

## Characteristics of the Technology Transfer Processes in the Republic of Moldova: SME Case Study

Dr. Rodica CRUDU<sup>1</sup>, Mihaela PETRICI<sup>2</sup>

### Abstract

*Nowadays, in a world of constant economic change, SMEs and technology transfer play a key role when it comes to innovation. SMEs are directly engaged in the development and commercialization of innovations. They are also adopters of innovations developed by other organizations, they provide ideas and inputs to ideas generation that are exploited by large firms, universities/research organizations and other small firms. However, SMEs often face larger barriers on capital and labour markets than larger established businesses. It is for that reason that multiple policy measures have been adopted to target those firms and their opportunities to engage in innovation, which is why this study aims to reflect upon the characteristics of the technology transfer in the Republic of Moldova through means of a SME case study.*

*Key words:* technology transfer; innovation; SME; Republic of Moldova

*JEL classification:* O30, O 32

### 1. Introduction

The Republic of Moldova, as a member of the World Trade Organisation (WTO), has subscribed to the rigor imposed by the Trade-Related Aspects of Intellectual Property Right Agreement (TRIPS). Currently there are no intellectual property (IP) provisions, to which the Republic of Moldova, as a state, has not complied, but the international framework in the field is in constant development and modernization, and our country is monitoring its evolution to bring about improvements. Strong IP rights, by their very nature, are intended to encourage innovation. However, according to estimates by European experts in the field of IP, the main impediments that persist are not of a legislative nature but are related to the effective enforcement of intellectual property rights, including the exploitation of these rights, which is directly related to the innovation activity.

"Innovation" is the process by which new ideas meet the demands of society or those of the economy and generate new products, services or business models that are successfully introduced into an existing market or that can create new markets. The definitions of the concepts of "innovation" and "innovation" in the Republic of Moldova can be found in several

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<sup>1</sup> Dr. Rodica CRUDU, Assoc. prof., Academy of Economic Studies of Moldova, e-mail: [rodikakrudu@gmail.com](mailto:rodikakrudu@gmail.com)

<sup>2</sup> Mihaela PETRICI, MSc, Academy of Economic Studies of Moldova, e-mail: [mihaela.petrici@yahoo.com](mailto:mihaela.petrici@yahoo.com)

legal documents, which differ in their approach: For example, art. 20 of the Code on Science and Innovation of the Republic of Moldova no. 259 of 15.07.2004 focuses mainly on the implementation of the results of the scientific research and the transfer of the results of the given process in the economic sector: "Innovation - application of the new or improved final result of the scientific research activity and the technological transfer realized in the form of knowledge, product, service, competitive process, new or improved, used in practice and / or marketed on the market." The same approach is found in Law no. 138-XVI of 21 July 2007 on science-technology parks and innovation incubators, although it does not explicitly include a definition of innovation. The Innovation Strategy of the Republic of Moldova for the period 2013-2020 "Innovation for Competitiveness" (hereinafter "Innovation Strategy") is based on a modern vision, according to which "innovations are new technologies and practices for the given society. They may not be unprecedented in absolute terms, but they may be new at the company or market level."

The policies of the knowledge triangle in Moldova are still in a phase of evolution. Some efforts have been made to build the innovation infrastructure: an Agency for Innovation and Technology Transfer with incentive and funding instruments. (Crudu et al, 2016)

A small role in innovation development lies with small and medium-sized enterprises. According to Eurostat data, about 50% of EU SMEs have an innovation activity: technological or non-technological. It is interesting to note that an OECD study in 2011<sup>156</sup> indicates at a surprisingly high level the innovative activity of SMEs in Moldova: about 54% of SMEs said they have introduced a new product or service over the past 3 years.

According to the data of the National Bureau of Statistics, in 2012 in Moldova were:

- 49.4 thousand SMEs, or 97.5% of the total number of enterprises in which they were active
- about 20 thousand enterprises or 40.5% of the total SMEs operating in the trade area;
- Only 4.9 thousand enterprises or 9.8% of the total SMEs have activated in the manufacturing industry, where technological innovations can be implemented.

