

**E-COMMERCE AND SMALL AND MEDIUM ENTERPRISES (SMEs) IN
REGIONAL COMMUNITIES
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ABSTRACT

E-commerce is considered to provide substantial benefits to business, including SMEs (Small and Medium Enterprises), largely by way of improving efficiencies and raising revenue. It also offers the creation of opportunities for new businesses. Yet the rate of adoption of e-commerce by SMEs in Australia has been slower than anticipated.

The competitive nature of business requires that organisations, especially SMEs, develop and sustain any possible competitive advantage. Increasingly this requires that the tools of e-commerce not just enable electronic transactions to occur, but also to transform internal systems and help build relationships with customers. Despite this, these benefits are not being realised due to the lower than expected adoption rate.

These issues are discussed generally and then developed in an exploratory manner by way of three case studies of SMEs located in Hervey Bay, a regional area in Queensland. They range from an organisation offering tourist services online, a niche provider creating and commissioning commercial art, and a multi-media firm.

The purpose of investigating these SMEs is to identify the factors leading to their adoption of e-commerce, their use of e-commerce and to consider the success or otherwise of these businesses as a consequence. This is an on-going research project.

INTRODUCTION

E-commerce refers to a range of transactions in which organisations prepare or transact business or conduct their trade in goods and services electronically (Department of Communications, Information Technology and the Arts 1999, p.1). These activities cover such things as internet retailing, EDI, internet banking, electronic settlements and browsing and selection of products and services over the net.

Participation in e-commerce is important - not just from the perspective of commercial transactions but rather in the way it encourages transformation of internal systems and the subsequent efficiencies in terms of cost, responsiveness to customers, customisation of offerings and the potential emergence of new products and services (Crawford 1998, p.6).

Small and Medium Enterprises (SMEs) need encouragement and assistance to adopt and productively engage in e-commerce. A number of bodies have been established in the Australian context to provide this, or at least to consider e-commerce in the SME context.

This paper concerns itself with the issue of a lower than anticipated take-up of e-commerce by SMEs in the Australian context. It describes a range of initiatives that have been set in place to encourage the adoption of e-commerce both generally and within the Hervey Bay region. Notwithstanding these initiatives the present state of play is discussed particularly in terms of factors potentially inhibiting this adoption.

The actual adoption process (Rogers 1962, 1983, 1995) is also considered and must be taken into account so that messages to encourage e-commerce uptake are appropriate and are pitched in such a way as to maximize their effectiveness and impact.

Finally three case studies, overviewing reasons for adoption of e-commerce by SMEs, their use of e-commerce and an assessment of its effectiveness is undertaken.

This research is exploratory in nature and so raises many issues that require further quantitative analysis. It is the objective and intention of the researchers to pursue these issues in future research papers.

OVERVIEW OF REPORTS INTO E-COMMERCE AND SMEs

It is generally considered that governments need to take an active role in facilitating the adoption and productive use of e-commerce. Whilst it may not make economic sense for all SMEs to embrace e-commerce it is

considered that there is a need to encourage SMEs to consider the possibilities of e-commerce in the context of their own business planning.

The Australian Bureau of Statistics in 2000 (Australian Bureau of Statistics 2003) issued a report on the usage of IT and the internet by businesses in Australia. The report includes the following points amongst its key findings:

- 46% of Australian businesses were conducting internet business – 93% of these businesses employed over 1000 employees;
- The proportion of Australian businesses placing orders via the Internet or web, with or without online payment, continued to increase (25% in 2001-02 compared to 20% in 2000-01);
- The proportion of businesses receiving orders for goods and services via the Internet or web was 6% during 2001-02, compared to 9% in 2000-01;
- The most common internet business activity reported were receiving orders, sending invoices, providing after sales service and conducting online banking activities;
- Of the 42,000 businesses estimated to be receiving income from orders via the Internet, 33% generated less than 1% of their total income; and
- The most common purpose of business web sites were displaying company information and advertising goods and services, with less than 16% of sites with an online ordering facility or providing after sales service.

