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THE IMPACT OF THE TECHNICAL REVOLUTION ON HUMAN SOCIAL ACTIVITIES

Kushakov Fayzulla Abdullayevich
Senior Lecturer, Department of social sciences, TDTrU

Annotations:
This article discusses discoveries in the field of production, industry and technology of the 17th-20th centuries and their role in human life. Opinions were expressed about the discovery of new types of economic and political relations as a result of the "big bang" in Europe in industry and technology. The dynamic growth of revolutionary changes in such areas as manufacturing machines, automation and computing is studied.

Keywords: electric motor (dynamo), steel industry, textile, agricultural, industrial, engine, mechanical spinning wheel, locomotives and boats.

The innovations in the industrial and technical sphere of production of the XVII-XX centuries brought humanity to a new high level of consciousness. The formation of an industrial society after an agrarian society led to an increase in the types of stratification.

The 17th century was a decisive period for the Industrial Revolution. The power of steam was discovered. James Watt's (1736 - 1819) work on a steam engine enabled the creation of a machine for pumping water from coal mines (which was in fact an important hoard for England in the early layers and because of the high groundwater levels). This discovery led to the rapid development of the steel industry, textile production and other branches of the national economy. In England, by 1810, there were about 5,000 machines (for comparison: the first steam engine in Prussia appeared only in 1830). In a short time, England became the most technologically advanced country, although several more machines were created in this country in a few decades. In the same XVIII century, a mechanical spinning wheel was invented, initially combining eight spindles and serving only one worker; later the number of spindles reached eighty, and large machines-"spinning wheels" - performed the work of six and even eight workers. In the economic sector of England, there was a sharp

increase in labor productivity. The goal of such discoveries was not only economic gain, but also control of leadership in industrial Sox.

The discoveries of the science of the time contributed to the creation of new machines. The determination of electrical power was of great importance. In 1867, the universal engine - electric motor (Dynamo) appeared.

Hence, the transition of manufacturing to industrial production led to the widespread introduction into production and the use of Mechanical Engineering Technology in the production process. This, in turn, dramatically increased the demand for engineering activities, which could no longer be satisfied randomly. This was a sign of the growing human interest in engineering Sox, their interests in acquiring specialist knowledge, and the need for scientific and methodological, professional training of Engineers. The first steps in this Sox were taken by the French mathematician and engineer Gaspard Monge (1746 - 1818) with the establishment of the École Polytechnique de Paris in 1794. This in turn led to the discovery of a kind of education in which the scientific-theoretical and technical-practical training of students is carried out harmoniously. It was through this type of education that the training of a wide range of professional Engineers began, the main purpose of which was the functioning and development of Mechanical Engineering Technology.

The introduction of machines into production not only made human power superfluous, but also greatly increased labor productivity, leading to the widespread use of low-paid children's and women's labor in the process. As a result, hundreds of thousands of workers were forced to abandon production and were thrown into the street. The car becomes a competitor to the worker, so the workers directed their anger and discontent against the machines, and not primarily against the capitalist owners, and then a wave of anti-machine riots swept Western Europe, as a result of which hundreds of machine tools broke down and went out of business. Others were mass-burned or otherwise destroyed.

The volume of calculations and design increases sharply, since the engineer is engaged not only in the development of a new engineering object, but also in the creation of a similar modified product (for example, a machine of the same class, but with different characteristics-different strength, speed, dimensions, weight , design, etc.). In other words, the engineer is now busy both creating new engineering

objects and developing a whole class of (homogeneous) engineering objects similar to those invented.

One should dwell on automation and computerization. It is one of the most important processes of the scientific and technological revolution that took place in the second half of the 20th century. As early as the century, conveyors appeared in industry. In 1913, the first assembly line was launched at Ford plants, which increased labor productivity by eight times.

However, the assembly line had its own production. This limited human activity for some time. This required changes in the labor regime and other measures to ensure the desired productivity. Later in the developed industrial countries, research was also carried out on the transfer of a number of functions of those who worked on the conveyor to the machine. The goal was to create an automatic machine and systems of such Automata, which would contain special devices capable of maintaining an optimal operating mode, setting up feedback and correcting work. Such automatic machines were created. They first appeared in the United States. In the middle of the century, the first automatic plant was launched in the USSR, which produced Pistons for automobile engines.

Automation is able to cover not only individual factories and networks, but (in the future) the entire industry. Automation, on the one hand, leads to a sharp increase in production, a decrease in its cost, on the other hand, a decrease in the number of workers, unemployment, which, in turn, requires them to provide material support as a result of the retraining of former workers and the organization.

The main types of engineering activities are being formed: engineering invention, design, engineering project.

Inventive activity is a complete cycle of engineering activity: the inventor establishes connections between all the main components of the engineering reality - the functions of an engineering device, natural processes, natural conditions, structures (all these components are found, described, calculated). Design is an incomplete cycle of engineering activity: the connections between the main components of engineering reality are already established in inventive activity. The design task is different - it is possible to determine (including calculation) the structural location of the engineering structure, relying on connections.

In engineering design, a similar task (determining the design of an engineering device) is solved in a different way - the design method: without resorting to

prototypes in the project, the operation, structure and production method of the engineering device (machine, mechanism, engineering structure) are simulated and installed. A step-by-step process of schematization of Engineering Devices took place, in which these objects were divided into separate parts, and each of them was replaced by an "idealized image" (scheme, model). On the one hand, idealized visions were introduced with the aim of applying mathematical knowledge to the natural sciences, while on the other hand, they began to be considered as an engineering object. Replacing an engineering object with mathematical models was necessary both as a necessary condition for self-invention, design and computation, and as a stage in the construction of ideal objects of Natural Science necessary for these procedures.

In conclusion, the construction of the theory of technical science was carried out. As a result of these theoretical processes, the technique forced the human labor potential to be directed to other Sox. From this period, the technique has become a competitor in obtaining jobs for a person. As a result, a person began to work on himself(his attitude to work). The attitude towards the concept of Labor has changed radically, and the concepts of qualitative performance of Labor and a responsible approach to it have increased several times.

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