

THE FATE OF MARKETING LOGISTICS IN THE CONDITIONS OF THE 4.0. REVOLUTION

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Abstract: *The products of human ingenuity of the Fourth Industrial Revolution provide the opportunity for those already fortunate enough to enjoy the advantages of previous Industrial Revolutions to shape, not only the design of new technologies, but also agile forms of management and extraordinary benefits that can fundamentally transform the way people live, work, communicate and relate to each other. More powerful technologies dramatically modify not only traditional production models, but also conventional ways of „delivery service“ and distribution of the value. The implementation of the latest technological advances, primarily in the form of RFID technology, which is designed to provide continuous communication and „refresh“ data in the entire supply chain in real-time, will result in raising the quality of logistics services to a higher level while simultaneously significantly rationalizing and controlling costs. There is a growing trend in increased use of robotic manipulators and RFID-based smart shelves and smart factories, and retail stores without sales staff which eliminate the need to read and pay for products at cash registers are on the horizon. The revolutionary changes in marketing logistics are conditioned by the emergence and increasing use of multidimensional, so-called 3D printing that has the potential to initiate a trend towards approaching consumption production, which would significantly modify the current role of marketing logistics in the entire supply-chain. New*

technologies have not changed the essential role of marketing logistics, but the establishment of consistency in the physical movement of goods has evolved over time to the level of science-fiction. Logically, we impose the question of the fate of marketing logistics in the conditions of the 4.0. Revolution, as well as a much more serious question of the future of Man in the event that the humanoid machines made „in the image of man“, insensitive to the destiny of mankind, „master“ the World.

Key words: *Industrial Revolution, new technologies, marketing logistics, RFID, 3D printing*

1. INTRODUCTION

„Work fuels youth, cheers up old age, brightens happiness, and brings comfort to misfortune.“ (Cicero)

During the last 250 years, three Industrial Revolutions had a critical impact on eradicating the old and giving birth to the new industrial epochs. The birth of new industries transformed the way that people create value and they changed the world. New technologies and inventions of genius minds initiated the creation of completely new systems of manufacturing, exchange, and distribution of value, they had an impact on the radical change in social relations, the way of life, interpersonal communication, and the relationship

between man and nature. Thanks to the new circumstances, the role of man shifted from merely using workforce to regulating and guiding the process of manufacturing. The First Industrial Revolution (which is said to have lasted from about 1760 to 1830) started in the British textile industry in the middle of the 18th century, sparked by the invention of the steam engine, which impacted the transition from manual to machine production. Even though it contributed to the spreading of colonialism and the degradation of the environment, the First Industrial Revolution managed to make the world richer and a better place for life, primarily for those who belonged to the developed economies. Before 1750, even the richest countries – Britain, France, Prussia, the Netherlands, the North American colonies – had an annual growth rate of 0.2%, and even that was very unstable. Inequality was greater than today, and income per capita was at a level we would today consider extreme poverty. Until 1850, under the influence of new technology, the annual growth rate of those countries rose to 2-3%, and income per capita was steadily rising. (Schwab, 2018, page 8). During the next 100 years, the process of technological innovation (discovery, commercialization, widespread adoption and use) was the main mechanism for increasing wealth and improving well-being since the beginning of history. The steamboat and the steam locomotive made travel quicker and easier, the global economy became more interconnected, and probably the most visible aspect of the Revolution was the increased urbanization, because, nearly overnight, small, mainly agrarian and rural settlements located near a coal or iron mine became big cities and industrial centers.