From this it is clear that e-commerce is dominated by larger organisations. It is also apparent that the full capacity of e-commerce is not being fully utilised and that there has been a slowing of growth in the 2001-02 period.

The Strategic Framework for the Information Economy - Identifying Priorities for Action (Department of Communications, Information Technology and the Arts 1999) identified a number of Commonwealth Government objectives relating to the Information Economy. These included:

- Increased awareness of online business systems so that by the year 2000 every Australian business is aware of the benefits of doing business online;
- Establish an affordable high bandwidth environment to stimulate the creation of business to business online;
- Promote rapid diffusion of online technologies in the business sector; and
- Strengthen the export capability of Australian enterprises trading online.

Other reports since this time have commented on the position with respect to ecommerce within the SME sector. It can be argued that there is some way to go in terms of the achievement of these objectives. The year 2000 has been and gone and still it is questionable whether all small businesses are aware of the benefits of ecommerce as they pertain to SMEs.

In its report, *Taking the Plunge – small business attitudes to electronic commerce*, the Australian Electronic Business Network (1998) identified that the benefits of e-commerce need to be presented with respect to individual businesses in an independent and reliable way. SMEs tend to exhibit a significant level of distrust for e-commerce schemes promoted by major sector based corporations or government.

Crawford (1998, p.20) stated that whilst access to internet is relatively inexpensive and readily available, smaller enterprises have been slow in using this “even though it offers a low cost introduction to electronic commerce”. The main reasons cited for this reluctance were a lack of time, lack of awareness and a lack of business opportunities. Crawford stresses that whilst motivation is critical, there needs to be some impetus to change.

There are a number of initiatives that are taking place in an attempt to bring about this change. A clear example of this is seen in the amount of funds invested in the promotion of e-commerce in Australia, for example, via the Networking the Nation project, and given the extensive provision of infrastructure by Telstra Country Wide throughout regional Australia enabling access to broadband.

IMPEDIMENTS TO THE UPTAKE OF E-COMMERCE

Barriers to the acceptance of e-commerce can be broken down into factors internal to and external to SMEs. The following internal factors have been cited as the main reasons for this reluctance:

- Lack of awareness and knowledge of e-commerce;
- Lack of skill and time to investigate and implement e-commerce;
- Technology ‘phobia’ amongst proprietors;
- Cost of implementation and lack of realisation of the benefits associated with the implementation of e-commerce;
- Concerns with security and privacy;
- Poor business management generally, as evidenced by a lack of strategic direction or perspective; and
- High failure rate of new SMEs.

A number of external barriers also inhibit the implementation of e-commerce by SMEs:

- Lack of suitable software standards;
- Lack of easily accessible, independent and inexpensive advice and assistance to SMEs;
- Electronic authentication issues; and
- Bandwidth capacity and infrastructure issues.

Another real issue is the often fragmented nature of individual industry sectors and the need for regional SMEs to adopt a co-ordinated e-commerce effort. This is particularly important in rural and remote regions within Australia.

The Small Enterprise Telecommunications Centre (SETEL) formed the view that despite expectations concerning the potential uptake of e-commerce by SMEs, this was not being achieved. In its 2002 report (Brown 2002) the centre identified a number of factors limiting this adoption.

- E-commerce was seen to be a distraction from core business;
- Significant perceived cost and risks associated with e-commerce;
- Lack of strategic vision; and
- Lack of realisation of value/benefits of e-commerce to individual SMEs.

Whilst SETEL believed awareness had been achieved generally, further “simplification and demystification” was required to allay fears and remove impediments to its acceptance. The four main elements that were needed to break down these impediments to the uptake of e-commerce amongst SMEs, SETEL believed (Brown 2002), were:

- Simplification;
- Demystification;
- Leadership (Government, industry, educators); and
- Promotion of the value proposition to SMEs.

