CONCEPTUAL CRM APPLICATION DATABASE MODEL IN THE FUNCTION OF PHYSICAL PRODUCTS DISTRIBUTION FOR KNOWN CUSTOMER

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Abstract

The second half of the twentieth century was marked by significant social changes caused by extremely fast technology advancement, particularly information-communication technology. Besides changes in the way of doing business they have also brought changes in human society in general. Together with mass media and educational systems, information-communication technology (ICT) has influenced the growth of the overall information awareness, knowledge and human self-consciousness. A modern human being is now acting as an individual with clearly expressed needs and attitudes to products and consumption. On the other hand, the human i. e. customer permanently encourages modern producers, i.e. suppliers, to change the relationship. This relationship change is known and is theoretically articulated through relationship marketing concept i. e. as customer relationship management. The outlined concepts strive to maintain communication with consumer as individual in order to achieve optimal satisfaction of individual customers' needs. Modern industry 4.0 is already able to produce individualised products for known customers with the use of robotic and programmable machines and CRM applications ensure by the means of communication, that is presale, sale and post-sale activities, the optimal individualized fulfilment of customer needs. The future certainly brings transition from mass production for unknown customer to production for known customer. This will also influence the change of product distribution in the way of moving from mass distribution to individualized distribution. This kind of change demands the adequate adjustment of CRM applications which must provide producer (supplier) and customer with key information about distribution as post sale activity. In that way it is necessary to observe the data coverage and develop an optimal database model in the function of achieving optimal satisfaction of individual customers' needs in the product distribution phase. From that standpoint it is

meaningful to talk not only about product distribution, but also about information distribution, and to observe distribution as information phenomenon.

Key words: databases, relationship marketing, CRM, product distribution, information-communication technology.

1. INTRODUCTION

The transition to the new 21. century symbolically presents the transition of modern industrial society to the new information era. This transition actually started in the second half of the twentieth century, and its initiator is contemporary information-communication technology. However, information-communication technology is just one of the technologies which induced fundamental changes in society. Namely, from the beginning of the last century, especially after the World War II, the technological development has enabled mass production which has brought to significant changes in the market relations. While in the part of industrial era, in the period of products shortage, the producer i.e. supplier was in the more favorable market position, in the developed industrial era the appearance of product surpluses on the market has brought the consumer to a better market position. This better market position of consumer asked for an appropriate market reactions of the supplier, in the way that in the first step the producers i.e. the suppliers tried to solve this situation with the sales promotion, that is with activities aimed at customers in the way to try to persuade the customers to buy products without knowing his actual needs. The effects of these efforts were usually short term since the consumer i.e. the buyer has learned to be careful and distrustful through the interaction with sellers, and it become harder to “persuade” the buyer to buy the product he doesn’t need. When the selling concept started to show its weakness, the solution was found in fairly and more acceptable for the customers, marketing concept. The main idea of marketing is to put the consumer instead of the buyer in the center of the interest, that is the needs of the customer, and instead of an intuitive approach to deciding about the product assortment, this problem is approached rationally in a way that explores the market and defines the needs of consumers, based on the knowledge of consumer needs to define a production program. This marketing approach proved to be successful, leading to the development and "perfecting" of marketing, and marketing has in principle become a fundamental business philosophy. The appearance of marketing is connected to the middle of last century.

It is important to bear in mind that technology development and society development are intertwined with each other and in the same time the technological development is pushing the social development and social development encourages technological development. Social development is manifested, among other things, in the growth of knowledge both of individuals and society as a whole, and the growth of knowledge affects the growth of self-awareness and the growth of population needs. The higher the level of knowledge and self-consciousness of an individual, the more his aspiration to individuality increases. The growth of the individuals’ needs has affected the evolutionary market processes, which manifested itself in an increase

