

Original article

## INNOVATION IN THE EU: ECONOMIC AND LEGAL ASPECT

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**Abstract:** Starting from the fact that this topic is in the development phase, the author points to the significance of innovation in the EU, as a relatively new concept. Innovation plays an increasing role in our economy. It provides gives for citizens as both consumers and workers. The work essentially determines the innovation in the EU, and then reviews recent developments in legal project management. The aim of the paper, respecting article size limit, is to present specific features of the innovation in the EU, both: economic and legal aspects.

**Keywords:** European Union, innovation, legal, regulation.

### 1. INNOVATIONS IN EUROPEAN UNION

Innovation is one of the key trends in economic growth and is of great importance for the development of the economy (Popiel, 2014). Innovation contributes to raising the level and quality of social life and thus to leveling social inequalities. It is very important to emphasize the role of knowledge and innovation in generating economic progress. Scientists also say that since the beginning of the 2000s, we have been able to see many differences and innovations in the field of culture and knowledge (Jovanović, 2020). Innovativeness will contribute to the success of the company in the form of increased sales, increased market share or increased efficiency. Through innovation, companies achieve a competitive advantage in the market (Popiel, & Jablonska, 2014).

The Fourth Industrial Revolution has immense potential for Europe's economy and citizens (World Economic Forum, 2019). For instance, fully implementing a digital single market could increase Europe's GDP by up to an estimated €415 billion per year to 2025. Lagging European firms, were they to double their digital intensity, could add up to €2.5

trillion in GDP in 2025. (McKinsey Global Institute, 2016). Europe has an enormous opportunity to leverage the new wave of digital technologies – such as artificial intelligence (AI), machine learning and blockchain. For example, developing and diffusing AI can add up to an estimated €2.7 trillion to European economic output by 2030 (McKinsey Global Institute, 2019). Europe needs a new ambition: to compete for global innovation leadership. Europe has strengths to build on: its start-up scene is increasingly vibrant and its tech workforce is growing faster than ever at 2.6% a year. It boasts many small and medium-sized enterprises (SMEs) that are leaders in their fields. (World Economic Forum, 2019).

To catalyze innovation, Europe could attract international talent through its comparative advantages in quality of life. To leverage existing talent bases, Europe could encourage women's talent in technology and entrepreneurship and use new technologies to advance and train its population (World Economic Forum, 2019). However, labour markets will be disrupted: in 60% of today's occupations, 30% or more of activities are already automatable with existing technology, and European workers will require new sets of skills – technological, social and emotional

(McKinsey Global Institute, 2017) – to make new technologies successful and mitigate job losses due to automation (World Economic Forum, 2016).

Europe cannot compete globally just by imitating its competitors. To achieve sustainable competitive advantage and long-term success, Europe must achieve scale. Europe already has a comparative advantage over competitors in some key economic sectors, such as finance, advanced manufacturing and robotics, but needs to invest more in other areas crucial to innovation, including digital and internet services. In addition, it is very important to focus on strengthening the powerful base of small and medium-sized enterprises in the EU while encouraging the diffusion of technology. In order for Europe to have the opportunity to become a world leader in digital innovation, it is necessary to catalyze its own strengths. This can be achieved primarily by encouraging the highly qualified population to focus on innovation (World Economic Forum, 2019).

## 2. EUROPEAN UNION'S INNOVATION POLICY

Innovation policy is a set of intentional and purposeful activities of public authorities, which directly or indirectly aim to support innovation, and thus the competitiveness of the economy. The aim of innovation policy is to support the innovativeness of the economy through government programs and various instruments that enable the state to influence the level of innovation of individual entities and sectors. Innovation policy is a strategic part of structural policy, which aims to ensure the efficiency of the national innovation system (Popiel, & Jablonska, 2014). The foundations of modern innovation policy were developed in the last decade of the twentieth century. Modern innovation policy is horizontal in nature and is based on a broad understanding of innovation, which assumes that innovation is the result of an interactive process. Some scientists understand innovation in a narrow sense that focuses on inventions, others use a systemic perspective and look at the entire innovation process from the creation of new ideas to their application and dissemination (Waresa, 2018). Edler and Fagerberg (2017)

identified three main types of innovation policy (p.17):

- 1) Mission-oriented policy, which focuses on selected priority areas.
- 2) Invention-oriented policy, which focuses on research and development and how it is translated into inventions. This type of policy is not very much concerned with the implementation and diffusion of new ideas.
- 3) System-oriented policy, which focuses on system-level elements (capabilities of actors, interactions among them, etc.)

The concept of innovation policy emerged in the literature in the second half of the twentieth century as a combination of science and technology policy, and industrial policy. Nowadays, innovation policy is considered part of economic policy, and its main functions are: (McKinsey Global Institute, 2017). strengthening linkages in the national innovation system; creating favorable conditions for the implementation of new solutions (innovation); fostering structural changes in the industry (e.g. changes in technology, quality improvements); enabling companies to reap the benefits of globalization and international cooperation.

