

# Information Systems and Small Business

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## INTRODUCTION

The subject area of the application of information systems to small business is a thoroughly interesting, yet relatively under-researched topic. Small business is an important part of any economy. In the United Kingdom, 25% of the gross domestic product is produced by small business, which employs 65% of the nation's workers (Ballantine et al., 1998). In Canada, 43% of economic output is accounted for by small business, employing 50% of private sector employees (Industry Canada, 1997). Further, governments view the small business sector as that component of the economy that can best contribute to economic growth (Balderson, 2000). Given the importance of this sector of the economy, it is incumbent upon researchers and managers of small business to develop a better understanding of how information systems may contribute to the operation and growth of individual businesses as well as the overall sector.

The objective of this article is to provide an overview of information systems used by small business. Research projects are presented that describe the current situation. Recommendations are then proffered for various stakeholders who should contribute to a more effective use of information systems by small business.

## BACKGROUND

There does not seem to be a commonly accepted definition of a small business. Thus, individual researchers have adopted a definition for their specific projects. Some definitions include annual revenue, amount of investment, or number of employees. The definition mostly used is number of employees (Longnecker et al., 1997). The European Parliament (2002) has also adopted number of employees as a definition and has further refined the category. Thus, 0 to 10 employees represent micro businesses, small businesses include 10 to 50 employees, and medium businesses have 50 to 250 employees.

Beyond the size aspect of small business, there are others that differentiate them from large businesses. Stevenson (1999) has determined that from a strategic perspective, managers of small businesses tend to respond to opportunities presented by their environment in a multi-staged approach by committing a minimum of

resources. Another differentiating factor is "resource poverty" (Thong et al., 1994). This term refers to the lack of time, finances, and human resources.

Laudon and Laudon (2001) suggest that an information system is "interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization" (Laudon & Laudon, 2001, p. 7). As indicated previously, managers of small businesses emphasize short-term decisions in their allocation of scarce resources. However, most information systems require a long-term plan with a significant one-time initial financial commitment. This conflict may result in inefficient investment in information systems, which in turn may negatively impact the financial situation of the small business.

Recent research has supported the contention that the use of information systems by small business represents a unique approach. For instance, Belich and Dubinsky (1999) and Pollard and Hayne (1998) determined that the issues being faced by small business managers (lack of time, skills, and financial resources) are different than those faced by large business managers. Further, Taylor (1999) investigated the implementation of enterprise software in small businesses and found that neither the businesses themselves, nor the software vendors were fully cognizant of the unique problems (matching system capability to functional requirements) encountered by small business managers. Finally, Hunter et al. (2002) identified two major themes regarding small business use of information systems. These themes are "dependency" and "efficiency". The authors suggest that the adoption of information systems increased the small business' dependency on an internal champion, and a series of external stakeholders, including consultants and suppliers. Hunter et al. (2002) suggest this increased dependency results from the approaches to business (Stevenson, 1999) taken by the manager and the concept of resource poverty (Thong et al., 1994). The efficiency theme suggests that small business managers primarily use information systems as an operational tool to help complete daily activities.

Earlier research (Nickell & Seado, 1986) determined that small business was mainly using information systems for accounting and administrative purposes. Research conducted in the 1990s (Berman, 1997; Canadian Federa-

tion of Independent Business, 1999; Fuller, 1996; Lin et al., 1993; Timmons, 1999) noted a growing interest by small business in employing information systems for daily operations. While small business has been more than prepared to exploit the use of information systems to support daily operations (El Louadi, 1998), there exists little evidence that they are prepared to employ the technology in a strategic manner (Berman, 1997). Bridge and Peel (1999) determined that small businesses employed computers mainly to support daily operations and tended not to use them to support decision-making or long-term planning. Current research suggests this situation has not changed. For instance, Dandridge and Levenburg (2000) found that information systems were being employed for daily operations and there was little use of computerization for competitiveness aspects such as accessing the Internet.

A number of research projects have identified that small businesses have not adopted Internet use because of lack of knowledge and experience (Damsgaard & Lyytinen, 1998; Iacovou et al., 1995; Kuan & Chau, 2001). Another set of contributing factors relates to the lack of personnel and time (Bennett et al., 1999). Even when time and personnel are available, there seems to be reluctance by small businesses to investigate the use of the Internet (Chapman et al., 2000).

Burgess and Trethowan (2002) examined the use of Web sites by small businesses, represented by general practitioners, in Australia. They found that while there was reasonably high use of computers to improve efficiency and lower costs, there was not much use of computers for Web sites. Those who had Web sites mainly employed them to provide basic information and contact details.

## **FUTURE TRENDS**

This section presents a number of recommendations for various stakeholders intent on increasing the use of information systems within the small business sector. These recommendations represent suggestions for the future and reflect a synthesis of available literature, presented in the previous section, in the area in conjunction with, and in the specific context of, previous research (Hunter, 2002; Hunter & Long, 2003; Hunter et al., 2002).

### **Small Business Manager**

To overcome the limitations of being dependent upon others' expertise, managers need to gain an understanding of the capabilities of information systems. While managers do not need to know how to design or develop

information systems, they do need to understand how technology might be used as a key resource in adding value to the firm's core business products or services.

Further, the small business manager should establish a relationship with a specific individual regarding a source for advice. The recommendation is for the manager to establish a relationship with someone who is independent of a specific solution and who will be prepared to play a strategic role, taking a long-term perspective. It is incumbent upon the manager to review the relationship to ensure that the recommendations being proffered are appropriately contributing to the long-term success of the firm.

Also, managers should take a proactive approach toward the adoption of information systems. This would involve actively seeking out ways to leverage information systems to create or improve products or services offered to customers. However, the manager should avoid being an early adopter of new hardware and/or software applications.

### **Consultant**

It is important for consultants to recognize that in regard to the nature, timing and acquisition of resources, the small business manager generally aims to minimize the amount of resources used at each stage of the firm's growth. Generally, consultants need to be able to provide opportunities for small businesses to "phase in" information systems in stages. Doing so will accommodate small business practice and form the foundation for a mutually beneficial ongoing relationship.

### **Vendor**

Vendors should make a visible commitment to small business through the establishment of an entity specifically directed at small business. The small business sector is a large and important one; thus target marketing this sector makes good business sense. Also, software vendors must ensure that an application performs the necessary functions for small business. It is incumbent upon the vendor to ensure the hardware or software addresses the appropriate functionality of the small business.

### **Government**

Government can help overcome resource poverty by providing advice and financial incentives to small business. By initiating relationships with small business managers, individuals representing government services can more effectively support these managers by tapping into their informal networks to exchange required information.

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