

EU Innovation Strategies and Mechanisms Applied on National Level

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ABSTRACT: The article addresses the topic of innovation strategies and mechanisms used in the Romanian public sector in order to optimize the innovation process within the country, and, at the same time, it focuses on the European Union strategies and mechanisms implemented on a national level. The purpose of this article is to present a framework on the modalities of innovation in the public sector, focusing on innovation strategies, but also on the mechanisms used to achieve the proposed goal. This article is based on the research of scientific papers focusing on innovation, especially on the public sector. The importance of using innovation strategies and mechanisms on a national level needs to be understood because it is through innovation that the demands of the citizens of a state can be met.

KEYWORDS: innovation, social innovation, public sector, innovation strategy, innovation mechanism, public sector innovation

1. Introduction

The subject of this article is part of my PhD thesis, and I would like to illustrate some of the concepts related to innovation strategies and mechanisms used in the Romanian public sector. The subject is very relevant considering the debates currently taking place on both national and European level on innovation, but also considering the fact that it is necessary for each country to have innovation strategies and mechanisms, emerged from the strategies and mechanisms of the European Union.

Just as the delivery of innovation is different from one organization to another, the mechanisms of innovation are different from one strategy to another. Every organization needs a planning strategy so that things have a positive outcome. Following this statement, we can say that every state needs an innovation planning strategy so that the state achieves a positive outcome, leading to economic growth.

1.1. Theoretical aspects

Innovation is the commercial or industrial application of something new, a new product, process or production method, a new market or source of supply, a new form of business or financial organization (Schumpeter 1993, 353-363). Another definition of innovation is found in the Oslo Manual; here, innovation is defined as "the implementation of a significantly improved new product, process, marketing method, or organizational method in business practices, workplace organization or external relations" (The Organization for Economic Co-operation and Development 2005, 46).

Social innovation is a relatively new field of analysis, both in terms of the development of approaches that consider designed social development as possible and effective, and in terms of approaches that emphasize dispersed knowledge, decentralization, and the ability of communities, and more specifically, social groups to organize themselves and find answers to the problems they face. Thus, in this context, innovation emerges as a response to a new social problem (Matthew 2009, 86-87).

The public sector can be defined as that part of the economy made up of public services and public enterprises whose main purpose is to satisfy the citizens of a state.

Strategy represents the long-term determination of the goals and objectives of an enterprise, the adoption of a course of action, and the allocation of resources needed to achieve objectives (Chandler 1993, 63). Another definition of strategy refers to the fact that this concept is the common axis of the organizations' actions and products/goals that define the essential nature of the economic activities that said organization carries out or plans to carry out in the future (Ansoff 1996, 116). According to this perspective, a strategy is made up of three main elements: the most important objectives to be achieved, the most significant policies to be followed and the programs that enable the achievement of the objectives. At the same time, strategy refers to the fact that it represents the set of the major long-term objectives of one organization, the main ways to achieve them, together with the resources allocated to reach competitive advantage according to the organization's mission (Nicolescu and Verboncu, Management 1999, 131).

There are many understandings of the concept of strategy, but within the context of each definition stands the idea that all strategies are carried out with the aim of achieving their stated objectives.

For a strategy to be successful, it must have a mission, the fundamental objectives and strategic goals must be well established, the resources required must be known, and the timescales for completion must be known; all of which lead to the creation of competitive advantage. With regard to the concept of strategy in the public sector, administrative institutions and civil servants are called upon to take on the formulation of strategies, objectives and priorities as an integrated part of managerial activity (Nutt and Backoff 1993, 30-45). Numerous studies have looked at how public organizations define and implement their strategic objectives and have found a significant influence of public sector distinctiveness in this area.

Another idea referring to strategy in the public sector is that it requires dealing with the relationship with the environment, as well as the organization's missions and goals, and the strategic approach must involve three major components: defining goals and objectives, developing an action plan that makes the organization and its environment compatible, and constructing effective implementation methods (Bozeman and Straussman 1990, 14). Strategy involves setting organizational objectives and priorities and designating operational plans through which these objectives can be achieved.

Mechanism, according to Cambridge Dictionary, is defined as the set of elements that form a whole, functioning as an organism. The innovation mechanism is that part which is made with the purpose of helping to achieve and fulfil the objectives of certain strategies. Just as innovation strategies can be in both the public and private sectors, innovation mechanisms can be in both sectors.

