

5-2009

A Conceptual Framework for Evaluating the Adoption of E-Market for Electronic Business in Small and Medium-Sized Enterprises in Australia

Hepu Deng

RMIT University, hepu.deng@rmit.edu.au

Pramila Gupta

CQUniversity Melbourne, pramilag@optusnet.com.au

Xiaoxia Duan

RMIT University, xiaoxia.duan@rmit.edu.au

Follow this and additional works at: <http://aisel.aisnet.org/confirm2009>

Recommended Citation

Deng, Hepu; Gupta, Pramila; and Duan, Xiaoxia, "A Conceptual Framework for Evaluating the Adoption of E-Market for Electronic Business in Small and Medium-Sized Enterprises in Australia" (2009). *CONF-IRM 2009 Proceedings*. 42.

<http://aisel.aisnet.org/confirm2009/42>

This material is brought to you by the International Conference on Information Resources Management (CONF-IRM) at AIS Electronic Library (AISEL). It has been accepted for inclusion in CONF-IRM 2009 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact elibrary@aisnet.org.

43. A CONCEPTUAL FRAMEWORK FOR EVALUATING THE ADOPTION OF E-MARKET FOR ELECTRONIC BUSINESS IN SMALL AND MEDIUM-SIZED ENTERPRISES IN AUSTRALIA

Hepu Deng
School of Business Information Technology
RMIT University
GPO Box 2476V, Melbourne 3000, Australia
Email: hepu.deng@rmit.edu.au

Pramila Gupta
Faculty of Arts, Business, Informatics and Education
CQUniversity Melbourne
108 Lonsdale St, Melbourne 3000 Australia
Email: p.gupta@mel.cqu.edu.au

Xiaoxia Duan
School of Business Information Technology
RMIT University
GPO Box 2476V, Melbourne 3000, Australia
Email: xiaoxia.duan@rmit.edu.au

Abstract

This paper presents a conceptual framework for evaluating the adoption of electronic market for electronic business in small and medium-sized enterprises in Australia. Such a conceptual framework is built on a comprehensive analysis of existing research in electronic market, in particular in relation to the value drivers and the critical success factors for adopting e-market in electronic business. Within the proposed framework, the current patterns and trends of electronic market adoption in Australia can be analyzed, and the emerging issues for making full use of the potential of electronic market for electronic business can be discussed.

Keywords

Electronic market; Business-to-Business Electronic Business; Technology Adoption

1. Introduction

Electronic market (e-market) is a virtual marketplace in which buyers and sellers are brought together in one central market for exchanging goods, services and information. It is often referred to as a website that allows businesses to buy and sell industrial products and services using a standard web browser, commonly referred to as business-to-business (B2B) e-business (Dou and Chou, 2002; Grieger, 2003; Milliou and Petrakis, 2004). E-market has been increasingly popular in the recent decade, exemplified not only in the rapid growth of the offerings of e-market product and service (Yellow Page Report, 2003; E-market Service,

2008), but also in the wealth of literature resulting from the active research in this area (Daniel et al., 2004; Lipis et al., 2000; Wall et al., 2007). The popularity of e-market is mainly due to the potential benefits of e-market to business including strengthened customer relationships, ease of reaching the targeted market, improved efficiency, reduced costs associated with inventories, and greater competitive advantage (Purao and Campbell, 1998; Daniel et al., 2004; Standing and Lin, 2007; Deng and Molla, 2008).

Small and medium-sized enterprises (SMEs) are organizations that employ less than 200 persons (ABS 2007). SMEs are important contributors to the global economy accounting for approximately 50% of all national gross domestic products (GDP) and 30% of export (OECD, 2007). Globally approximately 99.5% of all businesses have 100 or less employees while 99.8% of all businesses have 200 or less employees (OECD, 2005). In Australia, SMEs are essential to the Australian economy as about 96% of businesses are categorized as SMEs, employing approximately 3.5 million people and contributing to an estimated 30% of national GDP. In June 2006 there were 1,963,907 actively trading SMEs in Australia, almost 1.9 million businesses employed less than 20 people, and over 1.8 million businesses had annual turnover of less than \$2 million (ABS, 2007).

Realizing that e-market is a major source of competitive advantage as well as a cost effective way for SMEs to reach customers for competing with their counterparts, both Australian federal and state governments actively assist SMEs with expanding, growing and prospering their business through developing policies and programs for improving the economic environment and growth prospects for SMEs (OECD, 2005). Key initiatives introduced include (a) the establishment of the Small Business Deregulation Task Force in 1996, (b) the Small Business Assistance Program with \$60 million funding over four years in 2002, (c) the successful New Enterprise Incentive Scheme providers in 2003, and (d) an \$5.3 billion package entitled Backing Australia's Ability-Building Our Future through Science and Innovation in 2004 (DITR, 2007). Such initiatives have created a sound environment for supporting Australian SMEs financially and promoting the adoption of latest technologies for developing their respective businesses. With the rapid advance in web technologies, the barriers for SMEs to conduct their business online are greatly reduced (Kaplan and Sawhney, 2000; Molla and Licker, 2005a). With the continuous support from the federal and state governments as discussed above, the number of SMEs in adopting e-market for e-business has been increasing in Australia and the world (Poon, 2000; e-market services, 2008).

