

# INNOVATION – CREATIVE MANIFESTATION WITH ECONOMIC IMPLICATIONS

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## **Abstract**

*The present paper aims at a correct perception of innovation, regarded as a present phenomenon, for which it is necessary to resort to a series of notions and definitions, as well as to multiple perspectives. Thus, the definition of this phenomenon - in all that it captures in it - suggests dynamism and ease of communication.*

*The complexity of the phenomenon of innovation is the creative capacity, around which there revolve all other matters concerning innovation.*

*The present paper also illustrates the relationship between technology and economy, meaning that technical progress makes the economic system that created it. This, in turn, provides a more consistent support for changing technology. Economic factors play a major role in the development of technology, because they are interested in reducing costs, increasing productivity, sales volume, as well as goals that can be achieved through innovation.*

*Successful entrepreneurs in an increasingly more competitive environment try to assert through value creation rewardingly new and different outputs, a fact which represents a change from what was known at the beginning of the business.*

*In general, innovation and to the same extent technical and technological innovation has always accompanied the development of human society. Innovation has manifesting itself throughout history with different levels of intensity. Technical-scientific revolution, present in all spheres of human activity through the accelerated mutations that produce them, fundamentally influence the way in which orientation and innovation evolve.*

**Keywords:** *innovation, creative capacity, concerning innovations, value creation, economic factor.*

## **Introduction**

Since the advent marked by the birth of a new idea until its merging with daily natural phenomena and becoming a common product for consumers at the organizational level there is an on-going metamorphosis, marked by an extremely complex process, called innovation.

Passing through a filter system, only a few ideas come to detain the attention of managers that may find those ideas worth being investigated. And fewer of these are to be implemented projects in the production system – often just a single one. In this instance, after substantial marketing costs, product/service reaches the market, supported by advertising, but also through a set of specific features (as defined in the phase of conception).

In the end, the consumer shall - depending on the degree of satisfaction of one's requirements - decide to buy it or not; the consumer is the one that decides the success of this very creative effort, which is both organizational, financial and also the result of media enterprise. The consumer compares all characteristics of the product – i.e. the perceptible and imperceptible ones – with those of similar products offered by competitors.

## **Definition of the concept**

For a correct perception of this actual phenomenon that is believed to appeal to the notions and definitions that have tried to describe and to explain it, we have to consider a series of different points of view. Thus, the definition of phenomenon captures the fact that through it you suggest dynamism and ease of communication.

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- Phenomenon: the outer manifestation of the essence of a thing, process, which is accessible and directly perceivable; what surprises by rarity and/or novelty.

The complexity of the phenomenon of innovation is the creative capacity, around which there revolve all other matters concerning innovation.

- Creativity: ability to identify new connections between seemingly unrelated items between them. A whole complex of ideas, ways of thinking, activities, processes (Tools, techniques, and approaches), results (solutions to problems, production systems, products).

From the historical point of view, the first item in terms of institutionalized innovation was the invention through the patent of invention. The definition suggests that a creation is permanently tied to the intellect, science or engineering and must involve the novelty, intention and purpose.

- Invention means an intellectual creation, scientific or technical, embodied in a product or process, in all fields of technology, provided that they are new, involve inventive step and are susceptible of industrial applicability.

- Invent yourself: is the science of making inventions.

- Innovation.

In terms of data definitions of the notion of innovation, one can notice a relatively large variety. According to our opinion, this diversity is a result of the manifestation of the phenomenon of innovation, which, over time, was revealed by researchers through new perspectives. One should remark the convergence of these definitions to the explanation of the application of the new innovation in response to the requests and demands of the market.

Starting from the definition of the concepts of this phenomenon, i.e. creativity, as well as invention, we appreciate that the most comprehensive definitions and objectives, in terms of coverage of innovation, appear to be the following:

- Innovation: the action to make a change, to enter a new domain, in a system that is upgraded, etc. The notion of innovation has become interesting to economists like Schumpeter, in whose work innovation is presented as an accomplishment which consists in applying ideas or inventions, products, technologies or systems in the economic activity. Thus, innovation can be considered to produce something else or to make something occur otherwise or in a way that may be a tool for entrepreneurs who might exploit change as an opportunity for the various different services or business.

- Industrial innovation: innovation in the industry that does get added value and competitive advantage for businesses, the main generator of new products/services.

- Open innovation: innovation based on the partnership between industry, universities and technology centres and research.

