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Review Paper

INNOVATION AS DRIVER OF MODERN RETAIL

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Abstract. *The main objective of the paper is to point to the importance of innovation for modern retail. It relies on the fact that retail, as well as total trade, is an innovation-intensive economic sector, and that innovation is a critical factor in creating and maintaining a long-term competitive advantage. Using the desk research method, the paper takes a conceptually wide approach to understanding the meaning and proliferation of innovation in retail. Special emphasis is on the development and application of technological innovation. The hypothesis about the importance of innovation for modern retail development is tested using the example of 250 largest retail chains, with a focus on Walmart, as the leading retail chain. Based on this, the main features of the application and importance of leading innovation in retail are particularly highlighted.*

Key words: *retail, innovation, technological innovation, Walmart*

JEL Classification: L81, O30

INTRODUCTION

The view that dominates in the scientific and professional community is that trade, as well as retail, is an innovation-intensive economic sector. This is understandable, given the fact that trade, especially retail, is a highly competitive economic sector, and that, in today's conditions of intense changes, it is not enough to satisfy the customer needs only. Retailers always need to go one step ahead of their customers, using product bundles to overcome customer expectations and wishes. At the same time, modern customers are highly sophisticated, well-informed, and constantly connected to the Internet, well aware of market flows and monitoring the price/quality ratio. Under these circumstances,

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innovation becomes a business imperative for modern retail chains. Therefore, modern retailing is characterized by the broad usage of mobile and contactless technology (Pantano & Priporas, 2016), which exerts additional pressure on retailers to redefine their business schemes. Retail is gradually shifting from the classical to the multi-channel business strategy phase involving the use of multiple channels, such as classic shops, social networks, mobile and web applications, and virtual reality (Ailawadi & Farris, 2017; Grewal et al., 2017). This environment has made shopping more convenient for customers, but also faced retailers with the challenge of effectively managing innovation. Altogether, this has increased research interest in the evolution and application of innovation in trade and retail. It is exactly the aim of this paper to enable a more complete and a fuller understanding of invention and its application in the retail sector, as considerably as the pronounced proliferation of innovation in modern retail. Although authors generally agree that innovation is the application of novel thoughts that stimulate economic performance, this term attracts enormous research attention, with studies largely depending on the innovation context. Based on the above, the paper summarizes the results of previous research related to innovation in retail. Furthermore, it thoroughly analyses technological innovation in retail. The final part of the paper analyses the global power of retail based on innovation. It analyses the trend of sales volume and other key indicators of the 250 world's largest retail chains in the last five years. In the Walmart case, the paper considers the impact of innovation on the development of modern retail. Research and available data show that Walmart has been the world's leading retail chain for almost two decades, and that it is imperative for it to be constantly innovative. Thus, using desk research and the method of description, analysis, and synthesis, the paper tests the hypothesis on the importance and role of innovation in modern retail.

1. Theoretical and Methodological Approach to Studying Innovation

Innovation has been in the focus of interest among numerous researchers for many years. Schumpeter (1912) defines innovation as a set of new ideas that depend on the introduction of new goods, new production methods, new markets, new sources of supply, and new organizations in any economic sector. This definition shows that innovation is a certain entrepreneurial process aimed at allocating available resources to new use.

Further research generally sees innovation as a radical technological change, resulting in radical changes in costs, measured by the intensity of research and development (Solow, 1957; Romer, 1990). The very characteristics and effects of innovation vary in different economic sectors, due to differences in institutional structure, research and development policies, or managerial perceptions of costs or demand for innovation.

Thus, innovation becomes the main driver of national economic well-being, which is why a large number of countries are engaged in the race for a global innovation advantage. In addition, a large number of researchers relate innovation to technological change, while some researchers relate it to research and development activities (Zaltman et al., 1973; Rogers, 1995). However, innovation means much more. In regards to the Organization for Economic Cooperation and Development (OECD) (2010), innovation is the application of a new or highly redefined product (good or service), or process, a new marketing method, or a new business practice organizational method, workplace organization or external relation. The definition emphasizes that innovation must, to a certain extent, contain a novelty, be it related to an enterprise, market, or the economy as a whole, whereby it is necessary to create a sustainable business concept.