in the level of market segmentation. The level of market segmentation has encouraged the evolutionary processes in marketing, so while marketing in the middle of last century followed and produced mass production, in the next period, in the 1970s marketing segmented the market and produced a growth in product assortments in line with market segments. In the eighties of the last century the focus of the marketing was on even more narrow market segments, i.e. niches, which leads to further grow of product differentiation and to further grow in both volume of production and product range. The plexus of industrial potential, the growth of awareness and knowledge, and through this, individual consumers' needs in the nineties of the last century, resulted in such a subtle segmentation of the market that segmentation became atomistic and reached the level of one on one relationship between supplier and consumer. In order to reach such fine segmentation it was necessary to develop or encourage the development of the new approaches in both the industry and marketing. The industry started to build systems which are capable to produce small or individual products for a well-known, personalized consumer within the framework of a new version of industrial production that carries the label industry 4.0. Marketing, on the other hand, has evolved into a new developmental version that carries the name of relationship marketing, whose motivation is the establishment and development of long-term partnerships with consumers. In order to keep consumers and to build long-term partnerships, relationship marketing puts the emphasis on permanent and continuous communication with consumers, all in order to create products and provide services that will optimally meet the needs of consumers. Given the volume and turbulence of modern market processes, such communication is impossible today without the use of information-communication technology or marketing databases as data hubs, i.e. information and knowledge about consumers' needs and behavior. The concept that was based on a systematic approach to the realization of relationship marketing primarily using the information-communication technology carries the name Customer Relationship Marketing, i.e. CRM. Consumer relations are managed in the framework of pre-sales, sales and post-sales activities to achieve the optimal satisfaction of consumers' needs and ensure consumer satisfaction. It is assumed that a satisfied consumer will be a loyal consumer, because in today's market conditions, it is increasingly difficult to win a new consumer, so business entities are more likely to form a barrier around their consumers to prevent competition in their takeover. Often with the individualization of products, manufacturers i.e. suppliers increasingly use services as means of creating additional value or barriers that will prevent consumers from leaving. One of the additional services that in that sense plays a significant role in creating a barrier around consumers, is an integral part of marketing i.e. marketing mix, is product distribution. It should be borne in mind that small-scale and individual production for the well-known buyer, i.e. consumer, radically changes the approach to the design, implementation and follow-up of product distribution processes. It is precisely the problem of distributing the product to a known consumer in the new information age, which is an integral part of the small-scale or individualized production for the well-known consumer, in the focus of the conducted research which the results are presented with this paper.

In addition to all the above, it is worth pointing out other dimensions brought by the new information age, which ultimately have repercussions for changes in the

principles of product distribution. First of all, changes in distribution will affect the digitization of existing physical products as well as the emergence and development of new digital products resulting in a rise in the share of digital products in the total volume of products on the market. Therefore, a significant change will occur in changing the focus of society from physical to virtual distribution. One of the major factors of change is the addition of intelligence to physical products in the form of nano-computers, which will be reflected not only in the evolution of the concept of intelligent consumer electronics, or in the broader sense of the Internet of Things (IoT), but also on the principles of the product distribution in their lifetime, but also after their lifetime when it is time to dispose and recycle them. In this sense, the significance of automation and digitization of a part of product distribution will grow, i.e. the emergence and development of intelligent distribution. Furthermore, a tremendous impact on distribution will also be the growth of production capacities that produce physical products with the help of digitized knowledge, i.e. with the help of machines controlled by the artificial knowledge. Such products instead of large storage or distribution centers and large transport capacities will require mobile flexible transport systems that will ensure just-in-time product distribution from the manufacturer to the consumer. Ultimately, the important role for distribution and its further evolution certainly has the expected increase of the share of electronic business, especially electronic commerce in the total mass of business, i.e. trading in the new information age. All of this implies that the distribution we know of today will not be able to meet the needs of the industry, i.e. the society of the modern information age, so science faces the task of finding new solutions in terms of distribution evolution where digitization of data flows within the distribution framework will not be sufficient in terms of satisfying the needs of transformed way of action both in production and society as a whole, but the distribution will seek the fundamental changes that will need to be scientifically explored and modeled. The conducted research was going in the above described direction.

2. RESEARCH METHODOLOGY

Particularly since the Second World War, human society is in the period of intensive technological development, and this technological development from the roots changes the principles of functioning of the entire society. For the development of modern industrial society and its transition to the new era, information and communication technology is particularly important, so it is not surprising that the new era is often referred to by this technology - information age. Evolutionary technological processes have a significant influence on the changes in society so that with the growth of the technological potential of the society the human needs have also grown. One of the directions in which modern society is developing is the significant growth of knowledge and self-consciousness of contemporary people, which leads to an increasing need for individualized and personalized products. Principally, the industry 4.0 has the ability to respond to these challenges in terms of production, and relationship marketing, i.e. CRM as its application generally allows the discovery and meeting of individual consumer needs. However, since the concept

is set to its realization, it is often a long way to solve a whole set of specific problems. One of such problems is a problem of optimal distribution of individualized and personalized products produced according to needs of known customers and with use of the possibilites provided by the industry 4.0. Given that this is a complex problem that basically changes the distribution principles that existed since the mass production, it can be seen from several perspectives, or through more problems. One of the problems is the way of organizing the data related to product distribution within the CRM system, which reffer to the product distribution to known customer. In relation to this, it is possible to set the following hypothesis:

It is possible to define a database model of CRM application which allows the distribution for known customer.

In relation to the outlined hypothesis, the defined research goals are as follows:

1. Overview the term of relationship marketing and its referrence to the concept of customer relationship management.
2. Overview the evolutive processes in society and how they reflect on the modern industrial production.
3. Overview how the changes in the modern industry reflect on the modern distribution.
4. Improve the existing CRM systems, i.e. their data base with the principal modelling of the database wich allows the distribution of individualized products for known customer.