The concepts and definitions above may be supplemented with other forms of literature or through actual practice.

The definition most used at present is the one that presents innovation as a global technological process and a commercially creative act, one whereby new ideas or a new concept is transferred to the final stage of a new product, process or service accepted by the market.

Innovation – as a product: a new feature or improvement or expansion of the functionality of a product, process or service, in any of the domains and which could (or can be) responsible applications or market that could (or can be) generate a new market demand.

Innovation – as a process: the activity that allows the emergence of innovation-like product that is based on individual behaviour, as well as on social or corporate, creative and dynamic behaviour; innovation – the process includes research-development.

In these definitions, is the approach to innovation and its potential value, which in turn requires criteria of analysis, very difficult to establish? Criticism of these definitions, from the perspective of the author, mainly relates to the terms of individual, social or corporate, creative and dynamic behaviour in the definition of innovation – seen as a process, which must be extended to the

level of the product. The argument is that the two types of innovation do not differ in the assumptions or conditions, but only as to their based-on-reason application, which operationally and, possibly, from the point of view of the nature of the result, in the case of the second category of innovation, are more difficult to quantify.

- Innovation implies its own laws, such as:
  - paradigms: innovation based on Science, this is the 'road' from idea, when the technology is in its infancy, up to standardizing the way of production, which requires a specific "technological trajectory";
  - to innovate opportunities coming both from within the system (incongruity, need, changes in industry structure or market), and outside the system (of demographic changes and changes in education, openness, and understanding, the accumulation of new knowledge, etc.).
- Innovation stimulating role for the emergence of institutional forms, design offices, laboratories, centres of research and development (RD), public or private, in which human resources are trained; research is important both numerically and also as regards training, which organized on the topics of innovation. In addition, it outlines the trend of corporate networks for the exchange of information in the field of innovation.
- Innovation presents a high degree of dependency on the learning process of the acquiring of knowledge, whereas, during the process of innovation there is a dependency of the subsequent past-innovation processes (technological trajectory or natural trajectory).

Analysing the previous definitions, literature filters ideas and practical experiences generate long results in advising firms. Authors have outlined their own definition that summarizes the undertakings and the innovative effort. Thus, innovation is a continuous process of identifying and implementing new solutions (products, technologies, new production methods, new sources of supply, developing new markets, management systems, learning, etc.) in order to satisfy customers.

### **Socio-economic implications of the phenomenon of innovation**

Innovation activity at all levels of aggregation overlaps the history of human society. This anthropology of human creativity is very well mirrored in literature, but the relevant points which are specific to the concept of innovation are very difficult to surprise especially with a profound clarity. As regards the evolution of the concept of innovation, once can find a few steps that have encumbered the phenomenon of innovation over time.

Innovation has been extended gradually, from the individual action of men of exceptional, collective actions, organized within the framework of institutions, research centres, enterprises, economic innovation by putting their thumbprint in all sectors of the economy, especially on the industry. Seen as evolving over time, innovation moves from the individual in the community, with significant social values, and will define itself as a change in the yield possibilities.

The most common sense and general innovation is attributed to the introduction of new products and technologies that affect the market. Schumpeter has addressed for the first time the mechanisms and factors of the innovative process, arguing that the spirit of enterprise and the possibility to obtain a temporary monopoly profit may stimulate the release of new products on the market and reducing the cost of production. Schumpeter called it creative destruction whereby the previous market structure is destroyed to make way for a successful invention<sup>1</sup>.

Interference between technological development and economic development have resulted in the gradual shaping of the idea concerning the existence of a synchronization between the two phenomena, in the sense that major technological innovation intensifies during periods of strong economic growth<sup>2</sup>.

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<sup>1</sup>J. Schumpeter, 1934.

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The relationship between technology and economy is interdependence, meaning that technical progress makes the economic system that created it. This, in turn, provides a more consistent support for changing technology. Economic factors play a major role in the development of technology, because they are interested in reducing costs, increasing productivity, sales volume, goals that can be achieved through innovation.

Under the economic factors, in particular, the technological development (as the sum of innovation in a given period) tends to occur in waves, meaning that technological changes made in an industrial sector following the response triggers in other related sectors.

