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MEASURING COMMERCIALIZATION SUCCESS OF INNOVATIONS IN THE EU

The results of numerous studies have revealed that not all innovations can be commercialized. To achieve financial success, assessing potential to commercialization is very useful as it assists in minimizing risks associated with failure of the overall commercialization process. At the same time the other equally important dimension of commercialization is evaluating its financial effectiveness. One should understand what effects is possible to obtain after commercialization and what spheres can be covered by commercialization effects. The study is devoted to analyzing approaches and indicators for evaluating commercialization potential, and evaluating financial commercialization performance in the EU countries.

Keywords: commercialization of innovations, commercialization potential, financial effectiveness of commercialization, EU, success of innovations.

Formulation of the problem generally. In the results of the analysis of commercial success induced by innovation in the field of industrial technologies carried out by PricewaterhouseCoopers EU Services EESV has been referenced: “the EU has a clear need for information on the factors that determine the chance of survival of the innovation in the “valley of death”, as well as the elements that can help to cross the valley as quickly and safely as possible and to become commercially successful on the market” [11, p. 25]. This claim very precisely describes the relevance of the current study.

The results of numerous studies have revealed that not all innovations can be commercialized. To achieve financial success, assessing potential to commercialization is very useful as it assists in minimizing risks associated with failure of the overall commercialization process. Thus, such evaluation can prevent huge losses of the parties involved in commercialization process.

At the same time, the other *equally important* dimension of commercialization is

evaluating its effectiveness. One should understand what effects is possible to obtain after commercialization and what spheres can be covered by commercialization effects. When talking about commercialization process it is useful to consider it through the two dimensions: preconditions of successful commercialization or, in other words, capacity to commercialize innovations, and commercialization financial performance. There are a lot of innovation indicators but there is still no universal algorithm to identifying potential to commercialization and algorithm to evaluating its financial effectiveness.

Analysis of recent researches and publications. There has been a lot of literature to deal with innovation indicators. Many investigations are devoted to considering the problem of assessing patent value as a measure for effectiveness of commercialization of innovations. Hsieh [17] has presented a hybrid method of assessing patent value and determining strategy in the early stage of commercialization.

Wagner and Wakeman [26] have investigated to what extent patent-based indicators explain product commercialization in the pharmaceutical industry. The authors have related patent-based indicators that capture either the value of an invention or the uncertainty nearby the patenting process to the outcomes of the product commercialization.

Aarikka-Stenroos and Sandberg [1] have reviewed how divergent network actors contribute to the commercialization of innovations. The authors have pointed that the network aspect of commercialization is crucial. In their research they aimed at integrating the knowledge on how current research and business employ the network approach in commercialization, and how contributors external to the innovator firm can assist the process of commercialization of innovations.

One of the main research highlights of investigation is that different network approaches, such as industrial, strategic, social networks, entrepreneurship networks are related to commercialization process. To the conclusion that social networks impact university commercialization Casper [6] has also come. In particular, when analyzing the impact of regional economies on the commercialization of university science the researcher has revealed that university commercialization outcomes are dependent on involvement of universities in regional social networks.

Walsh, P.R. [27] has developed conceptual framework for identifying the appropriate choice of commercialization strategies when assessing the market environment for Renewable Energy Technology (RET). The author has come to conclusion that commercialization of innovation in RET depends on RET demand and eco-sophistication of the market. For each of these dimensions the researcher has identified four separate commercialization environments: Innovation Wasteland, Innovation Push, Innovation Pull and Innovation Nirvana. All these environments influence the choice of commercialization strategies.

Arora, Cohen and Walsh, J.P. [2] have investigated the acquisition and commercialization of invention in American manufacturing. The authors have surveyed over 5000 American manufacturing sector firms in order to determine the extent to which innovators count on external sources of invention between 2007 and 2009. The results of the research have shown that 49% of firms report that their most important new product had originated from an outside source, particularly customers, suppliers and technology specialists (independent inventors and R&D contractors, universities). Researchers have concluded that external sources of invention make a considerable contribution to the overall rate of innovation in the economy. Thus, the origin of invention can influence the process of commercialization of innovations.

Lin, Wang and Kung [20] have investigated the influences of cross-functional collaboration and knowledge creation on technology commercialization in high-tech industries. The researches aimed at investigating the relationships among cross-functional collaboration, knowledge creation and technology commercialization performance in the high-

tech industry context.

For achieving this goal they have surveyed 203 marketing and R&D managers and employees in Taiwanese high-tech companies. Their empirical findings have indicated that cross-function collaboration reveals new opportunities for creating knowledge and commercialization.

When analyzing factors affecting effectiveness of commercialization of innovations, it should be noted that last years a question of great importance is how commercialize effectively academic innovations. To this question many authors have devoted their studies. Khademi, Ismailb, Leec and Garmsari [19] have investigated the role of potential licensee availability in facilitating commercialization of academic research results.

