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Numerical Technologies In Economy

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ABSTRACT

This article deals with the several key technologies of the numerical economy, such as BIMPLM,IoT, SRM, BIG DATA.. Analyzed the advantages and the risks of the implementation of numerical technologies in economy and the role of numerical technologies in the development of economy.

KEYWORDS

Numerical economy, information technologies, economy, business.

INTRODUCTION

Today we entered to the era of cardinal changes and in near future the main fields of life such as economy, management, science, security systems of the humanity may take new forms and meanings. People are changing and accordingly changes the forms of the social life. One of the central features of the community of the future will depend on numerical technologies which affects to the every day life and existence of the people. It can be

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explained by the rapid development of the micro electronical,, information and telecommunication technologies.. So we can predict that numerical technologies in near future will dominate in all spheres of human activity. In some respect we can consider that it is a kind of chain which is interconnected: using technologies, using means of mechanisation, and using numerical technologies. (numeralization).

Truly, numeralisation is the core of numerical economy. Although, numerical economy is a term with more broader notion. Numerical economy also has its varieties, but the most widespread definition of numerical economy is the following:

Numerical economy – is the economy which is characterized with such peculiarity as to satisfy maximum needs of its participants due the usage of information, including personal information. It becomes possible owing to the development of information – communication technologies and finance technologies, as well as availableness of infrastructure which together supplies full collaboration of all participants of the economic activity, subjects and objects of the process of creation, division, exchanging and consuming of goods and services.[1.p.12]

Numerical economy, essentially, is the opportunity of creating numerical models of the real world economy, which on the base of measuring of modern technologies makes it possible to notify various resources in real economy and processes which occurs with these resources.[2,p.18]

Information technologies help to overcome high rate of negative spending. For the several branches this factor is crucial in the market economy. For some branches of economy in the market this factor is considered as crucial. At present for some companies there is no way but reducing spending by using IT solutions. The advantages of numerical economy are the followings:

- The growth of productivity of labor
- Simplifying centralized management
- Taxation and control
- Global automatization and standardization all producing processes: industry,education,medical system,social sphere etc.; reducing bureaucracy and corruption, developing numerical currency and renouncement of physical payment system etc.[3, p.460].

Most essential risks of using technologies in economy to our mind threatens to national cybersecurity in different spheres of social life of the country – finance,, management of economy etc; threat to the society is robotization of production and the sphere of services in shifting to numerical economy which may rise the level of unemployment and lead to poor human and personnel potential. Furthermore, today more representatives of business sphere accept the use of information technologies as opportunity of rising efficiency of production and services. It is a kind of reflection of a certain level of development of economy as a whole: growing the meaning of competition among companies, companies seek additional resources for rising effectiveness of business. Information technologies – a kind of tuning for business organizations for reaching maximum effects. We shall analyse below some key points:

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1. Building information modeling BIM (informational modeling of the building)- it a process of creating and managing information about construction project in its life cycle. One of the key results of this process is information model of the building, numerical explanation of every aspect of the building under construction. BIM unites all information about every component of the building as a whole unity and makes it possible to anybody to obtain information for any purpose, for example for more effective integration of different aspects of design. So, reduces the risk of making mistakes or non standard cases and minimized spending. The data of BIM can be used for the illustration of all life cycle of the building, from creation up to projecting and up to demolishing of the building and re use of construction materials. With the help of warning system of noticing conflicts BIM saves appearing mistakes in different stages of compiling the project and directly in construction. Computer modeling and projecting is actively used constructing buildings and in designing them. BIM is future of the projecting and long term managing constructing buildings, as modern equipment, programmed supplementation and cloud technologies open new opportunities for growing needs of construction sphere. According to out prediction the use of BIM in near future becomes more habitual , than today and leads this sphere to a principally new advanced qualitative level which is effective and profitable.
2. Product Lifecycle Management. PLM (managing lifecycle of the product) is generalized handling of all information related to projecting , producing, storage and final utilizing industry goods. PLM can be considered as a) storage of all information, which affects to the product; b).process of communication of interested participants of the product: mainly marketing , projecting, producing and servicing. The PLM system is a place where meets all information about the product where it is made , and where it is ahead in what form suitable for its production and further processes. Some analysts use PLM as a general term which includes engineering (automatic projecting system) . But the instruments of collecting information data about the product includes testing processors, electronic tables and graphical programs , instruments of analyzing requirements and estimation of the market, reports about field incidents and even electronic letters. To our mind PLM instrument is oriented exceptionally on managing data, which include all life cycle of the product , independently, how these data is being collected. PLM also can serve as central storage of secondary information which catalogs, feedbacks of clients, marketing plans, archived graphics of the project and other information which is obtained in life cycle of the product. Programmed supply of PLM can help people better to understand how to project, produce and serve the product. Most

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consumers value the openness of the information on the product.

3. Internet of Things. IoT (Internet of Things) – this concept in which Internet is evaluated from the uniting computers and people to the unity of (clever) objects/ things [4.p.29]. In its broadest sense the term " Internet of Things" includes all which is connected with Internet, but it is often used to denote objects which "talk" with each other. Internet of Things makes it possible to the equipment connected to the closed private internet unities to communicate with others and unites these networks. It gives an opportunity to the equipment to exchange data not only close separated networks but between various types of networks and create much bigger interconnected world. In everyday life Internet of Things represented as technologies and equipment such called " clever house" – these are sensors of movement, clever sockets, clever home appliances which can be operated from the distance and centralized with the help of smartphones. In industry today intellectual sensors are often used in production lines in which these sensors controls the whole production process and can rise the efficiency of it due to the reduction of waste.
4. Custom Relationship Management. CRM (the system of management relationship with clients) includes programmed supply for the organisations which serves for the automatic strategies of connection with clients, particularly, for the rise of the selling level, optimization of marketing policy and improving quality of services due to storing information about clients and the history of connection with them. CRM system makes it possible to create healthy communication between organizations and with its consumers.
5. Big Data (big information) – the term explains large amount of information as structured and unstructured which are circulated in business and helps to create new opportunities for the growth in the process of uniting and analysis of large amount of information in this or that aspect of activity. Due to these information it is possible to predict and warn big spending, saves time for taking decisions owing to automatized cultivation of big information. This technology finds its usage in private and state sectors in economy. Summing up modern world with its complex and complicated economic conditions heading to digitalization, as well as in economy. Blockchain, internet banking, big data, numerical currency have become usual case for us, in one word economy is dependent to these technologies. As it is said to each news in technology offering various advantages brings some problems as well which the solution of these problems and risks for the scientists to solve in future.

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