The new wave of interconnected technologies and systems developed during the Second Industrial, or the Technological Industrial Revolution (electric energy, the internal combustion engine, fertilizer, and a whole new set of inventions that made life at the time easier) contributed to the further growth and possibilities of intensive and continual development of human civilization to, up until then unimaginable scales. The shift to mass-production started the process of accelerated industrialization and continued the even more intensified urbanization, aided by deagrarianization. Mark Twain called the 19th century, the time of quick growth and new inventions, the gilded century, because its outer glamour hid all the cruelty of factory work, the formation of empires and extractive colonies, as well as the massive inequalities between countries, as well as within them. In the middle of the 20th century there were revolutionary discoveries in information theory and digital computing, the technologies which made up the foundation of the

Third, so called Digital Industrial Revolution. As was the case before it, the Third Industrial Revolution was not just a consequence of the existence of digital technology, but of the way that it changed the structure of economic and social systems of the modern age. The ability to store, process, and spread digital information reshaped nearly every industry and dramatically changed the work and social lives of billions of people. Although it indisputably had unwanted consequences and left negative byproducts on both local and global scales, contributing to the degradation of the environment, decreasing and eradicating natural resources, and increasing inequality, the combined effect of these three Industrial Revolutions was an immense increase of wealth, quality of life and opportunity for most of humanity.

The Fourth Industrial Revolution (the 4.0 Revolution), which modern society is living in, is a new chapter of the development of human civilization, led by the increasing availability and interaction of a whole array of incredible technology, built on the infrastructure of the three previous revolutions. In the ideal conditions, to those who are fortunate enough to have the advantages of the previous Industrial Revolutions, the Fourth Industrial Revolution provides opportunities to shape, not just the design of new technologies, but more flexible forms of control and benefits, which will reshape the way that people live, work and interact from the ground up. Technologies in the making could provide immense benefits to the industry and society, but the experience from the past Industrial Revolutions reminds us that, in order for the world in the making to fully harness and make use of the benefits of these advanced technologies and create a prosperous future, it would need to overcome these three crucial challenges. (Schwab, 2018, pages 12-17)

1. Fair distribution of the benefits of the Fourth Industrial Revolution, considering the fact that wealth and welfare generated by the past Industrial Revolutions were, and still are unequally spread. Seeing that new technologies have potential to concentrate privileges and put current systems of control into question, maybe the most important problem of the Fourth Industrial Revolution might be the fear that **the economic benefits of human ingenuity** will again not be fairly distributed and that the resulting increase in inequality could undermine social cohesion.

2. Management of externalities of the Fourth Industrial Revolution in the sense of reducing risk and damage it might cause. In the previous Industrial Revolutions, there has been little effort to protect „endangered“ populations, the natural environment and future generations from the costs of change and progress and/or intentional abuse of new possibilities these technologies bring forth. The challenge in the sense of unwanted consequences is especially present considering the power of the technologies of the Fourth Industrial Revolution and the uncertainty of its longterm influences on complex social and ecological systems.
3. Making sure that the Fourth Industrial Revolution is human-led and human-centered. Human values have to be respected on their own, not just in the sense of getting financial gain. This challenge is especially critical because of the fact that the products of the Fourth Industrial Revolution are different from the inventions of the prior phases of technological development. New technologies can „peer“ into the most hidden intimate parts of the human mind, disrupting even the privacy of personal thought and shaping its behavior. They are designed to access and make decisions based on data that no man can process, and in a way that no „mere mortal“ could understand. They become capable of manipulating genes and changing the genetic „building blocks“ of human beings which will be born in the years to come. „Experimentation“ in the area of geoengineering could lead to unrepairable damage to the biosphere.

Technologies in the making are not forces outside of control of the human mind, nor are they simple tools with known effects and consequences. Exciting possibilities arising from artificial intelligence (AI), cryptocurrencies, unmanned drones, self-driving cars, the Internet of things, geoengineering, biotechnology, neurotechnology, additive manufacturing, and multidimensional 3D printing are already transforming society by altering the old ways of life and the future of everyone on the planet. Increasingly more powerful technologies are dramatically transforming the future of production, delivery systems and the distribution of wealth, which is raising many questions and starting a global discussion. Will the products of human ingenuity demean and defeat man and make him unnecessary in “the world of machines build by human hands“ in the era of

