



The Use of Computerised Accounting Systems in Small Business

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Abstract

This paper is based on a research project which was designed to investigate small business usage of a computerised accounting system (CAS) to ascertain if there are obstacles that prevent small businesses from migrating to such a system. Two groups of small businesses are surveyed. Those that currently use a CAS and those that do not. The purpose of this comparison is to determine what were the major influences in their decision to use or not use accounting software for their business. A secondary objective was to learn more about the influence and role (if any) played by their accountant in their decision. The development of an understanding of the obstacles that inhibit the use of a CAS will be useful in the building of strategies to encourage greater efficiency in small business record keeping.



1. Introduction

The traditional view of small business record keeping suggests that it is paper based and filed in a shoe box until such time that it is placed in the hands of the accountant for the preparation of the annual taxation return. Over the years the accounting profession and small business training providers have been trying to change the approach to record keeping adopted by small business operators, with a view to them holding better records and ultimately improving the management of their business. With the introduction of lower-cost and more user-friendly computerised accounting systems (CAS) there appears to be fewer obstacles to improved record keeping practices. This paper reports on the findings of a study that investigated small business usage of CAS. It begins with a review of the literature on the adoption of Information Technology (IT) and then considers the findings of the study in the context of the adoption factors identified. It concludes with a discussion of the issues that are associated with the usage of CAS and provides some direction for those organisations involved in advising small business operators about their record keeping.

2.0 Literature Review

The motivating factors for IT adoption in small business is a widely researched topic. While there is much research on the overall adoption of IT, there is little research focused specifically on the motivating factors for adopting computerised accounting systems (CAS) in small business. Small business accounting software, however, is an important sub-set of overall small business IT research. In many studies of small business IT usage, accounting software was the predominant application package used and the driving factor behind the IT hardware acquisition decision. For example, in Australia the Yellow Pages (1997) reported that 76% of the small businesses surveyed had at least one computer and 75% of these used accounting software. Burgess (1998) in a review of IT adoption by Australian small businesses concluded that the main software application package used was accounting (see also Burgess 1997, and Wenzler 1996). To investigate the motivating factors for adopting accounting software, it would be reasonable to first review the more comprehensive literature on overall IT adoption. This literature review, therefore, begins with a discussion of the studies of general IT adoption and then reviews studies specifically focused on accounting software adoption.

2.1 IT Adoption Factors

Several studies (Thong 1999; Harrison, Mykytyn and Riemenschneider 1997; Cragg and King 1993; Moore and Benbasat 1991; Treadgold 1990) of small business IT adoption have identified a variety of motivating factors. Thong (1999) attempted to consolidate the myriad of IT adoption research by developing an integrated model of information systems adoption. This model is a useful framework in reviewing the variables that impact on a small business owner's decision to adopt IT. Thong categorised the variables into four elements:

1. characteristics of the organisational decision makers;
2. characteristics of the technological innovation;
3. characteristics of the organisation; and
4. characteristics of the environment in which the organisation operates.

According to the literature all of the above characteristics influence, to varying degrees, the owner-manager's decision to implement IT. In this paper, Thong's framework has been used to discuss the relevant literature.

2.1.1 Characteristics of the Organisational Decision Makers



In large businesses teams are typically involved in the IT decision-making process. This is in contrast to small business where the owner-manager is usually the IT decision maker (Thong 1999). In small business, therefore, the characteristics of the owner-manager are critical in determining the organisation's attitude to IT (Rizzoni 1991). The particular owner-manager characteristics important to IT adoption are: innovativeness, computer self-efficacy, level of IT knowledge, education, and IT training experience (Thong 1999).

Compeau and Higgins (1995) defined computer self-efficacy as a "judgement of one's capability to use a computer". Small businesses that have CEOs (typically the owner) that have undertaken computer training and possess computer self-efficacy are more likely to implement IT (Delone 1988, Raymond 1988).

Conversely, owner-managers can inhibit any worthwhile IT achievements through hostility or detachment toward IT (Thatcher and Perrew 2002). While it is widely acknowledged that IT adoption is more likely in small enterprises where the owner-manager has IT exuberance and competency, the question is what specific IT skills are required? Feeney and Wilcox (1998) provided further insight into this question by outlining the core skills required to exploit IT. These skills are:

- The ability to analyse the external market for IT services and the selection of a sourcing strategy;
- To be able to provide technical fixes in a complex, networked systems environment;
- The ability to integrate the IT effort with business purpose and activity;
- To effectively develop user's understanding of IT potential to ensure users' satisfaction;
- To negotiate and/or facilitate existing IT contracts and ongoing contract maintenance.

