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ITP5159

This paper appears in *Managing Modern Organizations Through Information Technology*, Proceedings of the 2005 Information Resources Management Association International Conference, edited by Mehdi Khosrow-Pour.

A Study of IT Use in Small and Medium Businesses in Melbourne, Australia

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ABSTRACT

This paper reports on the results of a series of interviews with thirteen small and medium-sized businesses in Melbourne, Australia – ten small businesses and three medium sized businesses. The interviews investigated the manner that the small and medium businesses use IT and the value that it adds to their businesses. The paper commences with some background on the particular peculiarities in relation to the manner in which small business use IT and then reports on the results of the small and medium sized business interviews in relation to each of these peculiarities. The study confirmed many of the features of small business identified in the literature. The businesses in the study did tend to take a short-term focus towards to their use of IT, and identified operational systems as their major use of IT. They did, however, identify a number of innovative ways in which they use IT. The medium businesses showed aspects of both 'small' and 'larger' cultures in their IT use. They virtually had no strategic IT plan (like small businesses), but they did understand terms such as 'service agreements' and 'benchmarking'. Their uses of IT did tend to be more sophisticated than their smaller counterparts. The study had limitations (mainly the number of businesses), but there is enough evidence to justify further studies into 'medium' sized businesses in relation to their usage of IT.

INTRODUCTION

The literature has identified a series of features that are particular to small businesses (as compared to larger businesses) in the manner in which they use information technology (IT). In particular, these features are the short-term focus taken by small businesses in relation to planning for the use of IT, the use of IT for mainly operational or efficiency gains, and the confusion faced by small businesses when trying to determine the benefits of IT. This paper reports on the results of a series of interviews with thirteen small and medium-sized businesses in Melbourne, Australia – ten small businesses and three medium sized businesses. The original intent had been to interview only small businesses – but three of the businesses had grown to be 'medium' in size, so were included for comparison purposes. The interviews look in an in-depth manner at the way that the small and medium businesses use IT and the value that it adds to their businesses. The paper will commence with some background on the particular peculiarities in relation to the manner in which small business use IT and then report on the results of the interviews in relation to each of these peculiarities. Comparisons between the small and medium sized businesses are made.

What is Small?

The impact of small business is significant. In the United States of America (USA) alone, small businesses account for the vast majority of all businesses and nearly half of the country's GDP (Pflughoeft et al, 2003). When studying the use of Information Technology (IT) in small business, the range of definitions used to describe 'small business' varies across international boundaries. This range can make it extremely difficult for researchers to 'match up' different small business studies. A 2003 study by worldwide members of the Information Resources Management Association Special Research Cluster on Small Business and Information Technology (Burgess, 2003) found that definitions of 'small business' ranged from less than 20, 50 and 100 employees (with some definitions including requirements for annual turnover and asset levels). In this study any organisation with 20 employees or less is regarded as a small business. Organisations with 21-200 employees will be classed as medium sized businesses.

Barriers and Opportunities

The literature around the area of small business and information technology is rife with what is now a fairly accepted list of 'barriers' to the successful implementation of IT in small businesses when compared with their larger counterparts. Table One lists these barriers.

Short Term Focus?

One of the barriers identified in the list above that hinders the effective use of IT in small businesses is a lack of formal planning and control methodologies (Burgess, 2002). This relates to a lack of knowledge of how to plan effectively, lack of time and money to seek this knowledge, lack of time to apply it even if they have the knowledge and a lack of understanding that they even need the knowledge! Small businesses are, however, concerned with issues relating to how they can operate more effectively and efficiently and/or how they can grow (El Louadi, 1998). One of the problems is that management practice in small businesses is often based on the short term and is informal and ad hoc. Much of the time is spent 'surviving', so that little time can be devoted to examine IT projects (Pollard and Hayne, 1988).

Use of IT are for Efficiency Gains

It has been well reported in the literature that small businesses that use computers mainly use them for administrative and operational purposes (such as accounting, budgeting, payroll, inventory control and the like) (Burgess, 2002).

Much of the software that is, used by small businesses is purchased 'off the shelf' (McDonagh and Prothero, 2000), although there is some evidence to suggest that small businesses with particular (specialised) needs are prepared to invest in customised software (Burgess, 1997).

More recently, Premkumar (2003) identified 'competitive advantage' as a primary driver of the adoption of IT by small businesses. Levy, Powell and Yetton (2001) identified a link between a small business' strategic context and its investments in IT.

