

Uncertainty of Successive Existential Risks of Case-effect Type Economic Pandemia and Crisis, in Progress of Activities in the Pharmaceutical Industry

Vasilică Rusu

Free Internationalal University of Moldova, Doctoral School, Chişinău,
cabinetaesm@yahoo.com

Abstract

Uncertainty and risk can be seen as interdisciplinary phenomena. At the same time, the uncertainty and the risk of the rule are taken into account in the context of the analysis of decision-making processes. Under uncertainty and risk, an enterprise needs to have a rational basis for decision-making that allows the comparison of different alternatives and the choice of the most appropriate operating strategy in the management of pharmaceutical companies. In today's economy, with the growth of information flows, there is an objective need to continuously increase employees' skills, an increase in the number of modernization projects, which will reduce labor and material consumption, the development of industrial marketing tools and increased operational efficiency. The pharmaceutical industry needs flexibility like no other industry, which will make rapid reconstruction possible. The purpose of this paper is to identify the importance of digitization for the pharmaceutical industry.

Key words: strategy, pandemic, management, pharmaceutical industry, risk.

J.E.L. classification: I2

1. Introduction

The Covid-19 pandemic changed our normal lifestyle. It has affected both the economy and democratic freedoms and thus – the rule of law. Exceptional measures put a tension between the common interest and individual freedom and have a considerable economic impact. We therefore wonder what the impact of the pandemic is on the pharmaceutical industry.

The changes in socio-economic life, related to modernization and technocracy, which began in the second half of the 20th century, certainly had an impact on production. In any economic system, including industrial ones, managerial decisions are made. The new decision-making circumstances that constantly arise lead to the emergence of several development alternatives and significantly complicate the development of the operational strategy.

As mentioned above, the phenomenon of uncertainty has been studied for quite a long time in economic theory and represents a separate direction of research. Uncertainty is an important factor in economic relations, which dictates the need to use different methods of forecasting and reducing the degree of risk. Risk systematization allows the development of the necessary management tools. Many of the classifications, in our view, are excessively detailed, while it is extremely important to consider only those risks that lead to the loss of planned revenues. It should be born in mind that uncertainty increases exponentially as the supposed time event is eliminated. Therefore, the selection of an operational strategy relating to a long period of time requires closer examination of the uncertainty factor

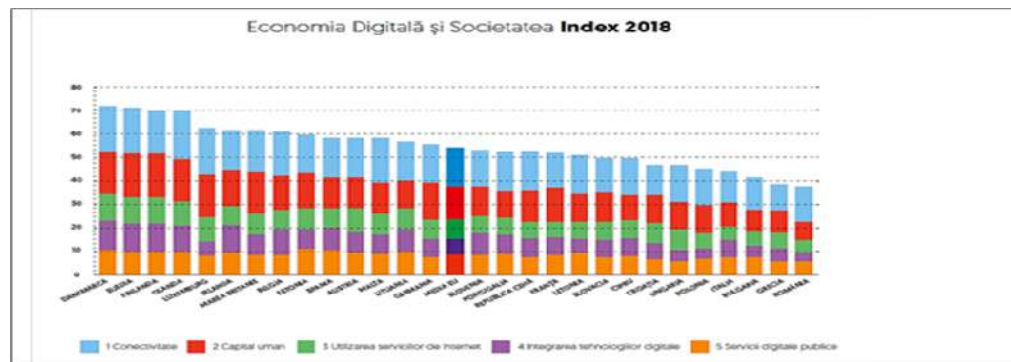
Under the influence of the dynamic transformations taking place in the post-industrial economy, the uncertainty of the external environment is also changing, and independent and discrete changes that are not interconnected have begun to turn into systemic ones. Thus, in a continuous flow there are economic constraints, namely cost reduction, optimization of consumption, increased complexity of products, new technologies, globalization, communication, increase in sales volume,

opening up new emerging markets, lack of specialized workforce, which have contributed for the industrial environment to react and seek solutions that solve the above mentioned problems. Each new transformation leads to a change in the remaining components of economic relations. As Khana R.B. noted, the average life cycle of goods decreased compared to the mid-20th century, from three to four decades to three or five years.

2. Theoretical background

Information and uncertainties are considered by many researchers as mutually exclusive components. Consequently, the increase in the share of organizations using global information networks indicates greater management of uncertainty in the Romanian and Moldovan business environment. The growing demand for information services demonstrates an increase in the uncertainty of economic relations in Romania and the Republic of Moldova. It is also interesting to see the digitization of the economy in the European area, Figure 1.

