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### **eCommerce Strategy In A Multi-Sector Trading Environment – Quandaries For SMEs**

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#### **Abstract**

*For nearly a decade the potential benefits of Business-to-Business electronic commerce for business efficiency and competitiveness have been vigorously promoted by business, industry groups and governments. The belief underpinning policy is that from a small initial step, eCommerce will become a central part of their business strategies. This paper considers the use of B-2-B electronic transactions by SME suppliers who trade with buyer companies across diverse industry sectors in Australia. We investigate the links between their business strategies and their views of electronic trading. A survey of 240 cross-sector suppliers nationwide found little evidence that electronic trading was integrated with their overall business strategy. We suggest an approach to the understanding of cross-sector electronic trading strategies that emphasises the complex, inter-connected but fragmented trading milieu rather than describing the balance between drivers and barriers that operate for the individual firm.*

#### **1 Introduction**

The benefits and success of conducting business transactions electronically have been widely described and documented. The popular business literature abounds with examples, and governments have actively promoted the replacement of paper-based

systems as costly, inaccurate, slow and with limited scope for supporting planning. Large enterprises have moved a long way down this track. Among this group are many companies which use well-established applications and exploit new technologies and combinations of technologies. The expectation has been that these enterprises (which include large multi-national companies and government bodies) would provide leadership through a combination of good example and influence on their suppliers. Governments have taken up the campaign, both as organisations developing policies and supporting business services and as major buying organisations (e.g., NOIE, 2000; Levy and Powell, 2003). There can be few people in business who are not aware of the arguments (at least in broad brush terms) for doing business on-line, even if they are not confident of the detail of how such processes work.

But even after all of this discussion, advocacy and offers of assistance, small businesses have not met expectations of B-2-B adoption. This view is repeatedly offered as a truism in the research literature and is confirmed by business and government professionals. While the ownership of computer equipment and use of internet connections have continued to grow, the *effective* use of online transactions to support business goals is still not common. This has been reported in many countries and regions (Levy and Powell, 2003; Wagner, Fillis and Johansson, 2003; Yellow Pages, 2003; European Commission, 2002; Keeling, 2000).

A common indicator of SME eCommerce adoption has been computer ownership and internet connectivity, a rather crude proxy which tells nothing about strategic business uses of eCommerce. Preoccupation with the high levels of internet connectivity has obscured the longer-term issue of low-level SME usage which has 'limited the benefits being derived by these firms' (Griffin, 2004:142). It is true that eCommerce requires computers and connection to the internet or some other proprietary electronic interchange system. However, there appears to be an assumption that once SMEs adopt eCommerce at this low level they will then, almost inevitably begin moving along a stages of growth model, moving from low level web presence to fully fledged eBusiness in which eCommerce is a highly integrated and strategic part of doing business (Wilcocks, et al, 2000; Lawson, Alcock and Cooper, 2001). However, Levy and Powell (2003) demonstrate that the empirical evidence for the stages of growth model is very weak. There is no path of inevitable development.

There has been a great deal of attention to the benefits of eCommerce for SMEs. Researchers have attempted to identify the reasons for eCommerce adoption (eg. Mehrrens, 2001; Poon 2000). However, few have explored how these technologies are actually used to achieve the business goals of the firm (Wagner et al, 2003). It may be argued that eCommerce adoption will remain at low levels and low utility where SMEs fail to see the strategic benefit of eCommerce to their business goals.

For many SMEs, the issues surrounding electronic trading are complex. This is particularly the case with firms which do business in several industry sectors, a group which has not been well researched. Much of the discussion of supplier eCommerce has been based on supply chain models. Examination of businesses which trade across, rather than within, industry sectors may well shed light on the conundrum of sluggish uptake of eCommerce.

Businesses trading across sectors comprise a significant number of SMEs (Nambisan, 2000) and electronic trading has grown well beyond supply chain boundaries (Chan and Swatman, 2000; Poon and Swatman, 1997). Yet understanding of the suppliers' concerns and the trading interrelationships remains rudimentary as does the ways in which eTrading strategies may be linked to overall business strategies.