Working Out the Benefits of IT

Another barrier to the successful use of IT in small businesses is a lack of understanding of the benefits that IT can provide, and how to measure those benefits. The most common way used to determine the level of IT success is to measure small business user satisfaction with information technology (Premkumar, 2003). Such measures of user satisfaction have one major problem – they are linked with user expectations (Naylor and Williams, 1994). For instance, an owner/manager understanding the strategic benefits that IT can provide may be less satisfied with a simple transactional system than an owner/manager who is unaware of these strategic benefits. This is despite the possibility that they be reviewing

Table 1. Typical Barriers to the Use of IT in Small Business (Source: Burgess, 2002)

Barrier	Comment
The cost of IT	Small businesses often have difficulty in justifying the cost of IT as they generally have limited budgets.
Lack of time to devote to the implementation and maintenance of IT	A typical small business owner/ manager will work 50-60 hours per week.
A lack of IT knowledge combined with difficulty in finding useful, impartial advice	There is usually no person in a small business whose job is devoted to supporting the IT function. As such, the 'expertise' often comes from friends, accountants, family members and/or 'IT savvy' employees.
Lack of use of external consultants and vendors	Small business owners typically have a mistrust for IT consultants and vendors, believing that they do not really understand their business needs.
Short-range management perspectives	Often small business owner/ managers are so busy with the day to day operations of the business (and cash flow) they feel that they do not have the time to plan much further than the next day, week or month ahead. This also reflects a lack of understanding of the benefits of planning for the longer term.
A lack of formal planning or control procedures.	
A lack of understanding of the benefits that IT can provide, and how to measure those benefits	Most small business employees understand the many of the efficiency and cost saving benefits that IT can provide, but do not understand how IT can be used for competitive advantage. As such, It is often viewed as a cost and is not budgeted on a cost-benefit basis.

systems that perform in a similar manner. Again, the problem falls back to a lack of proper knowledge about the advantages that IT can provide.

What About Medium Sized Businesses?

Most research related to medium sized businesses (for the purposes of this paper, businesses with 21-200 employees) is grouped together with research into small businesses – the collective group being referred to as SMEs (small and medium enterprises). However, often being large enough to have their own IT departments or specialist IT employees, medium sized businesses are more likely to exhibit the characteristics (from an 'IT' point of view anyway) of larger businesses than smaller ones.

THE STUDY

In 2003 the School of Information Systems in Victoria University (Melbourne, Australia), sponsored a study of small businesses in the Melbourne metropolitan region. One of the purposes of the study was to investigate the relative difficulties placed upon small business in their use of information technology when compared with larger businesses. The purpose of this paper is to compare the results of the study with some of the supposed 'givens' about the use of information technology by small businesses that have emerged in the literature over the last few years, but with an added twist in relation to medium sized businesses (described later in this paragraph). The study was conducted in the latter half of 2003. The original intention was to interview a cross section of small businesses in the Melbourne metropolitan region. A commercial database, which had previously been purchased by the university, was used to identify 85 businesses that fell within the definition of small business. After removing businesses that were no longer at the location a sample of 66 businesses were left. Of these, 13 agreed to be interviewed. After the interviews, it was realised that three of the businesses could no longer be classified as small businesses (as they had more than 20 employees), so there were 10 usable responses left from a 'small' business viewpoint. It was decided that the three remaining businesses (all medium sized businesses) could make an interesting contrast to the findings of the other businesses – so the results from these businesses are also reported in this paper. The decision to use interviews rather than surveys was due to the richness of information that could be extracted and the ability to follow up on answers. The interviews typically lasted between 45-75 minutes and were conducted by a research assistant.

Table 2. Industry Representation in Interviews

Business Size	Individual Business Details
Small Businesses	Psychological consulting
	Lawyers
	Brokers to providers of finance
	Providers of packaged application software
	Providers of customised application software
	Providers of mobile telephones and accessories
	Rental of serviced apartments
	Timber wholesalers
	Florist
	Tyres for Motor and other vehicles
Medium Sized Businesses	Wine Distributors
	Dairy Company
	Building Contractors

The interview protocol adopted was the same set of questions used in a worldwide study of small businesses conducted by the Information Resources Management Association (IRMA) Special Research Cluster on Small Business and Information Technology[1]. It was originally intended to include this study as part of the IRMA study, but there was not enough demographic data collected in the study (such as age, years of work experience and level of education of the owner) for these results to be included with that study. In that interview protocol, the term 'Information Systems' (IS) was used to describe what this paper refers to as IT, but 'IT' will be used in the remainder of this paper.