2. Innovation strategies and mechanisms on European level applied on national level Strategies

A knowledge-based society is one that focuses on public sector innovation and competitiveness creation. On the European level there are a multitude of innovation strategies and mechanisms, but the most prominent strategies are the Europe 2020 strategy and the Research, Innovation and Development Strategy. Of course, these have their own mechanisms for delivering the strategy.

The *Europe 2020* strategy is a European-wide strategy, which is why EU Member States are obliged to take it on board and transpose it on national level. The European Commission presents seven initiatives needed to drive progress under each priority theme. These initiatives are, Innovation Union; Youth on the Move; A Digital Agenda for Europe; Smart Europe; An Industrial Policy for the Globalization Era (Rotaru 2014, 532-541); An Agenda for New Skills and Jobs and a European Platform against Poverty.

According to the European Commission, efforts are being made to finalize the European Research Area with a view to developing a strategic research agenda, to improve the framework conditions enabling organizations to innovate and be as innovative as possible, to launch various European innovation partnerships on national levels, and to strengthen various EU instruments for the innovation process (European Commission 2010, 15).

On national level, according to the European Commission, Romania and other Member States should: reform R&D and innovation systems to promote excellence; ensure a sufficient number of sciences, math and engineering graduates and focus school curricula on creativity, innovation and entrepreneurship; prioritize budgeting on knowledge. At the same time, it must invest in the education system so as to put education on a learning path and create jobs for young people. In addition, Romania and the Member States of the European Union must empower their citizens, in order to combat or minimize poverty.

Regarding the Research, Innovation and Development Strategy, despite the fact that research-development-innovation activity occupies a central place in all of Romania's development strategies, this activity is still poorly developed, and its impact is limited, which is why from 2022 onwards the budget allocated to research-innovation is lower than in previous years. For the year 2021, the budget allocated to research and innovation is approximately 24% higher than in 2020, when the budget was approximately 1.54 billion lei. According to the Ministry of Innovation, Development and Digitalization, the budget allocated to this sector is expected to decrease from year to year, so that in 2022 - 1.77 billion lei will be allocated, in 2023 - 1.68 billion lei, and in 2024 - 1.69 billion lei (Ministry of Research 2021, 2).

Romania was included in the category of modest innovators until 2019 (European Commission 2019) but since 2021 our country is ranked last in the European ranking, being classified as an emerging innovator. Even if Romania has progressed in terms of innovation, our country still occupies one of the last places in terms of digital public services.

In order to implement this strategy, several instruments were used, such as the National Plan for Research, Technological Development and Innovation 2014-2020 (PNCDI_3) together with other public policies in different sectors (Pașnicu 2018, 28-30). In addition to these, to implement the Research, Development and Innovation Strategy on a national level, the Government of Romania has approved Plan III - National Development and Innovation. Plan III was created to pursue the following objectives: the creation of a national research, development and innovation system, the provision of researchers and the development of new generations of internationally competitive researchers, and the increase of public funding by concentrating resources in areas with economic relevance and demonstrating research potential.

The share of public innovation in the Romanian system is about 71% and the private share of Romanian innovation is 29%. Even if at first glance we consider that the Romanian public system is not innovative at all and that it is stagnating, a closer look shows that the share of Romanian innovation belongs to the public sector and not to the private sector.

In addition to these, our country has developed its own strategies derived from the above. Thus, the Strategy for the Consolidation of Public Administration was created with the aim of forming a Romanian space in which transparency and citizen trust in relation to public services become a cornerstone in the formation of an innovative administration. The public administration will gain the trust of citizens by providing prompt and quality services. One of the activities targeted by this strategy is the simplification of Romanian bureaucracy. A strategic objective is to reduce bureaucracy and simplify procedures especially for citizens. These actions are intended to increase transparency.

Another strategy developed on a national level is the National Competitiveness Strategy. Its aim is to place Romania in the top 10 economies at European level to achieve a competitive business system that focuses on innovation, creativity, and entrepreneurship.

3. Mechanisms

As mentioned earlier, mechanisms are created to carry out innovation strategies. Thus, each strategy has its own mechanisms tailored to the specificity and purpose of the strategy. In order to make the Europe 2020 Strategy a success, the Horizon 2020 Program was created, which is the largest Research and Innovation program ever carried out by the European Union. This program promises more breakthroughs, and world firsts, bringing great ideas from the lab to the market (Ministry of National Education 2017). Horizon 2020 is the financial instrument to implement the Innovation Union, the Europe 2020 flagship initiative to ensure Europe's global competitiveness.

