



## Viewpoint

## Innovation drivers in retail industry



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## ABSTRACT

Although in recent years research in innovation management in retail industries have increased drastically, most of these industries have focused only on addressing consumers' acceptance of the most effective novel systems. For these reasons, a deeper understanding is needed in three main areas: the innovation management approaches in retail industry, the degree of innovation heterogeneity, and the innovation drivers. Starting from these evidences, this paper identifies to what extent there are similarities and differences in the main innovation drivers in retailing if compared to other sectors (i.e. education, game, etc.).

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## 1. Introduction

Information technology is increasingly considered as an enabler of business competitive advantage in addition to its contribution to satisfy consumers' demand of innovative and qualitative product and services (Chen & Tsou, 2012; Pantano & Viassone, 2014). Due to the large deal of research on advanced technologies and the subsequent speed of development of new systems for supporting retailers and consumers (Gunday, Ulusoy, Kilic, & Alphan, 2008; Pantano & Viassone, 2014), retail industry is frequently subject to a disruptive innovation process that makes available a large amount of novel information systems able to modify the traditional organizational process. Furthermore, the novelty involved in these technologies affects both consumers and retailers' familiarity and expertise, with consequences for the subsequent effective usage (Pantano & Viassone, 2014). In fact, capturing value from information technologies requires the development of new metrics and measurement tools (Grant, Adefantos, Meyer, & Edgar, 2013).

Usually, innovation in services is characterized by non-technological innovation and a limited effort in Research and Development (R&D) (Trigo, 2013). For this reason, retail industries' R&D effort is mainly devoted to the development of new products than to the development of new tools for improving the delivered services. Thus retailers are usually the adopters of innovations produced by other manufacturing companies. In fact, retailers generally lack of innovative capacity, thus they tend to outsource all the activities involved in R&D. Despite these conditions, the wave of innovative technologies available for selling goods and services

is spreading fast, by making available many interactive and innovative systems able to support both consumers while shopping and retailers for achieving fast and update information on market trends and selling process (Bennett & Savani, 2011; Fiorito, Gable, & Conseur, 2010; Pantano & Viassone, 2014; Walter, Battiston, Yildirim, & Schweitzer, 2012). For instance, in recent years groceries have introduced self-service technologies equipped with radio frequency identification (RFID) systems, such as the self-cash desks, and informative touch points; electronics have introduced interactive displays equipped with touch screens; other stores have introduced digital signage and applications for mobile phones; further retail-oriented firms created completely virtual stores based on ubiquitous computing, such as the Spanish Pickbe, which allows consumers to access stores and products directly from their mobile (when this is located in a certain area); another consistent part of retailers has not introduced advanced technologies in the points of sale yet (Pantano & Viassone, 2014). Hence, different retailers actually show a consistent heterogeneity in innovating strategies.

Despite the still limited and discontinuous diffusion of technology-based innovations in retail industry, other industries already introduced more advanced and sophisticated systems. For instance, game industry is largely paying attention to the development of the best haptic technologies and applications, virtual and augmented reality enriched scenarios, multimodal interaction (i.e. new input devices *invisible* to humans for enhancing the realism of the environment, such as the motion capture systems), interactive digital storytelling systems, customizable interfaces for increasing the level of excitement and enjoyment (Hamam, Eid, & El Saddik, 2013; Lai & Wang, 2012). Similarly, the education industry is currently oriented to the development of digital storytelling, virtual and augmented enriched scenarios, and collaborative 3D environments for enhancing the effectiveness of learning (Adamo,

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Bertacchini, Bilotta, Pantano, & Tavernise, 2010; Noguera, Jimenez, & Osuna-Perez, 2013). While tourism and hospitality industry is exploiting the most recent advances in 3D graphics, communication technologies (such as ubiquitous computing and new systems for increasing the quality of connectivity and data interchange), and geographical identifying systems for promoting tourism destination in a global perspective and attracting more visitors (Lin et al., 2013; Martinez-Grana, Goy, & Cimarra, 2013; Noguera, Barranco, Segura, & Martinez, 2012).

The purpose of this study is to provide a deeper understanding of the causes of a different level of innovation adoption and diffusion in retailing if compared to other sectors, while identifying the drivers that push retailers to innovate.

The paper is organized as follows: the first part is devoted to the innovation drivers emerging in other sectors such as manufacturing, while the following sections focus on innovation management in retail industry, with emphasis on the current approaches, theories and determinants, for underlying some lines of inquires and a research agenda.

## 2. Plurality of innovation drivers: evidence from recent studies

Organization might achieve a series of benefits from introducing information technologies, which need to be adopted through different practice (Ashurst, Freer, Ekdahl, & Gibbons, 2012). The adoption strategies are solicited by several components within the organization, such as innovation, market orientation, etc. In this paper we want to understand the main factors influencing the information technologies adoption in retailing, starting from the innovation drivers carried out in other sectors. For instance, innovativeness represents a new and nonfinancial measure for evaluating organizational performance, and understanding firms' reaction to market changes (such as the speed of reaction to changes in the market, etc.) (Moos, Beimborn, Wagner, & Weitzel, 2010). Thus, it is strictly linked to firms' ability to adopt and implement innovations, from both a product and service perspective.