Several scientific methods have been used for this research and among them significant meaning have deductive method, abstraction method, classification method, historical method, system analysis method, analogy method, specialization method, aggregation method, generalization method, composition method, descriptive modelling method, along with some other methods. The results of the conducted research are based on secondary and tertiary data sources, although the presented research findings are a part of a wider primary research which studies the problem of relationship marketing interaction, i.e. customer relationship management with development trends in industry, therefore the results of this research can be seen as the results of primary research not covered in this paper. Especially this applies to the defined final database model in the function of distribution of individualized products for known customer. Consequently, this work is the result of continuous research efforts by authors aimed at learning the changes brought about by the new information age or era of knowledge.

3. RESULTS OF RESEARCH

Since it was developed, in the middle of the last century, marketing has gone through several stages of development. The evolutive processes in marketing are conected to the depth of the market segmentation, so one can talk about the evolution of marketing from mass marketing, segmented marketing, niche marketing, and micro marketing, or marketing 1:1, which evolved into relationships marketing at the end of the last century. (Meler & Dukić, 2007, p. 82) According to Kotler: „Relationships and NetworksTransaction marketing is part of a larger idea called relationship

marketing. Relationship marketing aims to build long-term mutually satisfying relations with key parties - customers, suppliers, distributors - in order to earn and retain their long-term preference and business.“ (Kotler, 2002, p. 7) The same author continues: „Effective marketers accomplish this by promising and delivering high-quality products and services at fair prices to the other parties over time. Relationship marketing builds strong economic, technical, and social ties among the parties. It cuts down on transaction costs and time. In the most successful cases, transactions move from being negotiated each time to being a matter of routine.The ultimate outcome of relationship marketing is the building of a unique company asset called a marketing network. A marketing networkconsists of the company andits supporting stakeholders (customers, employees, suppliers, distributors, university scientists, and others) with whom it has built mutually profitable business relationships. Increasingly, competition is not between companies but rather between marketingnetworks, with the profits going to the company that has the better network.“(Kotler, 2002, p. 7) From the above outlined it could be concluded that relationship marketing tranforms the essence of the marketing raltions and moves them from the sphere of hostilitiy among consumer and producer to the sphere of partnership wich ensures mutual satisfaction, as well as the satisfaction of all factors involved in the process of creating and exchanging products, or participating in the marketing network. Regarding relationship marketing, the synergistic activity of consumers and small producers, Harbor states: „Relationship marketing is a sales approach focusing on building a long-term relationship that benefits both the customer and the business. Some of the techniques businesses use in relationship marketing include providing consistently excellent customer service, getting to know the individual and anticipating their future needs, and offering discounts and special perks through loyalty programs for repeat customers. The rise of the internet gives small businesses ample opportunity to build relationships and engage with customers by inviting them to visit their websites and comment on blogs, as well as interact on social media sites such as Facebook, Twitter, Pinterest, YouTube and LinkedIn.“ (Harbour, n.d.)

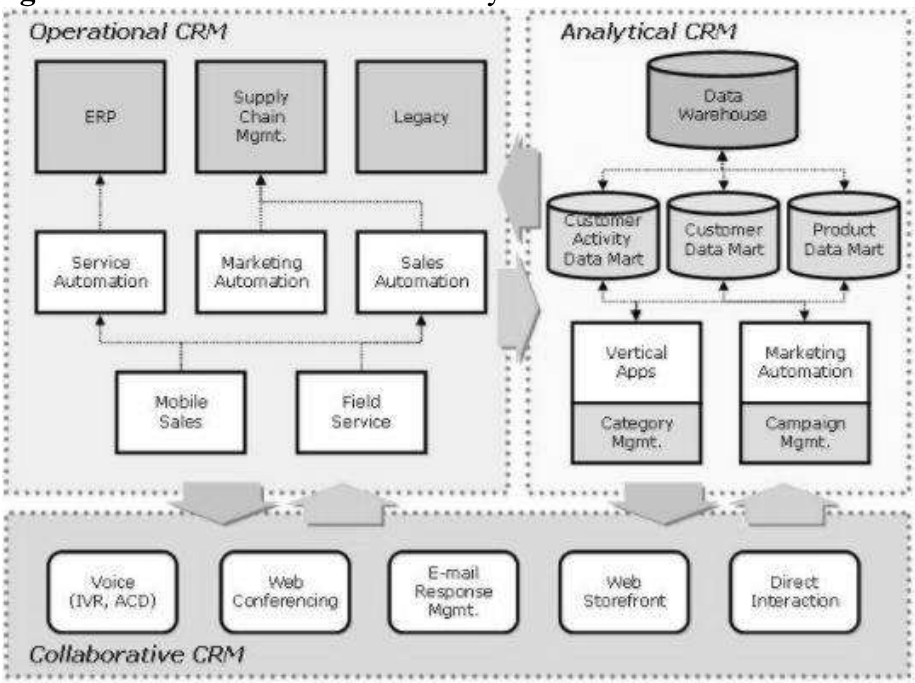
The instrument relationship marketing uses to develop long-term relationship between consumers and producers is the concept of customer relationship marketing. The following can be explained in a simplified way for the concept of consumer relationship management: „CRM is the acronym for customer relationship management, a phrase describing web-based computer systems or software that helps businesses organize and provide marketing, sales and customer service assistance. Data collected includes information about customers' purchasing history, demographics, details of purchases and returns, and anything that will help salespeople assist the customer in future interactions. Much of this data must be entered by the sales team. CRM systems are also mined to identify new sales leads and potential new product or service areas.“ (Harbour, n.d.) Unlike this general understanding, CRM can also be understood significantly expanded: „Customer relationship management (CRM) is a term that refers to practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle, with the goal of improving business relationships with customers, assisting in customer retention and driving sales growth. CRM systems are designed to compile information on customers across different