decreasing boundaries of digital, physical, and biological spheres? In the effort to make „the perfect servant“, will the architects of a new world order forget that the human race would not have moved away from the paleocene, not even to *Homo habilis* (skillful man) were it not for the hard work and the active relationship towards the universe? Will Schumpeter’s „creative destruction“ receive validation in nullifying civilizational values and destroying the Planet which will be ruled by humanoid machines with „the image of man“, indifferent towards the fate of humanity? Even though the technologies in the making have the potential to robotize humanity and compromise the traditional and root essence of Man’s being as a creative lifeform, the evolution of the Fourth Industrial Revolution is completely within Man’s power. Because, as Schwab, the founder and CEO of the World Economic Forum reminds us, „all new technologies are first and foremost tools made and designed by people for people.“ This creates the need to use the products of human ingenuity for economic and general progress of the global population, keeping human dignity, and building a better and more just World.

Moving from mass-production to production more suited toward individual needs, new improvements have been made in marketing logistics. New technologies have not changed its essential role, but the way of establishing consistency when it comes to the physical transportation of merchandise had evolved over time to science-fiction levels. Faced with new challenges which lead to the transformation of the conventional supply-chain and the emergence of new business models which generate the delivery of superior value to the consumer, marketing logistics is changing faster than ever.

2. The definition and role of marketing logistics

The modern corporation which participates in ever more fierce competition for a part of a massive market is preoccupied with making the products which will please the needs and expectations of end consumers, as well as devising a superior way to correctly place and make a product available for consumers in the right amount and intact form, in the right place, at the right time, minimizing expenses. Especially the latter, as the usability of a product is not only defined by its form and quality, but in large part by whether it is available for consumers when and where there exists a monetarily ready demand for it.

In the process starting with initial production and ending with consumption it is necessary to solve many problems and to do various activities which are tied to physical aspects of the process of the production, which are constrained by the existence

of the geographical and temporal divide of these two entities. The responsibility of timely and adequate transportation of products, improvement of placement and the success of sales is in large part a job of marketing logistics. The primary purpose of marketing logistics is represented by the endeavor to provide the necessary amount of the right products to consumers, unscathed, at the right time, and on the right market. Because of that logistics has to have access to information in real time, so that it can track the path of the products through the supply-chain and predict the right time and location of the delivery of the necessary amount of products. In essence, it is about activities which are primarily oriented towards: transportation, storage, manipulating merchandise, protective packaging, control of supplies and the processing and tracking of the process of delivery.

Today's business logistics is actually rooted in military logistics. It entered the business world by the name of "physical distribution" and during the 1960-s was primarily aimed at the delivery of finished products to their final destination, on the output side of corporations. Its initial aim was to deliver the product from the manufacturer to the end consumer, providing the best placement of distributive centers and optimal ways of transport. As a result, logistics has developed a strong connection to marketing and focused "downward" in the supply-chain. During 1970-s and 1980-s, the concept of logistics was expanded to "upward" in the supply chain. Seeing the insistence on maintenance of the established level of production leads to the piling up of supplies both on the input and output side of the process of production, the focus was shifted toward the need of precise and timely delivery of materials to production engines. The realization of the need for the management of materials changed the way we saw logistics, which became equally important for providing the input and output of the production cycle. The nineties were witness to the intense growth and application of the supply chain management and a holistic understanding of the importance of management of the entire supply-chain. From there, logistics in the business sector, in today's sense of the word, is referring to the transportation of goods throughout the entire supply chain, both upward and downward, contributing to the optimization of both the input and output side of production. (Sanders, 2017, page 141)