The researches have focused on investigating the effects of the availability of potential licensee as a measure of academic commercialization and found that the availability of potential licensee and awareness of the invention market potential facilitate commercialization.

When considering commercialization of university inventions Wu et al. [28] have found that invention of university is licensed mostly if inventors perceive positively commercialization of research. Thus, licensing is an important factor of commercialization process.

Cavdar and Aydin [7] have examined whether technological development indicators, which are used as a proxy for economic growth, innovation and the development level of countries, are influenced by the used variables in their research. The authors have identified indicators for technology development and innovation as “statistics, which measure quantifiable aspects of technological development and innovation creation” [7, p. 1486]. Such indicators can provide insights on important dimensions of commercialization process, investigation of which is the objective of the present paper.

Commercialization process can be generally defined as a process that is dependent on results of scientific research and quality of technology innovation. Thus, there is a need to consider scientific and technology indicators in order to outline those of them that can contribute to understanding potential to commercialize innovation and those ones that can provide insights on economic effectiveness of commercialization process (Figure 1).

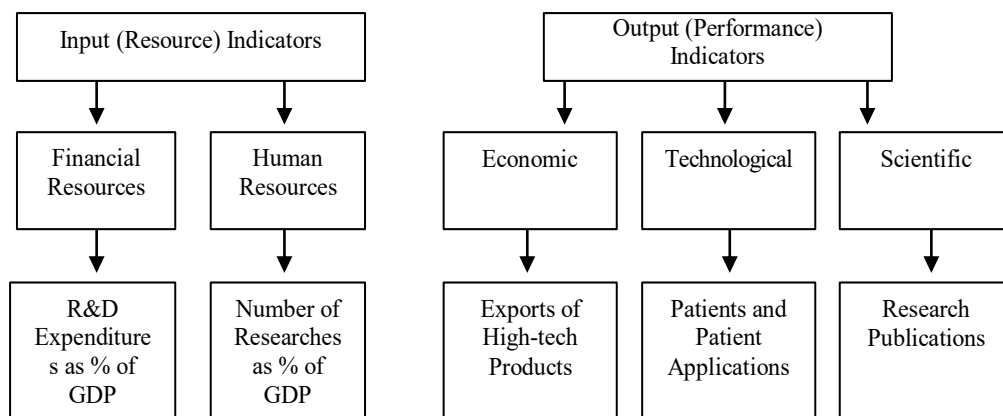


Figure 1 – Science and technology input and output indicators [7, p. 1488]

From the Figure 1 we can conclude that R&D Expenditures as % of GDP and Number of

Researches as % of GDP can be attributed to the system of indicators for assessing potential to commercialization of innovations in a country.

Such indicator as Exports of High-tech Products is considered to be an indicator for assessing economic effects of innovations. Thus, it also can be viewed as indicator for assessing financial success of commercialization process. Taking into account that commercialization is dependent on quality of technology innovation, we also consider Patents and Patent Applications indicator as one that can generate future increase of economic benefits. Thus, all reviewed above findings contribute to understanding commercialization (Table 1).

Unsolved issues as part of the problem. In this area, *not all* problems have yet been resolved that is also largely to be explained by the complexity of innovation process. One of key findings of PricewaterhouseCoopers EU Services EESV investigation is that Nanosciences, Nanotechnologies, Materials and New Production Technologies innovations “complex, multidisciplinary and potentially disruptive nature of the innovation cycle. Furthermore, each commercialization path is unique. Finally, NMP market is not a single market but a series of enabling technologies that provide groundbreaking solutions to high-value problems in every industry” [11, p. 7]. Thus, it is important to point out multi-dimension indicators, using of which is possible both at a firm level and at a country level.

The aim of this article is to consider approaches and indicators for evaluating innovations` commercialization potential, and evaluate performance of the EU countries by the multi-dimensioned indicators of commercialization financial effectiveness.

Basic materials. *Barriers to commercialization of innovations in the EU countries.* Today commercial capacity of innovation is crucial for all innovation process. Not only innovators are interested in successful commercialization but also investors that aim at investing resources in promising projects. Previous investigation has shown that in the EU countries effectiveness of commercialization depends on many factors such as quality of human capital, legal and institutional environment, interactions between parties of innovation process, including international relations, information and communication technologies.

According to the EU countries experience in commercialization of innovations, great attention should be paid to incentives. Such incentives include mainly two types: by nature of resource fund and by object of stimulation.

Moreover, the future success of commercialization depends also on goals of business, form of intellectual property, budget of economic resources, system of risks, related to the specificity of the product, privacy questions, business reputation.

