; Straub & Watson 2001; Standing & Lin 2007	10	
Electronic Markets	General electronic markets		Bakos 1998; Glassberg & Merhout 2007; Grover & Ramanlal 1999(a); Kambil, Nunes & Wilson 1999	4	
	Efficiency		Di Noia, Di Sciascio, Donini & Mongiello 2004; Lee & Clark 1996/7; Lee 1998; Cordella 2006	4	
	Pricing		Lee, Westland & Hong 1999;	1	
	Search costs		Bakos 1997; Campbell, Ray & Muhanna 2005	2	
	Product		Ghose, Smith & Telang 2006	1	
	Structure		Grover & Ramanlal 1999(b); Lindemann & Schmid 1998; Schlueter-Langdon & Shaw 2002; Bhargava & Choudhary 2004; West 1997; Steyeart 2004	6	
	Operational performance		Singh, Salam & Iyer 2005; Lee & Whang 2002	2	
System	General systems perspective		Choudhury, Hartzel & Konsynski 1998; Albrecht, Dean & Hansen 2005; Anandalingam, Day & Raghavan 2005 Viswanathan 2005	4	
	Auction	General	Atkins 1998; Bapna, Goes & Gupta 2001; Kambil & Van; Heck 1998 ; Katok & Roth 2004; Klein & O'Keefe 1999 Kwasnica Ledyard, Porter, & DeMartini 2005; McKeown & Watson 1999; Pekec & Rothkopf 2003; Pinker, Seidmann & Vakrat 2003	9	
		Auction support systems		Adomavicius & Gupta 2005; Leskela, Teich, Wallenius, Wallenious 2007; Avenali & Bassanni 2007; Yang & Zhang 2007; Bolton, Katok & Ockenfels 2004; Pavlou & Dimoka 2006; Dellarocas 2005; Gregg & Scott 2006; Lin, Li, Janamanchi & Huang 2006; MacInnes, Li & Yurcik 2005; Padovan, Sackmann, Eymann, Pippow 2002; Zacharia, Moukas & Maes 2000; Dellarocas, 2006	13
		Pricing		Amyx & Luehlfing 2006; Bandyopadhyay, Barron & Chaturvedi 2005; Caldentey & Vulcano 2007; Carare & Rothkopf 2005; Gallien & Gupta 2007; Günlük, Ladányi & de Vries 2005; Gallien & Gupta 2007; Oh & Lucas 2006	8
		Trust		Cazier, Shao & St Louis 2006; Ba & Pavlou 2002 ; Hu, Lin, Whinston & Zhang 2004; Pavlou & Gefen 2004; Pavlou & Gefen 2005	5
		Auction types and Strategies		Bapna, Goes, Gupta & Jin 2004; Ding, Eliashberg, Huber & Saini 2005; Elmaghraby 2005; Snir & Hitt 2003; Standifird, Roelofs & Durham 2004; Bapna, Goes & Gupta 2003 (ISR) (a); Bapna, Goes & Gupta 2003 (MS) (b); Deltas & Engelbrecht-Wiggans 2005; Easley & Tenorio 2004; Kelly & Steinberg 2005; Kwon, Anandalingam & Ungar 2005; Sandholm, Suri, Gilpin & Levine 2005; Day & Raghavan 2007; Arora, Greenwald, Kannan, Krishnan 2007; Guo, Koehler, Whinston 2007; Hidvegi, Wangand & Whinston 2007; Edalenman & Ostrovsky 2007; Ha, Zhou, Moon 2007; Minner 2007; Chen, Chen & Song 2007; Jones, Easley & Koehler	15

