Fast Changes in Food Retailing Due to the Impact of COVID-19

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SUMMARY

In this article, the impact of the COVID-19 pandemic on the Fast-Moving Consumer Goods (FMCG) sector is examined. We consider it important to analyze the directions in which the retail sector has shifted and to determine whether it has been able to react to the sudden and increased online market challenge. How do offline and online food retailing relate to each other? What new challenges will shopping face in the future, how is retailing adapting to them and how can artificial intelligence support these retail processes? What new innovations are expected in future retailing and how can domestic market players adapt to them?

Keywords: online and offline food retailing, FMCG sector, new models, innovations, AI, COVID-19

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INTRODUCTION

The COVID-19 pandemic has drastically set back the economies of countries around the world. The process of recovery in some sectors may last for years. The situation is further aggravated by the fact that the coronavirus epidemic is not fully over, but is still reigniting, though with less intensity. The coronavirus epidemic has affected the targeted retail sector in different ways. The winning markets in retailing have been food and hygiene products, with e-commerce gaining particularly strongly over traditional business networks in the first three waves. E-commerce will continue to play an increasingly important role in the future, but even traditional stores will find their place in the changing retail structure. In the food retailing sector, a particular situation is likely to emerge where multinational companies that have been strong in the online space will ally with offline retailers to consolidate their market position. Examples include Alibaba and Auchan, Google and Walmart, and Uber Eats and Albertsons. The online companies need this because it gives them access to logistics warehouses and points of sale without having to invest heavily.

Previous market systems are being transformed and new commercial models are emerging. For commercial companies, data and information related to the product being sold is playing an increasingly important role in value creation, and the role of transparency and increased options in customer decisions is becoming more important, alongside rapidity.

The procedures and policies defining the framework in which companies operate must adapt to these changes. Process controls and procedures for maintaining or improving efficiency are designed to enable businesses to change and adapt. Another aspect of organizational process management is the accumulation of knowledge and the continuous development of the company's learning capacity. The historical knowledge base of each business development project is maintained, updated and made available to the other parts of the organization; this knowledge base can be used to plan and manage future projects. All these examples illustrate how the strategic resources of companies (e.g. retailers) have changed, not only transforming traditional business models, but also requiring a different management approach to reach customers and understand their needs. For a commercial company, even 5-10 years ago, a more or less geographically defined catchment area was an important dimension of customer segmentation. The omnichannel sales channel model requires a different kind of stakeholder management. The internet has created the category of trait-based community (Ismail et al., 2014).

Regardless of geographical proximity, customers are "in the cloud" and communicate, creating a virtual community. Different methods and algorithms are needed to reach potential customers, understand their needs and serve them. In our study, we explore the paradigm shifts that are fundamentally influencing the spatial thinking and operations of corporate management as a result of the rise of disruptive technologies.

NEW MODELS AND INNOVATION

Big Data plays a key role in the new models. This data makes it possible to build a new understanding of consumer needs and to formulate new marketing approaches. Increasingly sophisticated methods of machine learning (ML) and artificial intelligence (AI) are playing a major role in this process. Natural language processing (NLP) represents an important area of development, with one example being Telekom Vanda's digital business assistant. These and similar systems are an effective way of keeping in touch with customers and serving their needs even better. Pepper, a humanoid robot with face recognition, face tracking and voice recognition technology, was presented at the ARKÁDROBOTIKA exhibition held 19–24 February 2019. The presented robot can make our everyday life more convenient due to its versatile usability, for example it can guide us, help us in booking a hotel, serve us in a restaurant, assist us in administration or even in reporting a lost credit card, and it can be a great help in a shopping mall, as visitors prefer to ask the robot for guidance on where to buy certain products, where to find a shop, etc. Pepper also gives you a sense of personality by looking straight into your eyes, playing with your voice, making small gestures with its hands and responding to your questions (Debreceni, 2019).

Another area of application of robots increased significantly during the COVID-19 epidemic. In particular, disinfection robots received significant attention; such robots were used by the Dutch company Ahold Delhaize in two US commercial centers. The machines, manufactured by AVA Robotics, were the first in the world to be used by Ahold Delhaize in the fruit and vegetable trade to disinfect their warehouses. According to the manufacturer, the robots were capable of disinfecting more than 800 square meters of surface and air space per hour and were 99% effective against the SARS-COV-2 virus (Horváth, 2021).

