Chapter XXX
Broadband Diffusion to SMEs in the UK

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ABSTRACT

Broadband is a relatively new technology and its adoption in the United Kingdom has been an issue due to its perceived benefits for businesses and more so for small/medium size enterprises (SMEs). In this chapter we argue that previous research focuses on home uses of broadband, particularly for educational purposes with little attention to its adoption by SMEs. We argue that the existing diffusion of innovation theories are inadequate for the study of broadband diffusion and we propose a more sociotechnical approach for that purpose. This study can be useful for SMEs considering adoption of new technologies such as broadband as well as policy makers that seek to apply effective technological adoption policies.

INTRODUCTION

The government's target was for the United Kingdom (UK) to have the most extensive and competitive market in the G7 by the year 2005 (Ofcom, 2004). The previous adoption, especially within the SME community did not match up with these expectations. According to Ofcom (2004), 68% of UK small/medium size enterprises (SMEs) were connected to the Internet, of which 37% used broadband, 65% used narrowband, 23% used integrated services digital network (ISDN), 32% used a narrowband unmetered service, 21% used a narrowband metered service, and 6% were unsure of what type of narrowband connection they had. More recently, however, the figures have changed dramatically. According to Ofcom (2006), in the last quarter of 2005, 84% of SMEs use the Internet, of which 73% use broadband. The numbers mentioned above provide information on the number of SMEs which have adopted broadband. However, there is no research on factors effecting broadband adoption or whether SMEs use broadband differently than dial up connections. Previous research focuses on home uses of broadband, particularly for educational purposes with little attention to the adoption by SMEs.

There has been provision of government initiatives aimed at improving broadband adoption by SMEs. In Fife and Pereira (2002), the authors highlight the possibility that government subsidies are an effective way to increase broadband take-up by SMEs. Additionally, specific government incentives have been made available such that the price of broadband for SMEs should be less of a constraint to take-up than for households (Affuso & Waverman, 2002). The Edinburgh Parallel Computing Center (EPCC, 2002), similarly observed that the UK government sees broadband as the "next leap forward for the Internet" and expected SMEs in particular to benefit from the technology. While we are not assuming that all SMEs will benefit from broadband (EPCC, 2002), we highlight some possible benefits for SMEs that choose to take up broadband. One of the benefits is the ability to trade and conduct business electronically at a faster rate. Affuso and Waverman (2002) stated that SMEs could potentially experience large transactions costs savings and productivity improvements should they choose to adopt broadband. Potential benefits of broadband to SMEs and the government's interest in promoting it makes it worthwhile to look into the different ways that broadband can be beneficial to them and factors influencing its effective uptake.

As mentioned earlier, previous research focuses on home uses of broadband particularly for educational purposes with little attention to the adoption by SMEs. In addition to the fact that little research has been done on broadband and SMEs, Lee, Sawyer, and Choudrie (2003) highlight the fact that there is little research on how SMEs can adopt new technologies at a faster rate and get full advantage of them. Therefore, there is a need to look at theories that can analyze the phenomenon.

The aim of the chapter is to propose a framework for diffusion of broadband to SMEs. We start by looking at the innovation diffusion theory. In previous studies of diffusion of technologies, the innovation diffusion theory as presented by Rogers (1995) has been widely used to understand the reasons behind adoption of innovations. We argue that the diffusion theories are one-sided trying to identify characteristics of the innovation that would make the users adopt the innovation while the perceptions of other stakeholders are not taken into consideration. Thus, we examine the use of social construction of technology (SCOT) as a way to help us examine the different viewpoints involved in the innovation diffusion process. We then propose a framework for the examination of these viewpoints in the case of broadband adoption.

BROADBAND AND SMES

The term broadband has no established definition and varies from country to country (Firth & Kelly, 2001). Broadband technology is an umbrella term which covers varying high-speed access technologies including asymmetric digital subscriber line (ADSL), cable modems, satellite, and wireless fixed (Wi-Fi) Networks. Basically, broadband provides an "always on" and faster Internet connection than dial up. It is an emerging technology that promises to improve Internet use.

Previous research has highlighted the lack of content of broadband technology. The slow adoption of broadband has been related to the fact that "killer applications" that can boost the use of broadband are yet to be developed (Carlyle, 2002; Heinzl, 2001; Lessig, 2002). Middleton (2003), in contrast, argues that consumers today gradually find value in broadband networks as they are currently deployed. Additionally, a substantial amount of research has been carried out in relation to pricing for broadband services (Clark, 1997; Courcoubetis, Kelly, Siris, & Weber, 1998; Falkner, Devetsikiotis, & Lambadaris, 2000; Yaïche, Mazumdar, & Rosenberg, 2000). The cost of obtaining and maintaining broadband could be a hindrance to its adoption, as it is slightly more expensive than narrowband (Zhang, 2002). This was taken into consideration in South Korea where the government recognized that in order to be successful, broadband access needed to be priced at affordable levels for middle-income households (Choudrie & Lee, 2004). While the issue of cost might be a hindrance, there are many benefits that have been related to the adoption and use of broadband, such as productivity (Lee, 2002). Similarly, according