The participating small businesses all had between three and twenty employees. The medium sized business had between 21 and 100 employees. In each instance the interviewee was the owner and/or manager of the business.

The industry representation of the businesses is shown in Table 2.

RESULTS

IT Planning

Participants were asked if they had an IT strategic plan.

Small Businesses

The results of the interviews appear to support this 'given'. Only **one** of the ten businesses interviewed actually said they had a strategic plan (the hospitality business, who rented out serviced apartments). What was really interesting about this was that some of the other businesses said about the role of IT in the organisation. Some typical comments were:

- "We are reactionary to our needs….eg we moved to Quickbooks only when Excel became cumbersome" [Psychologists]
- "IT for us is a tool" [Finance]
- "Our IT framework is purely a support tool" [Packaged IT solutions]

Two other respondents mentioned "support tools" in their responses. The implication from this is that IT is seen as a tool to support the business and therefore it is not necessary to plan that far ahead for it.

This tends to support the argument in the literature that small business owner/ managers will tend to not plan too far ahead for their IT needs.

Medium Sized Businesses
Only one of the three medium sized businesses actually had an IT plan (the Dairy company). The other two answered a flat – 'no'. In this instance (two of) the medium sized businesses were following the small business trend.

Top Three Uses of IT
Participants were asked: "What are the top three uses of IT in your business?"

Small Businesses
The vast majority of interviewees (80%) responded that their accounting or related applications were amongst their top three applications. This was not at all surprising and again supports the literature. Three interviewees suggested that email was an important application. This represents an interesting reliance by some businesses on the Internet is as a communications tool.

Other applications mentioned were electronic funds transfer, banking, ordering, sales, marketing, customer relationship management, Internet research, and project management (by two businesses) and human resources and warehouse management (by one business). Most of these are consistent with the 'small business' literature.

Medium Sized Businesses
There was no specific dominant application across the three businesses. The wine distributor highlighted accounting related functions, such as order processing and stock control, followed by administrative applications (word processing and email). The dairy company highlighted EDI as the most important function, followed by 'supply chain' and inventory. Perhaps not surprisingly, the building company listed project management as its most important application, followed by human resource management and then 'day to day functions'. If there is one thing to highlight here is that 'accounting' functions are not listed at the top of the functions as with the small businesses.

Use of IT to Enhance the Business
On a more practical level, there was interest in how the owner/managers felt that IT had enhanced their business. Participants were asked: "How does your business use IT to enhance the business?"

Small Businesses
There were some expected responses to this question, indicating that IT was used for day-to-day applications such as word processing and spreadsheets. However, there were some very positive responses to the question. For instance, the finance and wholesale businesses suggested that integration to business partners occurred through the Web. The finance business indicated "the Internet is the best thing that has happened to us". Other businesses suggested that IT provided them with greater ease in keeping track of customers and (through the Internet) the ability to source business information. Two of the businesses suggested that time savings through IT were important as it freed up staff to do other tasks.

Participants were asked to identify particular areas where IT had helped them. This question did provide some interesting results. Marketing, client management and/or selling were identified by 60% of the businesses as an area where IT had particularly helped them. Only 50% of the businesses mentioned accounting, so perhaps this is seen as being expected of information technology systems these days. Finance, human resource management and 'supply chain' were each mentioned by three businesses. Supply chain was mentioned in the previous question by the businesses that had mentioned that business integration opportunities had enhanced their business. Many of the applications mentioned here are related to forces external to the business (in this case, customers and suppliers), indicating that IT may be taking a more strategic focus in some of the businesses.

Medium Sized Businesses
In relation to how IT enhanced the business, both the wine distributors and dairy company mentioned that EDI enhanced their businesses, with the latter again emphasising the importance of the effective supply chain relationships. The other application of note was the human resource management system of the dairy company and building company.

In relation to identifying particular areas where IT had helped the business, two of the businesses indicated that IT helped them in 'all' areas, with the building company highlighting 'better administration' and 'project management' as the main areas of benefit.