A great contribution to the overall process of commercialization makes a proper understanding and awareness of steps that facilitate innovations to the market. In particular, they can be generally divided into technology-oriented decisions and business-oriented decisions. The first group includes involvement by industrial groups in innovation project activities, technology transfer, capacity study, testing or demonstration activities, prototyping, pilot project development. The second group consists of development of business plan, market study, startup launch, capital investment, investment from public authorities. Thus, before introducing innovation to the market and considering its commercial potential, it is important to be aware of a number of barriers to commercialization of innovations. In light of this problem the results of the project Flash Eurobarometer 394 “The role of public support in the commercialization of innovations” are very useful [14]. The project has been conducted at the request of the Directorate-General for Enterprise and Industry in the 28 EU Member States as well as in Switzerland and the United States. It was planned to benchmark innovation

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activities in a variety of areas, and investigate barriers to commercialization, as well as the role of public funding in innovation (Figure 2).

Table 1 – Measuring commercialization (authors own contribution based on [1; 2; 7; 9; 12; 19; 20; 22; 24-28])

Author	Factors/indicators	Contribution to commercialization understanding
Wagner and Wakeman	patent-based indicators	uncertainty regarding patent protection reduces speed of commercialization
Cavdar, Aydin		indicator that can facilitate future generation of economic benefits
Rylkova, Chobotova		commercialization process is impossible without the protection of intellectual property
Aarikka-Stenroos, Sandberg, Corkindale, Datta, Vovk	activity of network actors (distributors, users, customers, suppliers, investors, complementaries, associations, public organizations, regulators and policy makers)	- network actors facilitate adoption/diffusion and create markets; - network of organizations are imperative for commercialization activity
Mohannak, Samtani		- university involvement facilitates commercialization process
Walsh P.R., Corkindale	- demand and sophistication of the market: - the quality of commercialization environment (Innovation Wasteland, Innovation Push, Innovation Pull and Innovation Nirvana)	- commercialization of innovation depends on demand and eco-sophistication of the market: - all commercialization environments influence the choice of commercialization strategies
Arora, Cohen, J.P. Walsh	origin of invention: internal/external	origin of invention can be linked to commercialization
Lin, Wang, Kung	cross-functional collaboration and organizational knowledge activities	cross-functional collaboration and organizational knowledge activities facilitate knowledge creation and commercializing technologies
Khademi, Ismailb, Leec, Garmsari	licensee availability	availability of licensee facilitates commercialization
Wu, Welch, Huang		invention of university is licensed mostly if inventors perceive positively commercialization of research
Cavdar, Aydin	exports of high-tech products	indicator of economic effectiveness of commercialization process
Do, Mazzarol, Reboud	R&D	R&D is a part of commercialization process

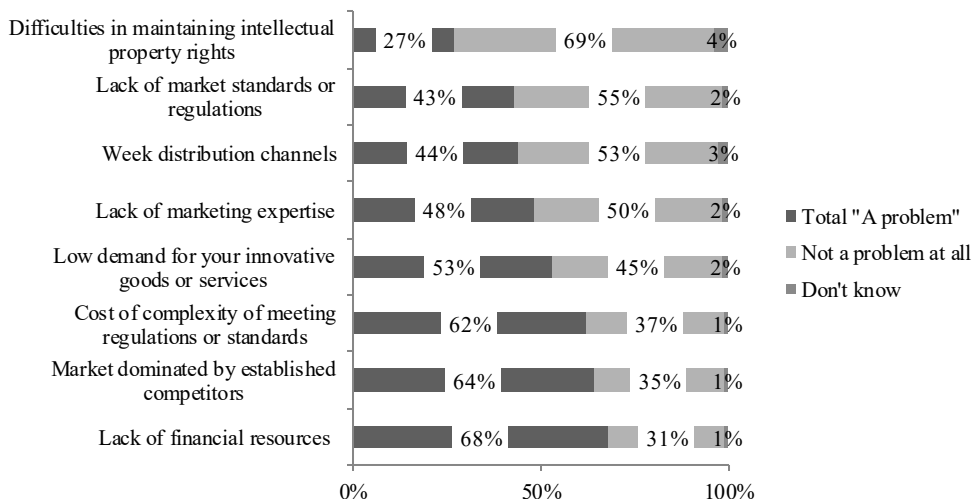


Figure 2 – Barriers to commercialization of innovations [14]

In view of the above, all actors of innovation process should take into account many factors that impact final financial success of commercialization. Thus, only after considering above-mentioned factors and barriers of commercialization process one should make a conclusion about commercialization capacity of innovation and its financial effectiveness.

Approaches and indicators for evaluating commercialization potential. As we mentioned above financial success of commercialization process to a great extent depends on a number of primary conditions. Assessing these primary conditions can be possible in different ways.

