TECHNOLOGIES THAT FACILITATE DIRECT INTERACTIONS WITH CUSTOMERS

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Abstract: This paper presents research on technologies that can facilitate direct interactions with customers, offering unique and attractive experiences when using artificial intelligence. As per the 2019 survey conducted by BearingPoint, two major categories of developing AI technologies are found to enhance the overall customer experience: (1) technologies that allow direct interaction with customers, and (2) technologies that enable more efficient handling of customer requests and expectations. Regarding the technologies that facilitate direct interactions with customers, there are POS technologies, AI-powered chatbots, digital voice assistants, etc. These technologies transform and enhance the customer experience, thus making shopping more appealing and interesting. The motivation for choosing this topic is that it gives a global, current perspective and arouses interest, curiosity, uncertainty, even fear. The research question is implemented with the help of an empirical investigation among retail representatives and customers to pinpoint if modern technologies that facilitate direct interactions with customers is the solution for achieving higher performance in the retail field, but without being used unethically. The originality of the research consists in investigating the behavior of generation Z towards technologies powered by Artificial Intelligence in the retail sphere, in an emerging market. Considering the direction in which the technologies that facilitate direct interactions with customers is evolving and based on the arguments of specialists, it seems that these will represent an element of distinction and competitive advantage. Companies in the retail sector that will invest in the development of Artificial Intelligence will benefit in the long term.

Keywords: Artificial Intelligence, Retail, Technology, Customers, Trends, Innovation, Stores

JEL classification: O10

1. Introduction

Technology is the soul of economic progress. Technological developments are a major factor influencing trade. We are currently living in an age of remarkable technological development (Sachs, 2002). Technological developments are also changing the retail trade which benefits from numerous innovations (Dabija, Pop and Săniuță, 2017) such as the Internet of Things, Pocket Bargain Finder, VR (virtual reality), AR (augmented reality), UPC scanners, augmented reality applications mobile (MAR), collaborative virtual environments (CVE), human enhancement technology (HET), etc.

Retailers are showing interest in improving the shopper experience. This can be achieved with the help of technological developments. AI-powered innovations are of real benefit to customers. For example, retail auditory confirmation of transactions (RTAC) establishes perceptions of trust in the retailer. Trust is enhanced as the sounds associated with purchase transactions on technology devices, perceived by shoppers when they scan an item at the point of sale, provide auditory confirmation that the technology has assisted them in the purchase process, reducing any ambiguity about the transaction. Increased trust in turn has a positive impact on buyer satisfaction and future purchase intention (Reynolds-McIlnay, 2019).

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2. Literature review

Alexa, OK Google, Siri, Cortana - these names are becoming more and more familiar (Hoy, 2018). People shopping rely on these conversational voice agents to get information like the weather and daily news, or ask them to do things on their behalf, like play music, turn on lights, or send text messages. As technology evolves, these AI-powered voice agents are integrated into devices ranging from computers and smartphones to Bluetooth speakers and connected appliances such as refrigerators or televisions. So far, most studies on persuasive or recommender agents have focused on designing text-based websites or chatbots (Dou, 2019), but recently, voice interaction with a conversational agent, which usually does not has visual display, has emerged as a new challenge for human-computer interaction (HCI) electronic commerce. Product recommendation by a conversational agent (voice chatbot) through a smart speaker or other devices is considered a technological development, a modified version of the commercial spot, because they have the same objective: promoting and selling a product or service (Luo, 2019).

Omni-channel commerce is achieved through the convergence of electronic, mobile, television, voice and silent commerce applications. The ubiquity, universality, uniqueness and unison of e-commerce will provide two main advantages for individual users and businesses: increased convenience as well as more personalized services. However, omni-channel commerce will also bring certain issues, such as a greater degree of privacy concerns, that will impact individual users, companies, and society in general. In retail, store chains need to know which technologies are most attractive to their customers. An omni-channel store is one that combines the advantages of brick-and-mortar stores (for example, the ability of consumers to see, feel, touch and try the product) with those of the online world (for example, a larger product offering and 24/7 availability and information). Consumers expect stores to provide them with technology devices in the showroom, to be equipped with all kinds of additional technology services and to facilitate the use of their own devices. These results are consistent with certain studies on the positive influence of the incorporation of interactive technologies on consumer shopping behavior. To provide a superior in-store experience, mobile app developers and retailers should not only focus on providing an additional shopping support interface, but should also integrate this interface with hardware features that seamlessly blend the physical world with the online one. Companies need to facilitate the connection between the online and the physical store, making the same offers, conditions and services available on both channels. Retailers should invest in technologies that provide a seamless consumer experience across all available channels to facilitate the shopping process and increase customer engagement and brand loyalty (Mosquera, 2018).

