

Systemes d'Information et Management

Small and medium-sized enterprises (SMEs)' challenges and opportunities in Industry 4.0

Special Issue - SIM

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Industry 4.0 corresponds to a unique or combined introduction of several emergent technologies such as the Internet of Things (IoT), cloud computing, business analytics, artificial intelligence blockchain, in manufacturing processes (Fosso Wamba & Queiroz, 2020; Hughes et al., 2019). It enables the real-time ability of manufacturers to connect people, machines, objects and communication systems via information flows, both horizontally and vertically, to actively manage complex manufacturing systems. Whether industry 4.0 is attracting increasing attention both from scholars and practitioners, empirical evidence of use value or successful implementation is less available in academic literature (Cagliano et al., 2019; Moeuf et al., 2020; Ancarani et al., 2020; Dwivedi et al., 2019), especially for SMEs which represent approximately 90% of manufacturing firms (Wong et al., 2019).

Horváth & Szabó (2019) suggest that SMEs have less motivations and more barriers to industry 4.0 adoption than their big counterparts. Their characteristics (as lack of expertise, limited resources, short-term strategy, lack of methods and procedures, etc.) may inhibit their ability to successfully introduce industry 4.0 technologies (Moeuf et al., 2020; Morgan-Thomas, 2016). Interesting research¹ from France public investment bank (BPI²) underscores that industrial SMEs owners and chairmans perceive the new industrial era enabled by industry 4.0 more from political, ecological, organizational, social and human lenses than technological point of view. These analyses don't mean SMEs reject industry 4.0 technologies. Their approach is rather context-rooted. Then, SMEs approach to industry 4.0 focuses upon genuine benefits that may bring for their people, processes, products. Also, as evidenced in the literature, technology introduction is not ever synonym of better performance or competitive advantage.

¹ "L'avenir de l'industrie : le regard des dirigeants de PME-ETI sur l'industrie du futur et le futur de l'industrie", November, 2018

² BPI (Banque Publique d'Investissement)

Studies on industry 4.0 is at the intersection of several disciplines. For instance, Kumar, Mookerjee and Shubham (2018) suggested that analyzing revolution enabled by industry 4.0 technologies in manufacturing context may rely on the interplay between MIS (Management of Information Systems) and OM (Operations Management) disciplines. Focus upon SMEs use value, benefits and/or challenges may interestingly mobilize theoretical entrepreneurship lens as EO (entrepreneurial orientation) which combines innovativeness, proactiveness and risk taking to investigate strategic and entrepreneurial decision making (Colclough et al., 2019; Lomberg et al., 2016; Dutot et al., 2014). Indeed, industry 4.0 introduction is often a strategic and entrepreneurial decision in SMEs context. Strategic management theoretical lens as absorptive capacity may also be useful to analyze how SMEs harness external knowledge in the industry 4.0 introduction process. Many other lenses may be mobilized to theoretical and empirical contribute to this special issue.

Submissions to this Special Issue related to, but not limited to, to the following topics are welcome:

- Digital transformation in SMEs ;
- Issues with SMEs development in Industry 4.0;
- Business performance of SMEs in Industry 4.0;
- Industry 4.0 and Smart Factories ;
- Smart business models for SMEs;
- Implementation strategies and roadmaps for SMEs in Industry 4.0;
- Entrepreneurial leadership & SMEs Competitiveness ;
- Business Intelligence & Business Strategy ;
- Eco-innovation and new entrepreneurial models;
- IoT, smart manufacturing and SMEs;
- Digital disruptions & Blockchain for SMEs ;
- Modern and digital supply chain management.

Submissions in French or English are accepted

To submit your paper:

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For any questions regarding the special issue, please feel free to contact Vincent Dutot (v.dutot@ipag.fr), Samuel Fosso Wanba (s.fosso-wamba@tbs-education.fr) and Rostand Affogbolo (rostand.affogbolo@univ-nantes.fr)

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Guest Editors

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