Technology audit approach. One of mentioned ways is a method of technological audit [10]. Evaluating the capacity of commercialization of innovations is possible through the use of software complex which automates auditing process and includes the blocks of interactive filling of electronic forms, decision-making, automatic report generation. Electronic forms can involve a number of information blocks, among which are blocks devoted to general information about the peculiarities of innovative project. It is also useful to include blocks that aim to reveal possible risks, intellectual property rights, and possible directions of commercialization. Technological audit is expected to be conducted by using *questionnaire* methodic and *interviewing*. The following criteria of Technological audit and questions related to commercialization of are of particular importance:

1) scientific level of innovation. This criterion is very important as can contribute to understanding of whether scientific level of a given innovation exceeds the level of existing innovations or is equivalent to existing innovations, or is lower than existing innovations;

2) patentability – indicates whether the findings are needed to be protected or the patenting is not relevant. It should be noted that patenting is more desirable as in case of patenting many goals can be achieved. Among the most popular goals of patenting are:

- an expansion of activity;
- protection from competitors,
- searching in the future an investor for realization of investments;
- access to cross-licensing;
- access to new markets.

3) perspectives for using the results of innovation process – contributes to understanding whether the invention is useful for a company or competitors, is there a market for invention and obtained by using its production;

4) meeting the challenges in the final part of innovative project – indicates whether it is real or unreal;

5) are there any considerable difficulties in area of innovative project;

6) are there any established partnerships with organizations that are planning to use results of innovation projects – can assist in indicating whether there any established partnership agreements; or there are agreements, but business relationships are not developed enough; or relationships are not documented.

Fuzzy logic method. Another approach that can be used for analyzing commercial capacity to commercialization is using Fuzzy logic method performance of technological innovation capabilities in uncertainty [8]. Fuzzy logic suggests using Fuzzy system for measuring. This approach involves using experts' knowledge. Fuzzy method is considered to be effective in conditions of vagueness of human thought. In fuzzy logic, each number between 0 and 1 indicates a partial truth, whereas crisp sets correspond to binary logic {0, 1}. Fuzzy approach is able to express and handle or imprecise judgments of the people under uncertainty mathematically.

Evaluation technological innovation capabilities can be conducted by the following criteria:

- planning and commitment of the management capability – calls for the selection of appropriate strategy for commercialization. Among the most complicated areas of commercialization process are questions of financial relationships between actors of innovative process. Thus, it is important to realize real budget of innovative project, proportion of necessary R&D in overall activity of the enterprise;

- marketing capacity – greatly contributes to understanding relevant market forces, customers' needs, effectiveness of collaboration and exchange knowledge between project actors and potential customers of innovation;

- innovative capability – helps to reveal the level of innovative risks, innovative feasibility of the project;

- knowledge and skills capability – implementing innovative project often requests using complicated program software, evaluating of innovative practices, assisting operational process;

- information and communication capability – identifies capacity to use information and generate new ideas, defines capacity to technology transfer, effective management documentation;

- external environment capability – indicates needs in development cooperation between actors of innovative project and external subjects, such as innovative centers, investors, universities;

- operations capability – assessing operations capability seeks to identifying capacity in a whole quality of technological innovation marketing, ability to meet marketing needs.

For the purpose of using Fuzzy logic can be used Strategic Technology Evaluation Program (STEP) and «IF {Fuzzy antecedents} THEN {Fuzzy consequent}» rule [3]. Evaluation scheme with using Fuzzy logic and STEP is presented in Figure 3.

Four-dimensioned approach. An interesting approach to evaluating commercialization potential is using of the four-dimensioned approach with the use of four groups of indicators [5; 21]. The first example of such approach suggests calculating the following indexes [21]:

1. Market index – a measure of firm’s focus on customer needs and to what extension the new innovation offers customers value for money.
2. Innovation index – a measure of the firm’s systematic approach to the process of new product development, and its management of intellectual property.
3. Resources index – a measure of the firm’s technological, financial, human, and managerial resources.
4. Strategy index – measure of the firm’s strategic planning in relation to its commercialization process.