Despite the large share of SMEs, they use insufficient IP. Furthermore, there are no clear criteria for awarding the qualification "innovative enterprise", and the SME patenting activity of the inventions is extremely low compared to trademark registration and industrial design. (Table 1)

**Table 1. The share of Moldovan SME applications to register objects of Intellectual property (OIP)**

OIP	Number of:	Total	SME	% SME
Inventions	Applicants	1915	124	6,5
	Requests submitted	5948	211	3,5
	Patents granted	4485	167	3,7
Industrial designs	Applicants	740	310	41,9

	Requests submitted	1691	692	40,9
	Patents granted	1204	493	40,9
Brands	Applicants	5530	2777	50,2
	Requests submitted	22355	10879	48,7
	Patents granted	12428	6051	48,7

*Source:* adapted by the author based on the statistical data provided by AGEPI (2016)

For SMEs, innovative development can often be the only way of survival. At the same time, SMEs need support in promoting IP exploitation and innovation in particular. Often, SME management does not value the priorities of OIP capitalization and the competitive advantages that can be gained from their application. Therefore, the intellectual property infrastructure, including the innovative one, must primarily be targeted at small and medium enterprises (SMEs). Given that the implementation of innovations has become a determinant factor of economic growth and SME's priorities have been fully reflected in practical economic activities, their development through the innovative way has become an imperative of time. Encouraging the use of intellectual property by small and medium-sized enterprises is one of the specific objectives of the IP Strategy, which includes a number of measures to achieve it (Turcan, A, 2013, p. 43-46):

- By informing the business environment about the commercial opportunities offered by IP and increasing the benefits of SMEs from the use of objects of IP (OIPs);
- Prioritizing the innovative process within SMEs;
- Providing SMEs with access to IP protection information and IP pre-notification services;
- Encouraging the creation and operation of small and start-up businesses;
- Providing innovative SMEs with access to preferential dollars (loans, grants, etc.);

At present, encouraging innovative SME activity can be in the form of grants, tax incentives, tax deductions for legal services in the IP field: for inventions only 15% of the normal taxes, for industrial design - 35% for brands - 50%.

The economy of the Republic of Moldova does not know any field in which it can be said that it is a global leader in innovation. In this respect, a balanced policy is needed in order not to waste the scarce resources by too much diversification of the priority areas and directions of innovation. The latter can and must be adjusted periodically, based on registration successes and needs identified by the Government. State innovation policies must promote the dissemination of new knowledge in order to enable local companies to become competitive first and foremost in the domestic market, after which those lonely companies will want to become innovative on the local and competitive market t, he regional / global market, engaging in research and innovation, technology transfer.

The analysis of R & D and innovation activity in the Republic of Moldova denotes that the official statistics until 2013 had only the scientific activity in this sector and in 2012 the National Bureau of Statistics in the "Science" section, which became "Science and Intellectual Property ", also included statistical indicators in the field of intellectual property. It should be

mentioned that the statistical data for 2006-2011 were included retroactively. At the same time, as far as the statistical evaluation of the innovation activity is concerned, the Republic of Moldova is the only country from the CIS, Europe, OECD, etc., which does not have the necessary statistics in the field of innovation activity. This complicates the possibility of evaluating the efficiency of the research and development activity regarding the application of the innovations in our country.

To obtain a deeper analysis of the impact of innovation and technology transfer on the success of a company, a survey was conducted among some companies in the Republic of Moldova. The survey was sent to a number of companies working in different domains, with the aim of obtaining data that would illustrate a full picture of the impact of innovation and TT, but for some reasons many companies avoided replying to the polite request and providing the requested information.

The poll aimed to collect data on:

- What product / process / organizational innovations have been brought to the market?

- What is the ratio of finished and abandoned or suspended innovations?

- In what innovation activities are local companies trained?

- What budgets are allocated to R&D by companies?

- Which sources of funding are used by local companies, own or external sources?

- How do companies evaluate the importance of OIP?

