

INVENTIONS AS PROMOTERS OF SCIENTIFIC AND TECHNICAL PROGRESS

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1. General aspects

The development of society in the XX century brought creativity to the foreground of research. It happened because practically in all fields of activity the social demand for creativity became really urgent. In other words, re-evaluation of the place of creativity among modern values was done simultaneously with the recognition that creativity is the main resource for development. There are various types and forms of creativity, but technical creativity is considered to be unique in a way. Inventions, as a “personification” of technical creativity, with such parameters as novelty, value, applicability, are a driving force of technical progress. When the level of economic competition is high and its scope is wide, the price of new ideas correlated with the criteria of their efficiency, productivity, quality, etc., makes the orientation to novelty one of the main constituents of general evolution.

Let's imagine for a moment how our modern society would have looked if the great inventor hadn't realized the first fire through friction, if the greatest inventor of the world, Arhimed, with his outstanding invention, hadn't existed, if the Romanian architect Vitruvius hadn't invented the hydraulic turbine, Gittenberg - printing, in 1440, Denis Papin - the vaporous machine in 1695, Faradey - electric engine in 1822, Morse - the telegraph in 1843, the inventor nb. 1 of humanity Th. Edison - the incandescent lamp and phonograph in 1878, H.Coanda - reactive engine in 1910 and a lot of other pioneer inventions, which got some new directions off the ground in science and technology.

Contemporary society is realizing more and more fully that the sustainable living standard and good quality of life, to a great extent, depend on the efficient use of the creative capabilities of the members of that society. We are beginning to understand that, at the end of the XX century, the unlimited resources of human mind are becoming even more important than

the depleting and exhaustible resources of nature. Thus, present-day conditions make an inventor a local figure of scientific and technical progress whose super-products, super-technologies are based on the latest inventions.

It is worth mentioning here that the unprecedented sophistication of technical systems and the growth in number of relevant problems to be solved are reasons for the intensification of creativity in engineering. The “gearing” of technical problems and engineering solutions is inter-dependent. The greater the range of technical problems, the wider the scope of engineering solutions, the latter in turn bring about new technical problems. It is quite to the point here to note the following: the number of technical systems doubles every ten years, the complexity of technical products doubles every fifteen years, the volume of scientific-technical information, which may be appropriate for inventions, doubles every eight years. But the period of elaboration of new products is reducing twice every twenty-five years. So, we can say that the volume of creative searching has been, and is, growing ten times every ten years, while the number of professional inventors is growing only three times in the same period, which means a shortage of creatively-oriented designers and constructors.

That is why it is evidently necessary to support technical creativity in every possible way; this type of creativity being a bedrock for many, if not for all, countries of the world. It is especially urgent for under-developed states and for economies in transition, an example of the latter being the Republic of Moldova. For instance, the diagram presented in figure 1 signalizes a total crisis in creativity, a field in which the Technical University

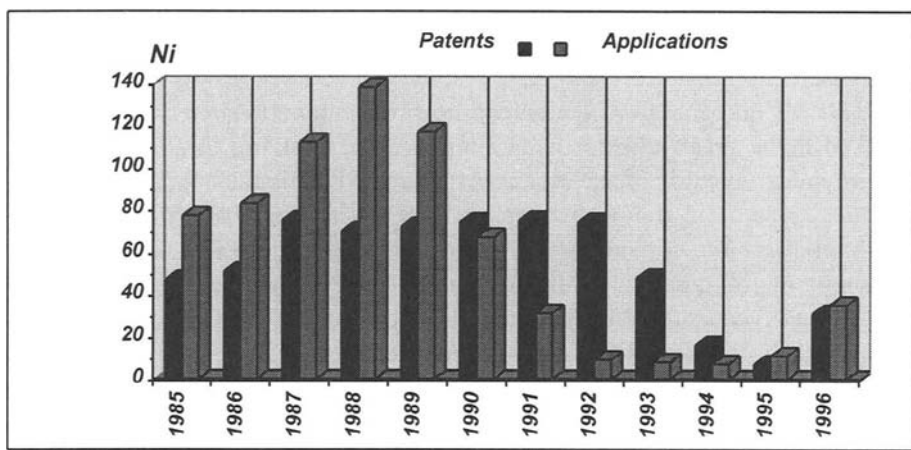


Figure 1. The dynamics of getting patents in the TUM.

of Moldova found itself in the last 6-7 years, being one of the most important sources of inventions from the Republic. For comparison, the number of