channels -- or points of contact between the customer and the company -- which could include the company's website, telephone, live chat, direct mail, marketing materials and social media. CRM systems can also give customer-facing staff detailed information on customers' personal information, purchase history, buying preferences and concerns.“ (Rouse, 2014) If it comes to CRM as application, for such software solution could be stated the following: „CRM software consolidates customer information and documents into a single CRM database so business users can more easily access and manage it. The other main functions of this software include recording various customer interactions (over email, phone calls, social media or other channels, depending on system capabilities), automating various workflow processes such as tasks, calendars and alerts, and giving managers the ability to track performance and productivity based on information logged within the system.“ (Rouse, 2014) Usually CRM application contains the following components:

- Marketing automation: CRM tools with marketing automation capabilities can automate repetitive tasks to enhance marketing efforts to customers at different points in the lifecycle. For example, as sales prospects come into the system, the system might automatically send them marketing materials, typically via email or social media, with the goal of turning a sales lead into a full-fledged customer.
- Sales force automation: Also known as sales force management, sales force automation is meant to prevent duplicate efforts between a salesperson and a customer. A CRM system can help achieve this by automatically tracking all contact and follow-ups between both sides.
- Contact center automation: Designed to reduce tedious aspects of a contact center agent's job, contact center automation might include pre-recorded audio that assists in customer problem-solving and information dissemination. Various software tools that integrate with the agent's desktop tools can handle customer requests in order to cut down the time of calls and simplify customer service processes.
- Geolocation technology, or location-based services: Some CRM systems include technology that can create geographic marketing campaigns based on customers' physical locations, sometimes integrating with popular location-based GPS apps. Geolocation technology can also be used as a networking or contact management tool in order to find sales prospects based on location. (Rouse, 2014)

CRM system is structurally defined on Figure 1.