SETEL believed SMEs need advice and direction to overcome ignorance, inertia and risk aversion. Furthermore, incentives need to be offered to encourage uptake. In communicating the virtues of e-commerce, the focus needed to be placed on benefits to the business rather than benefits of technology (Brown 2002, p. 18).

SETEL drew up a “hierarchy of needs” identifying actions required to further breakdown barriers to the adoption of e-commerce amongst SMEs. Four tiers of need were identified:

1. Awareness.
2. Leadership and promotion, education and training.
3. Implementation and progression.
4. Mastery, expansion and innovation.

It could be argued that this hierarchy is akin to the Innovation Adoption model developed by Rogers (1962, 1983, 1995) which represents the stages a consumer, or SME’s in this case, pass through before adopting a new product, in this case e-commerce. The stages are represented by the following steps; awareness, interest,

evaluation, trial and then adoption. Rogers postulated that innovation was more likely to succeed if the relative advantage as a consequence of its introduction was evident; was compatible with the organisation, its operations and view of the world; was not too complex; was able to be trialled; and was able to be observed (Rogers 1995).

“The challenge ... is to create awareness and interest among consumers and then get them to evaluate the product (e-commerce) favourably. The best way to evaluate a new product is through actual use so that performance can be judged.” (Belch & Belch 2001, p. 149) The issue then is how to encourage trial. The demonstrations or simulations of the use of e-commerce in terms of businesses similar to their business may be effective.

From this perspective communication about e-commerce needs to be tailored to where the customer sits on the continuum between awareness and adoption. SETEL's view is that the focus needs to be at the level of awareness and information provision (Tiers 1 and 2 in their hierarchy) with emphasis therefore being on heightening awareness in more specific terms.

In reviewing the slow uptake of e-commerce by SMEs it could be said that generally there is a lack of real understanding as to what e-commerce is, what it can do and how it can benefit an organisation e.g., by way of the transformation of internal business practices. Further it can also be said that there is reluctance by SMEs to change and embrace the possibilities e-commerce offers due to:

- Myths about the costs associated with the introduction of e-commerce;
- Lack of strategic direction;
- Ignorance and concerns re security;
- Lack of understanding of supply chain issues;
- Lack of realisation of the potential benefits re efficiencies and revenues; and
- Focus on costs rather than benefits.

These issues will now be considered in the Hervey Bay context.

HERVEY BAY

Hervey Bay is located in the Wide Bay Burnett region of Queensland and is, on nearly every indicator, an economically and socially disadvantaged region (Planning Information and Forecasting Unit 2001). Hervey Bay has an estimated population of 45,959 (Australian Bureau of Statistics 2002).

The region's median weekly income is \$293.18 well below the Queensland state average of \$398.30 according to the AEC Group's latest statistics (details available from <<http://www.aecgrouppltd.com>>) and the Queensland Government Families Minister Judy Spence, has been reported as saying that the City is the oldest electorate in Queensland (Pausa 2003), with 20.7% of its population over 65 compared to the Queensland average of 12.4%. Couple these factors with a continued strong population growth, where Hervey Bay is ranked in the top 35 cities within Australia with one of the fastest growth rates in the country of around 8.5% per annum (Business Advisory KPMG – *The Fraser Coast Chronicle* 27 March 2003, p.1), and a paradox is evident.

As a consequence of *recent* in-migration patterns, the school-aged proportion of the population of the region is actually slightly higher than the national average (Department of Education, Science and Training, 2001) and new groups of professionals are now entering the population. This will serve to increase wealth of the area and mitigate the impact of the high unemployment rate (around 16% generally and 24% for youths) and the high welfare recipient rate – with a ratio of welfare payments to personal disposable income of 27.9% (Bray and Mudd, 1998).

From this it is understandable then that the take-up of IT access opportunities has been limited by socio-economic factors in the Wide Bay Burnett region. This partly explains the low rate of take-up of e-commerce in the region. There is opportunity for change if community capacity building in the IT area can assist and support a community's economic and social development.