Research on electronic transactions between trading partners in industry-specific supply chains has extensively documented the benefits (for example, Singh and Thomson, 2002; Lejmi, 2002; Tomak and Xia, 2002; Stefansson, 2002). However, the technical platforms on which these applications run have tended to be industry-developed and thus industry-specific (Nicolini et al 2001; Raupp and Schober, 2000; Steinfield et al, 1995; Zaremba, et al, 2003). They are often developed by large buyer companies which have considerable power in the trading relationship in contrast to suppliers which are often small businesses (Daniels and Grimshaw, 2002; Min and Galle, 2001). A supplier could not, in all likelihood, use an application prescribed by one trading partner for trading with another customer in a different industry. Thus, a supplier company must decide whether to adopt some or all of the e-trading applications required by customers and potential customers. This involves decisions about investment in technology and training to use those technologies effectively. This is a key issue for business strategy but one which has received little attention (Wagner et al, 2003).

Daniel and Grimshaw (2002: 136) provided an excellent overview of many previous eCommerce studies that have attempted to identify the uses that SMEs and large business have made for eCommerce. Motivations include competing more effectively, finding new customers, enhancing customer relationships and improving internal processes. In a similar vein, Mehrtens, Cragg and Mills (2001) developed an SME Internet adoption model based on an earlier study of EDI adoptions by SMEs (Iacovou, Benbasat and Dexter (1995). They found in their case analysis three central factors that influenced Internet or eCommerce adoption: (i) perceived benefits of adoption which centred on efficiency of transactions, information gathering and image development of the firm (ii) organisational readiness, centring upon IT knowledge within the firm and adequate systems to access the internet and (iii) external pressure such as pressure from customers and suppliers.

Across these studies there has been little focus on the relationship between the business goals of the firm. With the exception of finding new customers and competing with other firms, there is little evidence that SMEs' adoption of electronic commerce is related to the overall business strategy. Mehrtens et al (2001) identified the benefits of eCommerce largely in terms of operational efficiency and, to a minor extent, profile building. Pressure from customers, especially powerful ones (Webster, 1994) may also influence the supplier, suggesting compliance and reaction to the buyer rather than a strategic move.

The conventional approach to SMEs' adoption of electronic trading has been to conceptualise the issue as an interplay between 'drivers' and 'barriers' within the individual enterprise (see for example European Commission, 2002; Ratnasingam, 2004; Ihlström and Nilsson, 2001). While this approach has been useful for identifying issues that influence business strategy and SMEs' decisions, it does not encourage attention to the network of transaction links among companies, the business context in which they operate or the relationships among them. The chief limitation of the drivers-and-barriers approach is that research in this vein remains fundamentally descriptive rather than analytic and theory-building. This is particularly the case when the drivers and barriers approach is coupled with the stages of growth model. Implicit in both is the assumption that once drivers are identified and barriers are removed, the company will almost inevitably move along the path to eCommerce. This focuses on the individual enterprise in isolation and on factors such as awareness, commitment, knowledge, resources, and the like (Daniels and Grimshaw 2002, Poon and Swatman, 1997; Wang, Teo, Wei, 2003) but little attention is paid to factors such as the broader network of supplier-buyer relationships, the multitude of technical standards, the influence of application vendors, government initiatives, the influence of integrated supply chains within and across sectors, and the social and organisational relationships which influence business

activities. The neglect of this wider range of factors affecting suppliers' business decision-making is particularly problematic in the study of diverse trading networks where factors lying outside the individual firms are critical. There is clearly a need for a more inclusive perspective when considering how SMEs develop business strategy, including their approaches to electronic commerce techniques (Castleman, 2004; Min and Galle, 2001).

Porter (2001) has argued that internet commerce needs to consider strategic positioning as well as operational efficiency. He argued that the importance of strategic positioning for the firm and its relations to eCommerce has not been fully considered. Porter argues that focussing solely on operational efficiency does not often generate a strategic advantage for the firm. If a company focuses on operational efficiency, it is ultimately competing on price – getting a similar product to the market place at a lower price. This is not the market positioning that enables small businesses to compete effectively against larger businesses. It is also likely that the productivity gains of eCommerce are larger for big business than they are for small business.