In the context of defining innovation, the definition given by General Electric (EC) (2018) is very useful: “To innovate ... means to challenge and change the status quo in order to improve the customer experience and ensure new forms of value”. John Kao (2007) gives a similar definition, saying that innovation is the transformation of the existing into the desired conditions.

Innovation itself has traditionally been observed in a technical context and included the creation of new or improved consumer goods. However, innovation in services, and, therefore, trade and retail, is becoming increasingly important, given that services account for more than 75% of most European economies. For this reason, understanding innovation as a purely scientific and technical product implies a wider context to include the application of information technology, the emergence of new business models, and the creation of a new customer experience or approach to service delivery. This creates the possibility of changing almost all service sectors, from retail, logistics and catering to health care, professional and financial services.

No matter how defined, innovation is very important because it stimulates economic growth, new jobs, improves life quality and national competitiveness. Therefore, innovation is becoming an increasingly important concept in economies characterized by globalization, rapid technological change, customer preferences, dominance of knowledge, and need for quality information. In such conditions, innovation has a direct impact on the economic development of the entire society, so innovation and innovativeness become key competitiveness factors. Therefore, in order for innovation to be successful, it needs to add value, i.e. bring higher benefits in relation to investment in its development. The optimal combination of a well-formulated innovative strategy, system, and business environment is fundamental to the success of any innovation (Afuah, 2003). Knowledge is the prime factor in the development of innovation. At the same time, modern economy increasingly depends on knowledge, information, and specific skills, which increases the share of high-tech knowledge-based products. In such circumstances, the success of innovation depends on various organizational, economic, social, and other forms of knowledge.

Based on the above, the conclusion is that the ability to innovate is unequivocally related to the competitiveness of both individual enterprises and entire economies. In modern business conditions, failure to innovate, especially in developed economies, creates unsuccessful companies, the loss of national export competitiveness, and, finally, structural economic crisis. As Schumpeter (1912) elaborates: “In capitalist reality, it is not competitive price that counts, but competitiveness arising from new goods, new technology, that is what affects not only the profit margin of the enterprise, but also its survival”. It is precisely this struggle for innovation advantage that affects the economic survival of enterprises and national economies.

More than ever, economies need innovation to become competitive on a global scale (Dumitrasco, 2018). This is especially noticeable in the case of developing economies, which, without innovation, have difficulty in dealing with low income and low salaries. Their ability to take the lead in process innovation (production automation and higher production with fewer workers) and value chain improvement to develop products and services with a higher new value are particularly critical, which less developed economies cannot do. Furthermore, in order for big economies to succeed they must innovate, not only in new start-up companies, but also in the entire range of small and medium-sized businesses. In doing so, large economies will be able to reduce their trade deficit and at the same time create better paid jobs. Finally, a healthy trading sector allows economies to avoid high debts arising from trade, which future generations will definitely have to pay by spending less than they produce.

2. Growing Importance of Innovation In Retail

The growing market globalization and the growing trade and retail internationalization have resulted in the increasingly intense competition in the retail and the total trade sector. The means of competing are becoming more and more diverse, where innovation and innovativeness take a significant place. For this reason, there is a need for a more comprehensive understanding of the meaning and proliferation of innovation in retail.

2.1. Meaning and proliferation of innovation in retail

Innovation in services, and, thus, in retail, is less tangible than innovation in production, and, hence, it is more difficult to define and measure it. Although studies offer different approaches to defining retail innovation (Evangelista, 2000; Miozzo & Soete, 2001; Michel et al., 2008), authors generally agree that retail innovation is insufficiently explored and understood (Sokolov Mladenović & Ćuzović, 2017).

Previous research results in the field of trade and retail innovation show that innovation in retail is conditioned by customer behaviour and demands or the expected results (Hristov & Reynolds, 2016). Thus, innovation conditioned by customer behaviour and demands relates to organizational changes in enterprises that have a measurable impact, such as:

- Innovation as a means of variety and maturation (e.g. new supply chain, development of a common product model with suppliers),
- Innovation as part of a strategy (e.g. corporate strategy, innovation).

