



# Information Need and Its Impact on the Adoption of E-Commerce Tools in the Small Business Sector in Western Australia

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## BACKGROUND

Despite the demonstrated advantages of Information Technology (IT) and e-commerce, worldwide evidence suggests that the adoption of e-commerce is uneven among businesses. While the varying degrees of adoption of IT and the ensuing digital divide issues generally have been widely debated (Chanda 2000; Hoffman, Novak et al. 2000; NOIE 2000), much less research has been done into the factors that moderate the adoption of these tools by the business sector.

For businesses, the assumption appears to be that operational efficiency will mandate the use of computers and business and market forces will dictate the use of the Internet. Broad-based information suggests that adoption of computers and Internet connectivity have been high among Australian businesses but such connectivity has not translated into business transactions (Venkatesan & Fink 2002). Among small businesses, studies show there is still a low level of adoption of e-commerce (Poon & Strom 1997; Akkeren & Cavaye 2000).

Like most OECD countries, Australia has a dominant small business sector and this sector is the backbone of its economy in terms of innovation and employment generation (ABS 1997). Thus, the adoption or non-adoption of e-commerce by this sector has the potential to significantly impact on the overall use of e-commerce. Data from Australian business sector suggests a higher rate of computer usage and Internet connectivity compared to UK and Europe (NOIE 2000). However, there is concern within national agencies about the poor uptake of e-commerce and possible loss of business opportunities (CSIRO 1999).

Poor adoption of e-commerce in the 'Business-to-Consumer' (B2C) sector worldwide has been largely attributed to security issues and lack of consumer confidence. However, Business-to-Business (B2B) transactions are often confined to larger businesses and their supply chains and horizontal transactions between small firms have been infrequent in Australia (Venkatesan and Fink 2001).

Driven by the tenet that information is power, existing Internet solutions have focused on providing massive volumes of information on the World Wide Web (www), without an understanding of what information is needed, resulting in information overload. This is exacerbated by the open structure and accessibility of the Internet.

While large volumes of information may be a requirement for big businesses, questions remain on whether small businesses need such information and whether they are capable of analysing such information. Little is known about what information is needed, how it is accessed and what impact new technologies have had on such access. Thus, these have become crucial questions impacting on how businesses use IT.

Small and medium sized businesses, by their very nature, are localized in their operation, have limited market impact and face significant resource constraints (Venkatesan 2000). Studies reveal that they engage in limited market research and take an unprofessional approach to gathering and implementing market information (Carson 1985). Such businesses are usually owner managed and their time and knowledge limitations hinder their ability to search for information on the Internet.

Given the paucity of data on the information needs and access patterns of businesses, a study was carried out in a regional Australian town and the results are presented below. The findings are based on a quantitative study using mail survey to collect data. Parallel studies reveal that many of the findings are also applicable to small and medium businesses located in metropolitan areas of Australia.

## RESULTS

### Business Profile

The majority of businesses surveyed were home-based and involved in primary production. Almost all were owner-managed and met the Australian Bureau of Statistics (ABS) criteria for classification as small businesses. The number of retail and service based businesses was small<sup>1</sup>. The median annual turnover of these businesses was around A\$100 000 (range \$50000 - \$250 000).

Responding businesses were predominantly production oriented with little emphasis on aspects such as marketing, accounting or financial planning. Almost half of the businesses serviced local markets and about 30% serviced statewide. Though their products were sold to a wider market through intermediaries, these businesses viewed marketing as too involved and time consuming. Minimal impact on the market and the long lead-times between producing a product and sales also discouraged their marketing efforts. Other studies demonstrate that localised operation and lack of need for marketing appear to be generally applicable to small businesses (Carson 1985; Carson & Cromie 1990; Venkatesan 2000).

About 50% of businesses used computers and less than 30% were connected to the Internet. The frequency of use was low to moderate with most computers being used for administrative tasks.

### Information Need

To examine the need for different types of information, importance of such information and frequency of access of such information, respondents were asked to use a five-point scale to rate the importance of a range of information in their everyday activities.

Mean values suggested that, in relative terms, businesses considered banking and agriculture information to be more important than leisure and financial information. Employment and educational information were considered relatively unimportant. Because of their narrowly defined business activities and restricted scope for diversification, businesses sought information directly relating, and of immediate relevance to, their business. Because of the long planning cycle and local markets, businesses had more need for locally oriented information. Other studies on metropolitan city-based small businesses have shown that small businesses use little market intelligence (Venkatesan & Soutar 2001). This could be one reason for their minimal adoption of the Internet.

As can be inferred from the mean values (Table 1), weather, which directly impacts on primary production operations, was the most accessed information, followed by banking and price of products. This was not surprising

Table 1. Type of information accessed

	Mean	S.D
Banks	3.28	1.191
Accountants / financial planners	4.37	0.925
Government services	4.43	0.893
Weather	2.42	1.655
Health	3.84	1.221
Agriculture information	3.42	1.490
Price of products	3.18	1.341
Stock markets	4.07	1.363
Others	2.55	1.508

(1-Daily; 2-Twice a week; 3-Twice a fortnight; 4-Once or twice a month; 5-less than once a month)

Table 2. Frequency of information access through different media

Medium	Mean	Median	S.D
Phone	1.46	1.00	0.746
Fax	2.69	2.00	1.407
Internet	3.59	4.00	1.500
Email	3.50	4.00	1.551
Radio	2.97	3.00	1.542
TV	2.99	3.00	1.590

(1-Always; 2-Often; 3-Sometimes; 4-Rarely; 5-Never)

Table 3. Information access and sources of information

Source	Mean
Local sources	2.62
From regional centers	3.25
Perth and whole of WA	3.21
Whole of Australia	3.71
Internationally	4.15

(1-Always; 2-Often; 3-Sometimes; 4-Rarely; 5-Never)

given the preponderance of primary producers in the sample. However, it should be noted that even weather information was accessed about twice a week or less. Stock market and other information were accessed much less. Dealings with accountants/financial planners are also less frequent. This demonstrates that instantaneous access to such information may not be critical for small businesses.

