

Chapter 8

Balancing Growth: A Conceptual Framework for Evaluating ICT Readiness in SMEs

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ABSTRACT

This article analyses the strategic, organisational, and structural conditions for small and medium enterprises (SMEs) to fully exploit the potential of information and communication technology (ICT). The authors build a conceptual framework relating “ICT readiness” (a new construct) to two more common dimensions: “strategic vision of ICT” and “ICT maturity”. Using the framework, the study identifies four distinct groups of SMEs, associated with differing degrees of readiness, before analysing possible evolutionary and regressive development paths among these groups. In discussing the implications of the framework, the authors argue that the framework represents a valid tool of diagnosis and intervention, especially in those circumstances where SMEs cannot fully exploit the potential of ICT. The framework helps identify the underlying causes of limited ICT readiness and supports owner-managers and consultants in choosing and implementing appropriate interventions.

INTRODUCTION

Information and communication technologies (ICT) have had a powerful impact on business in the past three decades. That impact has been reflected in the high volume of academic papers on the adoption and use of ICT in firms that has charted the many benefits ICT can bring as

regards efficiency, effectiveness, innovation and competitiveness (Johnston, Wade, & McClean, 2007; Hamilton & Asundi, 2008). Nevertheless, these studies have mainly focused on the larger corporations, who were the first to strongly invest in ICT and consequently the first to witness the revolutionary impact of those technologies. Less attention has been paid, at least in the first years of the so-called “new-economy”, to the impact of

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ICT on the smaller firm, despite the number of such firms and the crucial role they play in developed economies (Levy, Powell, & Galliers, 1999; Bellamy, 2003). More recently, this comparative research gap has begun to be addressed with a number of research studies focused firmly on the small and medium firm (Drew, 2002).

Given the lag in understanding between the large and small firm, it is perhaps not surprising that the most recent E-Business Watch (2008) report concludes that SMEs fail to exploit the potential of ICT as much as larger firms. This may be influenced by the perception in small firms that ICT usefulness is limited to achieving operational goals such as reducing cost and increasing productivity rather than promoting more strategic roles such as in market analysis and knowledge management (Levy, Powell, & Yetton, 2001; Costello & Chibuleshi, 2007; Marasini, Ions, & Ahmad, 2008). In other words, small business owners typically fail to align ICT with their strategic vision (Ordanini, 2006; Maguire, Koh, & Ahmad, 2007) and commonly lack a long term ICT strategy (Hicks, Culley, McMahan, & Powell, 2010) or managerial strategic capability (Caldeira & Ward, 2002) that would make best use of typically constrained resources in key areas such as marketing.

The invisibility of small firms in the strategic considerations of ICT is reflected in the development of what could be called maturity models. These are models that seek to align the growth of a firm's strategic capability with its technological ICT infrastructure. Such models range from the simple stages model of the DTI's ecommerce adoption ladder (DTI, 2000) to more comprehensive maturity models that offer the individual firm a series of benchmarks to check their development against. The pioneer in this respect is the model developed by Carnegie Mellon University's Software Engineering Institute which is primarily directed at software adoption (Humphrey, 1988) – the capability maturity model (CMM). This is a five level model offering successive stages of increasingly mature management of software

processes within the firm. In this model, a firm can progress from an initial chaotic state in which software processes are largely undocumented and unmanaged by the firm to a mature optimal level of continuous improvement to well managed, carefully assessed processes. More recently, Luftman's (2000) strategic alignment model (SAM) offers a similar five level model that charts the integration of a firm's information systems capabilities with the firm's internal organisation and external environment (Luftman & Kempaiah, 2007). In this model, progress across stages is assessed with respect to six categories; these are: communications; competency/value measurements; governance; partnership; technology scope; and skills. Once again, the firm is assumed to progress from an initial state of *ad hoc* unstructured understanding of how ICT can help meet strategic needs, through to an optimal level where the firm fully understands and actively manages through routine measures ICT's contribution to business strategic success.

These maturity models are typically applied to the large corporation and are influenced by an underlying assumption that firms pass through successive growth stages that are distinctive and identifiable (Nolan, 1979). This is problematic when applied to small firms because the assumed linear development pattern that is embedded within a stages approach is often much more complex in the small firm (Martin & Matlay, 2001; Alonso Mendo & Fitzgerald, 2005). With this in mind, Henderson and Venkatraman's (1993) strategic alignment model (SAM) offers a more compelling model of development in that it eschews a staged model of development. Instead, the business and ICT domains are seen as separate entities that require the attention and action of management to bring them into close alignment both in terms of infrastructure and strategy. There is still a progressive element but this is muted and not necessarily linear. In the SAM the impetus to alignment can be developed along different paths arising from either the business or the ICT domain.

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