Innovation conditioned by the result or outcome relates to new products, services, or mode of operation, and can be:

- Innovation in the range of products or services,
- Innovation related to the reformulation or improvement of business practices.

Innovation observed in this way should be incremental and continuous and implemented over a longer period of time. No matter what kind of innovation it is, it should be a futuristic vision translated into an aggregate of realistic activities that will be cooperatively realized. All of this should ultimately lead to growth, operational efficiency, and the improvement of service quality for customers (Pantano et al., 2017). For this purpose, the retail innovation matrix can serve as a useful tool (Figure 1).

	Offer/customer - related	Support - related	Organisation - related
Strategic	e.g. The development of a new "big box" fashion store concept for retail parks e.g. A transition from a 3.000 to a new 12.000 sq. ft. store footprint e.g. Unveiling retail's first carbon neutral eco-store	e.g. The introduction of a new IT suit of business applications for CRM and supply chain management e.g. New distribution centre, fully automated in line with a fast fashion business model of buying in six-week cycles	e.g. External innovation networks linking up venture capital firms with business start-ups working with the retailer on innovation projects e.g. An accelerated NPD initiative providing 52 annual product themes
Operational	e.g. Extending the organic range of products from 300 to 1.000 SKUs e.g. In-store "retrofitting" of car components; satellite navigation, indirect vision mirrors e.g. Developing a new own label portioned coffee capsules system	e.g. Experimenting with electronic shelf-edge labelling, for automatic refreshing of prices throughout the store e.g. New delivery model of route planning optimisation	e.g. The introduction of "corporate merchandising guidelines" to maintain clear brand positioning e.g. "Best welcome initiative" for new employees joining the retailer

Fig. 1 A retail innovation matrix
Source: Hristov & Reynolds, 2016.

The presented retail innovation matrix can serve as a useful tool for retail chains when making innovation planning decisions or for visualizing and assessing a set of innovation activities at different decision levels. Observed in terms of technological innovation, this process is presented in Figure 2.

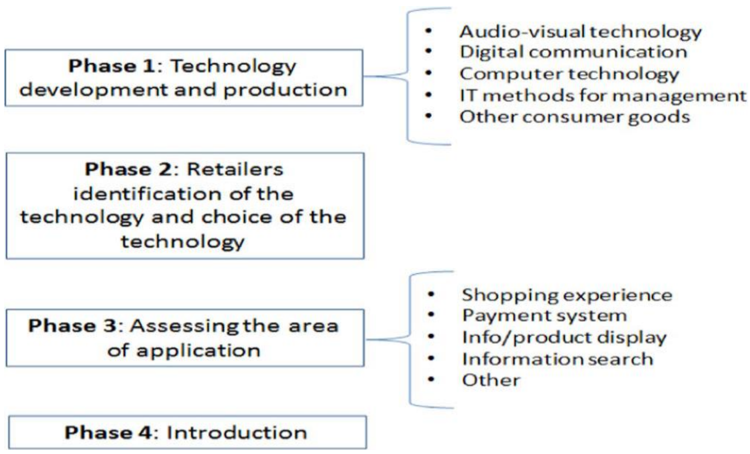

Fig. 2 Innovation introduction process in retailing
Source: Pantano et al., 2017.

However, customers themselves have the final say about the success of retail innovation. Numerous studies on customer acceptance of innovation show that they are willing to accept and use innovative systems if they offer benefits in terms of better shopping experience, higher satisfaction, and, ultimately, loyalty (Kohler et al., 2011; Ku & Tai, 2013; Pantano & Di Pietro, 2012). Table 1 shows the most common types of innovation introduced by retailers, the number of retailers introducing it, the amount of investment, and the type of retailers.

Table 1 Innovation diffusion in retail industry

Technology	Number of adopters	Amount of investment	Typology of adopters
Digital signage	Medium	Medium (mainly in hardware)	Fashion industry (i.e. luxury brands)
Self-service technologies	High	Medium (mainly in hardware)	Groceries and department stores
Mobile apps	High	Low (mainly in software)	Both small-medium retailers and large retailers, both luxury brands and low cost ones, etc.
Ubiquitous stores	Low	Low (mainly in software)	Small and frequently ad-hoc enterprises

Source: Pantano, 2014.