Figure no. 1. Digitalization index of the economy of EU countries



Source: (Rusu V. et al, 2018)

Unfortunately, according to data submitted by the European Union, Romania ranks last in terms of digitalization. Moreover, most Member States are creating their own structures to ensure the successful implementation of new technologies.

As for the situation in the Republic of Moldova, the Digital Moldova Strategy 2020, approved by Government Decision No. 857 of 31.10.2013, creates the necessary bed, outlines the directions to ensure a systemic development of the field of information and communication technology in the coming years, ensuring the exploitation of the facilities offered by the Information Society for the comfort and well-being of the citizen (Government decision no.857, 2013).

The strategy provides favorable conditions for the development and wide use of ICT potential in all areas: public, private, business and the daily life of citizens. Mobile broadband Internet access with high data transfer speeds becomes accessible throughout the country. Companies have a clear long-term predictability and can invest effectively in network development, and users – enjoy advanced quality services in any corner of the Republic of Moldova.

In recent years, considerable investments have been made in mobile communications services and networks, confirming the thesis that Moldova chooses mobility and access from anywhere.

The increase in the number of users among economic operators can be seen as a consequence of the increase in the number of economic entities and, consequently, the flow of information for the exchange of data. Another reason can be considered an increase in the number of new regulatory documents (National Agency for Medicines and Medical Devices in Romania,2020).

In order to identify the main sources of uncertainty from a business perspective, we have analyzed existing views on their nature. Some scientists such as McConnell P., Iosof S., Gavri T. (Iosof S. et al 2013), believe that uncertainty is generated either by insufficient knowledge of the nature of phenomena and processes or by a lack of information about these phenomena and processes. The author believes that these interpretations need to be supplemented, flashing out the causes that generate uncertainty. In this context, the following types of media can be distinguished,

which can be considered sources of uncertainty:

- the socio-economic environment, in which macro-factors of uncertainty manifest themselves, dictating a certain development of markets and regions, in which the company carries out economic activities (dynamics of macroeconomic indicators, legislative changes, political transformations);
- the scientific and technical environment, the revolutionary changes that can lead to significant operational changes at the enterprise level;
- the political and legal environment, which is the source of legislative acts, which dictate the political conditions for the management of the business and regulations in force;
- the environment of the distribution partners, subject to the activities of the company's partners, economic activity, financial situation, which directly affects their ability to fulfil their obligations;
- the supplier environment, reflecting the future actions of suppliers, including those expressed in the change in terms of supply;
- the competitive environment, including the change in the degree of influence and behavior of competitors;
- the consumer environment, on which the condition, size, dynamics, stability of demand depends;
- the internal environment, which can be considered as a source of conflict, which leads to disturbances, teamwork, which increases the efficiency of the system in which human and technical factors are closely linked together and can produce unpredictable results expressed in the level of product quality. The organization of work within the enterprise depends on the awareness of the state of all these environments.

A study of the management of industrial enterprises was carried out in the research reflected in the thesis. This study was carried out to determine the degree of influence (evidence) of each type of uncertainty on decisions taken when selecting the operational strategy on a 10-point scale. Overall assessment was made by calculating the average of the points indicated by the representatives of all the undertakings interviewed.

As can be seen, the greatest impact on the company's operational decisions is caused by uncertainties generated by the consumer environment.

At the same time, the uncertainty of the internal, political, legal, scientific and technical environment is being analyzed to a lesser extent. In other words, it can be said that entrepreneurs' confidence in the stability of organizational, managerial, technological and other components of the activities of their enterprises can hide the "traps" of inefficiency.

Generalized assessment of the influence of different types of uncertainties on the decision-making process on the operational strategy for the pharmaceutical manufacturing industry and pharmaceutical preparations was carried out.

It can be seen that the smaller the area of the figure in the diagrams, the less the companies in the industry under analysis feel the uncertainty when making decisions on the operational strategy. It seems that the smallest field of uncertainty is a characteristic of the chemical industry and the largest for the manufacturing industry of basic pharmaceutical products and pharmaceutical preparations.

Next, we will briefly introduce the economic aspects of the development of the pharmaceutical industry, in order to find the sources of considerable uncertainty that take place in an administrative decision-making environment. We will then proceed to the description of the method of measuring uncertainty.

As is well known, in Romania, the pharmaceutical industry is one of the most profitable, having a special place in the Romanian economy. During the communist period 1980-1989, in Romania, there was a centralized strategic planning of medicines, their production being divided by regions, for example in Bucharest were produced injectable / infusion spills and vaccines, in Iasi antibiotics, in Cluj solid oral drugs, at Viseu de Sus non-steroidal liquid preparations, at Tg.Mureş ointments. Today the pharmaceutical industry in Romania is sufficiently developed to meet the challenges (National Agency for Medicines and Medical Devices in Romania,2020).