According to Feeney and Wilcox (1998), therefore, the small business owner-manager needs more than just software-user skills.

2.1.2 Characteristics of the Technological Innovation

The characteristics of the technological innovation itself are also an important determinant in the decision to adopt IT. Rogers (1983) outlined the desirable characteristics of an innovation in terms of its relative advantage, compatibility, complexity, observability and trialability. These terms are defined as:

- Relative advantage: how much better an innovation is perceived to be compared to its predecessor,
- Compatibility: how consistent an innovation is perceived to be with regard to existing values, past experiences and the needs of the targeted adopters,
- Complexity: how difficult an innovation is perceived to be to learn and use,
- Observability: how visible the results of innovation are to others, and
- Trialability: how much an innovation may be experimented with prior to adoption

Applying Roger's (1983) theory to the adoption of accounting software as the innovation, the software must be perceived better than the predecessor system (most likely a manual accounting system); must be consistent with the needs of the adopter, such as capable of handling GST; must be easy to learn and use; the results must be apparent; and the accounting software should be available on a trial basis.

Over the past decade, the advent of powerful, low cost micro-computers coupled with user-friendly accounting software, have improved and lifted the barriers to IT innovation adoption. This has led to an increase in the adoption of IT by small business (Thong 1999).



2.1.3 Characteristics of the Organisation

The characteristics of the organisation are other variables that influences the decision whether to adopt IT. Organisational characteristics such as: business size, employee's level of IT knowledge, industry sector, business location, and information-intensity has been analysed in previous research studies (See for examples: Fink 1999; Burgess 1998; Wenzler 1996; Attewell 1992; Yap 1990; and Delone 1988). Generally, the larger the number of employees, the greater the sales turnover, the more information-intensive the industry - the more likely a small business will adopt IT innovation. Moreover, small businesses tend to suffer resource poverty (Thong 1999) in terms of financial capacity, available time and IT skilled staff to facilitate innovation adoption. Consequently, resource poverty raises the barrier to innovation adoption in small business (Attewell 1992).

2.1.4 Characteristics of the Environment

The characteristics of the environment in which the organisation operates relates to variables such as competition and external agents. For example, Link and Bozeman (2001) established that competition leads to innovative technology adoption. Treadgold's (1990) study indicated that small businesses with high IT adoption rates had been influenced by external agents such as: trade associations, wholesalers, voluntary groups and franchisors. Wenzler (1996) found that small business customers were a significant reason for implementing IT, more so than the influence of competitors.

This paper extended the external agent influence to the role of accountants in the decision to adopt accounting software. Many small businesses are impeded by resource poverty, consequently the owner-manager does not have the available time or funds to source, analyse, review and implement software applications. Public Practice Accountants are in a unique position to provide systems analysis, design, implementation and support advice to their clients, thereby spreading the cost of acquiring this expertise among multiple customers. The accountant, therefore, could generally provide this service more efficiently and effectively, than if the small business owner performed the function himself or herself.

Furthermore, at the time of this study, the introduction of the Goods and Services Tax (GST) was an external influence on small business owner-managers' decisions to adopt a CAS (see for example Lief 2000).

2.1.5 Motivating factors for the adoption of Accounting software

The advent of powerful, low cost microcomputers, together with user-friendly accounting software, has allowed a greater number of SMEs to implement IT in recent years (Raymond and Bergeron 1992). The need to facilitate financial management is another motivating factor for adopting accounting software (McMahon and Holmes 1991; Gorton 1999). Moreover, some researchers have identified a link between the use of CAS and enhanced business performance (see Gorton 1999; Smith 1999; and Reid and Smith 2002). An alternative view is that a growing SME faces increased financial challenges and consequently there is a greater need for careful attention to financial management and financial reporting (McMahon 2001).

The major benefits of implementing a CAS are to increase business efficiency and to facilitate timely information (Burgess 1997). The impediments to implementing a CAS are lack of time (Proudlock et al. 1999), owner-manager's view that the CAS is costly (Head 2000), perception that the technology is not suited to the nature of the business (ABS 2000), and lack of IT expertise (ABS 2000; Burgess 1997).