Table 1 shows that different retailers adopt innovation with varying intensity. An analysis of previous studies gives an insight into how different retailers achieve different success with the introduction of innovation (Table 2).

Table 2 Summary of findings from cross-retailer analysis.

Retailers	Innovation	Level of exploitation	Role of innovation
Fashion	Digital signage	Medium	Informative (providing consumers information)
Groceries and (large) department stores	Self-service technology	High	Providing new services for consumers
(Large) department stores	Self-service technology and mobile apps	High	Providing new services for consumers
Ad-hoc new retailers	Ubiquitous computing	Low	Creating new services for consumers, reducing the number of employees, managing data on market trends

Source: Pantano, 2014.

Thus, Table 2 summarizes the analyses of actual diffusion of innovation among different retailers.

2.2. Technological innovation and smart technology in retail

Previous analyses, as well as the actual situation in retail, show that innovation developed and adopted in retail is technology-related. In today's Industry 4.0 development conditions, adopting smart technology in retail is more and more pronounced.

The growing diffusion of information and communication technology has significantly transformed and is still transforming retail and total trade, creating new customer shopping experience. The performance of world's leading retail chains shows that they are already making great use of smart technology (Inman & Nikolova, 2017; Renko & Druzijanic, 2014). Smart technology in retail is an interactive system that provides customer services through a network of smart or intelligent devices that can integrate in real time in order to collect data, communicate, interact, and obtain customer feedback (Roy et al., 2018). Smart technology can be integrated into existing retail systems, presenting products in store windows or aisles and allowing customers to, for example, try out clothes, order products, and also connect with social networks. Thus, smart technology is an outbreak in the application of information and communication technology in retail. Since physical and digital purchasing dimensions are integrated, it creates a unique individual-customer-tailored shopping experience. Moreover, the use of smart technology (smart mobile phones, tablets), that was a trend among younger people, is now widespread among almost all age groups. In this way, customers now have the opportunity to get a service with a high degree of efficiency, resulting in customer expectations of targeted, more sophisticated, and equally efficient services from retailers. On the other hand, retail chains widely accept this concept, and many of them emphasize the notion of smart technology as part of their business mission and vision. At the same time, they are aware of all the opportunities smart technology offers, becoming one of the key goals in the modern retail environment, be it offline or online. Thus, studies predict that investment in smart technology will reach 6,2 billion dollars by the end of 2025, with retail sales taking a significant place.

However, the opportunities smart technology offers are much greater than its introduction or use, so this phenomenon opens up numerous challenges and opportunities for retail chains. It is, therefore, necessary that they evaluate the real value and the changes smart technology brings. Thus, in a recent survey, Anderson and Bolton (2015) highlight the importance of applying smart technology in retail, such as sensors and radio frequency identification (RFID), for the needs of collecting different data. Sensors allow collecting data on the number of customers entering the retail facility, as well as a lot of complex data such as demographic or behavioural data during shopping. According to the survey, the implementation of smart technology in retail requires modification of business activities and processes.

Using smart technology, a retailer develops a partnership with their customers. At the same time, within its sales facilities, this way, it is easier to understand and cover customer intentions and needs, as well as their expectations of smart technology. Building a good shopping experience is an imperative of modern retailers, while, on the other hand, it attracts enormous academic attention.

3. Global Power of Innovation-Based Retail

The world's largest retail chains yearly record positive business results. Their business reports, as well as their mission and vision, show that innovation, especially technological, is a business imperative. Reports of 250 largest retail chains, published annually by the consulting firm Deloitte Touche, prove this. The latest report shows the top ten retail chains in the world and their business performance (Table 3).

Table 3 Top 10 retail chains, 2017.