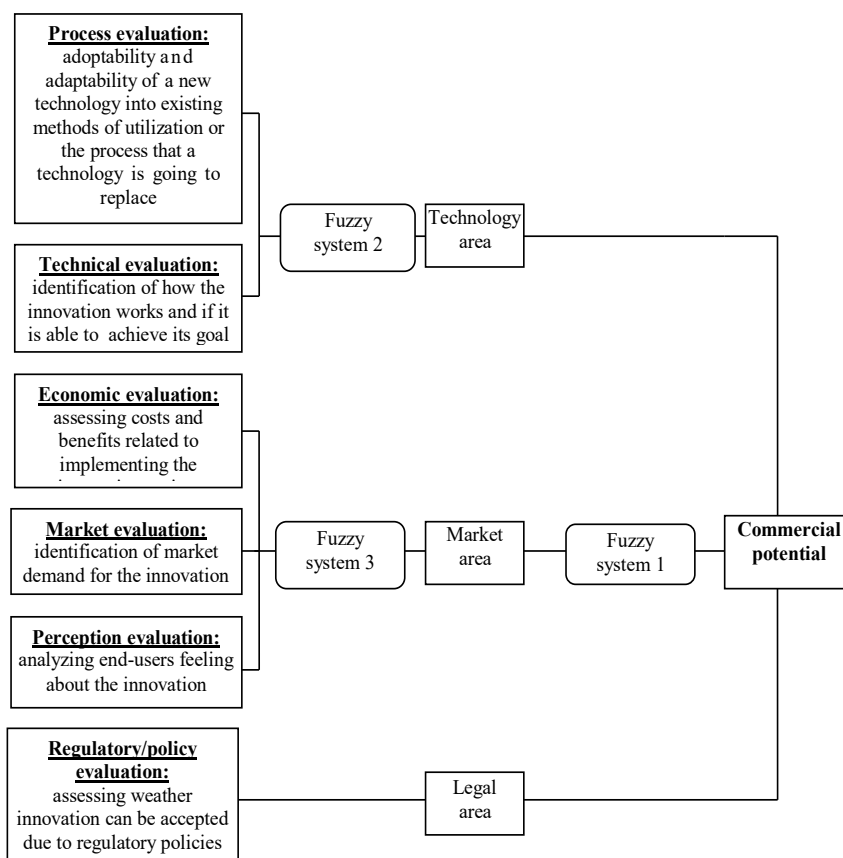


Figure 3 – Fuzzy approach with using of STEP (developed by authors based on [3])

The second approach (Figure 4) indicates hierarchical structure for commercial potential assessment [5].

Such approaches are very useful as reflect systematic effects of four different dimensions in deciding whether innovation has commercialization potential.

Indicators for evaluation financial performance of commercialization. As we mentioned above evaluating of effectiveness of commercialization process is complicated process due to different reasons. When analyzing capabilities of Innovation Union Scoreboard Index (IUS) (Innovation Union Scoreboard, 2015) [13], Nasierowski and Arcelus have concluded that

“... such ranking does not take specific economic and social conditions of the country into account” [23, p. 799].

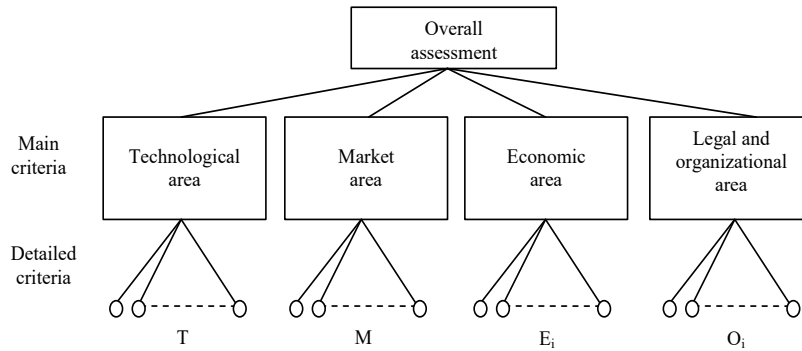


Figure 4 – Hierarchical structure for commercial potential assessment [5, p. 7]

But for a first approximation, evaluation of financial performance of commercialization by some indicators of the overall IUS can greatly contribute to understanding of whether commercialization was successful in a separate country. To the same conclusion individual researches have come.

Furthermore, there are developed numerous innovation guides point to a necessity of consideration of indicators, calculated in IUS [18]. Of particular interest are the following indicators of IUS:

- employment in knowledge-intensive activities [16];
- medium and high-tech product exports [4; 7, p. 1488,15];
- knowledge-intensive services exports;
- sales of new to market and new to firm innovators [16];
- license and patent revenues from abroad [16].

In the Figures 5-9 performance of the EU countries by above-mentioned indicators is presented.

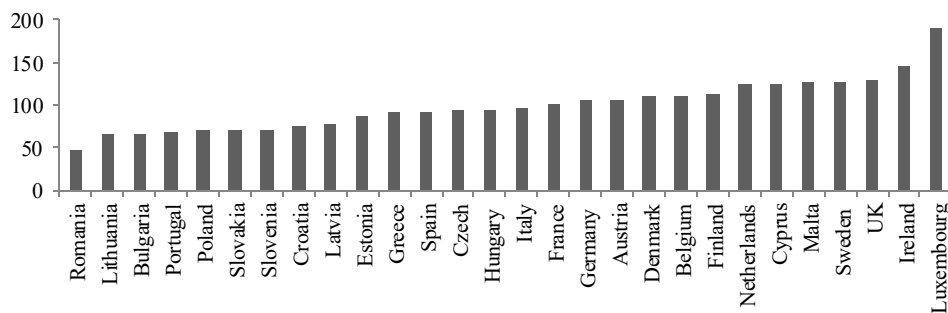


Figure 5 – Employment in knowledge-intensive activities in the EU countries (authors own calculations based on [13])