Starting from Stewart's definition of physical distribution from more than half a century ago, stating that physical distribution is "the science of business logistics with which the correct amount of the right type of product is available for placement at the right place, where there is a demand and at a time at which it exists" (Stewart, 1965, page 65), it

became clear that marketing logistics needed to provide the timely and adequate supply to consumers and a delivery system which provides additional value and a higher level of satisfaction for the potential buyer with the minimal expenses. From there the basic goal of marketing logistics is derived from the general economic principle and defined as: maximizing services to potential users while minimizing the costs of distribution. As a high level and quality of services is nearly always followed by an increase of the total expenses, these two diametrically opposite requests, as contradictory, are mutually exclusive. With regards to that, Kotler thinks that no system can both maximize services to the consumer and minimize the distributive costs, considering that the maximal service to the consumer requires great supplies, high-quality transport, and numerous storage units, all of which increase the costs of marketing logistics. (Kotler & Keller, 2006., стр. 525) Realizing that it is impossible to simultaneously maximize services to the consumer and minimize the costs of distribution, the task of marketing logistics reduces to defining and creating an efficient and effective logistics-chain. The potential chances of preserving the market attractiveness of a product and creating a different advantage, the modern corporation is more and more focused on solving logistics problems.

3. The products of human ingenuity as a function of optimization of logistics activities

The optimization of the effects of marketing logistics and the rationalization of the logistics process was greatly helped by the adoption of the EAN (*European Article Numbering*), a system of unique symbolization, coding and identification of products using bar-code technology and electronic exchange of EDI (*Electronic Data Interchange*) data. The advantages of electronic interchange of data and business documentation are obvious in practice, numerous, and reflective of the whole logistics-chain, contributing to efficient communication between different business partners and consumers on a national and global scale. It is evident that the effects of technological advancement of logistics are not tied only to the corporations which accept and bring innovations, but are in a great sense manifested in the spheres of interest of the consumers themselves.

Bar-coding technology is one of the most widely-used methods of electronic identification of products. Optically reading the code allows access to a database which provides all the useful information about the marked objects, so accepting an correctly using a unique EAN code provides a use of consistent standards as a basis of efficient

and secure exchange of products, services and information about them.

Following the GS1 standards, every logistics unit intended for transportation and distribution is marked by a unique serial number for shipping SSCC (*Serial Shipping Container Code*) as a required element of the GS1 logistics label during transport and/or storage of merchandise. That way the control of movement of logistics units are tracked in all parts of the supply-chain, and a complete history of the states and movements of merchandise in real time is made available. Reception of cargo in storage by scanning bar-codes from logistics labels from pallets or containers, all information can be extracted about their contents: type of merchandise, amount, production date, expiration date, and other important guidelines for further movement of goods through the warehouse to the end consumer. In the same way, fixed bar-codes can be used for identification and tracking of merchandise which is internally relocated.

More and more widespread use of bar-code technology enabled the development of EPOS (Electronic Point of Sale) systems of electronic payment for goods on the marketplace based on identifying the sold product by scanning a unique code on a terminal of a cash-register, which allows the identification of the entered price. After a successful transaction (payment received), POS software updates supplies, issues a receipt to the buyer, as well as a control receipt of the transaction of the consumer. The introduction of the system creates certain benefits of all interested parties in the logistics-chain. Aside from quick payment of the sold/bought goods, increased productivity of the workers employed at the place of the transaction and increased happiness of the buyer caused by the decrease in wait-time for the payment in the lines in at the store, certain benefits are made by the participants in the logistics-chain by getting reliable information necessary for tracking the movement of products on the sales-supply relation by acquisition of timely insights into: the current state of supplies in the retail store and the state of supplies per article in warehouses and distributive centers.

The further advancement of the EPOS system led to the introduction of EFTPOS (*Electronic Financial Transfer Point of Sale*) system for cashless payment on an electronic marketplace by transfer of funds from the checking account of the consumer to the account of the seller at the time of purchase. Scanning the card automatically identifies the consumer, their account number, the bank which they belong to, as well as the credit ability and liquidity of ownership of the card and

account. One of the upsides of this kind of system of payment is the fact that it eliminates the need for carrying around large sums of cash, especially when it is the case with larger acquisitions.