			2006	1
		Revenue	Engelbrecht-Wiggans & Kahn 2005; Rothkopf, Pecec & Harstad 1998; Vulcano, van Ryzin & Maglaras 2002; Caldentey, Vulcano, (2007)	4
		Procurement and Supply chain	Chen, Roundy, Zhang & Janakiraman 2005; Elmaghraby 2003; Engelbrecht-Wiggans & Katok 2006; Hartley, Lane & Hong 2004; Parkes & Kalagnanam 2005; Rothkopf, Harstad & Fu 2003; Chen 2007; Fan, Stallaert & Whinston 2003	8
	Knowledge management systems		Felfernig 2007; Gosain 2003	2
	Business models		Cousins & Robey 2005; Dai & Kaufmann 2002; Ordanini 2006	3
	Trading mechanisms		Fan, Stallaert & Whinston 1999; Kang & Han 2003; Cheng, Chana & Lin 2006; Zhao et al 2006; Joh & Lee 2003; Lee, Chun, Shim & Lee 2006; Levi, Kleindorfer & Wu 2003; Subirana & Carvajal 2000; Du, Li & Wei 2004	9
Adoption/ Implementation	General adoption issues		Damsgaard 1999; Gregor & Jones 1999; Ba, Stallaert, Whinston & Zhang 2005; Agrawal, Hariharan, Kishore & Rao 2005; Christiaanse, Van Diepen & Damsgaard 2004; Driedonks, Gregor, Wassenaar & Van Heck 2005; Pan & Pan 2006; White, Daniel, Ward & Wilson 2007; Gengatharen & Standing 2005;	9
	Adoption approaches		Brown & Lockett 2004; Pozzebon & Van Heck 2006; Dewan, Jing & Seidmann 2000	2
	Adoption in procurement and the Supply chain		Baron, Shaw & Bailey 2000; Kleindorfer & Wu 2003; Segev & Gebauer 2001; Quaddus & Hofemeyer 2007; Christiaanse 2005; Jayaraman & Baker 2003; Wu & Kleindorfer 2005; Kalvenes & Basu 2006	1
	Barriers/ motivations		Howard, Vidgen & Powell 2006; Hsiao 2003; Kaefera & Bendoly 2004; Pavlou, Liang & Xue 2007; Zhu 2004	8
Organisational issues	General organisational issues		Gallaughier 1999; Hackney, Burn & Salazar 2004; Hempel & Kwong 2001; Premkumar 2003; Ravichandran, Pant & Chatterjee 2007	5
	Trust and security		Pavlou 2002; Ratnasingam 2005; Verhagen, Meents & Tan 2006; Chua, Wareham & Robey 2007	4
	Relationships		Grover, Teng & Fielder 2002	1
	Strategy		Soh, Markus & Goh 2006; Standing, Love, Stockdale & Gengatharen 2006; Watson & McKeown 1999; Yoo, Choudhary & Mukhopadhyay 2003 Phan 2003; Sheng, Mykytyn & Litecky 2005; Yeol and Benbasat 2007; Hackney, Jones & Losch 2007	8
	Networks		Volkoff, Chan & Newson 1999	1

Table 3. Articles classified according to categories

The five conceptual areas are further broken down to specific topics (table 3). Some sub-topics appear more than once. This is because the same issue can be examined from more than one perspective. For example, trust appears in the auction category and also within organisational implications. Trust is

treated in a narrow sense within the auction concept but it is also a much broader organisational issue that can impact on relationships between firms.

4.1 Electronic markets

A major category of papers relate to the theoretical foundations of market versus hierarchy economics. Bakos (1997) discussed the efficiency of electronic markets and more recent papers have examined the implications of search costs, the importance of the type of product on e-marketplace efficiency, the structure of e-marketplaces, and operational performance in e-marketplace use. This work draws primarily upon the concepts and theory discussed by Williamson (1975, 1979) and Uzzi (1997).

The benefits of hierarchy and market mechanisms for conducting business activity have been extensively debated from an economic perspective (Williamson 1975; Malone, Yates & Benjamin, 1987). The development of IT has been viewed as a primary factor in the reduction of transaction costs and one which allows for a greater number of suppliers in electronic markets (Malone et al. 1987). Transaction costs are the costs associated with finding someone with whom to do business, reaching an agreement about the price and other aspects of the exchange, and ensuring that the terms of the agreement are fulfilled (Williamson, 1975). Electronic markets have the potential to streamline and manage these activities and reduce the transaction costs associated with conducting business compared with hierarchies where a company has to manage its suppliers and procurement processes (Malone et al., 1987). However, it has been acknowledged that market efficiencies may be related to certain types of non-recurrent transactions (Williamson, 1979).

Research questions

- Do electronic markets result in lower prices?
- How does a dominant player influence price?
- Does a lack of transparency in the electronic marketplace impact on efficiency?
- What are the main entry barriers to participation and how do they impact on the marketplace?
- How does the trading of heterogeneous products impact on the electronic marketplace?
- What transaction costs still exist in e-marketplaces?
- What forms of friction are there?
- The role of trust in reducing friction?