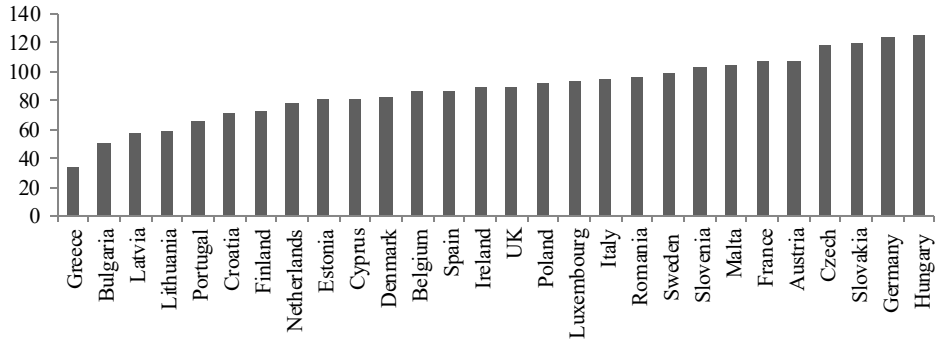


Figure 6 – Medium and high-tech product exports (authors own calculations based on [13])

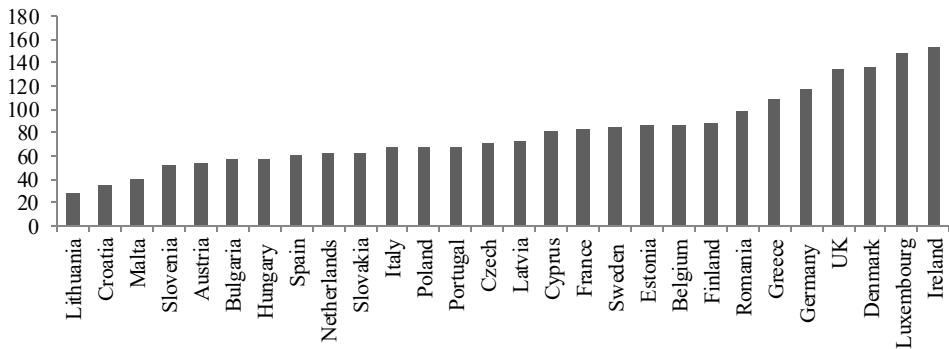


Figure 7 – Knowledge-intensive services exports (authors own calculations based on [13])

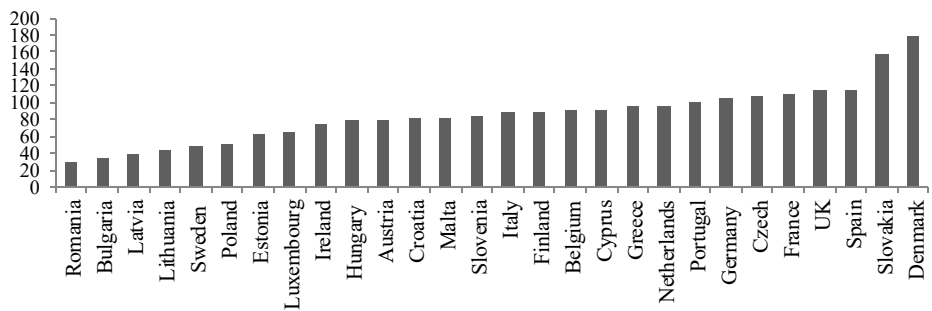


Figure 8 – Sales of new to market and new to firm innovators (authors own calculations based on [13])

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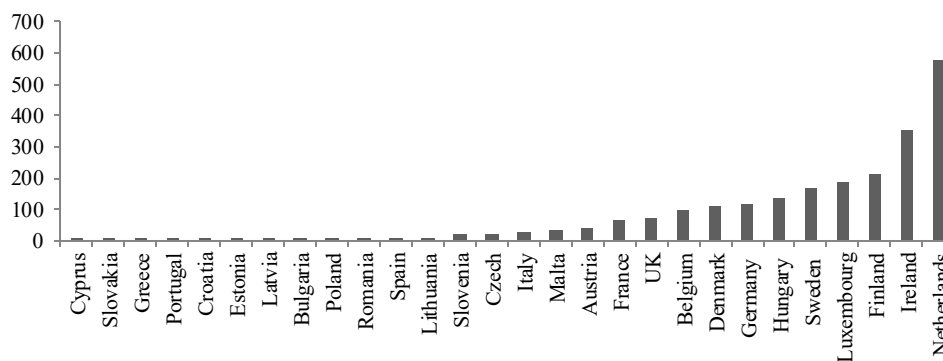


Figure 9 – License and patent revenues from abroad
(authors own calculations based on [13])

Thus, systemized effectiveness of the financial performance of commercialization in the EU countries by above-mentioned indicators is presented in Table 2.