On the turn of the millennium a technology called RFID (*Radio Frequency Identification*) became more and more widespread. Its use spread to the level of identification of individual products. Unlike bar-codes, which are identical for large amount of the same products, the RFID transponder with a microchip as a carrier of data contains a unique serial EPC (*Electronic Product Code*), which meant that every single product of the same type has a unique identifier. With the installation and placement of RFID labels, as a transponder, „smart“ stickers or RFID plates (PCB-*Printed Circuit Board*) of different memory capacities and abilities of „persistence“ in different conditions, on packaging, pallets, containers or individual products can be identified and remotely tracked on every step of the transportation and storage, and the received data very often represent instructions for further actions with the real-time handling of goods. (Vujović and Jovović, 2009, page 23)

The quality and efficiency of decisions made within corporations and supply-chains in large part depend on the accuracy and timeliness of information on which they are based. Considering that radio-frequency identification technology provides information about the whole production and distribution process of goods in almost real-time, its use expands the ability of making high-quality and optimal decisions based on that information. With that in mind, RFID has a potential to increase efficiency, precision, and security of the process by improving the exchange of information which secures continued communication and the “refreshment” of data in real-time in the entire supply-chain.

Integrating RFID systems into already existing software applications, corporations such as applications for: ERP (*Enterprise Resource Planning*), SCM (*Supply Chain Management*) and *Warehouse Management Systems*, corporations gain the opportunity to track the positions and status of the natural resources and finished products in real time and make decisions based on information that is only a few seconds or minutes old (Zelbst & Sower, 2016, page 33) which serve a purpose of simplifying the processes, faster movement of goods from the production-line to the distributive centers, retail and end consumer, identification and elimination of bottlenecks and minimizing errors of the type and quantity of shipped goods. The ability of control and optimization of movement of goods is based on the

real-time ability of systems to secure not just verification of the authenticity and the contents of the logistics units, but also information about the status and location of the products, the state of the warehouse, the reception and requests for delivery in any segment of the supply-chain. The benefits of RFID technology in managing the supply-chain are determined through reduced supplies, improved visibility of “property”, the ability of making decisions in real time, the improved reversibility of logistics operations in cases where it is necessary to return the damaged or faulty products or objects which the consumer did not want, the easier recall of dangerous and harmful products, stopping forgeries and prevention of aging, (Zelbst & Sower, 2016, crp. 49) because the possibility of the less frequent merchandise being “forgotten” in some part of the warehouse and getting to its expiration date. Simply put, the proper implementation of RFID in logistics operations and systems of command gives corporations the ability to improve its agility, efficiency, and its effective functionality to a higher level, contribute to the improvement of performance of the organization, increase profitability and create rival advantages of global scales.

Even though during the 1980-s the practical application of the technology was dictated by the high price of RFID traces and RFID readers. It gained traction from the moment when, after its acceptance by the leading supply-chains in America and Europe, such as Wall Mart and Metro, the price of RFID labels continually went down. It is obvious that alongside a high price, the main reason for the relative slowness of implementation and mass-use in modern systems lies in the fact that bar-code technology for marking and identification of products was widely adopted for almost half a century, so the change of planning and building specialized information systems compatible with RFID technology demands large investments and a long period of time. Undoubtedly, this technology will gain full affirmation in the years to come.

The development of communication infrastructure which mobile phone networks and the Internet provide has enabled communication with far-away AVL (*Automatic Vehicle Location*) Fox devices palced on vehicles and the gathering, memorization and distribution of data to monitoring centers for overlooking vehicles and all interested parties in the supply-chain. FoxFMX (*Fleet Management System*) has created the possibility of detecting the change of state and location vehicles and remote changes of parameters in irregular and emergency situations during transportation. The location and status of

the transporter can be found on Google maps and satellite images, as well as by mobile phones with have GPRS (*General Packet Radio Service*) and a wap search engine, which is the case with most newer models. Alongside that, „electronic guards“, or the devices for tracking merchandise are built-it to containers allow the manufacturer and transporter to possess data about that state and location of the delivered load using GPS(*Global Positioning System*) technology at any time. The satellite networks emit the results of measurement of the containers – the temperature, humidity, and impacts which are transmitted to the control centers, and are then forwarded to interested parties.