The concept of innovation, reflected in neoclassical growth theory leads to the observation that the ability to change the configuration of production becomes an essential factor of profit maximisation. In this case, technology is understood as summing the knowledge that firms can access on a fast and inexpensive way. K. Arrow identifies technology with knowledge; technology in its broadest sense is the know-how and the innovative process is interpreted as the process of production of knowledge. In this instance, it is considered that the process of innovation is, in particular, a process of discovery of new knowledge, transformed into new products under a given set of conventional stage.

In the modern theory of innovation, the technological infrastructure is different from one firm to another, depending on the organizational footprint of the firm, its features, and how the technological processes can be integrated with the knowledge, skills, use of equipment, training, management system, etc.<sup>3</sup>

According to endogenous growth theory, developed in the second half of the 80s<sup>4</sup>, instead of total factor productivity, new inputs, as well as the knowledge of design and development, product quality, and quality of human capital are more realistic. The supporters of this theory believe that they may have an important contribution to the Elimination of jams induced by decreasing yields of production factors, to assure a continuous economic growth.

After 1994, the relationship between innovation and social issues has been highlighted by the study of the influence of technological innovation on the standard of living.

In the same context, in 1992, Lundwall, formulated for the first time in history, the phrase “national innovation system”; he stated that it is a principal instrument of government intervention in favour of technological innovation. Prerequisites for the success of the national system of innovation are considered economic liberalization, reforms of copyright, and multiculturalism<sup>5</sup>.

In the recent statements of the theory of economic growth there has been a significant mutation in the treatment of the sources of growth, i.e. an acceptance of technical progress, which is regarded as a determining factor, has become widespread. The role of innovative activity in the process of growth has been reconsidered, air-dried to a finding that the abundance of goods which characterize the current era is the result of a sequence of following the confessions of design and methods development design, dissemination of information, dissemination of results, etc., both in terms of products and technological processes. Thus, the emergence of science is motivated by economic reasons, but also extra-economic resorts (social, environmental, etc.).

Successful entrepreneurs in an increasingly more competitive environment try to assert through value creation a rewardingly new and different production; thus, a change of what was known at the beginning of the business occurred. Innovation, in the opinion of a businessman, consists of an organized search and purposeful change; it also implies the systematic analysis of the opportunities that these changes could provide through the economic or social innovation analysis of the concept of innovation, which has lead to highlighting two approaches that have undergone multiple transformations.

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<sup>3</sup> Peter F. Drucker, 1993.

<sup>4</sup> Peter F. Drucker, 1993.

<sup>5</sup> Lundwall B, 1992.

The first refers to the newness of the technology, which is considered a major source of essential changes.

The second approach, the latest, the innovation as a result of quality management, whereas the Manager is considered an essential vector of innovation within an enterprise, being responsible for its outcome. In this sense, different managerial tools have been developed with a view to creating efficient management for managers of all kinds within an organization.

Thus, when referring to innovation, the effects are: thinking in terms of efficiency or quality all activity or business, which sends it to the notion of quality assurance as a key part of the total quality management (TQM-Total Quality Management), as well as other similar systems that are developed (e.g. engineering). Currently, new approaches to quality in the enterprise have been expanded from the product up to the level of the organizational system of the firm, being developed as well, and for all phases of the life cycle of a product/service (from conception and design to after-sale services offered to customers)<sup>6</sup>. As a result, it has become natural for these systems to be applied, as well as for the innovative processes within organizations.

The Conference in Brussels in 2004, the cooperation in the fields of research and development (RD), on the one hand, and the transfer of knowledge, on the other hand, both stressed that they expect improvements in all aspects of innovation, because innovation depends on many factors, including the ability to create new relevant knowledge and to implement it through industry, as well as the value of human resources, and the ability to learn and innovate.

Collaboration with research organizations and firms from outside via a network and intake of this way of structuring the business innovation of enterprises is a feature of the phenomenon of innovation.