This program aims to help businesses and other types of organizations gain access to loans, guarantees and equity finance through two mechanisms: the Loan Facility and the Equity Facility (European Commission 2014).

The loan mechanism is based on the idea of building on certain policies and sectors so that different loans and guarantees will be offered to individual beneficiaries to increase research and innovation investment, and, on national level, the loan facility is manifested in the Euratom loan to Romania consisting of €223.5 million in the form of a facility for the completion of Unit 2 of Cernavodă nuclear power plant.

The equity mechanism will provide venture capital and/or mezzanine capital to individual businesses in the early stages. The mechanism will also have the possibility to make expansion and growth stage investments in conjunction with the Growth Equity Mechanism under the Competitiveness of Enterprises and SMEs Program, including the trusts' funds (Chesbrough 2005, 41).

The methodological aspects of the formation of the modern economic mechanism on the innovation process should be analyzed through the functioning of national innovation systems, as this will recognize the need for a holistic approach on the innovation process (Ganea and Demidetchi 2013, 230). And for the implementation of these mechanisms, the European Investment Bank Group can be entrusted with the task of implementing financial instruments in accordance with the Financial Regulation.

Smart specialization is a focus of the Research, Development and Innovation Strategy and involves several things such as: stimulating a certain type of economic behavior, with regional or global ambitions and orientation; understanding the social impact of science, technology, and economic activities in relevant sectors; and interdisciplinary research and development (Ministry of Research, Development and Innovation 2014, 22). Which is why tax mechanisms for indirect funding of research, development and innovation activities aim to encourage local investment in research and development. Within the Competitiveness Strategy, there is the monitoring and evaluation mechanism. This mechanism applies to different economic sectors and different areas of activity.

Table 1. Economic sectors of interest for the monitoring and evaluation mechanism

Economic sectors with competitive potential	Smart specialization areas in the 2014-2020 RDI Strategy	Bio economy	Information and communication technology, space, and security	Energy, Environment and climate change	Echo-nanotechnologies and advanced materials	Health
Important economic role and influence on employment	Tourism and ecotourism	✓		✓		✓
	Textiles and leather goods				✓	
	Wood and furniture				✓	
	Creative industries		✓		✓	✓

Competitive dynamics	Automotive industry and components		✓		✓	
	✓ Information and communication technology		✓			
	Food and drinks processing	✓			✓	✓
Innovation, technological development and added value	Health and pharmaceuticals	✓			✓	✓
	Energy and environmental management	✓	✓	✓		
	Bioeconomy (agriculture, forestry, fisheries and aquaculture)	✓		✓	✓	✓

Source: Romanian Government (2015, 8)

4. Conclusions

Strategy is a complex term, and to create a strategy one needs to take into account its mission, the fundamental objectives of the strategy, strategic options, resources and timelines as well as competitive advantages. In order for an organization, regardless of the sector in which it operates, to become as innovative as possible, it is necessary for it to create innovation strategies, and for those strategies to be touched and completed using innovation mechanisms. But one must bore in mind that each strategy has its own mechanisms and that strategies do not have identical mechanisms.

The Horizon 2020 Program was created to make the Europe 2020 Strategy a success. Horizon 2020 is the largest Research and Innovation program ever run by the European Union. Innovation strategies are created to help develop a country's innovation capacity and innovation mechanisms arise from the desire to have a positive outcome of the implemented strategy.

In Romania there are certain innovation strategies such as: the Research, Development, and Innovation Strategy; the National Competitiveness Strategy (and others) and it should be noted that the Research, Development, and Innovation Strategy emphasizes the expenditure allocated to the research, development and innovation process in our country, and the vision of the National Competitiveness Strategy is to place Romania in the top 10 economies at European level in order to achieve a competitive business system that emphasizes innovation and creativity.

The Loan Mechanism and the Equity Mechanism are mechanisms that belong to the Europe 2020 Strategy. These innovation mechanisms are also part of the Horizon Framework Program and are used to obtain various loans and equity financing guarantees.

Unfortunately, there is no clear definition of innovation mechanisms in the country to help implement innovation strategies and therefore it is difficult to use innovation mechanisms because it is not known what they are called, what their main purpose is and, more importantly, whether they can be folded into specific strategies.

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