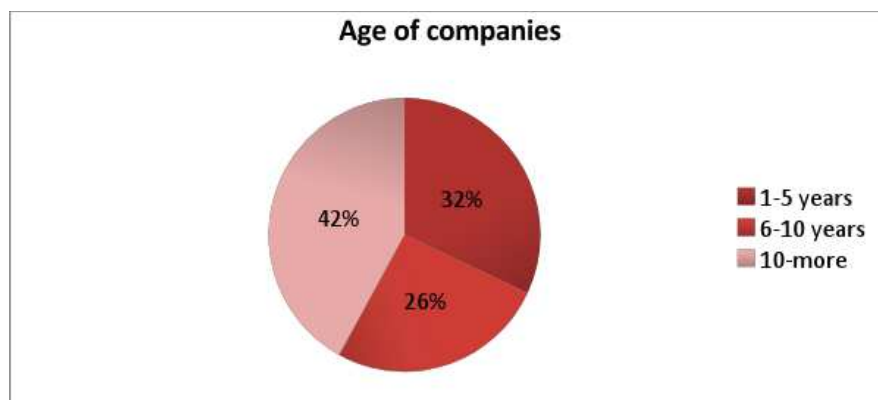
➤ *Portrait of companies participating in the survey*

Of the total number of companies that were invited to the survey, 19 companies accepted the request, with different areas of activity, sizes, staff numbers and different OIP portfolios, of which:

➤ *Age registered by companies, as shown below:*

It is easy to observe that most of the companies participating in the survey record 10 or more years of activity followed by novice companies up to 5 years old on the market. (Figure 1)

**Figure 1. The age of companies participating in the survey**



*Source:* elaborated by the author based on the results of the survey

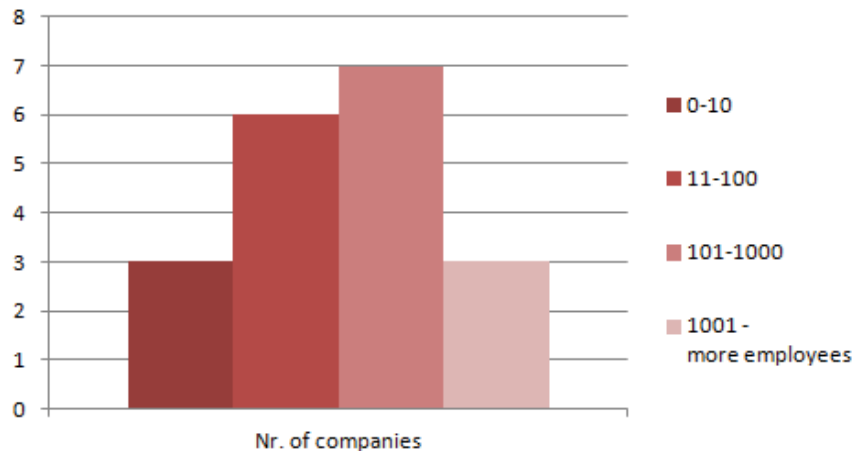
➤ *Turnover achieved by participating companies between 2010 and 2015*

Exceeds the volume of 1 000 001 lei for 15 companies, of which 13 are aged 6 years and over. It is worth mentioning that two novice companies up to 5 years of age managed to reach the turnover of 1 000 001 lei.

➤ *Average number of employees detained by companies between 2010 and 2015,*

As depicted in the figure below, most of the companies that participated in the survey are SMEs, with the following number of employees. (Figure 2.)

**Figure 2. The average number of employees of the company in the years 2010-2015**

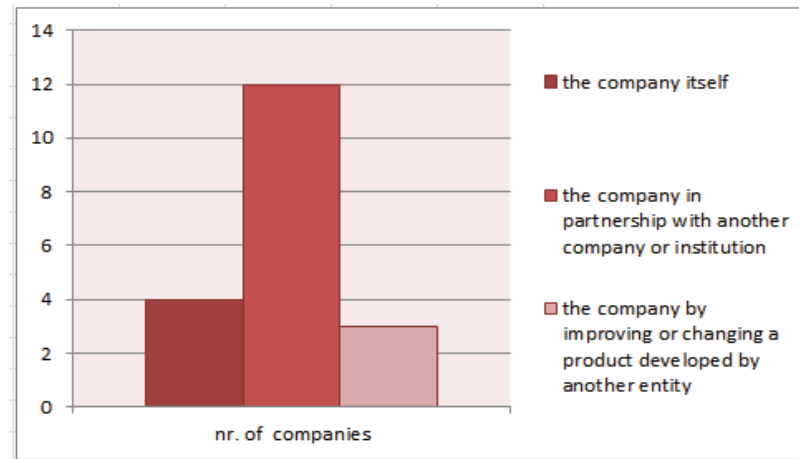


*Source:* Elaborated by the author based on data collected from the survey

➤ *Product innovation (goods or services)*

A product innovation is the process of launching a new or improved product or service on the market, respecting its original features, components, and other compelling parts. It is mandatory for the product innovations to be new to the company, but not necessarily new on the market. These can either be invented by the surveyed company or by other companies and institutions.