The tremendous potential of e-market for SMEs, however, has not been fully utilized. A majority of the Australian SMEs have not made use of e-market yet. Those who have adopted e-market for e-business one way or another have not moved beyond the entry-level adoption (Molla and Licker, 2005a, 2005b). Furthermore the choice of specific e-market for e-business does not guarantee the success of participating into e-markets. This is due to various critical factors which contribute to the success of e-business using e-market including the company size, background and culture, system compatibilities, resource limitation, and availability of various e-markets (Dunt and Harper, 2002; Hadaya, 2004; Son and Benbasat, 2007).

The new millennium has witnessed the rise and the fall of many 'dot.com' organizations (Ravichandran et al., 2007). As a result, SMEs nowadays are extremely cautious about the adoption of e-market for e-business. Such a practice is further enforced by the characteristics of SMEs on their lack of financial resources, specialization knowledge and skills, and the economy of scale in their pursuit of e-business using e-market. The past experience for Australian SMEs to design, build and maintain their own private e-markets has proven to be

unsuccessful despite a huge government and industry investment to build the e-business capabilities of SMEs (NOIE, 2003; OECD, 2007; Wang et al., 2006). On the other hand, a public e-market owned by a third party is able to provide SMEs with advanced technical expertise and external support in reducing SMEs' financial and managerial burdens in their pursuit of e-business using e-market. A comprehensive investigation of relevant literature seems to suggest that there is a lack of understanding of the main concerns of SMEs in their efforts to adopt e-market for B2B e-business.

This paper presents a conceptual framework for evaluating the adoption of e-market for electronic business in small and medium-sized enterprises in Australia. Such a conceptual framework is built on a comprehensive analysis of existing research in e-market, in particular in relation to the value drivers and the critical success factors for adopting e-market in electronic business. Within this proposed framework, the patterns and trends of e-market adoption can be analyzed, and the emerging issues for making use of the potential of e-market for B2B e-business can be discussed.

In what follows, we first present an overview of e-market for electronic business. We then discuss the emerging issues and challenges for e-market development in Australia. Finally we conduct a comprehensive analysis of the existing research in e-markets, in particular in relation to the value drivers and the critical success factors for adopting e-market, resulting in the development of a conceptual framework for evaluating e-market adoption in SMEs in Australia. Considering the benefits of the framework, it is proposed to apply it to analyse the situation of some cases from a mix of industries as future research.

2.An overview of e-market for electronic business

E-market is developed to bring multiple buyers and sellers together in one virtual place for facilitating the trading between them (Bakos, 1997; Dou and Chou, 2002). E-market emerges in different industries for supporting the exchange of goods and services of different kinds with and for different types of actors based on different architectural principles. E-market provides different kinds of services including (a) managing buyers' and sellers' offers and bids, (b) matching and linking sellers to buyers, and (c) exchanging information about prices and product offerings between potential buyers and sellers (Berryman and Harrington, 1998).

E-market has registered a rapid growth of product and service offerings in the recent decade. In 2000, e-market accounted for only US\$2.77 trillion of global trade. It was expected to exceed US\$7.3 trillion in 2007 (Milliou and Petrakis, 2004; Wall et al., 2007). A simple online search shows that there are about 600 e-markets currently listed on the website of e-market services, spanning across different industries and geographical regions worldwide.

The popularity of e-market in e-business is due to their potential benefits to organizations. Through e-market, organizations can achieve market efficiency by tightening and automating the relationship between supplier and buyer. With the use of e-market, the exchange of information, goods and services can be fostered and facilitated in all transactions regardless of their locations. In such transaction processes, e-market creates the economic value for buyers, sellers, and market intermediaries, leading to lower search costs, reduced transaction costs, wider accessibility of a large base of buyers or suppliers, improved flexibility, business processes automation, improvement in service quality, and reduction of inventory cost.

Witnessing the development of e-market in the past decade, many terms and definitions have been used to describe e-market such as e-marketplace, e-hub, exchange, auction, and portal (Petersen et al., 2007). These terms often mean different things to different people. For example, Grieger (2003) defines e-market as a marketplace that brings buyers and sellers together in one central market space and implicitly involves trade, financing organizations, logistics companies, taxation authorities and regulators. Bakos (1997) considers e-market as an inter-organizational information system that allows the participating buyers and sellers in some markets to exchange information about prices and products offerings. Nairn (2000) describes e-market as a website that allows business to buy and sell industrial products and services using a standard web browser. Soh et al. (2006) view e-markets as IT-enabled intermediaries that connect many buying organizations with many selling organizations. For simplicity, this study treats e-market as a neutral web-based location where businesses can conduct buying and selling transactions for goods and services in such a virtual marketplace.