Table 2 – Effectiveness of the financial performance of commercialization in the EU countries according to selected indicators of Innovation Union Scoreboard 2015
(authors own contribution)

The high performance	Indicators	The low performance
Luxembourg, Ireland	employment in knowledge-intensive activities	Romania
Germany, Hungary	medium and high-tech product exports	Greece
Luxembourg, Ireland	knowledge-intensive services exports	Lithuania, Croatia, Malta
Slovakia, Denmark	sales of new to market and new to firm innovators	Romania, Bulgaria, Latvia
Netherlands, Ireland	license and patent revenues from abroad	Cyprus, Slovakia

Another important indicator of evaluation financial performance of commercialization is turnover increase due to innovative goods or services. The results of Flash Eurobarometer 394 “The role of public support in the commercialization of innovations” (2014) allowed conducting an analysis of the EU countries by their turnover increase due to innovations (Table 3).

It can be concluded from the Table 3 that by indicator turnover increase due to innovative goods and services the most successful country is Sweden. Also commercially successful can be pointed Czech Republic, Estonia, Spain, Latvia, Austria, and Sweden. The least successful countries by this indicator are: Bulgaria, Greece, Croatia, Luxembourg and Hungary. Such countries, as Denmark, Germany, Greece, France, Ireland, Republic of Cyprus, Malta, Poland and Finland have shown different results and there is a need for more in-depth analysis to make a definitive conclusion.

Table 3 – Approximately what percentage of your company’s turnover in 2013 was due to innovative goods or services that have been introduced since January 2013
(authors own calculations based on [14])

	0	Between 1 and 25%	Between 26 and 50%	Between 51 and 75%	Between 76 and 100%	Don't know
	FL 394	FL 394	FL 394	FL 394	FL 394	FL 394
EU 28	10%	61%	13%	3%	4%	9%
Belgium	15%	67%	7%	2%	2%	7%
Bulgaria	12%	66%	12%	0%	2%	8%
Czech Republic	10%	61%	17%	2%	3%	7%
Denmark	7%	53%	15%	7%	6%	12%
Germany	6%	58%	16%	3%	7%	10%
Estonia	17%	57%	10%	2%	5%	9%
Greece	7%	70%	14%	2%	0%	7%
Spain	11%	64%	10%	9%	2%	4%
France	5%	75%	9%	4%	0%	7%
Croatia	14%	63%	6%	1%	4%	12%
Ireland	25%	65%	4%	2%	2%	2%
Italy	10%	59%	13%	3%	4%	11%
Republic of Cyprus	18%	44%	12%	7%	8%	11%
Latvia	18%	53%	14%	6%	4%	5%
Lithuania	10%	64%	11%	2%	6%	7%
Luxembourg	8%	65%	12%	2%	7%	6%
Hungary	16%	65%	13%	0%	3%	3%
Malta	11%	71%	5%	3%	4%	6%
Netherlands	8%	65%	12%	2%	7%	6%
Austria	19%	53%	12%	3%	4%	9%
Poland	8%	56%	17%	7%	4%	8%
Portugal	11%	66%	11%	3%	3%	6%
Romania	8%	65%	13%	2%	2%	10%
Slovenia	17%	65%	12%	0%	1%	5%
Slovakia	14%	61%	15%	3%	2%	5%
Finland	7%	54%	17%	5%	14%	3%
Sweden	13%	52%	16%	4%	6%	9%
United Kingdom	14%	55%	14%	4%	6%	7%
Switzerland	8%	69%	12%	3%	2%	6%
USA	10%	60%	16%	4%	6%	4%

Conclusions. The goal of current study was to consider approaches and indicators for evaluating commercialization potential, and evaluate performance of the EU countries by the multi-dimension indicators of commercialization financial effectiveness.

After conducted analyses we can conclude that evaluation of commercial potential has a nature of quality analyses rather than quantitative. Furthermore, it is rather difficult to assess commercialization potential at a country level, as this analysis tends to reveal firm level qualitative opportunities for commercialization. As study has shown commercialization potential can be considered from such points of view as patentability, quality of network activity, commercialization environment, demand and sophistication of the market, origin of

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invention, licensee availability, R&D. Generally, analysis of commercialization potential reveals different qualitative “abilities” of a firm to feel market demand and analyze own resource opportunities.