We have to conclude that traditional trading systems are also increasingly being permeated by the models offered by modern technology. Machine Learning and Artificial Intelligence are increasingly present in the offline space, which, combined with the benefits of the online space, opens up new opportunities for shoppers. As a fact, the period of the coronavirus epidemic accelerated the use of the online space, and customers

forced into home office became accustomed to the convenience offered by e-commerce, so in addition to convenience, low prices, wide choice and quality of delivery have become important factors for them. Research shows that the growth of the online FMCG market is accelerating strongly and could be up to four to five times larger than current sales. This is why it is in the interest of offline sellers to build and forge alliances with online retailers and create their own online world (Zhang & Wedel, 2009). To be successful, companies need to be able to manage Big Data data sets successfully. To do this, they need to employ experts with expertise in IT and mathematical methodologies to gain access to more sophisticated data sets that will help them develop and operate a new type of omnichannel marketing strategy. Omnichannel solutions allow companies to manage their sales palettes in the same structure, so their customers can get the information they need by voice, email, live chat, chatbot, SMS, social media or video chat. The key component of this new approach is interoperability between channels to ensure the right flow of information between buyers and sellers. Omnichannel marketing will only be truly effective if we are aware of the points at which we can help customers to choose our product without any significant effort. Thus, we use customer data to highlight the points that make the shopping experience easy and effortless (Bajor, 2018). In addition to this, it is also important that the messages sent through the communication channel include higher level brand knowledge and connections, i.e. a consistent brand image. Another important aspect is that the messages sent through the communication channels are tailored to the customer, as this greatly increases the effectiveness of the communication strategy. It is only through effective data mining that we can achieve the effective marketing strategy mentioned above. Through network research, Big Data datasets can be used to extract a wealth of data that can provide new information about the properties of social networks, the evolution of the networks of connections and the points of densification of networks. This clustered information can then be used to better identify marketing target groups and to predict information diffusion and behavioral patterns (Barabási et al, 2015; Barabási et al., 2020).

WHAT NEW DEVELOPMENTS CAN BE EXPECTED IN THE FUTURE OF RETAILING?

Nielsen's research has shown that comfort, practicality, environmental and health protection are the key consumer priorities for innovations, and this has become particularly important in the context of the COVID-19 pandemic (Szűcs-Villányi, 2019). And in the longer term, sustainability, personalization and online

penetration play a key role. However, there are also significant differences within online trade. Growth in the FMCG sector remains the most dynamic (Trade Magazin, 2022). Understanding customers and shopping opportunities are crucial for success online. In terms of shopping occasions, we distinguish between top-up and routine purchases, with the most common being weekly bulk purchases. The COVID-19 pandemic forced companies to come up with solutions providing convenience and practicality for shoppers. The pandemic period has accelerated this way of thinking among both offline and especially online sellers. From a business point of view, food home delivery has been a headache for retail chains for years, but with the exception of discount supermarkets (Aldi, Lidl, Penny Market), almost no one can afford not to be present in this market, including Tesco, Auchan, Spar and Prima. However, new companies have also emerged in the COVID-19 pandemic and are gaining ground over larger competitors. One such company in the food retail market is Kifli.hu, which was launched from the Czech Republic. If you "don't have time or motivation to go to that particular bakery where that particular croissant you love is made, you can order it from Kifli.hu and once you've ordered it, you can add a few other basic groceries you need anyway. You'll get the latter for about the same price here as anywhere else," promised Kifli's CEO (Torontáli, 2019). Kifli does not primarily aim to serve young people, but rather those who are willing to pay for good quality products and good quality service. About 50% of their product range consists of high-end or premium products: wines, bakery products, meat products and chocolates, for which people are willing to pay a higher price. However, they also try to ensure that the majority of their prices do not differ too much from those of the biggest chains, Tesco or Spar, as this is the only way to keep their competitive edge (Egy év alatt piacot robbantana Magyaországon a Kifli.hu, 2019).

