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Innovation in services: An introduction

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Silva e Meirelles (2006) emphasizes that service is basically a process, and, for that reason, in order to best approach the service sector and service activities, we must consider aspects of the process by which service is realized. The same is true for the process of innovation in services.

Since the seminal article of Gallouj and Weinstein (1997), where both technological and non-technological dimensions of services were considered in an integrative approach (reconciliation, assimilation, and demarcation approaches), research on service innovation has evolved to consider dimensions regarding service innovation processes, such as customer engagement and management, service innovation networks formation and functioning, but also how these innovations are integrated to products and process of other industries, and how this can be measured (Djellal & Gallouj, 2018).

Not only has the literature on innovation in services evolved toward a deeper understanding of the process of innovation, but the process of innovation in manufacturing industries has been evolving towards a service logic. In fact, we are on the edge of a new (technological) paradigm (Dosi, 1982) where intersectoral limits are fluid and blurred, and new industry architecture is emerging (Jacobides et al., 2006). This new paradigm is an "all is service" paradigm replacing the old demarcation paradigm based on the IIHP (intangibility, interactivity, heterogeneity, perishability) characteristics, supposed to make it possible to distinguish services from goods.

Service and its logic are spreading to all branches of activity in an irreversible process of technical-economic convergence, where agents are jumping from simple "value creation" to integrated "value provision" (Zawislak et al., 2022). Servitization, productization, and product-service systems are forms of appearance that the relational pattern of services, intertwined with digital technologies, is giving to new business models and innovation. The 21st century challenges our view of service innovation since it requires a more dynamic perspective of innovation analysis. Instead of well-defined technologies, in this digital economy, we must deal with generic or enabling technologies (Teece, 2018).

Together these technologies enable service activities to access the status of technology-mediated services, eliminating the need for physical co-location of consumers and service providers (Schumann et al., 2012). The consolidation of this trend can be seen in the rapid growth of startups that rely on a digital platform to offer services at a distance in various service activities: financial (fin techs), education (ed techs), health (health techs), law (legal techs), etc. This technological trajectory somehow contributes to validating and extending Barras' reverse cycle model (Barras, 1986) that describes the

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life cycle of innovation in services as the reverse of the traditional industrial innovation cycle, as (incremental then radical) process innovations precede product innovation (e.g., teleservices, cyberservices). In this sense, dynamic capabilities, and their relationship with organizational strategy, proposed by Teece et al. (1997), reinforce the importance of organizations identifying market opportunities, structuring internal processes to meet new demands, and offering innovative services to the market that is increasingly experiencing the transformations of the new digital economy.

We are seeing a profound transformation in how service is connected to industry and vice-versa. Technological advances in Industry 4.0, such as the Internet of Things, cloud computing, blockchains, robotics, and 3D printing, mark this new paradigm shift and fuel digital servitization (Münch et al., 2022). Industry 4.0 should be labeled Service 4.0. Conversely, service itself has been profoundly affected by modern technologies. The so-called productization of services (Baines et al., 2007) allows the offer of a given service to be more like that of a product through the systematization of several of its procedures and elements (Valminen & Taivonen, 2012).

It is an era of smart services and products (Frank et al., 2019), where servitization turns into a fundamental aspect of innovation networks that emerge in the market and non-market services in various configurations: Public Service Innovation Networks (PSINs), Market Service Innovation Networks (MSINs) (Desmarchelier et al., 2019).

The digital transformation and, more generally, the dynamics of innovation in services are a reality in advanced and emerging economies, especially after the Covid crisis (United Nations Conference on Trade and Development – UNCTAD, 2020). However, as presented in the article of Crispim et al. (2022), we miss a representation of Latin American and African countries in producing knowledge regarding service innovation.

We already had some studies of service innovation in Brazil (Stare et al., 2012; Vargas & Zawislak, 2006), servitization (Pereira & Vargas, 2021), and even innovation capabilities (Zawislak et al., 2022). However, we need further advances in the comprehension of the process by which services activities in emerging economies will contribute to this new economy, especially when it comes to Industry 4.0

In this special issue, we present six papers dealing with both aspects of servitization and digital transformation, as well as the way service firms face it through dynamic capability and knowledge management development. The special issue also addresses the non-technological side of service innovation, especially social innovation (Cunha et al., 2022). Although it mainly

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focuses on organizational and microeconomic issues, it also includes macroeconomic perspectives (Gomes et al. 2022).

Both bibliometric analyses show how servitization and knowledge management are two emerging themes appearing in service innovation literature (Crispim et al., 2022; Bandeira et al., 2022). In a more applied way, there are two articles about digital transformation.

One of them (Gomes et al., 2022) gives the perspective of a longitudinal study that analyzes the impact of the digital economy on the economic growth in Organisation for Economic Co-operation and Development (OECD) countries, while the other (D'Oliveira Andrade et al., 2022) points to the dynamic capabilities required to deal with digitalization and servitization in specific industries, such as automotive and energy.

The inevitable merger of marketing analytics with digital technology is the subject of a paper (Aguiar-Costa et al., 2022) that allows for a deeper understanding of the aspects of customer satisfaction in the provision of services related to the adoption of artificial intelligence.

Cunha et al. (2002) bring up the relevant debate around assessing the impact of social innovations. Social innovations are mostly service innovations, and evaluating their impact presents similar challenges. In this contribution, the authors highlight the main barriers to assessing social innovation impact identified in an extensive systematic literature review and point out some ways to overcome them.

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