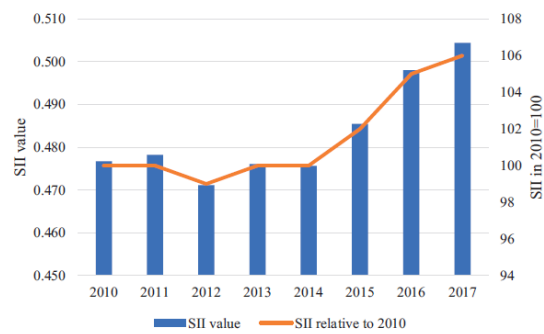
Regional policy in the European Union, especially in terms of innovation, is one of the most important policies. Activities undertaken within the European Union aim to promote pro-innovative attitudes, especially in small and medium-sized enterprises. One of the goals of the EU in the field of innovative policy at the regional level is the introduction of mechanisms that encourage the application of innovative solutions at all stages of the company's development, so that the regions become more competitive. It should be emphasized that building a competitive advantage relies heavily on product innovation, organization, management optimization, improvement of outdated, often inefficient processes and introduction of new ones, bringing new potentials and development opportunities (Popiel, & Jablonska, 2014).

Innovation strategy and policy combine many different elements related to innovation performance measured by the SII value was fluctuating in the years 2010-2014, however, without any significant progress as the SII in

2014 was at the same level as in 2010. Since 2015 an increase in overall EU innovation performance can be observed. In 2017 the SII value was by 5.8 percentage points higher than in 2010 (Waresa, 2018). However, not all components of the SII showed a positive change in the 2010-2017 period. Compared to 2010, EU performance has improved the most for 'Innovation friendly environment' thanks to a significant increase in broadband penetration. A huge improvement of EU performance can also be seen in 'Human technology, education, infrastructure, etc. Innovation policy in the EU has over 20 years of history. The evolution of the innovation concept, from a linear model, which assumes that innovation is mainly the result of research and development, to a systemic model, in which innovation is the result of interaction between people, organizations and institutions, has caused significant adjustments in innovation, strategy and policy concepts. The Innovation Union has brought a new approach to innovation policy by shifting its focus from pure research to research and innovation, which address societal challenges. Innovation is considered a key factor in achieving smart, sustainable and inclusive growth (Waresa, 2018).

European Union's innovation performance in the years 2010-2017 is measured using the Summary Innovation Index (SII) and its main components. The index consists of 27 indices representing four groups of factors that shape innovation performance (i.e.: framework conditions, investments, innovation activities and impacts), that are further split in ten innovation dimensions (EIS, 2018). Figure 1. shows how the SII in the EU taken as a whole evolved over the 2010-2017 period.

EU resources' with an increase of doctoral graduates contributing the most to this positive change. The innovation position of the EU suffered the most in 2010-2017 in the dimension „Innovators“. Here EU performance was worse in 2017 compared to 2010 for all indicators included in this dimension, such as percentage of SMEs introducing product, process, marketing and organizational innovations as well as SMEs innovating in-house measured as a percentage of all SMEs (EIS, 2018).



**Figure 1:** Summary Innovation Index in the EU, 2010-2017.

Note: Reprinted from *Strengthening the knowledge base for innovation in the European Union* (p. 24) by M.A. Waresa, 2018, Polish Scientific Publishers PWN

### 3. INNOVATION PROJECT MANAGEMENT

Innovation project management is based on such principles as selective management, target focus of projects, completeness of project management cycle, stage-by-stage approach and hierarchical nature of the innovation process and project management process, and multivariance (Bibarsov, et al, 2017). Conventional theories of innovation project management prescribe that projects with lower levels of technological uncertainty, modest levels of innovativeness, higher levels of complexity and higher levels of relational instability, need to be managed with careful process control, a formalized communication process, and detailed planning. The consistently high levels of failure of publicly funded innovation deployment projects however, leave us to question these kinds of planning and control methods (Kapsali, 2011). Innovation Project Management provides the tools, insights, and metrics needed to successfully manage innovation projects - helping readers identify problems in their organization, conceive elegant solutions, and, when necessary, promote changes to their organizational culture (Kerzner, 2019). The impact of projects and project management on our society will increase. Almost 40% in every we do (in time and money) is project management related. But the way we're executing our projects is changing; there's a different view on (project management) leadership (Schefferlie, 2020). The close bond between the management of projects and

innovation was well understood in the 1950s when pioneering organizations created new structures, techniques, and processes to manage complex and highly uncertain research and development projects in technologically advanced weapons and defence-related industries. Over subsequent decades, there have been some points of convergence when researchers investigated the nexus of innovation and project management, such as Japanese product development practices in the 1980s (Davies, 2013).