There are various classifications on e-market from different perspectives (Berryman et al., 2000; Grieger, 2003; Milliou and Petrakis, 2004; Son and Benbasat, 2007). Table 1 presents an overview of these classifications from the perspectives of (a) the nature of an organization, (b) the industry served, and (c) the stakeholders. These classifications are briefly discussed below to better understand the characteristics of e-market for B2B e-business.

Perspective	Classification	Example
Organization	Private	Walmart's Retailink, Ipod Online
	Non-Private (Public)	Metal Spectrum, Forest Express
Industry	Vertical	e-Steel, e-Chemicals
	Horizontal	BizBuyer, MarketPlace
Stakeholder	Buyer-oriented	CommerceOne
	Seller-oriented	Build-Online, e-Steel
	Third-party	Ebay, Amazon

Table 1: An Overview of E-Market Classification

E-markets can be classified into private e-market and non-private (public) e-market (Milliou and Petrakis, 2004; Son and Benbasat, 2007) based on the organization that operates the e-market. A private e-market is owned and operated by one company that in turn invites others to conduct e-business with it across the platform, such as Dell and Cisco Systems. A public e-market is usually owned by an industry consortium whose targeted users are from outside the organization. Public e-markets are more open in nature than private e-markets. They serve customers across different industries and focus on the development of collaborative services.

E-markets can be classified as vertical and horizontal based on the industries served (Grieger, 2003). Vertical e-markets are industry-specific, such as e-chemical, e-agricultural and e-steel. They are developed for satisfying the demand of a specific industry. Vertical e-markets aggregate supply or demand in vertical industries that require a good deal of industry specific knowledge for their success. Horizontal e-markets, on the other hand, facilitate the purchase and services used by a range of industries, often across different industries. They are developed to reflect general demand of various goods and services in a specific region.

With respect to the focus of stakeholders, e-markets can be divided into buyer-oriented, seller-oriented, and third party e-markets (Son and Benbasat, 2007). A buyer-oriented e-market aims to drive procurement costs down for participating buyers through “aggregating

their expenditure” for reducing administration costs, increasing visibility and facilitating global sourcing. A seller-oriented e-market concentrates on bringing multiple sellers together into a central catalogue y. A third-party e-market focuses on both sellers and buyers.

Third-party e-markets are a relatively neutral market between buyers and sellers. They provide services to both sides of transactions by taking into account the interests of buyers and sellers in their governance (Grewal et al., 2001; Deng and Molla, 2008). Third party e-markets play an important intermediation role in B2B e-business. The services they offers such as buyer aggregation, seller aggregation, information aggregation and conflict resolution are able to effectively overcome the inefficiency of direct trading between sellers and buyers. Additionally, Third-party e-market makers also operate by offering a wide range of services for both horizontal e-markets and vertical e-markets (Pucihar and Podlogar, 2003).

The failure of some early efforts to create private e-markets as well as the huge success of neutral e-markets have led to the increasing interest by companies looking at joining third-party e-markets for their B2B e-business. Some of these e-markets are popular with enormous number of users, a huge product list, numerous offers to sell or requests to buy that are placed on their website each day. The number of completed transactions, however, is much smaller than the number of members. This may be due to the critical problems existent including (a) the definition of value proposition, (b) the effective realization of the potential benefit of e-markets, and (c) the adequacy of business models for e-markets.

3.E-market developments in SMEs in Australia

The volume of B2B transactions in Australia and other countries continues to grow. An IDC (2001) report shows that B2B e-commerce spending was to continue at a 50 percent growth rate through 2002 to 2007. While estimates vary considerably, the volume of B2B e-commerce far exceeds that of B2C e-commerce. USA continues to remain the largest global market for B2B e-commerce. The absolute size of the B2B market is far smaller in Australia relative to the US. However, B2B transactions and investment into related technologies in Australia are rising and the trends mirror that of the U.S.

Existing research findings suggest that within the Australian commercial sector, businesses, irrespective of their size, are increasingly adopting Internet technology. The online procurement market developed in Australia at a compound annual rate of about 25 percent (IDC 2001). In the time period of 2001-2003, the amount of selling by Australian firms via the Internet more than doubled. The number of companies that generated 5 percent or more of their business income from the Internet grew from 37 percent to 42 percent (ABS, 2005). More than half of the small businesses in Australia now use the Internet.

Over the past several years, the Australian Government has introduced a B2B incentive scheme designed to attract SMEs to electronic commerce. During 2002-2003, the Australian Bureau of Statistics reported that the value of e-commerce was approximately \$24.3 billion Australian dollars, representing a doubling of income over a one year period. This amount constituted 1 percent of total income for all businesses and approximately 5 percent of total income for businesses which received orders via the Internet (ABS, 2005). Australia's leading advertisers were reported to be allocating 9 percent of their advertising budget to the Internet in 2005. The Australian government is among the leaders in terms of e-Government development and Internet usage among the general population continues to grow as well.

