# Adoption of Electronic Commerce by Small Businesses

**Serena Cubico**
*University of Verona, Italy*

**Giuseppe Favretto**
*University of Verona, Italy*

## INTRODUCTION

The role played by small business in economic growth and development in the world is officially recognized, in both the economic literature and in official documents (e.g., Organization for Economic Cooperation and Development, European Commission, U.S. Department of State).

Information and communication technology connectivity are widespread in all sized businesses, but small businesses seem slower than larger ones to adopt and use ICT and electronic commerce.

SMEs (small- to medium-sized enterprises) are independent firms that employ less than 10 (micro), 50 (small), and 250 (medium) employees (European Commission, 2003); the United States includes firms with fewer than 500 employees in the definition of an SME (OECD, 2000a).

In Europe, SMEs contribute up to 80% of employment in some industrial sectors (e.g., textiles, construction, furniture), and they are defined as "a major source of entrepreneurial skills, innovation and contribute to economic and social cohesion" (European Commission, 2005, p. 3); in the U.S. economy, small businesses represent 99.7% of all employers and "broaden a base of participation in society, create jobs, decentralize economic power and give people a stake in the future" (U.S. Department of State, 2006, p. 2).

To synthesize: more than 95% of OECD enterprises are SMEs, accounting for 60-70% of employment in most countries (OECD, 2000a).

The same proportion is indicated by the United Nations Conference on Trade and Development; in fact, SMEs account for 60-70% of all employment in developing countries (UNCTAD, 2002).

## BACKGROUND

Research interests in e-commerce utilization in SMEs have been driven by a basic hypothesis that this type of technology can offer new opportunities to counterbalance disadvantages of size, resources, geographic isolation, and market reach (Wymer & Regan, 2005).

Several different disciplines (management, organizational behavior, communications, computer science, information systems, marketing, work, and social psychology) are involved in research on incentives and technology adoption barriers. In this regard, different theoretical and applied models already exist:

- The *Theory of Reasoned Action (TRA),* and its extension, the *Theory of Planned Behavior (TPB)* (Ajzen & Fishbein, 1980; Chau & Hu, 2001; Harrison, Mykytyn, & Riemenschneider, 1997) are based on assumptions that a person's intentions are the best guide to behavior, and that there is a link between attitudes and behavior.
- The *Technology Acceptance Model (TAM)* (Straub, Limayem, & Karahannaevaristo, 1995), defines models as to how users come to accept and make use of technology.
- The *Adoption, Innovation and Diffusion Theory* (Rogers, 1995) defines adopter (of any new innovation or idea) categories as innovators, early adopters, early majority groups, late majority groups, and laggards.
- *Social Cognitive Theory* (Bandura, 1996) defines human behavior as a triadic, dynamic, and reciprocal interaction of personal factors, behavior, and the environment.
- The *Unified Theory of Acceptance and Use of Technology (UTAUT)* (Venkatesh, Morris, Davis, & Davis, 2003) uses performance expectancy, effort expectancy, social influence, and facilitating conditions as direct determinants of usage intention.

Table 1 presents a synthesis of the numerous factors influencing adoption of e-commerce adoption from the literature.

As we can see, adoption of electronic commerce by SMEs is influenced by different factors. Grandon and Pearson (2004) identified and synthesized four factors that have statistically significant effects on e-commerce utilization: *organizational readiness* includes financial and technological resources and compatibility of e-commerce with company's culture, values, and preferred work activity; *external pressure* is defined by competing, social factors, dependency on other firms already using e-commerce, the industry, and the government; and *perceived ease of use* and *perceived*

*Table 1. Factors influencing decision to adopt e-commerce/e-business/Internet technology (adapted from Wymer & Regan, 2005, p. 442)*

| Factor Name | Description |
|---|---|
| *Environmental Factors* | |
| Competitive Pressure | Competitive pressure from other Internet adopters within the industry |
| Government | Government rules and regulations |
| Market | Viable market or customer base for e-commerce |
| Partners/Vendors | Availability of the right partners |
| Supplier Readiness | Readiness of suppliers for electronic business |
| ***Knowledge Factors*** | |
| Change Experience | Employee experience with making major changes |
| Executive Experience | Experience of top executives with computers and the Internet |
| Innovativeness | Company's willingness to adopt new technology |
| Models | Successful models of use in the industry |
| Need | Perceived need for change or implementation of Web and Internet technologies |
| Prior Experience | Company's prior experience with new technology implementation |
| Trust | Trust or confidence in Web and Internet technologies |
| Understanding | Understanding of available opportunities and options with e-commerce |
| Value | Perceived value or relevance to the business |
| ***Organizational Factors*** | |
| Capital | Access to capital for start-up |
| Employee Reduction | Resulting reduction in number of employees |
| Priority | Priority relative to other projects that require existing resources and time |
| Profitability | Projected profitability of e-commerce |
| Technical Expertise | Availability of technical staff or consultants with Web skills |
| ***Technological Factors*** | |
| Cost | Cost to setup and maintain |
| EC Technology | Technology for selling products or services online |
| Infrastructure | Access to network services or infrastructure to support Web and Internet technologies |
| Reliability | Reliability of Web and Internet technologies |
| Security | Security issues |
| Technology Availability | Availability or adequacy of existing technology and tools |

*usefulness.* In particular, the last two factors turned out to be most influential in adoption of electronic commerce by top managers of SMEs, while compatibility emerged as a partial factor that highly influenced e-commerce adoption, as opposed to financial and technological resources.

The benefits of e-commerce are for all sized businesses, and even SMEs could reap advantages. Studies in numerous counties reveal that SMEs have been slower to adopt e-commerce than their larger counterparts, however information technology use by SMEs is increasing (Drew, 2003).

Moreover, many studies define and analyze e-commerce and small businesses through different points of views with images and concepts that are not of help in understanding the phenomenon (Ngai & Wat, 2002).

Small business have many reasons for selling or buying over the Web. They can receive benefits from this type of commerce—that is, "adding distribution channels, increasing overall sales, expanding their reach beyond local markets, or gaining greater exposure in existing markets [in] building an Internet storefront for a retail shop" (Mehta & Shah, 2001, p. 88).

SMEs use e-commerce in three different ways:

*Internet start-ups' are inventing new ways of creating value added, new service and new business models… 'Established*