This slow adoption of e-commerce is also evident in the business community, reflecting a number of factors that have been outlined in this paper. Underlying business practices are traditional and 'outdated' and it is the authors' contention that this creates a substantial barrier that must first be surmounted. This is considered to be an issue particularly for SMEs in the region who have not been exposed to, and are less aware of, e-commerce compared with their urban counterparts.

Another significant external factor, as raised by Scupola (2002) is the issue of critical mass. The nature of competition and the number of players in a particular industry, Scupola asserts, acts as a catalyst or deterrent to SMEs embracing e-commerce. The level of competition in regional areas such as Hervey Bay to date has been limited to existing players who to a large extent rely on repeat business and established reputation. It is asserted that as competition in response to growth increases, organisations may see the opportunity or necessity of adopting e-commerce as opposed to the tendency to consider it 'just by chance' (Engsbo 2001).

Three significant initiatives have been undertaken in Hervey Bay to improve and accelerate the uptake of the use of the Internet in both the general and business communities. These initiatives are summarised below.

- **Infrastructure**

Telstra, via Telstra Country Wide, has embarked upon a program of infrastructure improvement in regional Australia, including the Hervey Bay region. In the financial year 2002/3 it has injected \$187m into improving telecommunications access nationwide, around \$4m of this within the Wide Bay/Gladstone region within which Hervey Bay is situated (P Symington 2003, pers. comm., 15 May).

Optic fibre cables are seen to be central to future infrastructure due to its substantial capacity. An extensive network of optical fibre cable and digital radio systems linking telephone exchanges has been laid to provide extensive bandwidth to cope with and facilitate development of the region. During 2002, the Asymmetric Digital Subscriber Line (ADSL) broadband service was introduced to both Maryborough and Hervey Bay

Telstra's investment in the Hervey Bay region has been made in response to the social and political context as well as the growth anticipated future growth of the region and in turn this has further fostered future development of the region.

From the above it can be argued that the infrastructure is in place, at least in the Hervey Bay region, which will allow businesses and individuals to access broadband and the internet. This access has increased over time via improvements in capacity, speed and reach, as well as from the cost perspective.

It would therefore seem, *ceteris paribus*, that the provision of telecommunication infrastructure is not a major impediment to the uptake of e-commerce by SMEs in the Hervey Bay region.

From the Australian perspective information regarding the use of e-commerce would indicate that despite the existence of extensive telecommunications infrastructure, e-commerce is not being embraced as it might. (Australian Bureau of Statistics 2003)

- **FIZ**

Fraser Innovation Zone (FIZ) was launched in 2001 involving stakeholders from the Queensland Department of State Development, Hervey Bay City Council, the University of Southern Queensland and local business. The group embraces information technology (IT) research and development as well as all new technologies that have a potential to create employment and research in innovative technology within the Fraser Coast region.

It is considered the region is well placed to attract innovative businesses, as well as to foster the development of existing businesses. FIZ therefore seeks to, in conjunction with infrastructure providers, to provide these opportunities for business and to facilitate the coming together of business and IT professionals.

- **FACTOREE**

The Fraser Area Centre for Technology and Open Resource Education Enterprise (FACTOREE) is a joint project of the University of Southern Queensland, the Queensland Government Department of State Development and the Wide Bay Institute of TAFE with assistance from Telstra Country Wide. The Centre acts as a 'drop-in' centre for local businesses, providing the latest information, support and advice.

Clients will be able to see examples of the latest ICT and discuss how they can use technology in their operations. The project is concerned with generating awareness and helping businesses as they decide to adopt new technologies.

It is considered this body is an appropriate forum to provide independent and reliable information and support to SMEs. This would support the view of the Small Enterprise Telecommunications Centre (SETEL) which argues that education that is specific to the needs of individual business is critical to promote awareness and encourage acceptance of e-commerce (Brown 2002).

Co-ordination of information to encourage SMEs in the Hervey Bay area to adopt e-commerce could come under the auspices of the FACTOREE and FIZ. Parker and Swatman (1996) and SETEL (Brown 2002) also contend that the role of independent bodies such as industry associations, government and tertiary institutions is pivotal role in this regard. This will be the subject of future research by the authors.