Out of the surveyed companies, 60% mentioned that they have launched innovative services: new or significantly improved services during the period 2010-2015 and 40% have launched innovative goods: new or significantly improved goods (excluding simple resale of products and Aesthetic improvements.) To the question who developed these product innovations, the companies declared the following (Figure 3.)

**Figure 3. The origins of the innovations implemented by the surveyed firms**

*Source:* Elaborated by the author based on data collected from the survey

Of all the product innovations launched, according to survey results, the majority, 70%, were new innovations on the market, meaning that the company introduced a new or significantly improved product as that of the competitors (the product may already be available in other markets), while 30% were new innovations only for the company that launched them, the innovations having existed on the market before.

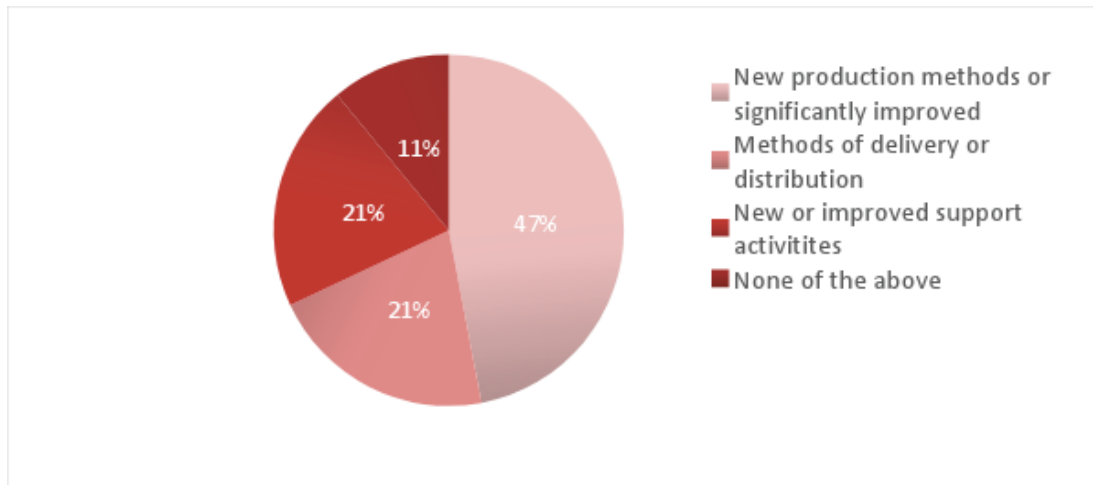
➤ *Process innovation*

A process innovation is the implementation of a new or significantly improved production process, a distribution method, or other support activity, which must comply with the following:

- Process innovations must be new to the company, but not necessarily new on the company's market
- Process innovation can be developed by both the surveyed company and another company
- Innovations of purely organizational nature are excluded

The survey showed that the majority of the participating companies have launched new or significantly improved production processes as process innovations, only a few have launched delivery or distribution methods for products / services. There are also companies that have not launched any process innovations. (Figure 4.)