We have started to address these issues in our research on SMEs supplying business customers in several industry sectors. In this paper we report the findings of a survey of 240 Australian SMEs engaged in B-2-B relationships across a number of industry sectors. The research investigated how the owners of these companies view eCommerce and how they use electronic transactions. We looked for relationships between these variables and the business goals of the firm. We looked for factors which would distinguish SMEs which traded electronically with their business customers from those which did not. We compared those SMEs which are investing significantly in electronic transactions with those who are not. If strategy is a major driver of electronic trading, it should be highly related to eTrading use. It may be expected that those who have established systems and undertake extensive electronic trading do so for strategic reasons. We sought to identify the factors which led an SME to take a strategic approach to electronic trading and to understand the reasons they did so.

In doing so we attempted to explore four major areas:

- In what ways is improvement or investment in eTrading viewed as a means to the strategic ends of the business?
- In what ways do the business strategies and characteristics of the firms who identify as eTraders differ from those who do not?
- In what ways do the business strategies and characteristics of the firms who decide to invest in eTrading differ from those who have decided not to invest?
- In what ways do the business strategies and characteristics of the firms who believe that eTrading is a competitive advantage differ from those who do not?

## **2 Method**

The survey undertaken was part of the SWEEP project, a collaborative, practical research program to help overcome the obstacles to effective e-trading. It involves the provision of information to suppliers (mainly SMEs) via a website to help them transact with their corporate customers on a scale sufficient to generate real benefits both to the suppliers themselves and the organisations they supply.

The sample for the survey was drawn from a list of suppliers of several large corporations and government departments. Nine large organisations representing 6 different industry

sectors provided the researchers with a list of their suppliers. An initial telephone survey was carried out in April-May of 2003 to determine the characteristics of supplier businesses using e-commerce, their perceived benefits of conducting transactions using a common platform (Batten et al, 2004). A response rate of 48.8% yielded 2,495 responses. The industry sectors in which the participating businesses traded included retail, government, healthcare, mining and communication services, but many suppliers also had buyers in a variety of other industries. Thus, the participants were trading in a network setting rather than simply being part of specified supply chains.

Two hundred forty (240) of these businesses participated in a second web-based survey seeking further information about their business goals, business strategies and B2-B eCommerce behaviour to develop a broader picture of how they positioned their businesses. The businesses were all SMEs and dealt on average across seven different industry sectors. The businesses were based in both metropolitan and rural Australia.

The survey highlighted business transactions (purchasing and payment) rather than the more sophisticated eCommerce applications since these lower level transactions are universally relevant to all businesses. Companies were asked about methods of conducting business (mail, phone, fax, e-mail, EDI, Web services), whether they made bill payments electronically and the extent of their electronic trading with suppliers, buyers, government and banks. They were asked about factors that might afford them a competitive advantage, and a series of questions were designed to provide us with a deep understanding of their business goals. Finally, we asked about problems resulting from trading across multiple industry sectors or dealing with multiple electronic business formats.

All data were analysed using SPSS 11.5. Chi-Square tests of significance and hiloglinear analysis were carried out on categorical data. One way ANOVA with LSD post hoc tests, discriminate and factor analyses and correlations were undertaken on parametric data.

### **3 Results**

#### **3.1 Business Strategies Of The Firms**

To identify business strategies of the firms, the firms were asked whether they had major goals of (i) increasing business with existing customers, (ii) increasing the customer base and (iii) reducing business costs. They were then given a list of strategies that they might employ to meet those goals. A total of 20 items were listed. Improving or implementing eTrading was listed as a potential strategy for each of the three goals.

We then undertook an exploratory factor analysis on the 20 items to uncover the latent structure or associations between the items. Five factors in a non-orthogonal factor solution were extracted (Extraction method: principal component analysis, rotation method: oblimin with Kaiser normalization). The five factors were:

- (a) The improvement of customer relations. Items or strategies that loaded most heavily on this factor included: developing closer personal links with customers, improving services or products, improving customer relationship management.
- (b) The improvement of business processes. Items or strategies that loaded most heavily on this factor included: improving electronic accounting systems and re-designing business processes.