In essence, the e-business outlook for Australia looks promising. The evolution and growth of the Internet in Australia have been very similar to their growth in other developed economies including the US. This has in fact provided a sound basis for making use of the tremendous potential that e-market can offer, in particular to Australian SMEs for improving their performance in B2B e-business. The adoption of e-market, however, is somehow affected by several existent critical problems including (a) the lack of understanding of the value proposition in SMEs for e-market adoption, (b) the lack of understanding of the critical success factors for e-market adoption, in particular in relation to the use of the third-party controlled e-market-market, (c) the lack of well-developed business models in most e-market for SMEs to use (Wise and Morrison, 2000; Petersen et al., 2007).

A profound understanding of the nature of SMEs is crucial to the identification of the value drivers and the critical success factors in their endeavors to adopting e-market. There have been many studies in the literature that attempt to define the characteristics of SMEs. It is well recognized that many of the processes and techniques that have been successfully applied in large enterprises do not necessarily provide similar outcome when applied to SMEs. SMEs belong to a separate and distinct group of organizations with their own characteristics which are different from that of large organizations. As a result, existing research on the value drivers or the critical success factors for e-market adoption in organizations without specifying the company size is not applicable to SMEs due to their distinct characteristics. To realize the potential of e-markets for SMEs, a good understanding of their characteristics is absolutely necessary.

SMEs tend to be more prone to risk than their larger counterparts. For example, Cochran (1981) shows that SMEs tend to be subjected to a higher failure rate. Rotch (1987) demonstrates that SMEs have inadequate records keeping and as a result often find it hard to plan its business strategically. Welsh and White (1981) prove that SMEs suffer from a lack of trained staff and have a short range management perspective. More recent studies also reveal that most SMEs lack (a) technical expertise (Barry and Milner 2002), (b) adequate capital to undertake technical enhancements (Gaskill et al, 1993; Raymond, 2001), and (c) sufficient organizational planning (Miller and Besser, 2000; Tetteh and Burn, 2001). Moreover, most SMEs are strongly influenced by their business partners and differ from the large organization in the type of product or service available to the customer. They have little control over the environment (Bunker and MacGregor, 2000).

Along with the rapid advance of web technologies, the barriers for SMEs to conduct their business online are greatly reduced (Kaplan and Sawhney, 2000; Molla and Licker, 2005a, 2005b). Existing research shows that SMEs are going online at an increasing rate. Starting from June 1998 to June 2006, the percentage of SMEs online has been increased from 32% to 81% (ABS 2007). The accessibility of the Internet makes e-market a realistic possibility for most SMEs. However, a relative stable figure for the SMEs' web presence from 2003 to 2006 with corresponding 23% and 29% reveal that SMEs in many regions across Australia are still not well ready to adopt e-market. This is partially due to lack of understanding of the benefits and barriers that SMEs face in the e-market adoption (Goode, 2002).

The dominant pattern of e-market adoption appears to focus on SME's building own e-markets. Such a philosophy is rooted in the capitalist mode of production. It is often problematic due to unavailability of financial resources, a lack of specialization knowledge and skills, and the economy of scale (Duncombe and Molla, 2006; Das and Buddress, 2007). These SMEs spending from their limited financial resources to build websites of various

sophistications and capability have not normally had the desired return on their investment (Wang et al., 2006). As a result, most SMEs have yet to be fully integrated into the emerging digital economy (Dunt and Harper, 2002; Soh et al., 2006; Molla and Heeks, 2007) despite a huge government and industry investment to build the e-business capabilities of SMEs in Australia (NOIE, 2003; OECD, 2005, 2007). The experience of SMEs that use public e-market (such as in e-bay) seems to suggest that what SMEs actually need is a capability to make efficient use of an existing public e-market rather than building and operating a private e-business system (Dou and Chou, 2002).

4.A conceptual framework

E-market provides an innovative way of doing business for modern organizations. It generates tremendous economic values in terms of its direct contribution to the national economy and the indirect contribution to the efficiency of the industry in Australia (ABS, 2007; Das and Buddress, 2007; Deng and Molla, 2008). Australia is ranked the second highest country in Asia Pacific region in terms of Internet infrastructure, penetration and activity (NOIE, 2003). The influence of e-market has expanded into the large sectors of Australian economy including business services, communications, finance, and retail trade, contributing 25% of Australia's GDP (OECD, 2005).

