

## Chapter 9

# SME Adoption and Use of ICT for Networked Trading Purposes: The Influence of Sector, Size and Age of Firm

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### **ABSTRACT**

*Based on empirical evidence gained by a telephone survey of 375 SMEs (Small and Medium-sized Enterprises), this chapter uses logistical regressions as a means of identifying the potential for relationships between three variables - industry sector, firm size (as measured by employment), and age of firm - as they influence ICT ownership, ICT use and ICT benefits. Such inter-relationships can then be used to identify networked trading practice and proclivity. Data was gathered for firms on the basis of four industrial sectors ('Media', 'Logistics', 'Internet Services' and 'Food Processing') in a region encompassing West London and adjacent counties. Logistical regressions on the sample data suggest that possession, application and the benefits derived from ICT can be explained on the basis of single and multiple variables or as the result of none, and are individuated as either 'just sector', 'just size', 'sector and size', 'sector and age', 'sector, size and age' or 'no variable'.*

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## INTRODUCTION

There are over 4.7 million enterprises in the UK (BERR, 2007). The majority of these - nearly 3.5 million – are ‘one-man-bands’ (i.e they have no employees) leaving around 1.2 million which have employees. Further breakdown shows that just over one million (1,019,295) have between one and nine employees (constituting ‘micro firms’), 160,820 have between 10 and 49 employees (‘small firms’), 26,690 have between 50 and 249 employees (‘medium-sized firms’) and nearly 6,000 have over 250 employees and above (‘large firms’). Thus ‘Small and Medium-sized Enterprises’ (SMEs) – that is, firms with between 0 and 249 employees - account for over 99 percent of all businesses in the UK, and thus have a significant role to play in the UK economy (Beaver, 2002). The European Commission (2002) observes that SMEs “generate a substantial share of European GDP and... are a key source of new jobs as well as a fertile breeding ground for entrepreneurship and new business ideas.” (European Commission, 2002, p.1). Additionally Tse and Soufani (2003) speculate that:

*“Small firms might carry even more importance in the new economy... While the traditional economic structure favours size and physical matters, the new economy is earmarked by relationships, network and information. It is in this light that it can be seen that small firms would become an ever more important engine in the new economy” (Tse and Soufani, 2003, p. 306 as cited in Fillis et al, 2004).*

Whatever ‘outrageous fortunes’ some ICT (Information and Communications Technology) and e-business initiatives may suffer, if we accept the role that electronic mediation or ‘networked trading’ already plays, and will continue to play, in economic activity (see e.g. Turban, 2004; Laudon & Laudon, 2005), then it is clear that its study in an SME and small firm context is of critical

interest. However, even though SMEs constitute 99% of all UK firms, the balance of research in the field does not reflect this primacy. With notable exceptions, research dwells mainly on large firm perspectives.

Arguably, examinations of large information systems in the literature tend to downplay financial resource issues, for example, due to the fact that they are the province of large firms and their significant resource bases and for whom necessary financial provision will be made – even in difficult economic circumstances. Many researchers examining ICT adoption in small firms however attest to financial constraints having critical influence. Martin and Matlay (2001), Dixon *et al.* (2002) and Taylor and Murphy (2004) are critical of literature that ignores the heterogeneity of SMEs. Any literature that broadly ignores critical considerations may appear somewhat irrelevant to SMEs. In a fast-paced and highly dynamic world, for policy makers, technology providers, and ‘small firms’ to work with the world as it really is, clear evidence of how small and medium-sized enterprises exploit ICTs and the Internet is continuously required. Perhaps this might help avoid incidents in which “firms continue to choose technologies which may not be very effective for their environment” (Gupta and Hammond, 2005, p. 307).

Empirical evidence of how SMEs exploit ICTs, gathered on the basis of industry sector, firm size and age should help provide richer pictures of business reality, and thus contribute to more effective ICT investment. Thus to complement existing evidence, this chapter addresses the question as to the extent of influence that industry sector, firm size and age might have on SME adoption and exploitation of ICTs. For the purposes of this study however, firms with no employees (i.e., single operators or ‘one-man-bands’) have been excluded. Exploration of sector, size and age differences is undertaken therefore on the basis of firms with employees only.

The chapter is structured such that the next section reviews the literature, and this is followed

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