4.2 Adoption and implementation of e-marketplaces

Connection to a B2B e-marketplace may involve a significant investment in hardware, software and employee training and this can impose significant switching costs for participants. Identifying the stages of adoption and implementation challenges have been an area of research. Many companies find they have little or no experience to draw upon in selecting an e-marketplace, and defining the stages and phases of implementation (Stockdale and Standing, 2006). Related to the adoption are the challenges of assessing risk associated with selection of the e-marketplace and implementation problems with suppliers. In an analysis of the adoption of an e-marketplace in the Australian beef industry it was found that social and political factors also played a significant role in determining levels of adoption (Driedonks et al., 2005). In particular, Driedonks et al. (2005) found loss of social capital, the nature of industry supply chain communication channels, and not recognising power brokers in the supply chain all had an impact on adoption and the success of the e-marketplace.

Research questions

- What are the adoption costs and risks for organisations?
- What are effective e-marketplace selection methodologies?
- What are the best ways to evaluate the costs, benefits and risks of adoption?
- What factors should be considered in adoption?
- What type and level of training is required?
- What is an effective E-marketplace adoption life-cycle?

- What are the barriers and challenges in adoption?

4.3 System and technology focus

A class of papers on electronic marketplaces have focused on the system itself, either from a functional perspective or from a technical perspective. The sub-categories within this field include: business models, trading mechanisms such as negotiation features, catalogue features and the efficiency of various transaction processes, and knowledge management exchange within e-marketplaces. In all of these cases the features of the e-marketplace systems are the focus of the research.

Research Questions

- What are the technical implications of mobile e-marketplaces?
- How do systems design features and constraints impact on usability and usefulness of e-marketplaces
- How will E-marketplace systems evolve?

4.3.1 Auction mechanisms

Because of the large number of articles focusing on auction mechanisms it has been included as a separate category. The most common topic of research within electronic marketplaces is the actual auction process itself. These articles focus on the type of auction process, associated algorithms, and the efficiency of auction types. In particular, the functionality of the system is emphasized in terms of pricing of goods, features to provide support to buyer and sellers related to bid strategies, feedback and reputation mechanisms, and trust issues related to auction features.

Research Questions

- What types of auction mechanism impact on the price of goods?
- Which auction mechanisms do consumers and sellers prefer and why?
- What bid strategies are most effective and why?
- What should be in a bid support system?
- What is rational and irrational behaviour in auctions?
- What are effective auction feedback processes?

4.4 Organisational Issues

Participation in electronic marketplaces (e-marketplaces) for the purpose of trading goods and services can potentially provide organisations with significant strategic, tactical and operational benefits (Standing et al., 2006). Despite the strategic benefits associated with e-marketplace participation, there are problems related to identifying and evaluating the associated benefits, costs and risks. Senior managers are often reluctant to participate in e-marketplaces because of their confusion over the varying benefits (strategic, tactical and operational) that can be obtained and their differing natures (financially tangible, non-financially tangible and intangible) (European E-business Report, 2004; Stockdale and Standing, 2006; Standing et al., 2006). In addition, many firms that engage in e-marketplace trading still struggle to develop effective participation strategies (Soh et al., 2006) and fail to identify the benefits and costs associated with participation (NeRPA, 2006; Standing and Lin, 2007).

Many firms find it difficult to assess the potential benefits, costs and risks of participation during the e-marketplace selection process and also during participation (Standing and Lin, 2007). It has been acknowledged that decisions in the B2B arena are usually more complex than in the business to consumer (B2C) arena where decisions are more likely to be based on price and transaction costs. Trust, frequency of the transaction, complexity of the transaction, firm reputation, managerial skill, service, delivery scheduling and switching costs are some of the factors that make strategic decisions on firms' participation in B2B e-markets more difficult (Glassberg and Merhout, 2007).

Research questions

- Identify the factors and strategies that enable organisations to successfully operate in business-to-business electronic marketplaces;
- Determine how the benefits, cost and risks derived from e-marketplace participation are related to the characteristics of the organisation; and
- Design and develop a model that can be used by managers to manage the business processes that need to be changed to obtain the benefits from e-marketplace participation and membership.