3.0 Methodology

This study involved a telephone-based interview of both users of computerised accounting systems (CAS) and non-users. Two separate questionnaires were developed, one for CAS *users* and the other for *non-users*. The questionnaire for CAS users focussed on the motivation for using a CAS to perform the accounting function. The non-user's questionnaire concentrated on the impediments to CAS use and the incentives that would encourage CAS use.

Respondents were selected initially from one database of small business operators, however it became apparent that two databases were required to complete the research. The initial database (Dun & Bradstreet) consisted of a selection of two thousand small firms from their Dunsfile *Business Who's Who*. The parameters placed on the selection of firms included firm size of five employees or less and firms located in the state of Victoria. The choice of smaller firms was made on the understanding that larger firms were more likely to use a computerised accounting package and therefore would not be useful to this research. After administering telephone interviews over several days, it became apparent that there were insufficient non-users of CAS in the Dun & Bradstreet database.

It was therefore decided to introduce a second database with a higher representation of CAS non-users. This second database was sourced from participants of the New Enterprise Incentive Scheme (NEIS) program. The rationale being that firm size is a key factor in determining whether a particular business uses a CAS. Typically, start-up firms are smaller and are less likely to be utilising a CAS. Because of the confidential nature of client information, and the more recent introduction of privacy legislation, it was necessary to engage two administrators of NEIS (Business Enterprise Centres) to conduct the telephone interviews with a selection of firms on their databases. The centres were instructed to only complete the questionnaire with business operators who did not use a CAS for record keeping.

As a result of this process, the data collected consisted of completed questionnaires from a total of 122 firms that use a CAS and a further 99 firms that did not. The data collected from these interviews was entered into the SPSS statistical computer package for analysis.

4.0 Findings

4.1 The characteristics of the organisational decision makers

The characteristics of the owner-manager are important influences on the decision to adopt IT (Rizzoni 1991; Thong 1999). The survey sought to ascertain characteristics such as: computer self-efficacy, age, education and gender. The results comparing both users and non-users are summarised in Table 1.

Table 1	Comparison of owner-manager characteristics according to CAS users and Non-users	
Owner-manager characteristics	Users %	Non-Users %
Computer Self Efficacy	59.0	46.2
Age of CEO		
Less than 30	9.0	18.3
30 – 39 years	32.8	32.2
40 – 49 years	32.0	28.0
50 + years	26.2	21.5
Educational Qualifications		
Degree/Diploma	41.7	37.2



Trade qualification	25.0	38.3
Completed secondary	11.7	6.4
Incomplete secondary	21.6	18.1
Gender		
Male	74.2	74.2
Female	25.8	25.8

The only similarity between the two groups was the gender mix. For both CAS users and non-users, 74.2% were male and 25.8% female (Table 1). The non-user group tended to be younger and less educationally qualified, with a greater proportion having a trade qualification.

Computer self-efficacy is a judgement of one's own ability to use a computer. According to the literature, those who believe they are capable of using a computer are more likely to adopt a computerised system. For the non-user group, computer self-efficacy was measured in terms of the owner-manager's acknowledgement that they did *not* lack IT skills. For the user-group, computer self-efficacy was measured in terms of whether the owner-manager installed the CAS themselves without any external support. The rationale being that those who felt they possessed CAS skills (that is, computer self-efficacy), were more likely to implement the system single-handedly. Using these criteria, as expected the user group had a higher proportion of owner-managers that demonstrated computer self-efficacy (59.0%) compared to non-users (46.2%).

It is anticipated there is a link between computer self-efficacy and software training. That is, training increases one's knowledge and capability in using a computer and consequently leads to greater computer self-efficacy. An alternative view is that where the owner-manager possesses computer self-efficacy, there is no need for computer training. To test this proposition, CAS users were asked whether they had undertaken any specific training in the use of CAS. Overall, only 39.7% had undertaken any training, while 43.7% of those identified as having computer self-efficacy had undertaken training. This result suggests that there is not a strong link between training and computer self-efficacy. A possible explanation is that user-friendly accounting software mitigates the necessity for computer training.

Forty-eight percent of the non-users group believed they lacked IT knowledge and skills. Further analysis of this group revealed a relationship between lack of IT skills, age and educational qualifications (Table 2). That is, those operators who are older (> 40 years of age) and less qualified, were more likely to indicate that they lacked IT skills.