Figure 1. The structure of the CRM system



Source: http://ithelink.net/category/Social?page=4

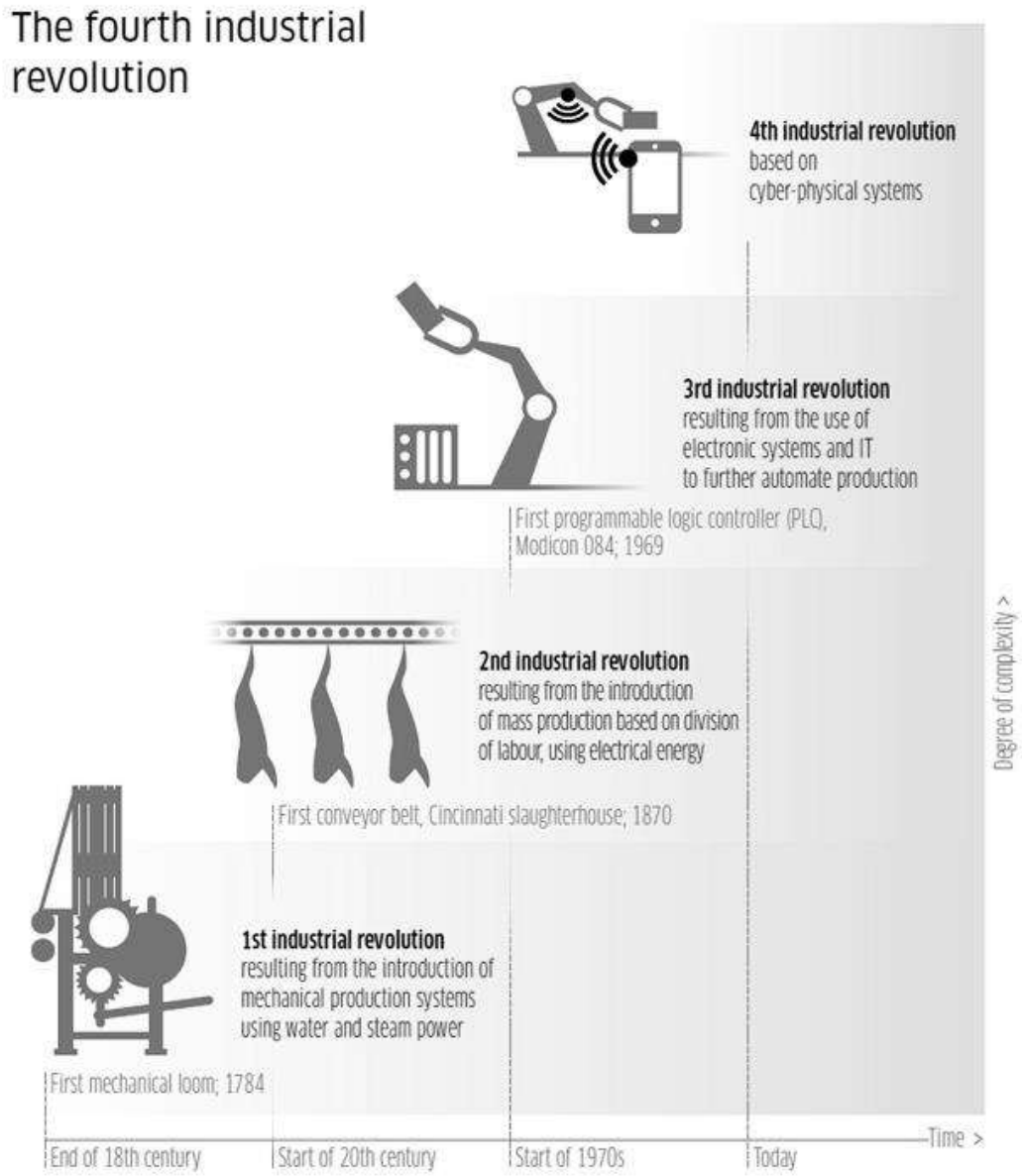
As it is shown in Figure 1., as a part of the back office, within the operational CRM, a supply chain management segment plays a significant role. The reason for this should be sought in the fact that is emphasized through the relationship marketing definitions, namely that relationship marketing tends to build marketing strategic alliances or marketing networks that connect to the value chain of consumers and all those involved in product creation. CRM as applicative element in relationship marketing in it structure, as it is shown in Figure 1., seeks to manage the marketing network. Collaborative CRM ensures interaction with customers through the customer touch point, while operational CRM supports collaborative CRM and ensures the functioning of the strategic alliance. The function of analytic CRM is to ensure the information base for the maintenance of the marketing network, i.e. to provide management with key information necessary to marketing oriented management of the business. Accordingly, the supply chain management, aims to ensure the operation of the marketing network and to open the way for successful problem solving of the distribution as one of the key marketing mix elements. The CRM system is based on principles and is also in the function of relationship marketing.

Otherwise, the relationship between relationship marketing and CRM could trivially be seen in the following way: „While relationship marketing is a sales and marketing concept, CRM refers to the tools used to carry out the concept. Relationship marketing is implemented as a strategy and includes activities such as identifying long-term sales and retention goals, public relations, marketing and advertising campaigns. CRM includes the operational tasks that support the relationship marketing strategy. Acitivities may include gathering data about the customers, then organizing and analyzing it to create target customer profiles. CRM data is also effective in finding opportunities to create special offers to reward long-time customers for their loyalty, further building the relationship. (…) Relationship

marketing seeks to increase sales by building trust and engaging customers. Using a CRM system effectively allows a salesperson to quickly and consistently deliver what customers are looking for with each and every interaction, because their preferences and buying history are recorded. The system benefits the customers, because they see the business "knows" them. CRM systems coordinate, automate and deliver online and offline advertising and marketing activities that help build the long-term customer relationships that are crucial to a successful relationship marketing strategy."(Harbour, n.d.)