Innovation project management faces a double challenge caused by the complex natures of both innovation and projects. Innovation project management must be considered within three aspects, in particular, as a system of functions, as a process of taking a management decision, and as an organizational system in terms of the functional approach in the innovation project management (Bibarsov, et al, 2017).

#### 4. LEGAL ASPECT OF INNOVATION

The law, the legal services and legal education are all undergoing extraordinary transformations as a result of rapid social, economic and technological changes. At the beginning of the 21st century, the business world is energetic and multiplex and competition is globalized. Rate of success in innovation in such a circumstance are low. To increase the modernisation of the EU industry, the absorption of product and service innovations, use of innovative manufacturing technologies and the introduction of new business models is demanded. The Commission develops policies that help speed up the broad commercialisation of innovation and engages in many activities that support innovation in the EU. The Innovation Union was a past research and innovation policy. The plan contained over 30 action points and aimed to do 3 things make Europe into a world-class science performer remove obstacles to innovation like expensive patenting, market fragmentation, slow standard-setting and skills shortages revolutionise the way public and private sectors work together, notably through Innovation Partnerships between the European institutions, national and regional authorities and business (European Commission, 2020). In our increasingly knowledge-based economies,

the protection of intellectual property is important for promoting innovation and creativity, developing employment, and improving competitiveness. The European Commission works to harmonise laws relating to industrial property rights in EU countries to avoid barriers to trade and to create efficient EU-wide systems for the protection of such rights. It fights against piracy and counterfeiting and aims to help businesses, especially small businesses, access and use intellectual property rights more effectively (Seconded european standardization expert in India, 2020). Intellectual property rights (IPR) protect a firm's intangible assets, allowing enterprises to profit from their creative and broadly innovative activities. Intangible assets account for more than half the value of companies and their importance is growing. In a world where EU companies compete more on innovation, creativity and quality than on price, intellectual property is a powerful tool for EU enterprises to become more competitive. The Commission has designed a legal framework and intellectual property system that offer incentives for EU companies to invest in the provision of goods and services with high standards of quality, innovation, design and creativity. Our main findings can be summarized as follows (Pelkmans, & Renda, 2014):

- Regulation can, under certain circumstances, be a powerful stimulus to innovation and entrepreneurship.
- EU regulation matters at all stages of the innovation process, from R&D to commercialization.
- Different types of regulation can be identified, in terms of their impact on innovation. We distinguish between general rules, innovation-specific rules, and sector-specific legislation. Different types of regulatory approach can have different impacts on innovation.

Typically, more prescriptive, rigid regulation can hamper innovative activity, whereas the more regulation is flexible, the more innovation can be stimulated (Pelkmans, & Renda, 2014).

The current system lacks synchronisation and is unfit to reach small firms effectively; innovation is not considered at all stages of the

policy-making process; there are no indicators that track the success of innovation-oriented policies. There is no simple relation between innovation and the regulatory environment. No strict rules can be set on an optimal level of numbers of regulations in a domain, on their level of stringency and on their stability over time. The absence of generic criteria based on evidence makes it necessary to examine different parts of regulatory regimes to identify which parts – such as procedures for marketing authorisation – need to be stable and which parts – such as accommodating new production techniques or materials – need to be open to development. The relationship between regulation and innovation, therefore, needs to be examined on a case-by-case basis (Directorate-General for Research and Innovation, 2016). The regulatory framework is de jure or de facto prescriptive in technology choice and discourages different solutions and new entrants; establishes a level of stringency which is inconsistent with available cost-efficient technology, hence delaying investment and deployment of solutions or allows too frequent changes in standards which may also limit the incentive for investment if a technology is relatively recent. Regulatory frameworks not sufficiently friendly for innovation can be identified when: the regulatory environment is not fully interoperable across sectors and blocks cooperation and the development of open innovation based on multi-technology sourcing; regulations which are technology specific are not adapted in a timely way to technological progress (Directorate-General for Research and Innovation, 2016).

## 5. CONCLUSION

The innovation chain is becoming increasingly heterogeneous, open and universalize; it includes and involves stakeholders from different sectors and parts in society. Faced with these challenges, in past years many European countries have suffered from an increasing competitiveness, innovation and growth. The Innovation Union has brought a new approach to innovation policy by shifting its focus from pure research to research and innovation, which address societal challenges. Innovations are promoting entrepreneurship, activities which allow to give the resources new economic opportunities. The most crucial

for the re-launch of the EU project is releasing the potential for EU competitiveness through innovation. Innovation and regulation should be further investigated both at the horizontal level and from sectorial perspective. A thorough analysis of business needs in specific regulatory contexts linked to innovative solutions with appropriate risk management is necessary to identify possible improvements in the impact of regulation on innovation and growth. The management of the innovations in projects is no easy process, because it consists in managing something completely new that is unknown and the produces endless doubts.

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