- (c) Seeking new customers: Items or strategies that involved identifying new customers loaded most heavily on this factor.
- (d) Implementing or improving eTrading. eTrading was included as one strategy for each of the three business goals and they formed one factor.
- (e) Changing pricing structure and specialising. This factor, the last one to be extracted from the factor analysis, had two items loading heavily onto it: changing the pricing structure and specialising business activities and product lines. This factor is nevertheless closest to Porter's notion of strategic positioning. These firms appear to be changing what they offer and their prices to position themselves in the market.

The factors were weakly correlated with each other, with correlations ranging between 0.340 (between (a) customer relations and (b) business process improvement) and -0.277 (between (a) customer relations and (c) seeking new customers. These weak correlations may be interpreted as suggesting that each of these factors can be seen to be a distinct business strategy and that a firm pursuing one strategy does not necessarily mean that they must also pursue another. Implementing or improving eTrading was a distinct factor and hence a distinct strategy. This suggests that seeking an eTrading solution is just one possible approach among many to achieve business goals. However, it is not the most popular solution with only eighteen firms (7.5%) believing that eTrading could assist in achieving the business goals of increasing existing and new business and to assist in reducing costs.

### **3.2 Identification As An Etrader**

Most firms in the sample had some forms of electronic transactions and engaged in some forms of electronic communication as part of the businesses. However, not all identified as eTraders. Those who do, may be more inclined to see eTrading as being more tightly associated with their overall business goals and strategies.

It was found that 81% of the sample saw their company as an eTrader. When those who identified as eTraders were compared with those who did not identify, no significant difference between the two groups could be found. There was little to distinguish eTraders and non-eTraders in terms of business strategy or on characteristics of the firm such as regional location, measures of size of the firm, business goals, the number of industry sectors they deal. Those who identified as eTraders were however more likely to have been in business longer ( $\chi^2=5.01$ ,  $df=1$ ,  $p<0.05$ ), to have had a positive experience of eTrading ( $\chi^2=17.143$ ,  $df=2$ ,  $p<0.001$ ), to be less likely to be trading overseas ( $\chi^2=4.61$ ,  $df=1$ ,  $p<0.05$ ) and less likely to have a significant investment, more likely to have a moderate level of investment ( $\chi^2=11.200$ ,  $df=2$ ,  $p<0.005$ ).

These findings are consistent with those found for the level of eTrading. Level of eTrading was measured by firms identifying the types and degree of trading undertaken electronically. Even if a company identifies as an eTrader, it does not necessarily mean that these transaction techniques will be used to achieve business goals. When each of the business strategies identified through the factor analysis were correlated against the level of current electronic trading, level of use was found to be significantly but only weakly associated with plans to improve business processes ( $r=0.166$ ). It was not significantly related to any other factor. It would appear that familiarity with eTrading use does not necessarily lead to seeing eTrading as a major means of achieving business goals.

Of interest, however is that eTraders have been in business longer and are less likely to be trading overseas. A three way analysis suggests that more recently established firms are less likely to be eTrading but are more likely to have been trading overseas. This fact and the fact that older firms are more like to trade electronically, suggests that eTrading and its strategic benefits are considered only after more pressing business goals are met, such as the establishment of the business.

### **3.3 Investment In eTrading**

eTrading was not seen as a major strategy to meet business goals by those who used eTrading or identified as eTraders. But what of those who were planning to invest significantly in eTrading in the next twelve months? Twenty five firms (10.4%) were planning to invest significantly in eCommerce over the next twelve months. These firms were compared with those 89 firms (41.6%) which were not investing and had not decided that such investment was not applicable. No significant differences were found in the demographic characteristics of the firms. It is not possible to distinguish such firms according to size, location, years in business or number of sectors they deal with.