There are various theories and models in the existing literature for determining the value drivers and the critical success factors for adopting e-market for B2B e-business. These theories and models are developed from different perspectives. There is, however, no general agreement on these issues for e-market adoption and the appropriate theory that can be used for analyzing and identifying the value drivers on e-market adoption (Wang et al. 2006), in particular for SMEs. To better understand the value drivers and the critical success factors for e-market adoption in Australian SMEs, existing theories and models on e-market adoption are reviewed in this section. Subsequently, a consolidated framework is proposed that can be used to analyze the current pattern and trends of e-market adoption, and to discuss the emerging issues for making use of the potential of e-market for B2B e-business.

Choudhury et al. (1998) investigate the factors for affecting the adoption of e-market in the aircraft parts industry. Their study shows that market variability, product value, product specificity, complexity of product description, and frequency of use are the drivers for airlines in adopting specific e-market. More specifically the aspects of the higher market variability in product availability, product price competitiveness, higher product value, and lower frequency of purchase have become the determinants for individual e-market users.

Grewal et al. (2001) build a motivational model (MM) to explain the use of e-market in the jewellery trading industry. Two key drivers including the efficiency motivation and the legacy motivation which fall into the category of performance expectancy and social influence in the unified theory of acceptance and use of technology (UTAUT) framework (Venkatesh et al., 2003) are respectively identified. The company IT capability and the learning ability together form the facilitating environment driver. These factors together affect the dynamics of the company status in e-market over time including the exploration state, the expert state, and the passive state. With the right motivation and the IT capability, companies are able to avoid the passive state of adopting and making use of e-market.

Molla and Deng (2008) discuss the adoption of information technology in Chinese organizations. The MM model is extended for identifying a set of the motivational and ability

related factors that influence the third party e-market adoption through three case studies. The research has extended the Grewal et al.'s (2001) work by proposing two other factors, namely the organizational context and the organizational size for better understanding the technology adoption in a Chinese environment.

Kollmann (2001) uses a LISREL model to investigate the determinants for e-market adoption. Five factors are found most relevant, namely the database quality, the intermediation service, the actual transformation rate, the ease of use, and the intermediation costs. These five factors are grouped into the performance expectancy, the effort expectancy, and the facilitating condition factors based on their nature in order to effectively investigating the determinants of e-market adoption.

Hadaya (2004) proposes three important factors affecting the future intention of an organization on the adoption of e-market in Canadian enterprises. The research model is tested on data collected from 1200 senior managers. The complexity of e-market implementation, the level of present technology, and the business relationship with external partners found in the study fit well into an existing conceptual framework. These three factors can be interpreted as effort expectancy, facilitating conditions, and social influences respectively as discussed above.

Joo and Kim (2004) test the effects of five factors on the adoption of e-market including the relative advantage, the external pressure, the buying power, the slack resources, and the organizational size. Their findings indicate that the external pressure and the organizational size have a positive relationship with organizational adoption of e-market. The relative advantage factor, however, does not have a significant impact on the e-markets adoption. These findings back up the research of Min and Galle's (1999) and Deeter-Schmelz et al. (2001) showing that the influence from powerful business partners is the most important determinant of e-market adoption in today's competitive environment.

Wang et al. (2006) differentiate the role between buyer and seller in their investigation of e-market adoption. Their research adopts the UTAUT framework to investigate the importance of individual elements in the UTAUT framework (Venkatesh et al., 2003) on e-market adoption. The study shows that even though all the factors contribute to the decision on e-market adoption, the social influence and the facilitating condition are the dominating factors for suppliers while the performance expectancy is more important for buyers.

To facilitate identifying the value drivers and the critical success factors for adopting e-markets in SMEs in Australia, this section presents a conceptual framework in the context of the UTAUT model as shown in Figure 1. The UTAUT framework is used because this framework is so far the most comprehensive IT adoption theory in the literature. It is designed to provide a unified view of user acceptance on technology adoption (Venkatesh et al., 2003) by integrating elements across eight most popular technology acceptance models including the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behavior (TPB), the combined TAM and TPB, the Model of PC Utilization (MPTU), the Innovation Diffusion Theory (IDT) and the Social Cognitive Theory (SCT). The UTAUT framework is claimed to be a useful tool for managers to assess the likelihood of acceptance of a new technology within an organization. It helps organizations better understand the factors that drive the acceptance of new technology. As a result, appropriate strategies and policies can be made to facilitate the acceptance of a new technology in organizations.

The proposed conceptual framework considers all the possible factors that influence the adoption of e-market. Those possible factors are organized into four core determinants for evaluating the value drivers and the critical success factors for e-market adoption in Australian SMEs. The determinants affecting the behavioral intention include the performance expectancy, the effort expectancy, the social influence, and the facilitating condition. The *performance expectancy* is defined as the degree to which an individual believes that use of e-market will help him or her job performance. It is theoretically derived from other elements such as the perceived usefulness, the extrinsic motivation, and the outcome expectation from existing research of Molla and Licker (2005b), which affect a user's intention to use a technology. The *effort expectancy* is the degree of ease associated with the adoption of e-market. This element parallels the elements named ease of use in Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT) (Molla and Licker, 2005b; Son and Benbasat (2007). The *social influence* refers to the degree to which an individual perceives the importance of e-market because others believe he or she should use the new system. It is represented as subjective norm in other models such as Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB) and image in IDT. The *facilitating condition* refers to the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system. The facilitating condition is derived from perceived behavioral control from TAM and TPB, and compatibility from IDT.