**Figure 4. Types of process innovations launched by companies, in the period 2010 and 2015**



*Source:* Elaborated by the author based on the data collected during the survey

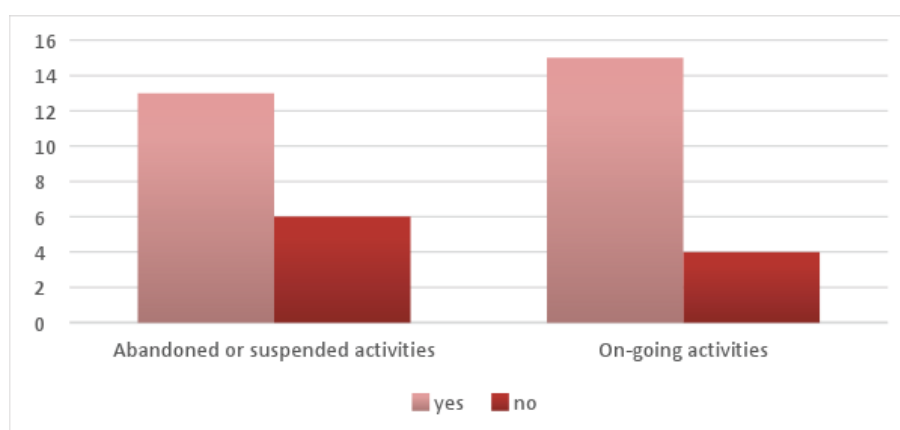
As with product innovations, process innovations have been for most companies, the result of collaborations with other companies or institutions, and only 5 companies have launched self-developed process innovations.

Being asked if these new process innovations have been existing on the company's market, 80% responded with "Yes," and only 20% of the companies have launched products that were completely new.

➤ *Innovations in progress or abandoned*

The activities related to innovations include the purchase of equipment, buildings, software, licenses, consultancy, design services, marketing, training and other activities undertaken to develop or implement a product or process innovation.

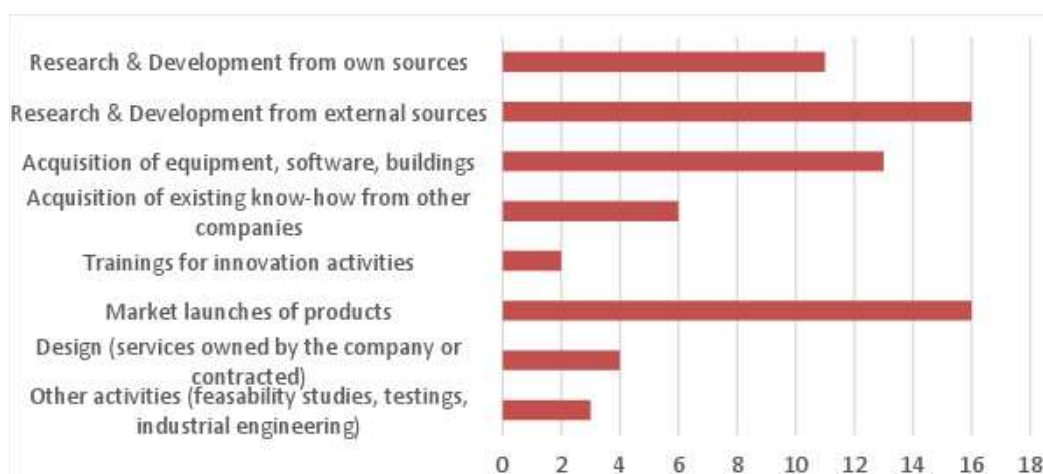
While it is commendable to successfully launch innovation activities, it may happen that for various reasons these efforts do not come to fruition with the launch of innovations, so to the question whether in the years 2010-2015 the company has undertaken any activities of innovation that did not result in the launch of a product or process innovation because the activities were either abandoned or suspended or are still in progress, the companies responded as following. (Figure 5.)

**Figure 5. Activities that did not lead to the launch of innovations**

Source: Elaborated by the author based on data collected from the survey

➤ *Activities and expenses related to product or process innovations*

In order to conclude which innovation-related activities have generated most of the company's spending, the companies were asked to enumerate the activities that they have undertaken, which can be seen in the figure below (Figure 6.)