Innovative Uses of IT
There has been some suggestion in the literature that suggests small businesses are thinking of more creative ways to use IT. Participants were asked: "Has IT helped your organisation to be more innovative?"

Small Businesses
Here are some examples of some interesting answers:

- "Yes, we have prepared a few packages for our customers and that is purely possible because of what fast access to information brings for us". [Finance business]
- "Yes, for example the use of Personal Digital Assistants (PDAs) in the field and Virtual Private Network (VPN) for remote work". [Lawyers]
- "Yes, by allowing me to implement more innovative market offerings. [Hospitality]
- "Absolutely, we use databases to identify customers who are coming out of contract and offer them excellent deals at the completion of their contract". [Telecommunications]
- "Yes, we use CRM with our permanent clients". [Florist]

The main surprise here was that so many of the businesses felt that they had become innovative because of their use of IT. There was even a florist mentioning Customer Relationship Management (CRM)! Only one business (psychologists) really indicated that they have not thought of innovative uses of IT: "We use IT the same as other practices. We are not being revolutionary and don't need to be. We do not have a large IT budget to play with".

The implication here is that these small businesses **are** looking at creative ways to build upon their existing systems for their innovative uses of IT, based on their on existing transactions processing systems (Tatnall et al, 2002). This is consistent with the 'external' focus that many of the businesses adopted earlier. A study of over 500 small businesses by Pflughoeft et al (2003) suggested that higher levels of IT sophistication facilitate the use of newer information technologies by small businesses. In fact, they see the Internet as being the natural extension of small business IT systems.

Medium Sized Businesses
Consistent with their earlier answers, the wine distributor and dairy company both mention the importance of EDI as a means of facilitating supply chain relationships and even reducing data entry errors. The dairy company also mentioned the use of data mining tools for decision support. The building company provided an interesting answer when asked if they had thought of more innovative ways to use IT:

- "Yes and no. Mostly we find it confusing. However, it has allowed us to be more effective in resource allocation and the like".

This is the sort of answer that would have been expected from a small business!

Working Out the Benefits of IT

Participants were asked: Is IT delivering on expectations? Most of the answers were what would have been expected - that is, a general level of satisfaction in relation to the role of IT in the business. Here is a sample of the responses:

- "It does what we want it to do" [Psychologists]
- "We do not hold too many expectations…" [Finance]
- "Sometimes yes, sometimes no. Its hard to select the best tool at times" [Packaged IT solutions]
- "Cost is high but we are getting good use" [Timber]

In other words, these responses were hardly those of 'senior executives' that viewed IT as a tool of strategic importance. However, there were two responses that suggested that the businesses were expecting a little more out of their IT:

- "Yes, billing module delivered significant decision making abilities and greater accuracy…" [Lawyers]
- "For sure – spending less. Online presence provides us with a competitive advantage… [Hospitality]

The vague nature of many of the responses was consistent with the notion in the literature that small business owners do not really have much idea of how to measure the benefits of IT.

Medium Sized Businesses

The wine distributor and dairy company each indicated that there is were delivering 'to expectations'. Unlike the small businesses, they did use terms such as 'service agreements' and 'benchmarks', which indicated a level of sophistication not in the smaller businesses. The building company were less complimentary about their systems, suggesting that although they did deliver operational benefits the installation had been expensive and time consuming.

CONCLUSION

The study of Melbourne small businesses has confirmed many of the features of small business identified in the literature. The businesses in the study did tend to take a short-term focus towards to their use of IT, and identified operational systems (mainly accounting related ones) as their major use of IT and certainly seemed to have no real ambitions beyond these uses in relation to their expectations for IT within the business. However, they did identify a number of innovative ways in which they use IT. The medium businesses showed aspects of 'small' and 'larger' cultures (perhaps not unexpectedly). In relation to having a strategic IT plan it was virtually non-existent, but they did understand terms such as 'service agreements' and 'benchmarking' in relation to their use of IT. Their uses of IT did tend to be more sophisticated than their smaller counterparts. It is realised that this is only a study of 10 small businesses and three medium sized businesses – and that the medium sized businesses were identified more by chance than anything else. There is enough evidence, however, to justify further studies into that group called 'medium' sized businesses as a separate group – rather than linked with small businesses. This is certainly applicable in relation to their usage of IT.

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ENDNOTES

[1] refer *http://www.business.vu.edu.au/sbirit/research_project.htm*