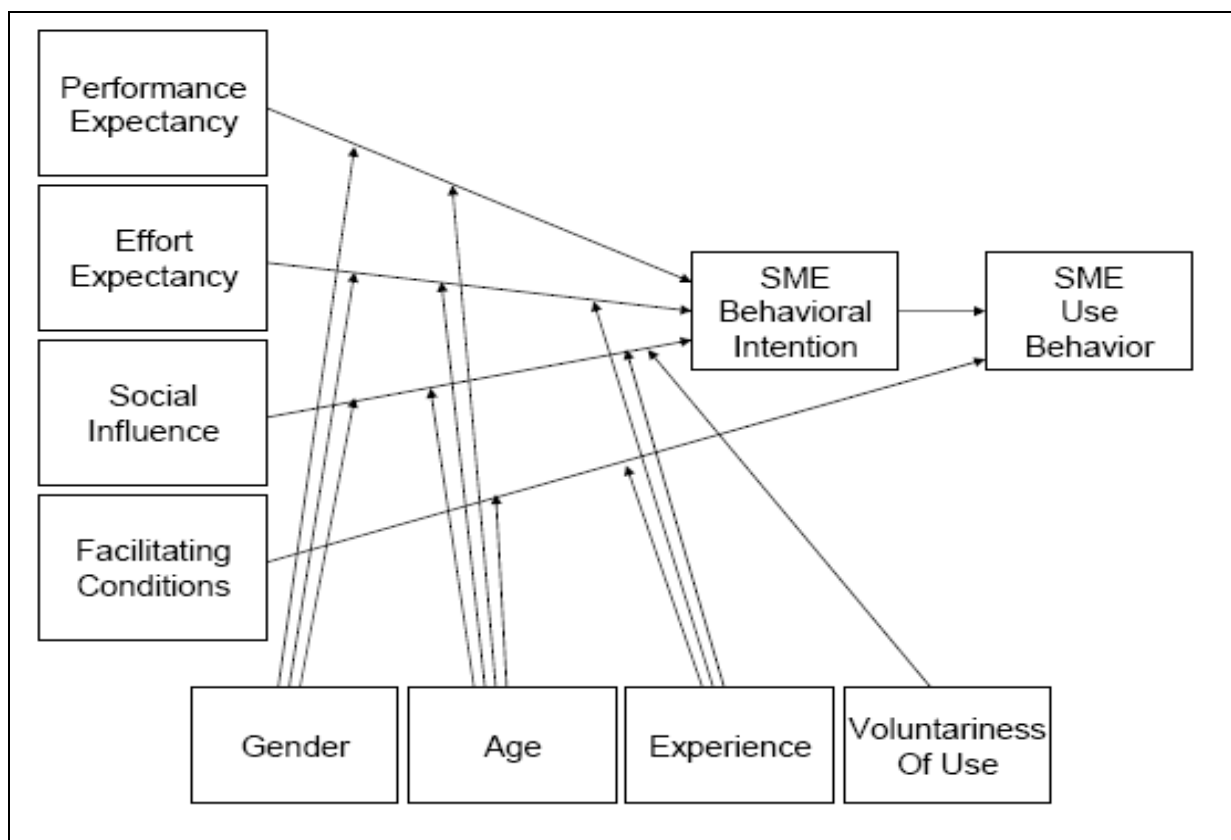


Figure 1: A Conceptual Framework for Evaluating the Adoption of E-Market

In addition to the four dimensions of the influence factor, the proposed framework introduces moderating factors such as *gender*, *age*, *experience*, and *voluntariness of use* from the perspective of social psychology. These moderating factors can help address the problems of inconsistency and the weak power of explanation of previous models in regard to the

behavioral differences of different groups of people (Molla and Licker, 2005b). Such a conceptual framework has effectively incorporated those elements from many IT adoption models. As a result, it is the most comprehensive one with extensive inclusion of factors and powerful explanation for evaluating the value drivers and the critical success factors for adopting e-market in SMEs in Australia.

6. Conclusion

Understanding the value drivers and the critical success factors for adopting e-markets in SMEs in Australia is of significance for the success of B2B e-business. This paper presents a comprehensive review of relevant literature on the nature of e-market, the characteristics of e-market and models and theories for e-market adoption. On the basis of this discussion, a conceptual framework is proposed for evaluating the value drivers and identifying the critical success factors for adopting e-markets in SMEs in Australia. Within this proposed conceptual framework, the current pattern and trends of e-market adoption can be analyzed, and the emerging issues for making use of the potential of e-market for B2B e-business can be discussed. It is proposed to test the framework empirically by applying it to some cases. The formulation of such a study is in progress.