Three interesting approaches have been outlined for evaluating commercial potential: Technology audit approach, Fuzzy logic method and Four-dimensioned approach. Evaluating the capacity of commercialization of innovations is possible through the use of software complex which automates auditing process and includes the blocks of interactive filling of electronic forms, decision-making, automatic report generation. Electronic forms can involve a number of information blocks, among which are blocks devoted to general information about the peculiarities of innovative project. It is also useful to include blocks that aim to reveal possible risks, intellectual property rights, and possible directions of commercialization. Technological audit is expected to be conducted by using questionnaire methodic and *interviewing*.

Fuzzy logic suggests using Fuzzy system for measuring. This approach involves using experts' knowledge. Fuzzy method is considered to be effective in conditions of vagueness of human thought. In fuzzy logic, each number between 0 and 1 indicates a partial truth, whereas crisp sets correspond to binary logic {0, 1}. Fuzzy approach is able to express and handle or imprecise judgments of the people under uncertainty mathematically.

Four-dimensioned approach suggests using of four groups of indicators, such as Market index, Innovation index, Resources index, Strategy index. Alternatively, it can involve technology area analysis, market and economic area, Legal and Organizational area. Such approaches are very useful as reflect systematic effects of four different dimensions in deciding whether innovation has commercialization potential.

As indicators for evaluation of financial performance of commercialization can be used indicators from Innovation Union Scoreboard Index (IUS):

- employment in knowledge-intensive activities;
- medium and high-tech product exports;
- knowledge-intensive services exports;
- sales of new to market and new to firm innovators;
- license and patent revenues from abroad.

The analysis has shown that by employment in knowledge-intensive activities the most effective countries are Luxembourg and Ireland, the least effective is Romania; by medium and high-tech product exports the most effective are Germany and Hungary, the least effective is Greece; by knowledge-intensive services exports the most effective are Luxembourg and Ireland, the least effective Lithuania, Croatia and Malta; by sales of new to market and new to firm innovators the most effective are Slovakia and Denmark, the least effective are Romania, Bulgaria and Latvia; by license and patent revenues from abroad the most effective are Netherlands and Ireland, the least effective Cyprus, Slovakia.

By indicator «turnover increase due to innovative goods and services» the most successful country is Sweden. Also commercially successful can be pointed Czech Republic, Estonia, Spain, Latvia, Austria, and Sweden. The least successful countries by this indicator are: Bulgaria, Greece, Croatia, Luxembourg and Hungary. Such countries, as Denmark, Germany, Greece, France, Ireland, Republic of Cyprus, Malta, Poland and Finland have shown different results and there is a need for more in-depth analysis to make a definitive conclusion.

Above-analyzed indicators of evaluation of financial performance of commercialization

we consider as multi-dimensioned as they can be effectively calculated both for country level and firm level.

Directions of further researches. Further research will be devoted to exploring the role of the parties of the process of commercialization of innovations and the ways of assessing the effectiveness of their commercialization activity. Taking into account that questions of financial relations between investors and companies are among the most complicated ones, crucial emphasis should be also paid to researching peculiarities of legal protection and use of intellectual property objects.

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Вимірювання успіху комерціалізації інновацій у ЄС

Результати численних досліджень показали, що не всі нововведення можуть бути комерційними. Для досягнення фінансового успіху оцінювання потенціалу комерціалізації інновацій є дуже корисним, оскільки воно сприяє мінімізації ризиків, пов'язаних із недостатністю загального процесу комерціалізації інновацій. У той самий час іншим не менш важливим аспектом комерціалізації є оцінювання її фінансової ефективності. Необхідно розуміти, які ефекти можна отримати після комерціалізації інновацій, і які сфери можуть бути покриті ефектами від комерціалізації. Дослідження присвячене аналізу підходів та показників оцінювання потенційних можливостей комерціалізації інновацій, а також оцінюванню ефективності фінансової комерціалізації інновацій у країнах ЄС.

Ключові слова: комерціалізація інновацій, комерціалізаційний потенціал, фінансова ефективність комерціалізації, комерціалізація інновацій, ЄС, успіх інновацій.

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Измерение успеха коммерциализации инноваций в ЕС

Результаты многочисленных исследований показали, что не все нововведения могут быть коммерческими. Для достижения финансового успеха оценка потенциала коммерциализации инноваций является очень полезной, поскольку она способствует минимизации рисков, связанных с недостаточностью общего процесса коммерциализации инноваций. В то же время другим не менее важным аспектом коммерциализации является оценка ее финансовой эффективности. Нужно понимать, какие эффекты можно получить после коммерциализации инноваций, и какие сферы могут быть покрыты эффектами от коммерциализации. Исследование посвящено анализу подходов и показателей для оценки потенциальных возможностей коммерциализации инноваций, а также оценки эффективности финансовой коммерциализации инноваций в странах ЕС.

Ключевые слова: коммерциализация инноваций, потенциал коммерциализации, финансовая эффективность коммерциализации, коммерциализация инноваций, ЕС, успех инноваций.

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