INSTEAD OF A CONCLUSION

The emergence and development for super-automatized distributive centers, air-conditioners, super tankers, satellites, containers of various dimensions, robotic manipulators are just some of the modern technological solutions which enable progress in the fields of transportation, storage, and packing of merchandise. “Modern innovations suggest that automation is possible in the fields of logistics, not just in manufacturing which uses automation far more”. (Vujović and Jovović, 2009, page 26) In highly developed countries it is predicted that mechanization and automation in the area of handling goods can achieve relevant savings and create conditions for quality service of consumers with minimal expenses of distribution. Therefore, the trend of increased use of robots for executing manipulative operations of sorting, moving to loading docks and lifting cargo is envisioned in completely automated warehouses. “Smart factories”, which self-regulate and self-optimize the rhythm of production activities in real time, based on, say, the movement-speed of tankers with “repromerial” in the stormy waves of the Atlantic are in the process of development. RFID also provides a basis for “smart shelves” which are “learned” to automatically and continually 24/7/365 keep inventory and order new deliveries at the moment when supplies reach a certain level. As an advanced technological solution “smart shelves” give precise and reliable answers to the queries of which type of merchandise and in what quantities is available at any moment on an arbitrary shelf, as well as all shelves on interconnected storages, distribution centers and retail objects.

Possible uses of RFID systems in retail are seemingly endless and they bring with themselves elements of futurism. Also, the integration of RFID with retail POS systems provides not just improved control of supplies, so that piling up can be prevented, but also provides the possibility of

real-world automated customer purchasing. It is a completely modern method of purchase, where the cart, equipped with RFID readers, would be “enabled”, with the addition of individual products with integrated RFID tags, they would recognize every “added” article and create list of selected items which would be automatically billed using the customer’s credit or debit cards, and after exiting the retail object – all without the need for the physical presence of retail staff and cashiers, and without long queues and waiting for a special scanner and payment at the cash-register. (Zelbst & Sower, 2016, page 57) The fact that at the end of 2016 the first cashier-less supermarket was tested by *Amazon* in the American city of Seattle shows that the modern way of purchasing is not just a product of imagination. The same company started trial-runs of delivery-drones, so it is becoming clearer that in the near future the products of human ingenuity in the forms of robots, unmanned aerial vehicles, and driverless-cars will “learn” to interact with the World in ever more natural ways.

The revolutionary changes in marketing logistics are made possible by the appearance and ever-increasing use of multi-dimensional, so-called 3D printing and additive manufacturing. Note that the terms “3D printing” and additive manufacturing describe the process of making physical objects by adding layers of material – unlike conventional manufacturing processes in which physical shapes appear by either “removal” of material (as is the case with, say, pouring metal). 3D printing allowed an economically feasible and profitable production of small quantities of products; personalize manufacturing has approached the client, granting faster design of prototypes, shorter delivery times and lower costs of transportation and therefore the decentralization of manufacturing and distribution. 3D printing still is not mainstream. Currently, it produces only about 0.04% of global production and less than 1% of all products made in the United States of America. That being said, it is still a fast-growing industry which threatens to significantly disrupt the existing models of production, delivery, transport, retail, and systems of available distributive infrastructure. According to Gardener, on a global scale half a million 3D printers were delivered in 2016, twice as many as in 2015, and by 2020 that number is expected to rise to 6.7 million. The research of *PricewaterhouseCooper* has shown that in 2016 52% of American manufacturers expect to use 3D printing on large scales within the next three to five years, and 22% predict that, within the same time-span, it will have a devastating impact of the supply-chain. (Schwab, 2018, page 143) Unlike the technologies in the previous Industrial Revolutions, 3D printing has the potential to

reduce the exchange of physical goods and increase the manufacturing capabilities of every individual, which would spark revolutionary changes in the area of physical transportation of products from the place of initial production to potential centers of demand. That is how the trend of bringing manufacturing closer to consumption by nullifying the geographic divide of these two entities, which would significantly modify the current role of marketing logistics in the entire supply-chain. Although advanced technologies, by increased access to information in real-time, provide logistics managers the ability of dramatically improving the efficiency of logistics operations and contribute to the humanization of work, mostly by elimination the need for human intervention when it comes to doing routine activities, there is an open question of which direction ever more powerful technologies will transform the future of manufacturing, delivery systems and distribution of value in, and what fate awaits marketing logistics in the conditions of the 4.0 Revolution.