References

- Australian Bureau of Statistics (ABS), Counts of Australian Businesses, including Entries and Exits, June 2003 to June 2006, www.abs.gov.au.
- Australian Bureau of Statistics (ABS), "Business Use of Information Technology: Australia, Sydney", 2005.
- Bakos, J.Y., "Reducing Buyer Search Costs: Implications for Electronic Marketplaces", *Management Science*, 43: 1676-1692, 1997.
- Barry, H., and Milner, B., "SME's and Electronic Commerce: a Departure from the Traditional Prioritisation of Training", *Journal of European Industrial Training*, 25: 316 – 326, 2002.
- Berryman, K., Harrington, L.F., Layton, D. & Rerolle, "Electronic Commerce: Three Emerging Strategies", *The MCKINSEY Quarterly*, 3: 129-136, 2000.
- Bunker, D.J., and MacGregor, R.C., "Successful Generation of Information Technology Requirements for Small/Medium Enterprises (SME's) – Cases from Regional Australia", *Proceedings of SMEs in a Global Economy, Wollongong, Australia*, 72 – 84, 2000.
- Choudhury, V., and Hartzel, K.S., "Uses and Consequences of Electronic Markets: An Empirical Investigation in the Aircraft Parts Industry", *MIS Quarterly*, 22: 471–503, 1998.
- Cochran, A.B., "Small Business Mortality Rates: A Review of the Literature", *Journal of Small Business Management*, 19: 50 – 59, 1981.
- Daniel, E.M., Hoxmeier, J., White, A. and Smart, A., "A Framework for the Sustainability of E-marketplaces", *Business Process Management Journal*, 10: 277-290, 2004.
- Das, A., and Buddress, L., "Evaluating Prospective E-providers: An Empirical Study", *The Journal of Supply Chain Management*, 31-46, 2007.
- Deeter-Schmelz, D.R., Bizzari, A., Graham, R. and Howdysheill, C., "Business-to-Business Online Purchasing: Suppliers' Impact on Buyers' Adoption and Usage Intent", *The Journal of Supply Chain Management*, 37: 4–10, 2001.
- Department of Industry, Tourism and Resources Australia (DITR), "Building Entrepreneurship in Small Business Program Fact Sheet", <http://www.industry.gov.au> [accessed on November 21, 2007].

- Deng, H., and Molla, A., "Multicriteria Analysis for Evaluating and Selecting E-Markets in Business-to-Business E-Business", Proceedings of the 2008 IAENG International Conference on Internet Computing and Web Services, March 19-21, 2008.
- Dou, W., and Chou, D.C., "A Structural Analysis of Business-to-Business Digital Markets", *Industrial Marketing Management*, 31: 165-176, 2002.
- Duncombe, R., and Molla, A., "E-commerce Development in Developing Countries: Profiling Change Agent Roles for SMEs", *International Journal of Entrepreneurship and Innovation*, 7: 185-197, 2006.
- Dunt, E.S., and Harper, I.R., "E-commerce and the Australian Economy", *Economic Record* 78: 327-342, 2002.
- E-market services, "Directory of electronic marketplaces", <http://www.emarketservices.com/start/eMarket-Directory/index.html>, 2008.
- Gaskill, L.R., Van-Auken, H.E. and Kim, H., "The Impact of Operational Planning on Small Business Retail Performance", *Journal of Small Business Strategy*, 5: 21 – 35, 1993.
- Goode, S., "Management Attitudes Toward the World Wide Web in Australian Small Business", *Information Systems Management*, 45-48, 2002.
- Grewal, R., Comer, J.M., and Mehta, R., "An Investigation into the Antecedents of Organizational Participation in Business-to-Business Electronic Markets", *Journal of Marketing*, 65: 17-34, 2001.
- Grieger, M., "Electronic Marketplaces: A Literature Review and a Call for Supply Chain Management Research", *European Journal of Operational Research*, 144: 280-294, 2003.
- Hadaya, P., "Determinants of the Future Level of Use of Electronic Marketplaces among Canadian Firms", Proceedings of the 37th Hawaii International Conference on System Sciences, 2004.
- Joo, Y.B. and Kim, Y.G., "Determinants of Corporate Adoption of E-marketplace: an Innovation Theory Perspective", *Journal of Purchasing and Supply Management*, 10: 89–101, 2004.
- Kaplan, S. and Sawhney, M., "E-hubs: the New B2B E-marketplaces", *Harvard Business Review* 3: 97-103, 2000.
- Kollmann, T., "Measuring the Acceptance of Electronic Marketplaces: A Study Based on a Used Car Trading Site", *Journal of Computer Mediated Communication*, 6, 2001.
- Lipis, L.J., Villars, R., Byron, D. and Turner, V., "Putting Markets in Place: an E-marketplace Definition and Forecast", <http://www.idc.com>, 2000.
- Miller, N.L., and Besser T.L., "The Importance of Community Values in Small Business Strategy Formation: Evidence from Rural Iowa", *Journal of Small Business Management*, 38: 68 – 85, 2000.
- Milliou, C., and Petrakis, E., "Business-to-Business Electronic Marketplaces: Joining a Public or Creating a Private", *International Journal of Finance and Economics*, 9: 99-112, 2004.
- Min, H., and Galle, W.-P., "Electronic Commerce Usage in Business-to-Business Purchasing", *International Journal of Operations and Production Management*, 19: 909–21, 1999.
- Molla, A., and Deng, H., "Business Participation in Third-Party Controlled E-Marketplace: An Exploratory Model", *International Journal of e-Business Management*, 2008
- Molla, A., and Licker, P., "Perceived E-readiness Factors in E-commerce Adoption: An Empirical Investigation in a Developing Country", *International Journal of Electronic Commerce*, 10: 83-110, 2005a.
- Molla, A., and Licker, P., "E-commerce Adoption in Developing Countries: A Model and Instrument", *Information and Management*, 42: 877-899, 2005b.

