
Editorial

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1 Introduction

The adoption of promising practices, innovation and technology is widely considered to impact on productivity and industrial performance (Hanson and Voss, 1995; Leseure et al., 2004). 'Adoption', however, or the *successful implementation of a new way of doing something*, is not straightforward. The meaning of 'failure' or 'success' in adoption can vary between firms (Taylor and Wright, 2003), the adoption process is a complex one (Leseure et al., 2004) and it can be implemented differently within different firms with very different outcomes. As Small- and Medium-sized Enterprises (SMEs) constitute around 90–95% of businesses in many developed and developing economies, the nature of the adoption process among these firms has become an important policy and research consideration (Cagliano et al., 2001). The argument has been put forward that the level of innovation and technology adoption amongst SMEs in an economy enables these firms to move upwards in the 'value chain' and, therefore, they are able to compete more effectively in the marketplace and contribute more effectively to industrial competitiveness (Porter and Ketels, 2003). In contrast, poor adoption practices and low levels of adoption in appropriate innovations and technologies are considered to impact negatively on competitiveness. The adoption of technologies and practices in SMEs is not as simplistic as this relationship would make it seem (Cagliano et al., 2001). Some innovations may not be suitable for firms with a lower resource base and others may

have significant opportunity costs. Successful adoption in SMEs can be linked to the nature of the innovation, its appropriateness to the firm, its cost and the way in which it is implemented (Leseure et al., 2004).

The purpose of this Special Issue of the *International Journal of Entrepreneurship and Innovation Management* is to present contemporary studies exploring these issues by examining innovation and technology adoption in SMEs. It is designed to contribute to the research and policy debate about adoption practices in SMEs by presenting studies from a range of contexts and themes. These studies contribute to the general debate about adoption of innovation and technology, while providing insights into the specific context of SMEs; illustrating both the complexity and impact of adoption practices.

The first paper entitled: 'Innovation, complementarities and performance in micro/small enterprises', by Anna Comacchio, Annachiara Scapolan and Sara Bonesso, begins this Special Issue by reporting on a survey of micro to small firms (1–50 employees) in Italy. This paper examines firm competitiveness by examining organisational forms, linkage between the adoption of complementary technologies, practices and human capital, and the impact adoption has on firm performance as measured by sales and product innovation. This paper makes a contribution to understanding by illustrating some of the dynamics behind the adoption of technologies and showing the complex inter-relationships between technology, process and human capital aspects and by showing how these inter-relationships impact on firm performance.

The next paper: 'The impact of regulatory affairs on biotechnology and pharmaceuticals SMEs: an exploratory study of e-submission', by Sarah Cooper, Su Fei Lim and Colin Bottomley, moves away from examining SMEs in general and explores the impact of external factors influencing the adoption of e-submission in the UK biotechnology and pharmaceutical industries. This paper provides a different insight into adoption of new technologies and practices by exploring the impact of regulation and the potential impact of future mandatory requirements. Partially driven by the industrial context and regulatory requirements, SMEs in this sector have adopted new requirements by using licensing, partnerships and outsourcing. This paper makes a contribution because it highlights that resource scarcity and lack of infrastructure can seriously impinge an SME's ability to adopt a new practice/technology; even where this is a regulatory requirement. It also shows that such challenges lead to networked innovation.

The third paper: 'Proliferation of computers among Taiwanese SMEs', by Quey-Jen Yeh and Arthur Jung-Ting Chang is set in Taiwan and examines the adoption of Computer-Based Information Systems (CBIS) amongst Taiwanese SMEs. The study used a survey and final sample of 103 SMEs in Taiwan and explored a range of factors, which created motivators or inhibitors influencing adoption. The study sought to understand the impact firm size might have on adoption, the current level of computerisation, how computerisation impacts on firm performance, the level of satisfaction after adoption and the value placed on CBIS within the strategic priorities of the firm. The study makes a contribution by showing lower levels of CBIS adoption in Taiwan when compared to the USA and that the level of adoption is low; being restricted to basic software (e.g. word; spreadsheets) rather than more advanced software (e.g. e-commerce). Interestingly, this study also shows that the level of adoption is led by strategic questions within the firm particularly CBIS's value and contribution where resources and opportunity costs are concerned.

The fourth paper: 'Evaluating web interfaces of B2C e-commerce systems for typical agrifood products', by Antonio Volpentesta and Salvatore Ammirato, examines e-commerce and provides a regional focus by examining SMEs in a rural setting in the region of Calabria, in southern Italy. This paper explores how rural SMEs can compete via the use of the internet and it explores the adoption of these technologies within a region, including some consideration about how levels of adoption impact on regional development. This paper moves on to classify e-commerce interfaces according to the SME's stage of development in an industry and its 'typical producer' status. This paper makes a contribution by showing that while the adoption of a technology (e-commerce) may take place it can be used at different levels of sophistication (e.g. moving from a web-presence to strategic use and higher levels of functionality). In a wider sense, this study shows that e-commerce may offer considerable value in the agrifood sector particularly in regions dominated by rural businesses but that its use and implementation amongst businesses varies considerably.

The final paper: 'E-business, innovation and SMEs – the significance of hosted services and firm aggregations', by David Brown and Nigel Lockett, explores aggregations of SMEs (e.g. consortia) in the UK. This paper focuses specifically on hosted services, aggregations, e-business and Application Service Providers (ASPs) by using case studies and qualitative data. This paper finds important linkage between various sources of e-business innovation including: technical; aggregation-based and inter-organisational system-based, showing once again the sophisticated processes, which involve different aspects of innovation (e.g. technical, process, human capital, etc.). A particularly important contribution is made to understanding the role of aggregations in providing 'access' to technologies, which would not have been available otherwise and could not have been adopted without the existence of the aggregation. Like Cooper et al., this paper also shows that network-based innovation is essential for adoption to occur where SMEs lack resources or where the technology is particularly complex.

Overall this Special Issue provides some useful insights into the influences impacting on the adoption of technology and innovation by SMEs. It highlights the complexity of the issues, showing that industrial, regulatory and regional context play an important role in setting the conditions within which practices and technologies are adopted. This Special Issue also highlights the processes of adoption, the challenges, the motivators and the inhibitors. Finally, it highlights how the adoption of technologies can be networked innovation, rather than one based simply on the actions of an individual firm, in some cases, adoption requires relationships, partnerships and intermediaries to succeed.

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