

# Big Data and the Next Information Revolution

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*The concept of permanent revolution was formulated in the XIX century by Karl Marx and became a subject of constant debate in humanities circle. In contrast-scientific and technological revolutions are natural components at all steps of human development. Their permanence is commonly recognized imperative, followed by numerous confirmations with a convincing inevitability. Information and industrial revolutions taking place now in the world are such evidences. Experts declare today the fourth industrial revolution. Peter Drucker farly predicted the fourth information revolution. It is interesting that the most important trait of both revolutions is the artificial intelligence which functions in the sphere of Big Data and Internet of Things. The application field (not the only) is the economy-its structure and content. Experts state the emergence of information capitalism and the information economy – innovations obtaining special and revolutionary traits. The article is devoted to analysis of main components of the innovations and offers the ways how they should be reflected in the curriculum for modern economists and managers.*

**Keywords:** information revolution, industrial revolution, information capitalism, Big Data, curriculum.

It is believed that the modern world has gone through several stages of development of capitalism. The natural evolutionary way trade Capitalism appeared to ensure that the successful functioning of financial capitalism emerged. Industrial capitalism came into the world economy through the struggle and the resistance of the working masses thanks to the industrial revolution. Today, researchers are talking about the information revolution, as a fait accompli and we consider a necessary consequence of this phenomenon: information capitalism.

At the end of the last century, Peter Drucker in his article "The next information revolution" [1] stated: "So far, for 50 years, the information revolution has centered on data—their collection, storage, transmission, analysis, and presentation. It has centered on the "T" in IT. The next information revolution asks, What is the MEANING of information, and what is its PURPOSE? And this is leading rapidly to redefining the tasks to be done with the help of information, and with it, to redefining the institutions that do these tasks." After almost two decades, we see how visionary was this prediction. IT giant Google has become a world leader in the use of market information processes and its experience already provides a basis for generalizations. Chief Economist at Google H.Varian in a series of recent publications [3,4] analyzes business activities of their company, and notes that from the outset, with the advent of the computer as a means of implementing the

transaction - fundamentally changed not only the accumulation of data and the use of processes, but also own decision ecosystem.

Decision ecosystem is largely determined by the provision of information processes, representing the information lifecycle - from data collection, storage and processing them - pending a decision on the basis of information obtained from the data collected. Today, in this environment are actively developing Big Data.

With the advent of big data decision-making environment changes reached fundamentals of the global economy - the processes of capital accumulation. Data become an asset. Among large IT data are converted into an instrument of profit directly from the information processes. This business is completely of IT origin: automatically search, data collection and storage, processing, search for users - potential customers, delivering them with information, account activity and payment from customers. Big data demonstrate the basic property of IT instruments - adding value: data on the Internet are not worth anything, but after going through the algorithms for big data acquired consumer properties information may interesting to advertisers. For this feature, advertisers pay generously. Shoshana Zuboff [2]: "I explore the proposition that 'big data' is above all the foundational component in a deeply intentional and highly consequential new logic of accumulation that I call **surveillance capitalism**. This new form of information capitalism aims to predict and modify human behavior as a means to produce revenue and market control."

Internet users - citizens of the virtual state, which is ruled by the information capitalism - are totally rightless: they are not asked when one picks up their data and - without any consent they collect information in the form of advertising. How dumb slaves they dutifully perform their duties: they are clicking on the interesting icon in the social networks and marketplaces. There is nothing forcing them to act in this manner - except formed need in comfortable collection the information you need to know. So they hope to reduce the level of uncertainty of the existence. But freedom of the uncertainty is not freedom at all, or freedom of choice in the surveillance capitalism. Beneficiaries of involuntary information servitude do not care about the creators of their capital: they do not care who they are, what are the circumstances of their existence. Their actions are directed primarily to users attempting to tie them stronger to the network by offering new search features or unusual sources of information forcing them to increase the number of clicks, and so to increase their capital.

However, Google deliberately ignores the existence of the consent of the monitored transactions for the discreet monitoring: a large part of companies and citizens "lend" their data unknowingly. For others - the trials are planned in the company's part of the overall business process and the possible costs of the super-lawyers obviously overlap obtained profits.

This manner of doing business (popular and for other mega-integrators) helped to accelerate some world economic processes and the entire economic picture of the world has changed dramatically over the past decade. According visualcapitalist.com - among the 5 largest companies in the world by capitalization was only one in 2006 related to IT - Microsoft. Other places confidently held companies representing traditional business: oil and the TOTAL EXXON, a diversified corporation - General Electric and financial giant - Citibank.

В 2016 году в новом списке из прежних компаний - участников осталась только Microsoft. На первом месте оказалась APPLE, на втором – Alphabet, материнская компания GOOGLE, на третьем – Microsoft, на четвертом – мировой лидер интернет - торговли - Amazon. На пятое место ворвалась «студенческая» компания Facebook, вообще не имеющая никакого отношения к материальному продукту, предоставляющая только коммуникационные услуги в интернете. In 2016 in first place was the APPLE, on the second - Alphabet, parent, GOOGLE, the third - Microsoft, on the fourth - the world's leading Internet - trade - Amazon. On the fifth broke Facebook company. No one of leaders does have any relation to the physical product that provides only communication services on the Internet.

Peter Drucker has not found at the end of the twentieth century sufficient grounds for declaration of the fourth information revolution. According to him at the time it was not recorded such changes, which could be compared in scale to have taken place during the previous one - third of the revolutions - the appearance of book printing. Then, thanks to the new possibilities of copying texts and images the world has received new learning opportunities - were secular books and any universities, surface maps of Earth pushed travel horizons and new lands were opened. It shook the religious world order. Nothing comparable with that global impact in the world community the actual information technology has demonstrated yet - according to P.Drucker. It seems that today, 20 years later, he would have changed his mind. The fourth information revolution with the advent

of Big Data in the real economy - was accomplished. There was also formed global information economy - all the properties and effects of which we have yet to learn. Researchers believe that we are on the way to an information civilization.

Whether the information capitalism becomes the dominant logic of accumulation in our time? What alternative path to the future can be associated with these competing forms? We are at the beginning of a new story that will lead us to new answers.

Modern education must respond to the major challenges of contemporary development of the information economy. The questions discussed in this article are waiting for answers in the educational process of economists. It seems that this situation should be of interest to specialists departments of economics and political economy. Indeed, history is repeating itself. Including economic. As for the industrial revolution came into the world of industrial capitalism, information capitalism has entered into the world economy after the accomplished information revolution. A new economic phenomenon requires careful study by professionals and beginners economists. There are many new and immediately you can see that from the old habitual knowledge may be used for the study of this economic innovation. In fact - the real unlimited resources and zero marginal costs give rise to a new economy. In some sectors of the information economy is dominated by the unusual composition of capital: Intangible Assets (Data), the productive forces - also virtual - are software agents. As in the information capitalism will shape political life when fundamental workers are real and virtual robots, and the relationship between employers and employees takes place in the absence of the social contract. The behavior of voters - people are fully controlled, and their decisions may be subject to a targeted correction. What kind of society will form the information capitalism?

In any case, there is a wide field for research and development of new curricula, relevant major challenges of the real world economy.

### **References.**

1. Peter F. Drucker. The Next Information Revolution Forbes ASAP, August 24, 1998
2. Zuboff, S. (2015). Big Other: Surveillance Capitalism and the Prospects of an Information Civilization. *Journal of Information Technology* (2015), 30.
3. Varian, H.R. (2010). Computer Mediated Transactions, *American Economic Review* 100(2).
4. Varian, H.R. (2014). Beyond Big Data, *Business Economics* 49(1).