Online retailers offer convenience and practicality by placing your order on your doorstep. Reducing food waste is an important aspect for both offline and online companies, so products approaching expiry are offered for sale at significantly reduced prices, and efforts are made to collect packaging. Kifli is a pioneer in this regard, collecting and recycling carrier paper bags at the time of the next purchase. In the long term, therefore, flexibility, responsiveness and a proactive approach, alongside multi-channel operations, will be the keys for success (Konuş et al., 2008; Verhoef, 2012). The year 2020 brought major changes. There was a massive increase in online demand for everyday consumer goods and it was not easy for retailers to keep up: "during the first months of the pandemic, online supply was severely understocked and retailers were not prepared for the increased delivery demands during the 'home office' and 'stay at home' campaigns - capacity could not be increased several-fold from one day to another" and this has reorganized the market (Sikos T., 2024, p. 387). The situation has given a big boost to the expansion plans of online FMCG players and the competitive situation created by new entrants has also been beneficial for service quality. Chefmarket stands out as an interesting example, which typically specializes in catering, but as a result of the pandemic was forced to open a retail business, which has been successfully launched and is expected to be maintained as an additional area of business. In 2020, the value of online shopping baskets increased by more than 40% as a result of the pandemic (Sikos T., 2024, p. 387).

Competition between online retailers has become fierce. The top five in the market included two hypermarkets (Tesco and Auchan), two drugstore chains (Rossmann and DM), and one purely online player, Kifli.hu.

Table 1

Ranking of the top online FMCG retailers in 2023

Ranking	FMCG company
1.	Kifli
2.	Tesco
3.	Auchan
4.	Rossman
5.	DM

Source: Hazai e-toplista: ők a menő kereskedők Magyarországon, 2023; TOP 15: ezekben a webshopokban vásárol legtöbbet a Magyar, 2021

The top five retailers' combined online turnover in 2023 exceeded HUF 50 billion (gross). Since these retailers sell not only FMCG products, the gross turnover of the sector was approximately EUR 76.6 billion (Sikos T., 2024, p. 388). Convenience and practicality have been important factors for the continued growth of online businesses, with personalization in the future.

ENVIRONMENTAL AWARENESS

Consumers are increasingly expecting companies to take care of the environment and minimize their environmental impact. However, we must also recognize that different generations live in different ways, with different dynamics, and react differently to certain issues in the world surrounding them. This was also the case regarding the epidemiological situation, but their thinking is also different on environmental issues. In many respects, are the elderly unpersuadable? Are teenagers careless? Are young people overreacting to protests and conscious living? Individual differences are always present, obviously, and it is not possible to determine what is right and wrong for the environment on the basis of age. Not everyone is equally concerned about this issue within any age group, and generational differences within families may well be due not to attitudes towards the environment but to the dysfunctional family dynamic (Kertész, 2020). The population over 55 is not only more environmentally conscious but also much more thrifty than younger people and much more generous. This is understandable, naturally, given the greater amount of consumer goods accumulated over their lifetime (Lewis, 2021). Thus, compared to those aged 16-34, they donate around 25% more of their household assets to charity. Habit and tradition lie behind the environmental awareness of the older generation. This is the generation that places more importance on car use in everyday life than other generations and is much less able to accept and switch to new transport alternatives (such as car sharing, BlaBlaCar etc.). Younger generations are often less aware, and often environmental awareness is not necessarily an intrinsic motivation, instead driven by peer pressure, following fashion. For the older generation, environmental awareness is based on respect for nature and natural values. And for the youngest age groups, the development of an environmentally aware attitude is strongly linked to what older people see and do to protect the environment (Sikos T., 2024).

Not only consumers, but also companies should strive to reduce overconsumption on the planet. To this end, on 29 July 2021, World Overeating Day, WWF and Tesco launched a unique initiative to promote affordable and sustainable food consumption in the Czech Republic, Hungary and Slovakia in the long term. Through this initiative, Tesco aims at raising awareness among shoppers to make an effort to consume food sustainably on a daily basis.

PERSONALIZATION

Achieving ever larger shopping baskets and, at the same time, developing personalized commerce are the key drivers of the future of online commerce. Large companies will focus on expanding their product range, while small companies will only survive in the market if they specialize. Obviously, the large range of products offered by shops also poses a number of risks, such as an increase in stock, which will become much more difficult to manage, and more complex IT and logistical tasks and a higher level of systems are required. In addition, a more effective marketing policy will be needed to inform customers. Large database (Big Data) systems and the management of data clouds require new types and skills of management and, of course, the development of new communication interfaces both for logistics and customers.