Initial analysis suggested a moderate significant correlation between various strategies and the decision to invest. A discriminant analysis was undertaken to identify those factors and variables which were most important in distinguishing between those who planned eTrading investment and those not investing. The analysis selects in turn those variables that best discriminate between firms that invest and those that do not. The analysis ceases when additional variables do not provide a significant additional contribution to the discrimination. This, in effect means that variables not included in the discriminant function are not significantly related to electronic investment decisions.

The results of this statistical analysis are shown in Table 1. It would seem that the small number of firms who are investing significantly in eTrading are seeing that investment in strategic terms. That those firms who choose to invest in eTrading also are undertaking strategic positioning suggests greater strategic thinking on the part of those firms. Categorical variables were not included in the discriminant analysis.

**Table 1: Discriminate Function Statistics For Investment In eTrading**

Variable	Tolerance	F to Remove	Wilks' Lambda
eTrading as a means to achieve business goals	.978	23.201	.754
Level of eTrading issues facing the company	.999	12.100	.686
strategy of strategic positioning/changing pricing structure and specialising	.977	4.684	.641
Improving customer relations	.983	4.134	.637

Table 2 summarises the statistical differences found for categorical variables between those who have decided to invest in electronic trading and those that do not. The findings also suggest that companies investing in eTrading for strategic reasons.

**Table 2: Factors Associated With Investment In Etrading**

Companies investing in electronic trading are:		
More likely to believe the company has a competitive advantage in eTrading capability	$\chi^2=8.566$ , df=1	p<0.005
More likely to have business goal to increase value to existing customers	$\chi^2=16.65$ , df=2	p<0.001
More likely to have business goal to increase customer base	$\chi^2=6.67$ , df=2	p<0.05
More likely to have business goal to reduce costs	$\chi^2=8.31$ , df=2	p<0.05
More likely to have plans for increased turnover	$\chi^2=11.44$ , df=1	p<0.001
More likely to be trading overseas	$\chi^2=8.839$ , df=1	p<0.005
More likely to have had a positive experience	$\chi^2=23.402$ , df=2	p<0.001

### 3.4 eTrading And Competitive Advantage

Finally, the analysis turned to a consideration of those firms who believed that their electronic transaction capability was a major competitive advantage for their firm. Forty one firms (18.3%) believed they had such a competitive advantage. It may be expected that such firms were more likely to invest significantly in their advantage and for eTrading to be well integrated in their business strategies.

Those businesses which did believe that they had a strategic advantage in electronic trading capability were more likely to have major goals of increasing business and their customer base, and of reducing costs. They were also more likely to be trading overseas, to have had a positive experience of eTrading and to plan an increase in turnover. However, they did not see improving eTrading as a means of achieving these goals. Improvement in eTrading was unrelated to these strategies. They also believed that they had, on average, more competitive advantages than other firms and were more likely to be trading overseas. On other grounds, they were virtually indistinguishable from the other firms. These findings are summarised in Table 3.

**Table 3:** *Factors Associated With The Belief That Etrading Was A Competitive Advantage For The Company*

Companies who believe that their eTrading is a competitive advantage are		
More likely to believe they had a higher number of competitive advantages than other firms (excluding eTrading)	t=8.52, df=74.34	p<0.001
More likely to have business goal to increase value to existing customers	$\chi^2=16.64$ , df=2	p<0.001
More likely to have business goal to increase customer base	$\chi^2=6.60$ , df=2	p<0.05
More likely to have business goal to reduce costs	$\chi^2=7.24$ , df=2	p<0.05
More likely to have plan to invest in eTrading	$\chi^2=9.03$ , df=2	p<0.05
More likely to have plan to increase turnover	$\chi^2=5.73$ , df=1	p<0.05
More likely to have a positive experience of eTrading	$\chi^2=13.59$ , df=2	p<0.01
More likely to trade overseas	$\chi^2=10.14$ , df=1	p<0.01

Overall, the results show that electronic trading is not seen as a competitive advantage nor as a major means of achieving business goals by the majority of firms. Those who trade electronically or consider themselves as eTraders do not generally view eTrading in this way. However, the small number of firms which have decided to invest in eTrading do see eTrading as a means to achieving their business goals. It is not possible however to identify these firms in terms of demographic or other characteristics of the firm. They are just as likely to be big or small or deal with a large or small number of industry sectors. Those firms which believed that they had a competitive advantage in eTrading came from heterogenous circumstances. Perhaps the most interesting finding is that while those firms believed they currently had a competitive advantage in eTrading, it did not feature in their plans to improve customer relationships or reduce costs.