Virtual reality (VR) allows the reconstruction of physical objects and spaces, through their digital representation. Individuals are typically introduced to the digital environment through a headset (with the specification that they do not have to physically share the same space as the VR-reconstructed environment). The more real the virtual experience, the more the individual's belief in continuing to experience the environments in the digital framework (with which they interact), increases the level of escape and pleasure, contributes to the efficiency of the shopping experience and the reduced consumption of time. VR engages the human senses and enhances shopping. Behaviors in VR-based and physical stores are quite similar. Individuals search for information differently when exposed to virtual or physical stores, choosing hedonic or utilitarian products. Some studies (Vrechopoulos et al., 2004) based on VR environments have found that VR can stimulate individuals' perception and physiological reactions similar to those in physical environments. Accordingly, (Lee and Chung, 2008), in their research, adopted the definition of VR proposed by Steuer (1992, p. 76): "VR is defined as a real or simulated environment in which a perceiver experiences telepresence". VR environments activate the reactions of individuals. This is why VR is also valuable as a marketing research tool, enabling data collection in a flexible and realistic shop environment that increases the external validity of laboratory experiments by going beyond the limits of traditional experimental stimuli such as a website of 2D shopping by implementing 3D virtual shopping environments (Pizzi, 2019). Augmented reality (AR) and virtual reality (VR) have emerged as rapidly developing technologies used in both brick-and-mortar

and online commerce to enhance the sales environment and shopping experience. However, the practical applications of AR and VR in retail are still quite fragmented (Bonetti, 2017).

Despite the phenomenal growth of e-commerce, the vast majority of transactions still take place on the traditional brick-and-mortar side. Pocket BargainFinder is a handheld device that aims to bridge the gap between e-commerce and traditional commerce, representing one of the first examples of a new type of commerce considered the augmented commerce store. Pocket BargainFinder is an example of technology that can naturally transform both e-commerce and physical commerce. With consumers able to find the best price regardless of where they shop, the physical retailer is left at a disadvantage. The Internet is perhaps the most visible innovation, but there are many others, including wearable and wireless devices, touch screen kiosks, electronic signage and shelf labels, virtual reality displays, body scanning, smart cards, and robotics (Burke, 2002).

Retail settings are becoming smarter and providing greater value to both consumers and retailers. Mobile Augmented Reality (MAR) applications are an increasingly recognized approach that has the potential to enable intelligent selling. MAR applications contribute to smart retail settings, creating additional value for customers as well as merchants. MAR applications are seen as changing consumer behavior (Dacko, 2017). A "smart" retail setting can be a beneficial way for a firm to generate greater value for customers and the company. One "smart" approach that is increasingly recognized as having the potential to create value for customers and retailers alike is the use of augmented reality in smart retail environments. Augmented reality is a smart technology that adds value to retailers by influencing customer engagement as well as purchasing decisions and can be used differently in-store and out-of-store, including at home. Such studies, along with broader research on augmented reality theory, mobile services and customer experiential value point to the potential for MAR to provide multiple benefits to both customers and smart retailers.

Collaborative Virtual Environments (CVEs), sometimes called "Virtual Worlds" or "Metaverses" such as "Second Life" are defined by Schroeder (2006) as "multi-user, three-dimensional computer-generated interfaces where users can experience and other participants as being present in the environment" (p. 25). A defining characteristic of retailing in these 3D environments is that users can navigate through a representation of a virtual store using a personification of themselves - an avatar - and further, to experience synchronous interactions with other avatars (e.g. , acting) as a sales assistant in a manner very similar to offline interaction. Thus, retailing in CVEs/Metaverse is different from the more familiar version of mainly 2D, based on the Internet store through 3D computer graphics and the social presence of avatars. 2D context can be defined as a website that functions as a group of 2D web pages, containing text, images and all kinds of multimedia files, to provide the user with an aesthetic and easily accessible 2D experience. Virtual collaborative environments consist of four main dimensions: the customer service dimension, the product dimension, the store dimension, and the 3D platform dimension. Metaverse presents opportunities for retailers in improving social experience, responsive services and opportunities for creative co-production, namely exploiting customers' desires for novelty, consumption aspirations and identity management.

Virtual reality has long been the global gaming venue. With virtual reality (VR) and augmented reality (AR) devices, much of the technology's potential to transform the retail customer experience is being realized. "In retail, VR is the future," says Mark Hardy, CEO of VR company InContext Solutions (Gadalla, 2013).

3. Methodology

The methodology followed by the article is a content analysis of technologies that facilitate direct interactions with customers. This method is widely used in the specialized literature. In this article, the first phase involves a literature review and consists of selecting relevant articles from ResearchGate, Science Direct, Scopus and Springer. Articles found were identified using "technologies", "retail", "customer relationship - AI", etc. as keywords and we identified a set of 28 articles published between 2001 and 2020.