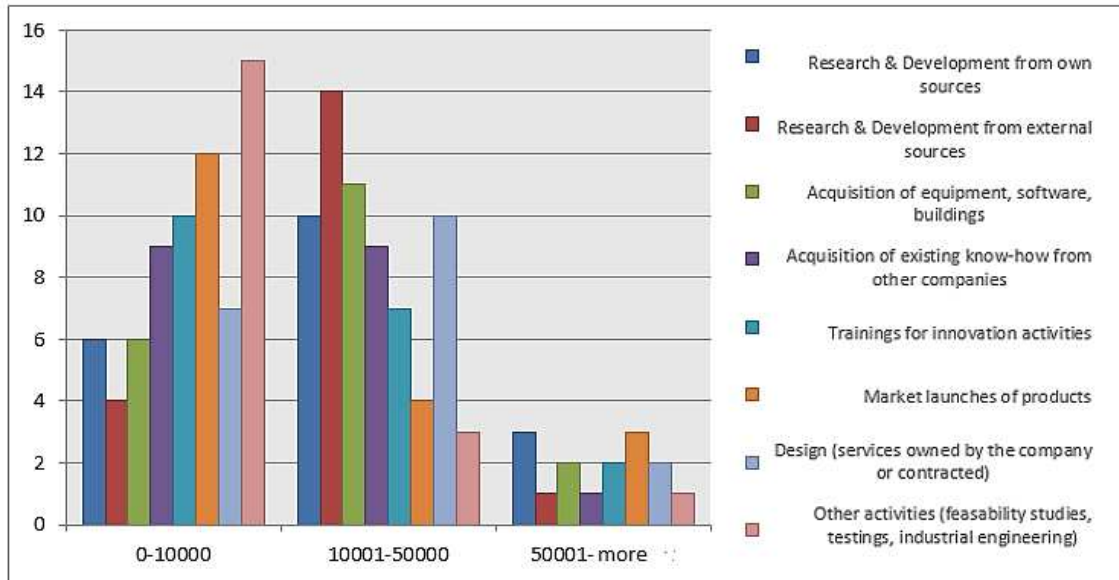
**Figure 6. Types of innovation activities undertaken by Moldovan firms**

Source: Elaborated by the author based on data collected from the survey

When asked about the amount of money the company spent on each of the activities, the companies responded as follows (Figure 7.)



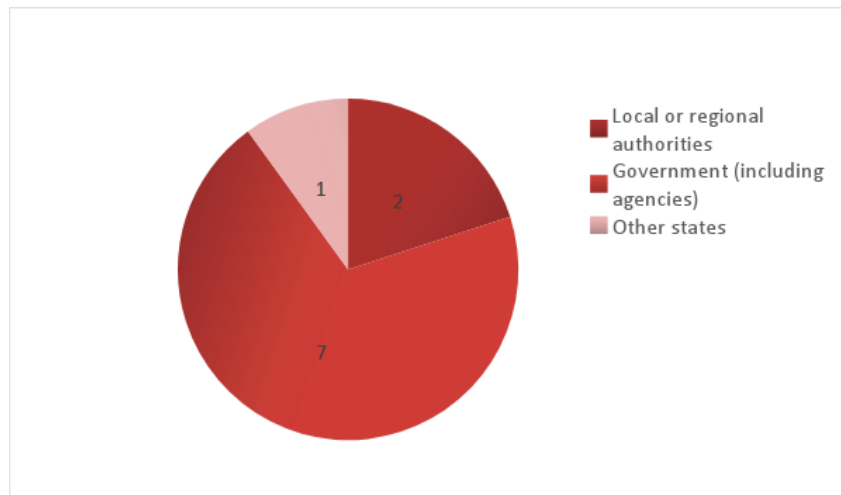
**Figure 7. Amounts of money allocated by Moldovan firms for the types of undertaken activities**



Source: Elaborated by the author based on data collected from the survey

Seeing that the financial support of innovative projects is one of the prerogatives of our state and of many other international organizations concerned with funding innovation, we have been curious to find out what is the contribution of public financial sources in the companies' balance sheet. So, the companies that participated in the survey declared that only a few of them received public funding in the years 2010-2015: (Figure 8.)