Table 2	Analysis of <i>Lack of IT knowledge</i>		
Owner-Manager Characteristic	Lack of IT Knowledge		
	Agree %	Neutral %	Disagree %
Age of the Operator			
Less than 40 years of age	37.0	2.2	60.8
40 years or older	60.0	11.1	28.9
Qualifications			
Left school prior to year 12	64.7	5.9	29.4
Technical or trade qualification	55.9	5.9	38.2
Degree or diploma qualification	37.2	5.7	57.1
Total Sample	48.3	6.5	46.2



4.2 The characteristics of the technological innovation

The availability of low-cost, powerful microcomputers together with low-cost, user-friendly accounting software has enhanced the benefits of adopting technological innovation. As such there should be a more positive perception of the relative advantage of the technology by CAS users.

Table 3 highlights a strong positive perception of the technological innovation by CAS users. The majority of CAS users considered that the software was not expensive to purchase (69.7%) or to set up (70.5%). Just over one-half felt that the software was not time-consuming to set-up (50.8%). Moreover, 89.4% of CAS users considered that the software made the business more efficient and 86.1% indicated that the software made accounting for the GST more manageable. Overall, 86.1% felt that the CAS had a positive impact on the business.

Table 3	Level of Agreement with Innovation Characteristics		
Statement	Agree %	Neutral %	Disagree %
The CAS was not expensive to purchase	69.7	9.0	21.3
The CAS was not expensive to set up	70.5	6.6	22.9
The CAS was not time- consuming to set up	50.8	13.1	36.1
The CAS has made the accounting for the business more efficient	89.4	9.0	1.6
The CAS has made coping with the GST more manageable	86.1	13.1	0.8
The CAS has had a positive impact on the business	86.1	5.7	8.2

In terms of the non-users, almost one-third (31.4%) indicated that they were satisfied with their present system. That is, they considered there was no relative advantage in adopting the new technological innovation. Cost was reported by a further 9% of respondents as the main reason for not using a CAS. Several of these operators reported that they felt their business was too small to need a computerised system.

Non-users were further asked their level of agreement with a list of more specific influences on their decision not to use a CAS (see Table 4). It is interesting to note that in all cases, the majority of non-users held a positive view of the relative advantage of the technological innovation. For example, 44.4% believed that the benefits outweighed the costs; 53.9% considered that a CAS would be useful and 33.3% disagreed that they had not found software to suit the business.

Table 4	Your decision not to use software is influenced by:		
Influence on decision	Agree %	Neutral %	Disagree %



Cost of computerising outweighs the benefits	31.1	24.5	44.4
The CAS would be of little use	24.2	21.9	53.9
Have not found accounting software to suit the business	22.2	44.5	33.3

Evidently, the perceived positive characteristics of the technological innovation are not strong enough influences on non-users to adopt a CAS.

4.3 The characteristics of the organisation

In general, firm size (number of employees and sales turnover) has a positive impact on IT adoption. Also, the years of operation and information-intensity also have a positive impact on IT adoption. In this study, a comparison of organisational characteristics revealed evidence to support these contentions. The non-user group tended to be smaller than the user group, with a significant group of non-employing businesses (52.7%) among those not using a CAS. More than one-third of CAS users (34.2%) had more than 5 employees, whereas only 6.6% of non-users had that number of employees. The non-users also involved smaller businesses with respect to their annual sales turnover. Only one firm in the non-user group had a turnover in excess of \$1 million, whereas one-in-five (19.3%) of the CAS users had that level of turnover. Almost three-quarters of non-users had turnover of less than \$50,000. The non-users were more likely to be in less information-intensive industries (such as trades and services) while the CAS users were more likely to be in information-intensive industries such as manufacturing and retail.

Furthermore, the non-users consisted of much younger businesses, with three-in-four businesses being less than three years old, while the user sample had only one-in-five in that age group. More than half of the businesses in the user group (53.3%) had been in business for more than ten years and most of the businesses (77.0%) had been using accounting software for between one and five years.

Given non-users were businesses that were younger and smaller in size, it is reasonable to understand that many of the operators would report satisfaction with their current record keeping system. The lower levels of turnover would generate less paperwork, allowing for a simple record keeping system to meet the owner-manager's needs. Moreover, younger and smaller businesses are more likely to suffer resource poverty in terms of available time and financial resources. This was evident in the findings where *lack of time* (37.6%) and *lack of financial resources* (41.9%) were cited as major reasons why the owner-manager had not adopted a CAS.