As it is already mentioned, the marketing is the result of the evolutionary processes which were happening during the industrial age, and these processes have also influenced the changes in marketing. Concerning the emergence and evolutionary processes in the industrial age, and the transition of industrialization in the information age, Marr states: „First came steam and the first machines that mechanized some of the work our ancestors did. Next was electricity, the assembly line and the birth of mass production. The third era of industry came about with the advent of computers and the beginnings of automation, when robots and machines began to replace human workers on those assembly lines. And now we enter Industry 4.0, in which computers and automation will come together in an entirely new way, with robotics connected remotely to computer systems equipped with machine learning algorithms that can learn and control the robotics with very little input from human operators. Industry 4.0 introduces what has been called the "smart factory," in which cyber-physical systems monitor the physical processes of the factory and make decentralized decisions. The physical systems become Internet of Things, communicating and cooperating both with each other and with humans in real time via the wireless web (Marr, 2016). Evolutionary processes in the development of the industrial age are shown in Figure 2.

Figure 2. Evolutionary processes in the development of the industrial age



Source: https://www.kaercher.com/int/inside-kaercher/newsroom/kaercher-stories/industry-4-0.html

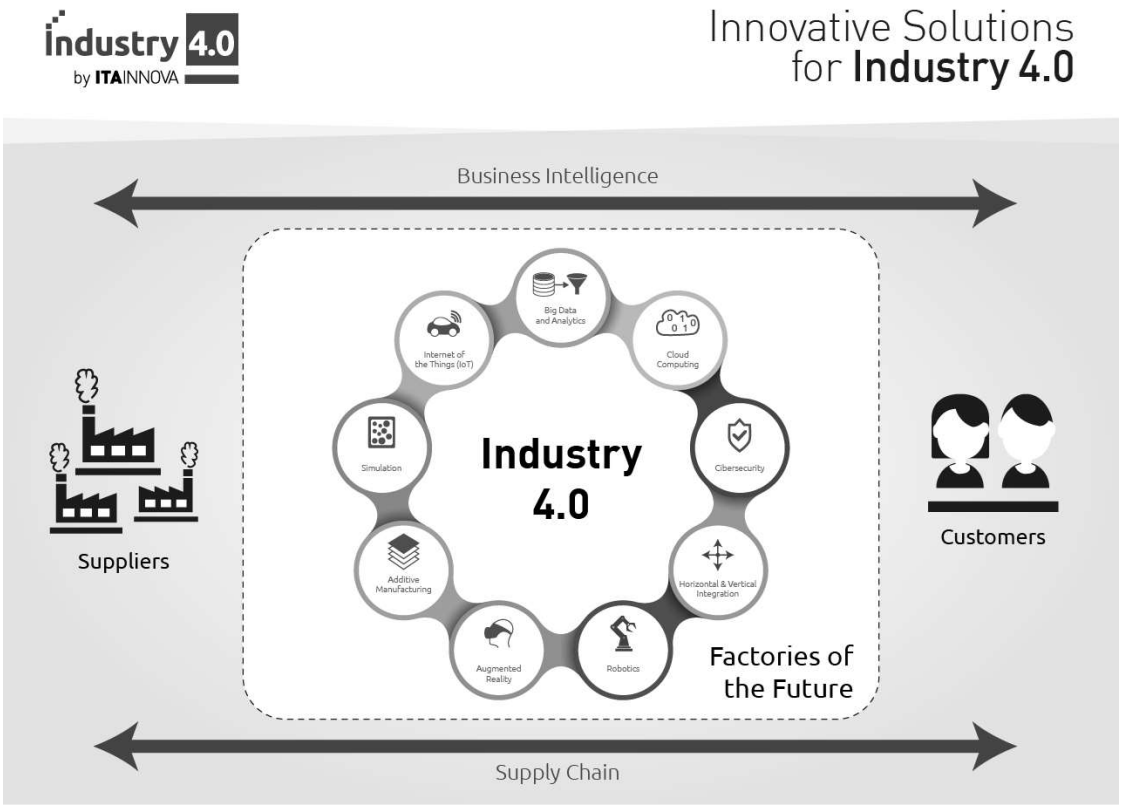
In order to state that a system of business entity operates according to the concpet of the industry 4.0, the system must include:

- Interoperability - machines, devices, sensors and people that connect and communicate with one another.
- Information transparency - the systems create a virtual copy of the physical world through sensor data in order to contextualize information.
- Technical assistance - both the ability of the systems to support humans in making decisions and solving problems and the ability to assist humans with tasks that are too difficult or unsafe for humans.

- Decentralized decision-making - the ability of cyber-physical systems to make simple decisions on their own and become as autonomous as possible. (Marr, 2016)

The shema of the industry 4.0 is shown in Figure 3.