In the year2000, most pharmaceutical factories entered the multinational circuit, which did not close them, but on the contrary, they competed to invest in retrofitting, development, exports. However, due to the lack of a national drug strategy between 2010 and 2014 Romania lost production of 40% of drug production volumes, closed a national institute in the field, closed a

private producer and did not bring a single portfolio investment to Romania.

However, in September 2015 the Government approved the National Competitiveness Strategy 2015-2020, where the pharmaceutical industry is seen as a strategic direction in Romania. Noting that there are, currently various tax, price, regulatory, economic diplomacy barriers that continue to affect the development interest of the industry, according to statistical data, in 2016, Romania had 158 manufacturers of medicines and pharmaceutical preparations and more than 6700 high-rise retailers were officially registered in Romania and medicines worth around EUR 350 million are currently exported. The development of this industry should therefore be systemic and designated as a strategic economic area of national interest (Khana R.B.,2015).

3. Research methodology

In the process of research the methods of systemic analysis, economic-mathematical modeling, mathematical statistics were used, as well as methods of economic analysis. The informational - empirical basis of the research formed -a materials of monographs, articles in and special publications, scientific publications, as well as materials of scientific-practical conferences. Regulatory acts, reports of transport companies, statistical data, art and scientific reports, exhibited on the web pages of scientific centers around the world, were used.

4. Findings

The pharmaceutical industry in Romania is a low-risk sector (as economic theory suggests), playing a role in reducing the amplitude of the business cycle. This conclusion was reached by dividing the Romanian economy into three risk categories (high risk, medium risk and low risk), depending on the sensitivity of an economic sector's activity to the business cycle. On the other hand, the pharmaceutical industry's small contribution to total added value does not allow this leverage to generate major positive results. Creating the conditions for a strong development of the pharmaceutical industry in Romania would also support the counter-cyclical buffers of the economy.

In today's economy, with the growth of information flows, there is an objective need to continuously increase employees' skills, an increase in the number of modernization projects, which will reduce labor and material consumption, the development of industrial marketing tools and increased operational efficiency. The pharmaceutical industry needs flexibility like no other industry, which will make rapid reconstruction possible. Today, 15% of Romania's trade deficit is caused by the pharmaceutical industry, which imports more than 8 billion lei worth of medicines annually but manages to export less than 1 billion. This is because Romanian pharmaceutical companies pay taxes to the Romanian state as much as all other providers of services and goods acting in health pay (McConnell P., 2016). One of the main opportunities to increase flexibility is the more complete use of modern computer technology. A positive development is the attraction in the Romanian pharmaceutical industry of portfolio investors, which would allow the concentration of financial resources for the implementation of new developments, taking into account market requirements in optimal terms.

We will continue trying to describe the uncertainty assessment model. Analysis of existing approaches to risk and uncertainty assessment carried out in the second chapter showed that the main outcome of the assessment is the amount of damage that may occur within the enterprise in the case of exposure to various factors. At the same time, this interpretation, as we see it, does not fully reflect the essence of the concept of "uncertainty". As mentioned above, uncertainty is associated with a lack of information, but uncertain events can have not only a negative result, but also a positive one. The pandemic and the economic crisis, in carrying out activities in the pharmaceutical industry.

The impact of COVID-19 is felt worldwide, with more than 390,000 cases and 37,200 deaths recorded globally by 31 March 2020. Industry biopharmaceuticals in Europe are taking an active role in the fight against COVID-19, joining global efforts to research and develop treatments that could prove valuable weapons in this fight.

The innovative pharmaceutical industry provides financial support and donations of goods to actively involved organizations and works closely with health authorities at European and global level to respond to this global threat of public health.

While governments are implementing appropriate public health measures and health systems are treating or preparing to treat an unprecedented number of patients requiring intensive care, the pharmaceutical industry focuses on three key areas:

- ensure stocks of medicines for patients in need
- support health authorities and systems, at European and global level
- to continuously investigate for vaccines, treatments and diagnostic solutions

The major concern of companies is to secure the necessary stocks for essential medicines in the fight against COVID-19. We closely monitor any risk situation regarding the supply of medicines on the Romanian market, through a constant dialogue with member companies and authorities. As the situation evolves, pharmaceutical companies prioritize the continuity of supply chains and work proactively to prevent and alleviate potential shortcomings by coordinating closely with local, European and global authorities. So far, producers have not reported deficiencies or production delays.