**Figure 8. The public funding sources used by Moldovan firms for their innovation activities**



Source: Elaborated by the author based on data collected from the survey

The general provisions of the legislative and normative acts of the Republic of Moldova in the field of innovation denotes a predominantly formal and fragmentary approach of the innovative process. Thus, out of all the mechanisms for encouraging the innovation activities applied abroad, only the following are used in the Republic of Moldova:

- direct co-financing of innovative projects implemented through AITT;
- promotion of the infrastructure of the innovation process (innovation incubators, technology transfer centers in universities, etc.)
- providing facilities for the payment of patents, industrial design and other IOPs through AGEPI
- product competitiveness and OIP used by companies

Reiterating the previously mentioned importance of the OIP for the economic success of an entity, the companies participating in the survey were asked to assess how effective they think OIPs are to the purpose of maintaining or raising the competitiveness of innovations and which of the following OIPs: patents, copyright and trademark do they find most effective, and the answers denounce that not all of the participating companies use OIP, and those that do have operated with them, highly appreciate the use of copyright and trademark and consider patents the least efficient.

The lack of awareness of IP rights is one of the obstacles that SMEs often face when trying to make use of OIP to increase their business. SMEs and entrepreneurs often do not have a coherent IP management strategy, they lack the necessary knowledge to develop and manage their IP portfolios, they do not fully understand the IP rights system and the need for resources for the proper protection and enforcement of intellectual property rights . These problems are aggravated when SMEs operate in international markets where they need to cope with different national IP systems

➤ Public Procurement and Innovation

Starting from the idea that the support for innovation activities is one of the most current prerogatives in the policies of all the world's states, we consider the partnership relationship that is established between the state and companies when the state recruits companies into a contract procurement an important criterion to analyze. When asked whether the companies have concluded between 2010 and 2015 public procurement contracts with public sector organizations, only 4 companies responded positively. Asked if they have undertaken some innovation actions as part of a public procurement contract, most companies answered that they have not done so, which shows with the partnership relationship in the field of innovation between the state and the private sector is still at an beginner stage in the Republic of Moldova.

Based on the survey data, the **following conclusions** can be drawn:

- The activity of innovation and technological transfer is not a priority activity for the majority of Moldovan companies, which remain highly concentrated on production, with a strong propensity to use classical techniques
- Except for large companies, most of the local companies lack the implementation of innovation management at the corporate level
- While using OIP instruments and declaring that they are extremely effective in their field, companies do not capitalize on OIP and do not reflect their values or their depreciation

- While the national budget is rather modest in terms of innovation support programs, it is still easier for innovative enterprises to access available financial resources

### **Conclusions and recommendations**

The innovative activity is very complex and includes a number of other scientific, technical, technological, organizational, educational, financial, commercial activities. It aims not only in creating, protecting and commercializing the results of scientific research, developing knowledge, but also distributing knowledge in the economy and in society in general, improving and streamlining technological, organizational, marketing, education and training processes, training employees, diversification and improvement of the quality of products and services, their promotion in domestic and foreign markets.

The growing interest on the world stage to intensify the innovation activity of enterprises, especially the technological one, is pursued both to maintain or increase the competitiveness of national economies and as a result of the awareness of the effects of the economic activity on the consumption of resources and the environment, which requires the design of new production and consumption patterns.

Technological transfer is very important in the economic development of a state, the least developed or developing countries feel the need to import technologies that could support their growth and penetration into developed countries.

A successful technology transfer will translate the strategy into achievable goals that allow states or firms to harness their technology and knowledge to gain a competitive edge on the global market. It is obvious that the main technological management activities in the development phases of the companies focus on the technological transfer, namely on the following phases of evolution: 1. The Learning Stage; 2. Construction phase; 3. The internationalization phase; 4. The globalization phase; 5. Dominant global phase.

Developed countries can obtain a huge market for their surplus production by selling goods, technology transfer by setting up joint ventures, for example, while developing countries can acquire advanced technologies and knowledge by offering new market opportunities and providing human resources and raw materials.

Therefore, the reasons why a country or a company that decides to engage in the technology transfer process may vary, but may include:

- achieving a positive economic impact on society;
- obtaining acceptance and / or financial rewards;
- generating increased funding for the laboratory / department;
- compliance with research contract obligations;
- attracting investors to research;
- creating educational facilities for students;
- connecting students to future employment opportunities;
- getting a sense of personal achievement.

Therefore, technology transfer is the process of promoting technological innovation through the transfer of ideas, awareness, mechanisms from ambitious companies or R & D organizations for wider application in industrial activity. Scientific and technological innovations can be seen as the process of transforming an idea into new or improved products used in industry or commerce. Innovation requires scientific, technological, organizational,

financial and commercial resources and is usually a result of applied research and experimental development.

