Chapter 3
Digital Fluency in SMEs:
A Typology and a Multi-Case Study

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ABSTRACT

In the practitioner and the academic literatures, links between information technology (IT) adoption, IT use, and digital fluency (DF) have been emphasized by a number of authors. However, there is a lack of understanding of what exactly digital fluency is, how it can be conceptualized, and what role it plays in small and medium-sized enterprises (SMEs). Based on the DF literature and its underlying concepts such as skills, expertise, and competencies, as well as on the SME literature, a multi-case study of three Canadian SMEs is conducted to empirically evaluate a typology of DF archetypes. The typology, that is based on a change agent perspective, has three archetypes. Results suggest that SMEs' managers should focus on the complementarity nature of the cognitive, social, and technological dimensions of DF when assessing and developing their employees' DF.

DIGITAL FLUENCY IN SMEs: A TYPOLOGY AND A MULTI-CASE STUDY

In today's world, private and public, small and large, manufacturing and service organizations have to develop and deploy strategies and processes that rely on information technologies (IT) (Catlin, LaBerge, & Varney, 2018). These organizations are overwhelmed by torrents of data and, to stay competitive or simply to survive, they have to manage those data and make sense of it (Dallemule & Davenport, 2017). This adds to the challenges related to the rapid and constant technological evolutions that organizations and their employees must face. In fact, the pressure is mainly felt by employees who must keep up the pace with the technological changes (Colbert, Yee, & George, 2016). They must make sure to maintain the appropriate knowledge, skills, abilities, and attitudes towards the various IT they have to use in their daily work. Thus, they have to stay digitally fluent (Hsi, 2007; Briggs & Makice, 2012). Maintaining the proper level of digital fluency (DF) can be challenging for any organization but even more for small and

medium-sized enterprises (SMEs) (Kyobe, Namirembe, & Shongwe, 2015; Lehner, 2018; Soto-Acosta, Popa, & Martinez-Conesa, 2018).

To stay competitive, SMEs need to innovate with IT and to develop new business strategies as well as processes that rely on IT (Kim, Jang, & Yang, 2016; Nguyen, Mewby, & Macaulay, 2015; Verbano & Crema, 2016). Thus, SMEs need to invest in IT infrastructures. However, the gains and benefits of such investments will materialize only if employees adopt and use IT adequately, which, in turn, depend on employees possessing the appropriate competences to maximize their use (Kotey & Folker, 2007; Palacios-Marqués, Soto-Acosta, & Merigó, 2015; Peltier, Zhao, & Schibrowsky, 2012). Moreover, SMEs have more limited means than larger organizations in terms of financial and human resources which will affect their capabilities and readiness to face the challenges imposed by constant IT evolutions strategies (P. Cragg, Mills, & Suraweera, 2013; Verbano & Crema, 2016). Therefore, it is essential that employees have a better understanding of the challenges and the opportunities related to the adoption and use of new IT in their daily works if SMEs want to benefit from their IT investments. Thus, SME employees must have the right digital competence or digital fluency to transform these IT investments in organizational value (Briggs & Makice, 2012; Caldeira & Ward, 2002; Colbert et al., 2016).

Aligning organizational strategies with existing IT expertise directly affect the extent of the adoption and use of IT in an SME (Bharadwaj & Soni, 2007; Fillis & Wagner, 2005; Marsh, 2018). Most SMEs find themselves in a difficult position because, on one hand, they must ensure that their IT strategies keep up with the constant and rapid technological evolutions and, on the other hand, they must ensure that their employees have the adequate DF to properly adopt and use these IT (Bergeron, Croteau, Uwizeyemungu, & Raymond, 2017; Dallemule & Davenport, 2017). From this discussion an important question emerges: How do SMEs' managers determine the actual level of DF of their employees and what would be the level of DF these employees need to attain?

Fluency is a concept that represents different things to different people in different contexts. The Merriam-Webster Dictionary (2018) defines it as " the quality or state of being fluent" and fluent as "having or showing mastery of a subject or skill". Such general definitions may explain why fluency has been conceptualized as an umbrella-type of notion wrapping almost every attribute that might influence performance (Bassellier, Horner, & Benbasat, 2001). In relation to information technology the concept of fluency has been labelled as digital fluency (DF). Briggs and Makice (2012) define it as "the maximum potential an individual has to achieve desired outcomes through the use of digital technology. Fluency is the results of individuals continuing to maintain and improve skills relative to the needs of your organizational context. Your fluency helps you act in a way that anticipates and support change (p.13)". For these authors, the skills and abilities related to the use of IT and the understanding of its roles in an organizational context are the central elements of DF. For Savin-Baden (2015), DF is "the ability to use digital media, of whatever sort, to manage knowledge and learning across diverse offline and online spaces. It includes the ability to understand complex issues, such as how identify can be established and faked, the ability to evaluate the trustworthiness and accuracy of information, and the ability to understand the subtext of digital media and information and place within a wider context (p.140-141)". Hsi (2007) provides a conceptualization of DF which overlaps with the knowledge, skills and attitudes to properly use IT in today's digital economy, since she defines it as "the competencies, new representational practices, design sensibilities, ownership, and strategic expertise that a learner gains or demonstrates by using digital tools to gather, design, evaluate, critique, synthesize, and develop digital media artefacts, communication messages, or other electronic expressions (p.1509)". Thus, being digitally fluent covers not only the technical skills element required for an employee to work in today's

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