4.5 Electronic Commerce and e-marketplaces

A number of articles that focus on electronic commerce issues also give significant attention to electronic marketplaces. These articles have been included since although they are not focused solely on electronic marketplaces they make a contribution to our understanding and the related theory. Wareham, Zheng & Straub, (2005) provide a literature meta-analysis that incorporates articles on electronic marketplaces and auctions. Some articles examine applications, for example, Martinsons (2002) looks at three case studies in China, one of which is an e-marketplace. The general business-to-business perspective, including e-marketplaces is examined in terms of evaluation methodologies and processes with the conclusion that effective evaluation uncovers additional benefits which in turn encourage further evaluation efforts (Standing & Lin, 2007).

5 DISCUSSION

Eleven years of electronic marketplace research have passed and overall the work has had a major impact on the discipline. Early work by Malone et al (1987) discussed the benefits and potential of electronic markets, stating their superiority over hierarchies in terms of transaction costs. It also predicted the rise of electronic marketplaces. Implementations of e-marketplaces grew rapidly from the mid to late nineties and many struggled for viability from 2000 to 2002. However, after a period of consolidation many viable e-marketplaces increased in profitability and they are now a competitive option for firms procuring goods and services and for consumers making purchases.

Although there have been a considerable number of papers published in leading journals on e-marketplaces there are still many unanswered questions and areas that lack clarity. Many articles have focused on auction mechanisms in relation to their efficiency and effectiveness. In comparison, relatively few articles have investigated the organisation implications of e-marketplace participation and the issues involved in adoption and implementation. As the adoption of e-marketplace trading is a major organisational decision with many associated risks such as the alienation of local supplier base and potentially unfilled or poorly filled orders, there is a need for more research on the organisational implications.

In addition, the fundamental questions related to the debate over the relative merits of electronic markets versus electronic hierarchies still need further research. Electronic markets according to economics theory should have reduced transaction costs and, if not produce a frictionless market, they should reduce the costs associated with conducting business compared with hierarchies. However, it has become apparent from the research conducted to date that the market versus hierarchy issue is much more complex when taken from an abstract theory and placed within an organisational setting (Glassberg & Merhout, 2007). The efficient market hypothesis (EMH) (Williams & Findlay, 2001) supports the superiority of markets over hierarchies but this doesn't take into account contextual factors. These may include the nature of the product and whether it needs to be made to exacting quality standards that can only be achieved through developing a lasting relationship with a supplier. Nor does it consider the social and political context of the organisation where the perspectives of constituents need to be considered. Therefore questions related to efficiency in electronic markets, the reduction of transaction costs, switching costs, efficient pricing of goods, and the causes of friction in markets still require further research to shed light on these issues.

The above two areas (organisational and electronic markets theory) are examples of macro level studies. In the on-going debate on the significance of information systems research themes, Agarwal and Lucas (2005) argue for more macro level research studies to be conducted so that micro level studies do not dominate the research landscape. They classify research that has a narrow focus as micro whilst macro level research investigates transformational aspects of IT. This supports our findings and view that a significant amount of e-marketplace research should address the impact of e-marketplaces rather than the e-marketplace itself. In addition, macro level studies can assess the impact of technology on industry sectors and the economy by addressing fundamental theoretical questions such as the merits of markets and hierarchies. Studies investigating fundamental theoretical issues are more likely to make a greater contribution to the discipline in terms of extending, refuting, or enhancing theory (Agarwal & Lucas, 2005). This is important since the research community is just as important a stakeholder as the practitioner. If a micro focus does dominate e-marketplace research then research on e-marketplaces may be in danger of being considered less relevant with many critical questions remaining unanswered.

From a systems perspective it is still unclear how certain e-marketplace structures and features impact on the fit with organisational objectives. Different transactions and different auction mechanisms can impact on the benefits and costs associated with participation. Technical system features can create integration problems with other enterprise applications such as enterprise resource planning (ERP) or customer relationship management (CRM) systems and add to the costs of implementation and use.

6 CONCLUSIONS

Overall, eleven years of research on electronic marketplaces has produced some valuable insights into this new paradigm. There have been many papers on various aspects of the technology and auction systems. However, it also highlights two distinct issues that reflect less positively on the discipline. The first is the lack of research on the fundamental questions on the nature of electronic markets and their efficiency. The second is the relative lack of papers on the organisational implications of adopting and managing electronic marketplaces. These include, the organisational benefits, costs and risks of trading through e-marketplaces and strategies and methodologies for managing organisational participation. Both of these areas require more macro level studies that address both organisational issues and economic markets theory.

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