Rank	Name of company	Country of origin	FY2017 Retail revenue (US$)	FY2017 Retail revenue growth	FY2017 Net profit margin	FY2017 Return on assets	FY2012-2017 Retail revenue CAGR	Countries of operation	% Retail revenue from foreign operations
1	Wal-Mart Stores, Inc.	US	500,343	3.0%	2.1%	5.1%	1.3%	29	23.9%
2	Costco Wholesale Corporation	US	129,025	8.7%	2.1%	7.5%	5.4%	12	27.2%
3	The Kroger Co.	US	118,982	3.2%	1.5%	5.1%	4.2%	1	0.0%
4	Amazon.com, Inc.	US	118,573	25.3%	1.7%	2.3%	18.0%	14	36.8%
5	Schwarz Group	Germany	111,766	7.4%	-	-	7.5%	30	58.9%
6	The Home Depot, Inc.	US	100,904	6.7%	8.6%	19.4%	6.2%	4	8.4%
7	Walgreens Boots Alliance, Inc.	US	99,115	2.1%	3.5%	6.2%	6.7%	10	11.9%
8	Aldi Einkauf GmbH & Co. oHG	Germany	98,287	7.7%	-	-	7.2%	18	65.1%
9	CVS Health Corporation	US	79,398	-2.1%	-	-	4.5%	3	0.8%
10	Tesco PLC	UK	73,961	2.8%	1.5%	1.9%	-2.4%	8	20.7%
	Top 10		1,430,353	6.1%	2.0%	5.5%	3.7%	12.9	25.1%
	Top 250		4,530,059	5.7%	2.3%	5.0%	3.3%	9.5	23.6%

Source: Global power of retailing, 2019.

The table above shows that the top ten retailers had 31,6% of the share of revenue in total sales revenue generated by the 250 largest retailers in the world in the fiscal year 2017, which is by 0,9% more than in the previous year (2016). The first three retail chains retained their position in relation to the previous fiscal year, while Amazon improved its position by two places, taking fourth place, with the highest growth in sales revenue (25,3%). Amazon's improved position can also be explained by the trends announced in earlier reports on the development of the largest retail chains. For example, factors such as digital transformation of trade, implementation of smart technology, and the concept of mobile trade, as well as the implementation of multi or omnidirectional channel strategy, are highlighted as the drivers of modern retail. All this points to the fact that innovation is a business imperative of contemporary retail chains, which is the starting hypothesis of this paper.

Generally speaking, in fiscal 2017, 250 retail chains saw a significant increase in sales revenue. In the total amount, sales revenues in 2017 amounted to 4,53 trillion dollars, which is by 2,72% more than in the previous year.

Walmart retained its position as the world's largest retailer, with a sales growth of 3,0% in 2017. Additionally, this company has been in the leading position among retail chains for many years, which is also reflected in retail revenue trends (Figure 3). The question arises as to the secret of Walmart's success and the role of innovation in that process.

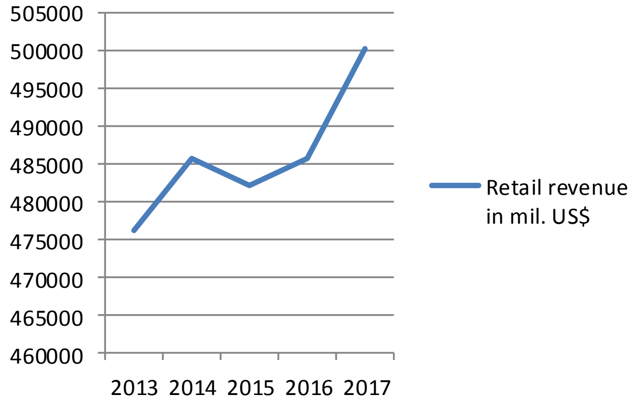

Fig. 3 Walmart's retail revenue, 2013-2017
Source: Authors' calculation based on Walmart Annual Report (2018)

Numerous studies consider Walmart the most innovative retailer in the world. With more than 4700 stores across the United States and many more around the world, Walmart dominates as a classic seller of "brick and mortar". More and more companies focus on digital retail space by investing in significant e-commerce services as well as technological initiatives. Implementation of innovation is visible in all segments of Walmart's business. In connection with this, there is also the official website https://blog.walmart.com/topics/innovation, where one can see the achieved degree of innovation, or different types of innovation that the company applies in its business. Some of them relate to the use of smartphones in order to improve business efficiency, the application of virtual reality in the purchasing process, specific applications simplifying customer shopping experience, and the like. From the use of new mobile applications for customers and employees to robots in stores, Walmart uses technological innovation to outperform competition in the best possible way. It is especially noteworthy that Walmart has intensified its innovation activity over the past two years, since it invested in the development of e-commerce and new technology to increase efficiency and improve working conditions, ultimately leading to higher sales volume and lower operating costs. In this innovation group, the following is worth noting:

1. Upgrading existing mobile applications refers to the improvement of existing applications that customers use to purchase products via smartphones. The new mobile application, in addition to the existing benefits for customers, provides an integrated Walmart retail store map, showing product location and services offered. In this way, the company implements the multi-channel retail strategy.