In the second phase, the selected articles are analyzed to identify the following aspects: the impact of innovative technologies powered by Artificial Intelligence on customers in the retail sphere, the importance of using and investing in technologies that facilitate direct interaction with customers.

4. Results and discussions

The impact of technologies that facilitate direct interactions with customers is one of continuous development and growth. To remain competitive and survive in an ever-changing and diverse customer market, retailers must become more agile (Oosthuizen, 2020) and innovate their value chain by adopting new technologies. In retail today, retailers are taking multiple approaches to improve customer experiences, including the latest in-store technologies. For example, human enhancement technology (HET) has a notable, beneficial impact on customer experiences, but this technology also has harmful (dehumanizing) effects on customer experiences (Grewal, 2020). The use of innovative technologies and applications has already revolutionized the front-end interface, but a more recent development involves human enhancement technology (HET), which comprises tools that proactively improve human functions. For example, when employees interact with customers, the interaction could be supplemented with HET. With these possibilities in mind, it addresses how firms might integrate such technology appropriately to ensure safety and benefits for both employees and customers. That is, it explores how companies could use HET and other innovative, cutting-edge technologies to enhance an employee's skills, with the ultimate goal of providing superior experiences to their customers. These technologies are designed to enable employees to perform, work better, improve customer experience and increase business profitability. Rather than simply using smart devices (e.g. tablets) to enhance the customer experience, the new HET interacts personally with the human FLE (physical, cognitive and emotional). Also, there are certain ethical aspects, negative aspects of dehumanization brought about by this technology. In addition to the beneficial effects of HET, there may also be harmful effects. This notion suggests that people experience feelings of nervousness and discomfort when encountering synthetic agents with too many human-like attributes. In order to examine the role of new technologies in value creation, it is necessary to distinguish three dimensions of experiential value: cognitive, sensory/emotional and social. Cognitive value is the experiential value that consumers receive as a result of information processing and decision making and is closely related to the analytical characteristics of AI technologies. Sensory/emotional value encompasses the value consumers receive from the sensory stimulation and emotional attachment that results from the sensory and affective features of AI technologies. Finally, social value includes the value that consumers receive by connecting to the social world around them due to the behaviors and relationships that AI enables (Hoyer, 2020).

Retail is evolving at an accelerated pace due to changes made possible by technologies and evolving consumer behaviors (Grewal, 2017). AI is greatly influencing the international business environment by providing important benefits to both sellers and buyers in the retail trade. Its machine learning and predictive tools often provide relief to the buyer's efforts. Artificial Intelligence for Retailers enables retail to obtain clearer predictive tools that ensure clearer business decisions are made (Oosthuizen, 2020). Algorithms enhance the ability to visualize business implications and translate results such as higher sales and lower costs through customer service, product inventory and personnel. Customer service is an important aspect of any retail business as it drives consumer loyalty and brand retention. Platforms like Facebook allow retailers to save on operational costs related to customer service by incorporating chatbots through Facebook Messenger. Artificial intelligence replaces the conventional customer service agent who answers questions by sending links, images and texts and uses human responders only if the problem is more complicated (Nadimpalli, 2017). If product inventory is mismanaged, it could trigger customer frustration and lost sales. Artificial Intelligence is a new trend of the 21st century, which makes it necessary for people to accept it and use it to receive benefits. It is important for the society to identify the benefits and threats of AI so that it can give it the right place, be used appropriately (Nadimpalli, 2017).

5. Conclusion

The main contributions of the current literature review are that it provides an extensive overview of the topic of technologies that facilitate direct interactions with customers and highlights some gaps in understanding the practical implications of this concept. AI is critical to reporting to customers. This influences customer relationship management and its long-term performance. What customers really care about is finding an answer to their current needs or wants in a way that's convenient, enjoyable, and gives them good value, both in terms of their money and the use of their time. Today's customers have access to a wider range of technologies than previous generations, with many customer segments growing or being heavily influenced by technology. Changing lifestyles mean that customers want to undertake the purchase process at a time and place that suits their needs, using technology that is in their hand or in front of them (Cook, 2014). Customers want a buying process on their terms and at their convenience. Retailers need to adapt to this and provide customers with such a pleasant experience that customers want to keep coming back (Cook, 2014). New technologies such as the Internet of Things (IoT), augmented reality (AR), virtual reality (RV), human enhancement technology (HET), mixed reality (RM), virtual assistants, chatbots and bots, which are usually powered by artificial intelligence (AI), dramatically change the customer experience. In the future, customers will have radically new experiences thanks to new technologies (Hoyer, 2020).

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