Some past studies pointed out also the role of market orientation and entrepreneurial innovativeness (including demand factors such consumers requirements and individual-CEO characteristics) as innovation drivers in manufacturing/production sector (Boso, Cadogan, & Story, 2012; Hameed, Counsell, & Swift, 2012), whereas other ones outlined the important role of organizational characteristics (i.e. dynamic capabilities, financial resources including equity capital and external financing, firm size and age) (Ashurst et al., 2012; Ellonen, Wikstrom, & Jantunen, 2009; Gunday et al., 2008; Hameed et al., 2012; Plessis, 2008). Market orientation is based on three main activities: generation of market intelligence (for understanding and predicting future consumers' needs and behaviours), dissemination of intelligence across organizational functions (distribution of gathered information across departments), and *organizationwide* responsiveness to such information (Kohli & Jaworski, 1990; Lewrick, Omar, & Williams, 2011; Sandvik & Sandvik, 2003). Similarly, it consists of consumer orientation (focus on consumers' behaviour), competitor orientation (focus on competitors' strategies) and inter-functional coordination (Lewrick et al., 2011). While entrepreneurial innovativeness refers to firm's ability to innovate, and it is linked to the capacity to adopt an innovation before the competitors (Gunday et al., 2008; Marcati, Guido, & Peluso, 2008). It is further triggered by entrepreneur's innovativeness, with specific regard to his/her personality in terms of openness to novelty and willingness to be the first adopter in a specific domain (Marcati et al., 2008). In particular, this emphasizes the role of human capital in the innovation propensity (Parrilli & Elola, 2012), by encouraging new ideas for improving existing processes

(Manley & McFallan, 2006). The role of entrepreneur's innovativeness is marked especially in the case of small-medium enterprises (SME), where the figure of CEO and entrepreneur coincide in one person. Usually, big companies have more financial resources if compared to SMEs, which have also limited capacities of Research and Development and technical skills, and are more focused on the technology and market uncertainty and risk that may affect negatively their cash flow (Lofqvist, 2012). As a consequence, firms' size and age may play an important role on the emerging ability to innovate.

Moreover, extant literature shows some links between organizational characteristics, such as dynamic capabilities and ability of innovating (Chen, 2010), by including capability to react to environmental change (Teece, Pisano, & Shuen, 1997; Verona & Ravasi, 2003). The adjective "dynamic" refers to the ability to perceive environmental changes and to behave consequently, by renewing competencies; whereas the term "capabilities" emphasizes the role of strategic management in the process of integrating and reconfiguring internal and external organizational skills and competencies for the innovation goal (Wang, Lin, & Luarn, 2006). In fact, they lie in (i) the firm's ability of perceiving environmental changes (for rapidly recognizing the challenges and the opportunities of the changes in the competitive scenario and to subsequently modify the strategies), (ii) the organizational learning (the continuous learning process that allows acquiring explicit and tacit knowledge to transfer into competitive advantages, by constantly learning to adapt to fast changes in the environment), (iii) the resource assignment and integration, and (iv) the value chain assignment and integration (Teece et al., 1997; Wang & Wu, 2010). Thus, these capabilities are able to reduce the innovation failure risk, by adjusting and correcting the actual strategies based on the organizational and managerial competences (Teece et al., 1997).

In addition, recent works identified the continuous progresses in science and technology (technology push) as further strong drivers (Pantano & Viassone, 2014; Parrilli & Elola, 2012), by providing a huge number of advanced systems able to enhance several organizational processes. Table 1 summarizes the main drivers emerging across the different industries.

Interest towards innovation studies has increased fast also in several industries beyond manufacturing (Trigo, 2013), thus sectors characterized by a low focus on technology and on R&D effort have been strongly acknowledged (Trigo, 2013). Since retail-oriented firms operate in a high competitive and uncertain environment, a deeper understanding of retailers' ability to innovate for successfully competing plays a key role for achieving business profitability. Although past studies identified innovation as a concept related exclusively to R&D efforts and number of patents, subsequent research demonstrated the existence of important innovative activities in services distinct from manufacturing innovation (Mothe & Nguyen-Thi, 2013; Vence & Trigo, 2009), thus the presence of a plurality of new technologies aiming at innovating and enhancing also retail process prompts to reconsider innovation management and innovation drivers also in retail industry.

## 3. Recent approaches to innovation management in retailing

As anticipated, retailers are mainly innovation adopters than developers. They are more interested in selling activities, while the advanced technologies should enhance the service delivering process. Hence, retailing can be viewed as a service-oriented industry subject to continuous innovations. As service related processes, the involvement of consumers may increase the quality of provided service, by adding clients' interactions to the set of

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