CASE STUDIES

In addition to analysis of secondary data, the methodology utilized in this research is that of interviews/case studies (Yin 1993, 1994; Tsoukas 1989; Parkhe 1993; Easton 1994). The case study research collected will enable ideas put forward in previously published reports as to the reasons why SMEs use or do not use the internet in their operations to be 'tested'. Whilst it is acknowledged that the number of organisations involved in this research is small, three in total, the outcomes are not intended to represent the state of play of internet utilisation of SMEs.

Rather the intention is to explore previously established notions from the point of view of these businesses and to raise further issues and questions that may require subsequent research perhaps of a quantitative nature.

○ Case Study 1

This organisation is a small business that creates and commissions commercial art work via the internet. The business in the past has been conducted via traditional means however around 8 years ago adopted the internet as a tool to assist in the sale and promotion of art works internationally. The target market is professionals and corporations worldwide.

The proprietor of this business has vast experience in business and has fully integrated e-commerce into his operations including product browsing, ordering, promotion and communication, and payment (although security has been an issue in the past). It is this skill and expertise that has fostered the success of the adoption of e-commerce in this business and the recognition of the strategic opportunity it provides.

Around 75% of sales are conducted via the internet which has also been responsible for the majority of growth experienced in this business, some 80% per annum. This growth is expected to continue into the future.

The use of the internet has seen a marked reduction in costs associated with providing information to potential clients. There has also been a significant reduction in turnaround times in terms of providing information to clients and their placement of orders. Prior to the adoption of the internet the turnaround time in getting information to clients was up to three weeks. The website allows clients to view work in progress enabling adjustments to be made, and thereby facilitating customisation.

Infrastructure in the region was considered to be adequate to the needs of the business although the lack of a reliable and reputable ISP in the region was an issue. The main reason underlying the relocation to the Hervey Bay region was one of lifestyle with the internet enabling location in a remote place without adversely affecting the business.

○ Case Study 2

This organisation is a provider of multi-media services (predominantly tourism based screensavers) although in recent times it has diversified into the production of souvenirs for the tourist market as well as online videos and multimedia training films.

The business targets the tourist market with its products available at tourist destinations throughout Australia. Its customer base and target market is largely located outside of Australia. Essentially the website provides sales support and facilitates repeat sales from existing customers. The site also enables contact with the business in the event of some difficulty with a product. Initially, sales of the screensaver product were via floppy disk however this resulted in a failure rate of around 1:1000. The Internet was seen to be a solution to this enabling a reduction in such failures as well as providing an easy way for customers to liaise with the firm.

It could be argued that the potential of the Internet is not fully realised in this business – as a sales tool or as a means of promoting the business and its product range. Sales over the Internet are around 3 – 4 per week with physical sales in retail outlets far outstripping this. However the Internet does enable the sharing of ideas and links the firm to suppliers, customers and distributors.

The organisation uses the Internet and broadband to conduct teleconferences with international suppliers and distributors. The proprietors relocated to the region for the lifestyle given the flexibility online operations provide. Hence availability of infrastructure was critical to their location decision to the region despite initial bandwidth problems.

The main benefits of operating online cited were the speed of developing new products and accessing potential international suppliers. Recently the proprietor was able to develop a new product, source suppliers and identify niche markets in a period of four days. This responsiveness to market needs was considered to be critical as the product life cycle shortens.

○ **Case Study 3**

This organisation provides an online tour, accommodation and car/camper booking service. It assists in planning and developing itineraries for those intending to travel to Queensland, especially in the Hervey Bay region.

This service is free to the consumer with commissions earned when the customer makes a booking. The business has relationships with over 100 tourism related businesses that participate in a network and these arrangements are being negotiated and the network constantly expanded.