4.4 The characteristics of the environment

According to the literature, there are several environmental (external) factors that can influence the adoption of IT, namely: competitors, suppliers, trade associations, franchisors and accountants. In this study, the majority of businesses had been in operation before the introduction of the GST in July 2000. Therefore, it was expected that the GST was a significant environmental influence on the decision to adopt a CAS. As expected, the major influence on the decision to use accounting software was the introduction of the GST (38.5% of CAS users). The next most important influence was also an environmental factor – the business accountant. One-in-four respondents (26.2%) indicated that their accountant was the major influence in their decision to use a CAS. Only a small number of CAS-users reported other external influences such as competitive factors (2 respondents) and Y2K (1 respondent). No CAS users reported external influences from suppliers, trade associations or franchisors that persuaded them to adopt a CAS.



The CAS non-users indicated that they could be persuaded to implement a CAS if external environmental factors changed. The greatest incentive to using a CAS would be cash grants from the government (47.5%). There was some degree of support for other financial incentives including taxation incentives (28.3%) and free training (11.1%).

4.5 Computerised Accounting Systems

Other CAS user related findings were that the majority (54.9%) of small businesses use the *Mind Your Own Business* (MYOB) accounting software package, followed by *Quickbooks* (24.6%), *Cashflow Manager* and *Attache* (both 2.5%) and 4.1% indicated they used a tailor-made system. The majority of CAS users appeared satisfied with their decision to move to computerised record keeping. On a scale from Strongly Agree to Strongly Disagree, 89% of respondents reported that they agreed that the software package helped make their business more efficient. Eighty-six percent of CAS users stated that it has helped them cope with the requirements of the GST. Furthermore, 86.1% of users stated that they believed the software had a positive impact on the business.

5.0 Conclusions and Recommendations

The owner-managers who used a CAS described their major motivation for its implementation as environmental factors, that is, the introduction of the GST and advice from their accountant. The major trigger being the GST, which created additional paperwork for the business. While the GST is a one-off circumstance in terms of its economy-wide introduction, it will continue to be a strong influence on smaller firms as they expand and come within the GST umbrella and will be required to comply with the reporting and lodgement requirements. The second most influential trigger was the advice of the accountant. The accountant is an important source of information for small business operators in many of their decision-making deliberations. With respect to the implementation of computer software, the accountant can provide advice on CAS factors such as: available software, implementation, customisation of the software to suit the businesses needs, the businesses reporting requirements, and the ability to interface with other software.

The study identified a number of other motivating factors, consistent with the literature, for CAS adoption. These factors included: the computer self-efficacy of the owner-manager; the cost and perceived benefits of the innovation; organisational factors such as the ability to pay for the innovation, having the time to implement the CAS and possessing the staff capable of using the system. These other non-environmental factors also played an important role in motivating the owner-manager to use a CAS.

This study demonstrates that it is not only a particular event, such as the introduction of the GST, that drives the motivation to implement a CAS; though the owner-manager may believe that this is the sole cause. It is the combination of several factors, such as: the operators' ability to handle the innovation, their ability to recognise the need for the innovation, and the firm's overall resources (financial and available time) that impact on CAS adoption. The relative importance of each of these factors in the overall decision is the subject of a further study, as it requires a greater level of analysis.

CAS non-users referred to two major reasons for not using the accounting software, one an innovation factor, and the other a characteristic of the organisational decision maker. The first reason (innovation factor) was that a CAS was not needed and would not add value to the business. The second reason (characteristic of the organisational decision maker) was that the owner manager lacked IT skills and knowledge.



With respect to trying to introduce non-users to a CAS, it may be useful to consider business operators who are currently satisfied with carrying out their record keeping manually as two distinct groups:

- Those who are satisfied at the present time, but who may seek to introduce a CAS in the future as their business needs change. Given that many of the non-users were young, micro-businesses then it is reasonable to suggest that their needs will change as the business grows.
 - Those who are uninformed about the benefits of using a CAS. This lack of knowledge may be a further result of the deficiency in IT skills as reported by almost half of the non-user respondents.
1. It is this uninformed group that may be influenced to introduce computerised record keeping processes into their business. It should however be recognised that there is also a need to improve the computer self efficacy of the business operators among this group. Training organizations should consider liaising with industry groups to offer IT skills development programs to small business operators. Alternatively training organisations should consider offering CAS skills development programs specifically targeted at family members of those involved in small businesses in order to avoid the reluctance identified among the business operators who lack computer self efficacy.



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