2. List of products for purchase – This relates to the established customer practice to have a paper list of products before making large purchases. Walmart's mobile application introduces a new list feature that allows users to choose more easily products they plan to

buy. Since the lists are integrated into new store maps, each product can be precisely located in the store.

3. Robots – They are used to fill shelves, find and return lost products and track stock levels, which is the most demanding task in any sales facility. Robots "walk" in sales facilities collecting different information, checking that the price has been updated, and the labels on the shelves are correct. Once a day, robots examine the general commodity departments, thus improving stock management precision, reducing staff fluctuation, and improving user experience. They are currently used in only 50 stores with the plan to use it in a large number of stores.

4. Virtual reality – Besides being used by customers, Walmart has enabled its use to improve employee training programs, creating a video game where simulated experiences are used to accomplish job-related tasks and achieve specific rewards.

5. Automation – It includes the process of unloading goods and sorting them in sales facilities. Currently it is applied in 30 sales facilities, with the plan to apply it as many stores as possible.

The aforementioned types of innovation are only a part of the innovative technology Walmart applies in its business. As its business reports point out, intensive application of innovation makes it easier for it to "fight" the competition. What is visible is the company's leading position in the list of the largest retail chains in the last twenty years and the epithet of the most innovative retailer.

CONCLUSION

Innovation is one of the key factors in creating and maintaining long-term competitive advantages in different economic sectors. Trade, especially retail, is considered an innovation-intensive economic sector. The novelties technological revolution brings have found their place in trade and retail. Innovation in retail refers to changes of the existing into something new and different. In doing so, understanding innovation can be approached from different perspectives, i.e. the multidisciplinary approach to the understanding of innovation is dominant. In line with these facts, the paper first pointed to the fact that the term innovation has always attracted the attention of theoreticians and practitioners, i.e. innovation is a permanent topic. In today's conditions, innovation is not just a research topic, but an integral part of the business strategy. This is especially evident in the case of modern retail, where innovation takes a very important place. In addition, there is noticeable proliferation of innovation and the inescapable role of information-communication and smart technology in retail. The paper placed a special emphasis on technological innovation and the use of smart technology in retail. The hypothesis on the importance of innovation in modern retail was tested using the example of 250 largest retail chains, which year after year show a tendency of growth in operating revenues and other business performance indicators. The subject of the special analysis was Walmart, which has a leading position in the list of the largest retail chains in the last twenty years. Bearing in mind the various types of innovation that this company applies and which were analysed, it can rightly be said that Walmart is the most innovative retailer. Therefore, innovation is *condition sine qua non* in modern retail.

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INOVACIJE KAO POKRETAČI SAVREMENE MALOPRODAJE

Osnovni cilj rada jeste da ukaže na značaj inovacija za savremenu maloprodaju. Polazi se od činjenice da je maloprodaja, kao i ukupna trgovina, inovaciono-intenzivan sektor privrede i da su inovacije kritičan faktor kreiranja i održavanja dugoročne konkurentske prednosti. Metodom kabinetskog istraživanja, u radu se koristi konceptualno širok pristup razumevanju značenja i proliferacije inovacija u maloprodaji. Poseban akcenat stavljen je na razvoj i primenu tehnoloških inovacija. Hipoteza o značaju inovacija za razvoj savremene maloprodaje testira se na primeru 250 najvećih maloprodajnih lanaca, s fokusom na Walmart, vodeći maloprodajni lanac. Na bazi ovoga, posebno su istaknuta glavna obeležja primene i značaja vodećih inovacija u maloprodaji.

Ključne reči: *maloprodaja, inovacije, tehnološke inovacije, Walmart*