Figure 3. The shema of the industry 4.0 concept



Source: La importancia de la Supply Chain en la Industria 4.0 ITAINNOVA Instituto Tecnológico de Aragón
http://www.itainnova.es/blogs/soluciones-innovadoras-en-logistica/la-importancia-de-la-supply-chain-en-la-industria-4-0/

As Figure 3. shows, the one of the important factors of the successful application of the industry 4.0 concept, i.e. the application of relationship marketing on its fundamental level, is the optimal functioning of the supply chain. However, the supply chain management needs to evolve according to evolutionary processes that industry 4.0 brings. In this sense it is important to acknowledge the fact that supply chain management in the age of mass, or segmented marketing if a lot different than the supply chain management in the age of relationship management which works in the interaction with industry 4.0, i.e. with marketing that focuses on the one-on-one relationship between the supplier and consumer. This doesn't mean that in the relationship marketing age, i.e. the new information age there won't be products that will be massively produced, but the mass production will in a number of spheres be replaced by the small-scale production, i.e. individualizes production or production by order. Namely, the new age and new technologies enable different approach than

the approach used in the age of mass production. The production of today is in a way returning to the fundamental principles of craftsmanship when the products were mainly produced by order and for the well-known consumer. This type of production used to be possible because relatively small circle of people (usually noble gentlemen) had resources to buy the products tailored specially for their needs. Today the capabilities of the computer aided machines enable individualized production. Along with that, the awareness of people has changed significantly in the last fifty, and especially twenty years, and there is relatively high consumer awareness about the individuality of the middle class population, and also the need to behave according to the principles that have been reserved exclusively for the wealthy consumer layer in the past. In addition to the growth of middle-class purchasing power, what is significant is the ability of the new industry to produce individualized products at a broader consumer base at acceptable prices.

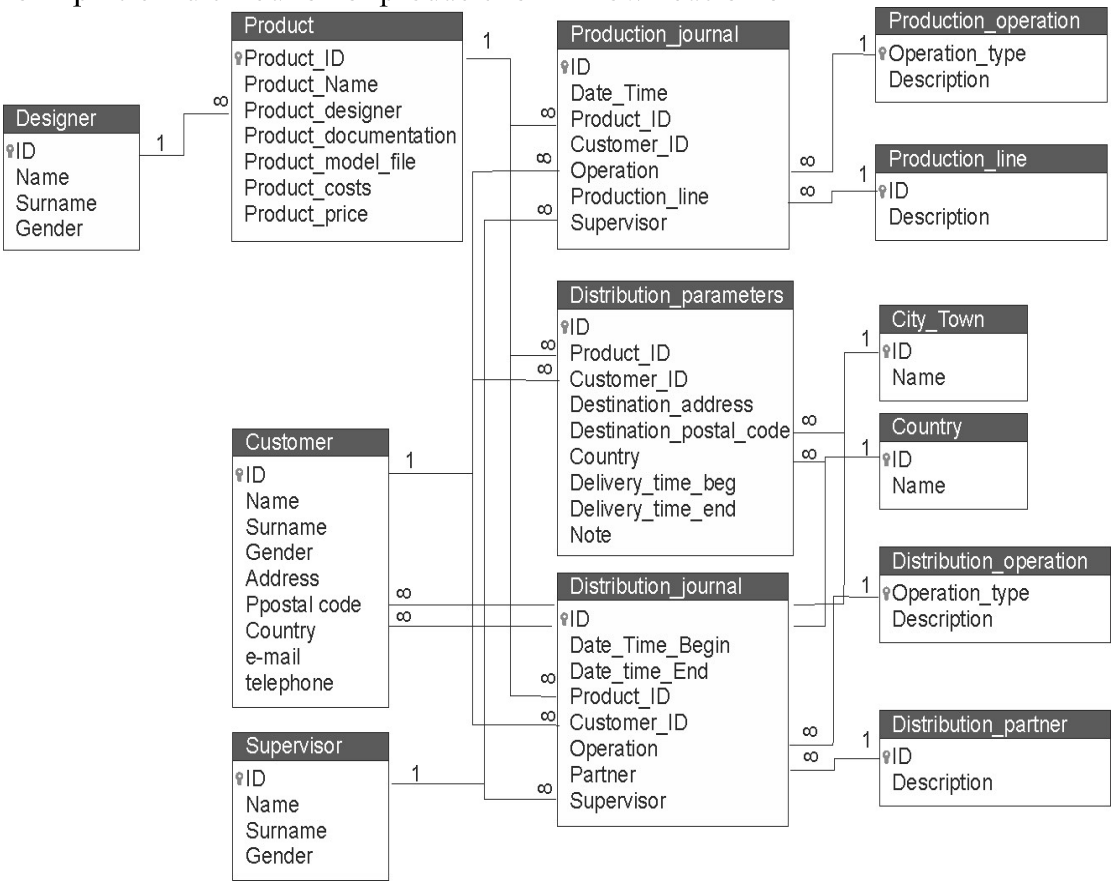
The very course of the production of individualized products according to the principles of industry 4.0 with the application of the principle of relationship marketing takes place according to the following flow chart:

1. Communication with the consumer
2. The consumer shows his interest
3. The negotiation with the consumer which result with the idea design of the product
4. Design of the 2D/3D product model – product virtualization
5. Product presention to the customer with the use of virtual reality
6. Model alignment with the customers' desires – finishing of the 2D/3D model
7. Obtaining consumer consent for product manufacturing
8. Creating CAM solution for product manufacturing
9. Product manufacturing for the known customer
10. Storing 2D/3D models and CAM solutions in data repository
11. Preparation for product delivery
12. Transport and product delivery to the customer (Obraz, 2016)

The entire process described with the outlined hologram is in the system of relationship marketing application tracked through CRM software solution. The application itself takes care of the interaction with the consumer through the communication process and the recording of 2D/3D models as well as CAM solutions. The CRM system is a complex software solution with extensions as CAD/CAM programes, virtual reality programes, dana warehouse programes, and also business intelligence programes. With regard to the focus of the research on all the applications that make up the integral CRM software system a particularly interesting part is the product distribution process. Since the product distribution process management is one of the CRM software application segments that experiences the most significant changes in the concept of individualized production within Industry 4.0, as it is a product distribution concept of 1: 1, its application and integration into the CRM system requires the elaboration of a database model that supports tracking the product distribution process along with the applications potential provided by geolocation systems. Database model in its essence presents principled platform on which specific

software solutions could be devloped, i.e. modules in the function of the part of a CRM system which is aimed for support and/or automation of supply chain management. Figure 4. shows principle database model of a part of CRM software solution which is designed for phisical distribution of products for a known customer.

Figure 4. Principled database model of a part of a CRM software solution designed for a phisical distribution of products for a known customer



Source: authors' work

4. CONCLUSION

Thanks to technological development precisely, modern society found itself in a state of good welfare in the middle of last century, as industrial production potentials were able to produce enough products to meet the needs of the population of that time for industrial products. Of course, it should be taken into account that this is a period in the history of human society when the needs of the population were relatively low and uniform, so this is the period of mass production of products with a relatively small assortment. However, this situation led to significant changes in market conditions because the buyer, i.e. costumer practically for the first time from the industrial era came to a better market position than the manufacturer. Manufacturers tried to respond on this condition with methods of sales promotion, i.e. with finding the optimal ways to persuade the customer to buy the products. Since these efforts

haven't been giving good results in long-term, because the buyers were becoming more careful, and it was harder and harder to persuade them to buy products, the solution was found in the new paradigm that was focused on the customer, not the buyer, i.e. the needs of the customer. This new paradigm, i.e. marketing, started from assumption that if the products which customers actually need are produced, then it won't be necessary to persuade them excessively to buy the products. That's why marketing puts research of customers' needs into the origin of its activity, and as a result of its action, it is a product that meets the needs of consumers.

In the time marketing was originated, the needs of customers were relatively low and limited, so with the research of customers' needs through marketing research, marketing strived to learn about the average needs of the average consumer set. The mass production that then prevailed produced average products for average consumers. As time went by, and as industrial potentials grew, mass production for the primary consumer set gradually replaced production for smaller market segments. This change in any case also contributes to the significant strengthening of the middle class and its purchasing power in developed industrial economies. The growth of the general level of information, knowledge and self-awareness of people, especially in the nineties of the last century, significantly contributed by the global information network Internet, brings ever more significant emphasis on the individual needs of individual consumers, to which marketing responds with the new developmental version or marketing 1:1, which is soon becoming a relationship marketing. As already pointed out, the individual needs of consumers, which in a way represent a return to the original production principles that were present in the period of craftsmanship, and a kind of return to the original marketing principles that initially advocate satisfying the individual consumer needs, has enabled the development of new technologies and new manufacturing paradigms united by the concept of industry 4.0. Industry 4.0 enables production of products for a known customer. Contemporary CRM systems as applicative level of relationship marketing enable permanent communication with customer and through that learning about and satisfying the needs of customers. Consequently, modern times, thanks to the potential offered by the modern industry and information and communication technology, enable the realization of a paradigm of individual production at reasonable prices for the known consumer, thus radically changing the way the modern society functions. Certainly mass or large-scale production will not completely disappear, but it is expected that its share will decline more and more with the simultaneous growth of individual production for the well-known customer. Changes in the production mode also require changes in product distribution. The problems of change induced by new concepts in production and their impact on changes in distribution were the focus of this research. The research has offered a solution to the fundamentals of the CRM system component that dealt with the distribution of products under the new business conditions through a principled database model of a part of the CRM software solution intended for the physical distribution of products to a known consumer. These research findings are the basis for further exploring and offering scientific solutions to the advancement of CRM software systems in terms that define the framework set by Industry 4.0 potentials.

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