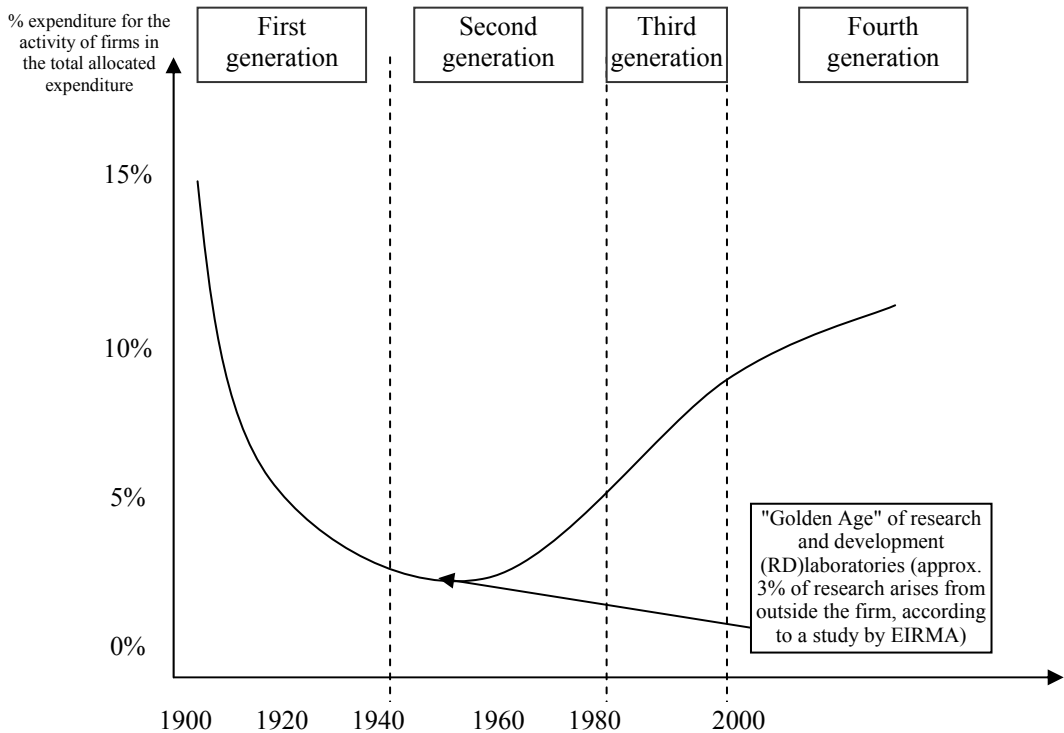
The innovation activity, link-time, research-development implied both the preservation of independent and specialized laboratories, as well as the internal organization of firms. In Figure 1 it is shown the work of research and development throughout the four phases (or generations) in the evolution of research-development-innovation, that is, the ratio of research and development organized outside the enterprise and company (first generation), research and development conducted within the enterprise (second generation), outsourcing research and development activity (third generation) and, finally, the globalization of research and development activity (the fourth, current generation).

As one can see, by the year 2000 (with the onset of the fourth generation), concurrently with the amplification of the phenomenon of globalization, businesses are looking to combine optimally the research and development work with the purchased from outside. The company, in this case, focuses attention on the evaluation, selection and exploitation of research results, as well as the development of purchased activities.

Thus, the fourth generation is characterised by the existence of cooperation between enterprises and research and development centres, and other businesses that carry out research and development, as well as in other newly created entities in the last period (centres of excellence, business incubators, technology transfer centres) etc. This new form of organisation of activity of enterprise is the concept of open innovation, as an important component of it.

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<sup>6</sup> Utterback I., 1994.

**Figure 1** Transforming evolutionary patterns of industrial research and development

Source: Druker, F. Peter – 1993.

Of the most fruitful collaboration, one should mention cooperation between businesses and universities, which has led to beneficial effects of stimulating innovation (research activities with predetermined goal, education for innovation, long-term research programmes and academic networks to promote the diffusion of knowledge and technology transfer, etc.), as well as the positive effects of social-economic nature (education for entrepreneurs increasing mobility of university-industry-market, business management courses for young scientists, etc.).

Currently, aspects such as the permanent relationship with the market (consumers) or construction of innovation culture have become equally important with the research and development component of the innovation.

### Conclusions

Thus, it can be said that the phenomenon of industrial innovation, considering all its characteristics and determinants, as well as its restrictive dimension, is a difficult endeavour. Firstly, because of the immense literature and documentation developed on this topic so far (actually, this topic has an exciting, fascinating character and it illustrates the most outstanding attribute of the human spirit – creativity – that lies at the origin of one of the most explosive phenomena of the contemporary world-innovation), and secondly, due to the complexity of the phenomenon of innovation. In general, understanding innovation – to the same extent as the technical and technological – which has always accompanied the development of human society, implies that we also understand its manifestation throughout history with different levels of

intensity. Technical-scientific revolution, by affirming in all spheres of human activity, through the accelerated mutations that produce them, fundamentally influences the way in which orientation and innovation evolve.

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