In the end there is an all-present concern of whether the era of the closing gap between digital, physical and biological spheres of products of human ingenuity will demean man and make him unnecessary “in the world of machines built by human hands”. Will advanced technologies, designed by people for people, truly make the lives of billions of people in the world, or is humanity predestined for an Orwellian future?

REFERENCES

- [1] Kotler, Ph., & Keller, K. L. (2006). *Marketing menadžment*. Beograd: Data Status.
- [2] Mogu li roboti ostaviti ljude bez posla? Preuzeto 25. aprila sa sajta <https://eubd.edu.ba/>
- [3] Schwab, K. (2018). *Shaping the future of the Fourth Industrial Revolution – A Guide to Building to Better World*. Geneva: World Economic Forum.
- [4] Sanders, R. N. (2017). *Supply Chain Management - A global perspective*. Hoboken : Wiley.
- [5] Stewart, M.W., (1965). Physical Distribution: Key to Improved, Volume and Profit, *Journal of Marketing*, Vol.29.
- [6] Vujović, S., & Jovović, M. (2009). Aktuelni trendovi u marketing logistici. *Ekonomski pogledi*. 3/2009. Kosovska Mitrovica: Ekonomski fakultet Univerziteta u Prištini. 15-28.
- [7] Zelbst, J. P., & Sower, E. V. (2016). *RFID for the Supply Chain and operations professional*. Second edition. New York: Business Expert Press.

SUMMARY

The products of human ingenuity of the Fourth Industrial Revolution provide the opportunity for those who are already fortunate enough to enjoy the advantages of previous Industrial Revolutions which formed, not only the design of new technologies, but also agile forms of management and extraordinary benefits that could fundamentally transform the way people live, work, communicate and relate to each other. More powerful technologies dramatically modify not only traditional production models, but also conventional ways of „delivery service” and the distribution of value. Implementation of the latest technological advances, primarily in the form of RFID technology, which is designed to provide continuous communication and „refresh” of real-time data in the entire supply chain, will result in raising the quality of logistics services to a higher level while simultaneously significantly rationalizing and controlling costs. Regarding this, RFID has the potential to increase efficiency, accuracy, and security of the processes by improving information sharing within the supply chain. Given that radio frequency identification technology provides information of the entire production and distribution flow of goods in almost real time, its application increases the ability to make high-quality and optimal decisions based on this information. Benefits of using RFID supply chain management include reduced stockouts, improved asset visibility, real-time decision-making capabilities, improved reverse logistics, counterfeit prevention, and prevention of obsolescence due to the possibility that less frequent goods remain „forgotten” in some part of the warehouse and „await” their expiration date. There is a growing trend in increased use of robotic manipulators and RFID-based smart shelves and smart factories, and retail stores without sales staff which eliminate the need to read and pay for products at cash registers have been announced. Revolutionary changes in marketing logistics are conditioned by the emergence and increasing use of multidimensional, so-called 3D printing that has the potential to initiate a trend towards approaching consumption production, which would significantly modify the current role of marketing logistics in the entire supply chain. Advanced technologies have not changed the essential role of marketing logistics, but the way of establishing traceability in the physical movement

of goods has evolved over time to the level of science fiction. Logically, we impose the question of the fate of marketing logistics in the conditions of the 4.0. Revolution. However, the more important question is whether advanced technologies designed by people for people will defeat Man and make him unnecessary in the world of machines built by human hands?