In early 2020, when, unfortunately, little attention was still paid to the pandemic generated by the Corona-19 virus, which generated the disease with the symbolic name of COVID-19, the vast majority of security experts considered that the US and China, under the leadership of two nationalist leaders, were at a crossroads, in which the very primary structure of the bilateral relationship was under alarming pressure. It was considered that without bold and creative leadership, the world could again become divided into hostile camps, of the kind experienced during the Cold War. A relatively disadvantaged Washington and a cautious-combative Beijing began 2020 in a mutual lack of trust, generated by the pressures of trade confrontations that tended to turn into a structured rivalry that could shape the global balance of power.

Thus, Romania will be able to benefit, through several priority policies, from funds that can be used to support the digitalization of the pharmaceutical industry and public administration. In this respect, the Romanian Government has approved, by an emergency ordinance, some measures for the elaboration of the National Recovery and Resilience Plan, through which funds will be accessed through the abovementioned Recovery and Resilience Mechanism. Digitalization. Thus it becomes a key element of this plan, supported by digital transformation projects, including through the automation of the pharmaceutical industry and services central and local government and future investments in infrastructure, interoperability, standardization and other digital transformation tools. The Authority for the Digitalization of Romania and the public authorities developing digitalization projects will play a key role in the transition to digital governance, in particular by improving digital services and automation. Implementing process automation has many advantages, such as increasing productivity and quality of results or reducing human costs and errors. The ADR, established in 2020 to achieve national digital transformation targets, plans to implement solutions for electronic identity projects, interoperability, government cloud, as well as to develop the national strategy for artificial intelligence.

In terms of the digitalization index, the European Commission's Digital Economy and Society Index (DESI) reports put Romania in the ante-penultimate position in the EU Member States in terms of the digital economy and society in 2020, while recording the lowest performance in EU countries in providing digital public services. It is therefore necessary that the funds that will be available for Romania in the coming years, in particular, programs that will facilitate citizens' access to digital public services should be implemented.

Thus, constant cooperation and dialogue between public authorities responsible for the coordination and management of national digital transformation and representatives of the private environment are essential factors in supporting the digitization of the economy and society. Romania is a real innovation center in technology, as well as a pole of interest for private actors, investors and start-ups in this field.

However, even as the digitization of the private environment progresses, the COVID-19 pandemic has shown that public administration must make substantial investments and changes in order to be able to provide digital public services and facilitate the system. Therefore, the digital transition, in response to the pandemic, will also lead to an increase in the quality of the citizens’

life, by simplifying the administrative procedures they must follow, by making access to information more efficiently and by optimizing their day-to-day work, whether we are talking about remote work, digital education or online payment of taxes.

5. Conclusions

To sum up, we assume that the probability of a positive and negative result may be different. There are all the prerequisites to divide uncertainty into positive and negative. In order to attribute a situation in which the operational strategy is developed, to one or another variant of uncertainty, it is necessary to analyze all possible consequences that may arise in the environments of uncertainty and to study possible results and the likelihood of their occurrence. At the same time, by result, we understand the degree of achievement of the objectives set out in the operational strategy in this case.

6. References

- Armitage D., 2001. *Classical potential theory*. London: Springer,
- European Centre for Disease Prevention and Control. Available at: (<https://www.ecdc.europa.eu/en>) [Accessed 23 August 2020].
- Government decision on the National Strategy for the Development of the Information Society "Digital Moldova 2020" no.857 of 31.10.2013. In: Official Gazette, 2013, No. 252-257.
- Iosof S., Gavri T., 2013. *Managementul riscurilor. [Risk management]*. Bucharest: University Publishing House.
- Khana R.B., 2015. *Production and Operations Management*. India: Prentice-Hall.
- McConnell P., 2016. *Strategic risk management*. London: Risk books.
- Monitoring report of the Action Plan on the implementation of the National Strategy for the Development of the Information Society "Digital Moldova 2020" in 2017
- National Agency for Medicines and Medical Devices in Romania. 2020. Important notification. Available at:<https://www.anm.ro/> [Accessed 20 August 2020].
- Pharmaceutical industry in Romania: main trends and impact on society and economy. Available at: <http://www.lawg.ro/files/assets/userfiles/files/Industria%20Farmaceuticala%20din%20Romania.pdf> [Accessed 27 August 2020].
- Rusu V., Calugăreanu I., 2018. *Elaborarea strategiilor operaționale ale întreprinderilor industriale în condiții de incertitudine [Development of operational strategies of industrial enterprises under conditions of uncertainty]*. In: International Scientific Conference, Balti, 30 November-1 December 2018 pp.34-40 Available at: <https://2020.eurosfat.ro> [Accessed 25 August 2020].