For small shops, one very important endeavor is to understand the needs of their customers as well as possible. Retailers need to be aware of the structure of a customer's shopping basket pattern and its frequency pattern. This will be one of the most important conditions for success in face-to-face sales. During the pandemic, retailers launched a significant number of small and large online schemes. The secret to the success of the online units established lies in their speed, accuracy and maximum adaptability to customers' needs. It can be stated as a fact that today it is becoming increasingly difficult to navigate across a wide range of products and therefore consumers are reinterpreting their preferences and expectations of products and services. "Traditional factors such as price, choice and convenience remain important, but given how many good choices consumers are offered, personalized experience may now be the differentiating factor. This is especially true for the digital natives of Generation Z, who now make up one-fifth of the European and US population, the Nielsen survey points out. Personalization will become easier for digitally enabled businesses, with e-commerce being able to track purchase history, ad views, demographics and preferences. All of this facilitates optimization for the retailer, who can then maximize revenue." (Dechant, 2016). New algorithms must be used to manage the data generated by purchases. New methods developed can track customer behavior, and with the help of marketing geography tools, we can gain even deeper insights into customers and tailor our business strategy accordingly.

We can then plan our advertising, promotions and advertising campaigns on this basis.

WILL TRADING TAKE PLACE OFFLINE OR ONLINE IN THE FUTURE?

The retail of the future will be a mixture of offline and online, which means that shopping will always take place through whichever channel suits the shopper best. So, shopping will take place at the edge of traditional geographic space and cyberspace. Surveys conducted by market research company Nielsen in sixty countries, including Hungary, show that consumers are embracing new digital technologies and expectedly these new technology solutions will become an important part of the future retail. Modern technologies help "retailers and manufacturers to take advantage of flexible sales opportunities. This will enable them to provide a better shopping experience and increase footfall in each channel." (Dechant, 2016). And all this will influence tomorrow's trading in a positive direction. The blending of online and offline also means that in many cases shoppers will choose the most convenient pick-up points for them. These may be the office, home, holiday home for home delivery, but also, naturally, certain points in the offline space, such as the various pick-up points or collection points designated by shops. The latter also has the huge advantage that in this case the shop acts as a warehouse, as the customer's shopping basket is assembled here. Some products are missing from the offline system or are only available in limited quantities, such as vegan foods, which are very popular among Generation Z. In a short time, the digital world can create a multitude of new tools to make ordering easier and faster, thus significantly accelerating the development of online commerce, which has already been accelerated by the recent epidemic. An innovative distribution system is emerging, using modern retail technologies, in which market players are constantly innovating and learning to adopt and use newer and newer technologies. This new system is now fully embraced by the world of robotics. In this new framework, firms are able to react very quickly to market challenges and to cooperation with smart partners in order to remain competitive in the market (Gauri et al., 2021). All of this makes it possible for customers to participate in a world of convenience and experience.

CONCLUSION

In the future, retail will be dominated by hybrid sales, where retailers will sell both offline and online. More and more companies are expected to merge in order to have both offline and online sales channels, as this will be the basis for their commercial success. The EBIT (Earnings Before Interest and Taxes) profits of offline companies are still higher for now, but no one can afford to ignore such a significant market segment as online sales (only discounters like Aldi, Lidl, and Penny Market can afford this nowadays, but it is not the way forward for them either). Online companies will become more successful as shopping baskets grow, and late entrants will easily find themselves at a competitive disadvantage. Companies with an offline network will need to build fewer logistics centers as they can use their own stores as logistics bases. It is also a fact that the COVID-19 pandemic in particular has had a significant impact on the development of online commerce. If we would like to extrapolate this in time, there has certainly been at least a 5–6-year jump in the growth process. Many other areas have also developed dynamically, as stricter hygiene conditions have become necessary in order to overcome the epidemic. To this end, several companies have adopted technologies that were previously less used, resulting in a dynamic development of robot technology, especially in the field of manufacturing disinfection robots, which were the most needed tools in logistics, alongside picking and transport robots. Of course, there were similar types of robots and applications before, but the pandemic has accelerated the use of these tools even more.

Humanity must face the issue of depleting resources and in particular the rational use of food resources, as many products end up as waste after purchase, while more than two billion people do not have regular access to adequate food and 11% of humanity is starving (WHO, 2023). However, the ecological footprint of the minority of the population exceeds the current carrying capacity of the planet if current trends continue. The COVID-19 epidemic has had a positive impact on the growth of the FMCG sector in the retail sector, including online retailing, which will continue to be a dominant trend in the future. The key to its continued growth will be a focus on environmental issues, sustainability and personalization in online commerce - particularly important among digital natives, who are the most receptive to digital culture.

Author's contribution

The authors, Tamás Sikos T. and Dóra Molnár, carried out the work in a 50% - 50% ratio.

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