The business has only been operating for eight months and its target market includes both overseas and domestic tourists. The proprietor has extensive experience in the tourism industry in the region and has developed his own site

The site enables users to take a detailed virtual tour to plan their holiday. The website links 17 websites to facilitate users finding this site. There are no payment mechanisms attached to the site but rather payment occurs by way of emailing authorisation forms to debit credit cards, faxes and the emailing of invoices. In this sense e-commerce is not fully integrated into the operations of the firm.

The proprietor envisages growth and additional opportunities opening up to the business. At the present time enquiries and subsequent bookings have been greatly impacted by world events – the war, threat of terrorism and SARS. Domestic markets are being targeted to generate enquiries and commissions until such threats pass. A number of new product ideas are being developed with a view to expanding the business in the future. Again, availability of infrastructure and proximity to tour operators has been influential in the location decision.

In examining the case studies cited in this paper, it is considered that the issues of resources, motivation and objectives of adoption of e-commerce, and the actual implementation process are critical. These three basic factors may be of significance in considering why many SMEs do not consider e-commerce. Further research needs to be conducted to test this assertion.

SUMMARY

It would appear from this preliminary research, that the use of the internet from the perspective of organisations cited in this paper is limited largely to 'one-on-one interaction via web pages' (Dann & Dann, 2001 p.386), aside from case study 1. Effectively the web is used as a support tool and is not used to its full capacity.

Further research needs to be conducted into why SMEs in the area are reluctant to adopt e-commerce and reasons for the partial use of its functionality, assuming this is the case.

Perhaps as suggested by Poon and Jevons (1997) and Golden and Dollinger (1993) inter-organisational co-operation between SMEs could be fostered in the on-line environment within the Hervey Bay region to maximize benefits to SMEs re the use of the internet. Organisations such as FIZ and FACTOREE may be appropriate vehicles via which to achieve this co-operation, awareness and dissemination of information so as to build knowledge about effective use of the web and its potential benefits. There is a need to simulate/demonstrate to actual businesses how e-commerce can be integrated into business and become part of a growth strategy, enabling a shift into the 'new economy'.

Since success of e-commerce businesses depends largely on how it is managed, education is required, not just in terms of e-commerce technology but also in association with management practices and marketing to facilitate the integration of e-commerce into business planning. It is evident in the initial investigation of the case studies that there is a tendency to focus on operational issues at the expense of business planning or strategic direction. Increased education with respect to strategic vision and realisation of the role e-commerce has in growth, expansion and changes to business practices, is critical in acceptance of e-commerce by SMEs.

Success stories of business that have successfully implemented e-commerce need to be promoted. It would seem that a suitable vehicle for this would be industry associations and chambers of commerce, as well as tertiary education institutions.

It is interesting to note that none of the three case studies seem to be overly concerned with the issues raised in the SETEL 2002 report. A possible reason for this was the range of initiatives (infrastructure improvement, FIZ, FACTOREE) within Hervey Bay designed to enable businesses through the application of cost effective, innovative techniques such as e-commerce to become successful. What was observed was a lack of understanding of the business context of using e-commerce which is an education issue that can be addressed as the businesses mature.

It is considered that this is an issue for SMEs in regional areas more so than in urban areas, and this again requires further research.

FUTURE RESEARCH

It would be interesting to test to see the variation in uptake of e-commerce in urban areas, major established regional cities where tertiary educational institutions are established (such as Toowoomba), emerging regional communities where there is a growing tertiary education presence and those regional and rural areas with no such institution. In addition the exposure to and an awareness generally of the benefits of e-commerce, the application of the diffusion of innovation model, and the role of tertiary education institutions could be tracked.

Certainly further research needs to be conducted to explain more fully the SMEs' perceptions of e-commerce and to identify and deal with factors inhibiting its adoption.

Questions regarding the rate of adoption of the internet by SMEs more broadly throughout Queensland or Australia, specific factors occurring in particular areas and or specific factors that may be occurring in this particular region will no doubt be important in fully understanding the underlying issues explaining utilization or rate of adoption of the internet by SMEs. These issues need to be further examined in the context of additional future research.

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