#### Medium of Information Access

To examine the use of Internet as an information-gathering tool, businesses were asked to rate how frequently they used different media to communicate in their business. A five-point scale was used for rating the frequency. The mean, median and standard deviation values are given in Table 2.

Telephone appeared to be the most used communication medium followed by fax and personal contacts. Mass media such as Radio and TV also found frequent use. Use of email, the Internet and other computer-mediated tools was less frequent. The Internet seemed to have had minimal to moderate impact on information access by regional businesses. Conventional media continued to be preferred ahead of computer related information channels.

This is likely to be due to lack of need for information, relevance of information from the www to the local community, the nature of the business activity and lifestyle as well as slow technological diffusion.

It should be noted that, while the adoption of the Internet and the www has been relatively rapid in large cities both by businesses and the community (about 80% adoption of computers and 50–60% adoption of the Internet by businesses), studies (Venkatesan & Fink 2001) show that businesses still use the computer for administrative and accounting purposes and the Internet was mainly used for gathering information and not for transacting any business. The adoption of email to contact other businesses or clients was also at a low level. Consequently, it is not surprising that regional or rural businesses have a low level of adoption of the Internet.

Progressively increasing mean values in Table 3 (comparable standard deviations) suggests the local nature of the information sought by respondents with the frequency reducing as the information horizon expanded from local to international arena.

Table 3 also demonstrates that regional communities/businesses have a higher need for local information and supports the argument that one reason for lack of Internet use is the lack of need to access general worldwide information. The www does not offer locally tailored information and anecdotal evidence suggests that www information is generalized and not current and specific local information can be obtained from other sources such as regional radio without logging onto a computer. While specialized sites are available for specific information, most such sites require payment and the total cost can be prohibitive.

Ease of access, lack of need for global information and limited availability of local information seem to be three key factors limiting the use of computers and the Internet.

Respondents were asked to rate the extent to which Internet was useful in their business.

Of the Internet users, over 60% considered it highly useful. Less than 10% found it to be not useful.

#### CONCLUSION

The results of the study suggest that businesses in regional Australia need more localised information better tailored to their needs. While the www was useful for generalised information, key business information needed a local focus to be of any relevance.

Businesses preferred conventional media such as phone and radio and relied more on local experts than on information available on the Internet, mostly because local experts could modify the general information to meet individual business needs. Criticality of information and speed of access was not of major concern to these businesses.

Overall, it appears that conventional and global IT solutions could have limited value in regional Australia and generally in the small business sector and more tailored solutions may be needed.

#### ENDNOTES

- <sup>1</sup> The town surveyed was an agriculture based town and hence the small number of retail businesses. However, in metro areas and non-agriculture based towns the proportion of retail and service based businesses has been shown to be high.

#### REFERENCES

- ABS (1997). Characteristics of Small Business 1997. Canberra, Australian Bureau of Statistics.
- Akkeren, J. v. and A. L. M. Cavaye (2000). *Factors affecting the adoption of E-commerce technologies by small business in Australia - an empirical study*. ICSB Conference.
- Carson, D. and S. Cromie (1990). "Marketing Planning in Small Enterprises: A Model and Some Empirical Evidence." *The Journal of Consumer Marketing* 7(3): 5 - 18.
- Carson, D. J. (1985). "The Evolution of Marketing in Small Firms." *European Journal of Marketing* 19(5): 7 - 16.
- Chanda, N. (2000). "The Digital Divide." *Far Eastern Economic Review* (October 19): 50-53.
- CSIRO (1999). Caught in the Web: The Not-So-Lucky Country. Canberra, CSIRO.
- Hoffman, D. L., T. P. Novak, et al. (2000). "The Evolution of the Digital Divide: How Gaps in Internet Access may Impact Electronic Commerce." *Journal Of Computer Mediated Communication* 5(3).
- NOIE (2000). The Current State of Play - July 2000. Canberra: 1-49.
- Poon, S. and J. Strom (1997). *Small Businesses' Use of the Internet: Some Realities*. The Seventh Annual Conference of the Internet Society, Kuala Lumpur, Malaysia, [http://www.isoc.org/inet97/proceedings/C2/C2\\_1.HTM](http://www.isoc.org/inet97/proceedings/C2/C2_1.HTM).
- Venkatesan, V. S. (2000). The marketing orientation of Small and Medium Enterprises: An Australian Study. *Ph.D Thesis*. Edith Cowan University, Australia: 300+.

Venkatesan, V. S. and D. Fink (2001). Joondalup Region Business Audit. Perth, Small and Medium Enterprise Research Centre, Edith Cowan University: 162.

Venkatesan, V. S. and D. Fink (2002). *Adoption of Internet technologies and e-commerce by Small and Medium Enterprises (SMEs) in Western Aus-*

*tralia*. 13th IRMA International Conference, Seattle, Washington USA, Ideas Publishing Group.

Venkatesan, V. S. and G. Soutar (2001). "Market research in Australian SMEs: An empirical study." *Small Enterprise Research* 9(2): 17-31.

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