- Molla, A., and Heeks, R., "Exploring E-commerce Benefits for Businesses in a Developing Country", *The Information Society Journal*, 23, 2007.
- Nairn, G., "Winds of Change Sweep Through the Marketplace", *Financial Times*, 11, 2000.
- NOIE, "The Current State of Play: Online Participation and Activities", Canberra: Australian Government, 1-47, 2003.
- OECD, "Enhancing the Role of SMEs in Global Value Chains", 2007
- OECD, "OECD SME and Entrepreneurship Outlook", 2005
- Petersen, K.J., Ogden, J.A., and Carter, P.L., "B2B E-marketplaces: a Typology by Functionality", *International Journal of Physical Distribution and Logistics Management*, 37: 4-18, 2007.
- Poon, S., "Business Environment and Internet Commerce Benefit – a Small Business Perspective", *European Journal of Information Systems*, 9: 72-81, 2000
- Pucihar, A. and Podlogar, M., "Organizational Factors for Successful Entering to E-marketplace: Case of large organizations in Slovenia", *Management*, 8: 49-75, 2003.
- Purao, S. and Campbell, S., "Critical Concerns for Small Business Electronic Commerce: Some Reflections based on Interviews of Small Business Owners", *AIS Conference Proceedings*, Baltimore, Maryland, 1998.
- Ravichandran, T., Pant, S. and Chatterjee, D., "Impact of Industry Structure and Product Characteristics on the Structure of B2B Vertical Hubs", *IEEE Transaction on Engineering Management*, 54: 506-520, 2007.
- Raymond, L., "Determinants of Web Site Implementation in Small Business", *Internet Research: Electronic Network Applications and Policy*. 11: 411 – 422, 2001.
- Rotch, W., "Management of Small Enterprises: Cases and Readings", University of Virginia Press, 1967.
- Son, J. and Benbasat, I., "Organizational Buyer's Adoption and Use of B2B Electronic Markets: Efficiency and Legitimacy-oriented Perspectives", *Journal of Management Information Systems*, 24: 55-99, 2007.
- Soh, C., Markus, M. L., and Kim, H. G., "Electronic Marketplaces and Price Transparency: Strategy, Information Technology, and Success", *MIS Quarterly*, 30: 705-723, 2006.
- Standing, C. and Lin, C., "Organizational Evaluation of the Benefits, Constraints, and Satisfaction of Business-to-Business Electronic Commerce", *International Journal of Electronic Commerce*, 1: 107-134, 2007.
- Tetteh, E. and Burn, J., "Global Strategies for SME-Business: Applying the Small Framework", *Logistics Information Management*, 14: 171 – 180, 2001.
- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D., "User Acceptance of Information Technology: toward a unified view", *MIS Quarterly*, 27: 425-478, 2003.
- Wall, B., Jagdev, H., and Brown, J., "A Review of eBusiness and Digital Business-Applications, models and trends", *Production Planning and Control*, 18: 239-260, 2007.
- Wang, S., Archer, N.P., and Zheng, W., "An Exploratory Study of Electronic Marketplace Adoption: A Multiple Perspective View", *Electronic Markets*, 16: 337-348, 2006.
- Welsh, J.A., and White, J.F., "A Small Business is not a Little Big Business", *Harvard Business Review*, July, 1981.
- Wise, R., and Morrison, D., "Beyond the Exchange: the Future of B2B", *Harvard Business Review*, November/December: 86-96, 2000.
- Yellow Pages Report, "2003 Yellow Pages Business Index E-Business Report: The Online Experience of Small and Medium Enterprises", Canberra: Telstra, 1-37, 2003.