## 4 Discussion

The results of the survey reported here indicate a lack of strategic orientation towards eTrading among most SMEs. Certainly eTrading is not seen as a major means of improving competitive advantage or achieving business goals. Moreover, there was no evidence that the stages of growth model applied to these businesses. There appeared to be no inevitability that those businesses which were eTrading would continue to invest and develop this capacity. This seems to fly in the face of business logic, indicating that Australian small businesses are falling short either in their basic business strategising or in their willingness to take on electronic trading as a positive business benefits. Or at least this is what the drivers-and-barriers approach and stages of growth model would suggest. If our approach is constrained by this model, we would conclude that:

- There is little driving such businesses and therefore there is little benefit to be had from electronic trading, and/or
- The barriers to eTrading are overwhelming and many businesses find it impossible to overcome them, and/or

- SME decision-makers have insufficient knowledge, awareness or entrepreneurial flair to allow them to make strategic decisions about their businesses and electronic trading.

These are not convincing explanations, especially since these very companies indicated differentiated business strategies on other dimensions (the kinds of customers they sought, the mix of efficiency and market goals they had). They also, as with a large group of Australian SMEs, indicated an awareness of the benefits of eTrading and rated these benefits more highly than the obstacles to adoption (Yellow Pages, 2003). A new explanation and consequently a new policy approach appear to be required.

The situation looks rather different when we recognise the fact that these SMEs are operating in a multiple-industry environment. We may understand more if we look beyond the level of the individual firm and incorporate the multi-firm context with diverse sectors, multiple suppliers, incompatible technical platforms and differential power of the integrated supply chains within this milieu. Under these conditions SME suppliers with little power and without the security of working within a single industry are very likely to find it difficult to formulate a clear electronic trading strategy. Incremental and ad hoc responses to buyer requirements may be their only option. It may be the cross-sector context itself which makes such strategies difficult so that these businesses can only be reactive and untargeted in their eTrading decisions. There is evidence that they are constrained by context and unable to formulate effective strategies.

These findings and our interpretation of them as possibly due more to contextual rather than enterprise-based factors, do not invalidate the observations and analysis of writers on eBusiness strategy such as Porter. They do, however, suggest that our understanding of how sound strategy is developed must be related to the wider business environment that SMEs experience. eTrading is one strategy among many competing strategies and demands of a business. The experiences of suppliers trading into multiple sectors provide a good insight into the complicated, even chaotic, reality that they face. A better understanding of how they operate in this environment will help us refine our approaches to supporting electronic business among SMEs.

## **5 Conclusions**

This study found few clear relationships between SMEs' business strategies and their orientation to electronic trading. The accepted tenets of business strategy were not reflected in the behaviour and attitudes of the SME owners. Our conclusion is that eCommerce researchers have, to some extent, been looking in the wrong place in that we have focused too much of our attention on the dynamics within the individual firm rather than on influences from the broader business and industry context. SMEs trading in multiple sectors are particularly exposed to the vagaries of this context and their strategic options may be dominated by the inconsistencies and difficulties of this setting.

It would be premature to leap to such a conclusion, however, since survey methodology is unable to pick up the complexities of suppliers' responses or the complexities of the cross-industry trading context. SMEs' eCommerce decisions are highly individualised and thus not able to be measured completely or accurately in a questionnaire format. Further research will need to analyse how suppliers perceive the cross-sector environment, the characteristics of their business, the influence of existing and potential trading partners and their judgements of how to manage their broader business goals and eTrading techniques. This will require a qualitative research methodology which can pick up the nuances and contradictions of this environment. The next phase of this study

will analyse these issues for this group of companies to understand how they transact business in multiple sectors and how they think electronic trading techniques might help them do so.

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