In order to stimulate technology transfer and innovation, developing countries and countries with economies in transition should establish a clear development agenda based on a needs assessment, identification of indigenous capabilities, coordination of external resources, establishment of an effective process of consultation and development of appropriate monitoring and evaluation systems. While developed countries tend to focus on the private sector and market forces, developing countries tend to emphasize the role of the public sector and intergovernmental agreements.

One of the declared priorities for restructuring and modernization in the context of European integration initiated at national level in Moldova is the technological transfer. It is expected that through the transfer of production of new technologies they will deliver results that will increase productivity, increase exports and ultimately increase profits and create new jobs, thus justifying state investment in research and development technologies. Therefore, one can say that a country must invest in the renewal of production and products, at least to the extent that it invests in equipment, because technological progress is a catalyst for development.

In the case of Moldova, technology transfer is one of the means still at an early stage of development, although it is included in the state action plan, the lack of sufficient funding makes them have modest results compared to other states in the region.

One of the current and most pressing problems of the innovative infrastructure is the reduced number of residents in the parks and incubators, due to the lack of scale and customs facilities for them, and the attractiveness of the innovative infrastructure under these conditions is considerably decreasing. In addition, work to develop innovation infrastructure faces a number of other challenges:

- Insufficient stimulation of innovation activities through public policies;
- Lack of legislation on risk capital;
- Lack of official statistics on innovation activity;
- The weak link between research and business

An essential component of the development of innovation infrastructure is also the incentive mechanisms. These are currently limited to:

- public funding of residents' technology transfer projects (up to 50%)
- finding the infrastructure development projects;
- partnerships between business and academia within the WCT and II;
- reductions in rates for the rent of communal rooms and services for residents of science and technology parks and incubators for innovation;
- provision of free or low-cost services;
- facilities for the tariffs for the protection of industrial property objects.

However, existing mechanisms prove to be insufficient to increase the attractiveness of innovation parks and incubators. In this respect, starting from the existing instruments in other countries, the innovative infrastructure in the Republic of Moldova requires the implementation of new incentive mechanisms that would increase the entrepreneurial predilection for innovation, thus attracting more residents to the parks and incubators.

A small role in innovation development lies with small and medium-sized enterprises. According to Eurostat data, about 50% of EU SMEs are performing some innovation activity: technological or non-technological. It is interesting to note that a study by the OECD in 2015 indicates at a surprisingly high level the innovative activity of SMEs in Moldova: about 54% of SMEs said they have introduced a new product or service over the past 3 years.

Despite the large share of SMEs, companies use insufficient IP. Moreover, there are no clear criteria for awarding the "innovative enterprise" quality, and the SME patenting activity is extremely low compared to trademark registration and industrial design.

The economy of the Republic of Moldova does not know any field in which it can be said that it is a global leader in innovation. In this respect, a balanced policy is needed in order not to waste the scarce resources by too much diversification of the priority areas and directions of innovation. The latter can and must be adjusted periodically, based on registration successes and needs identified by the Government. State innovation policies must promote the dissemination of new knowledge to take on innovative technologies to enable local companies to become competitive first and foremost in the domestic market, after which those lonely companies will want to become innovative on the local and competitive market. The regional / global market, engaging in research and innovation, technology transfer.

Among the major issues related to the stimulation of innovation faced by the Republic of Moldova are:

- low innovation capacities of enterprises, especially SMEs, which are not the main players in technological innovation;
- division of the S & T sector, which leads to the dispersal and duplication of efforts and to a low overall level of performance;
- particularly poor capacity and motivation of S & T innovation in the public sector;
- inefficiency of the S & T model of innovation resource allocation and innovation project evaluation system;
- lack of mechanisms for remarkable staff remuneration and encouragement of innovation and pioneering activities.

On the basis of the findings and conclusions presented, in order to stimulate the innovation activity, the following general proposals and recommendations can be formulated to improve the efficiency of the national innovation system and to strengthen the capacities of its participants:

*1. Studying and taking on good international practices*

The development of an innovating ecosystem as complete as possible, adapted to the socio-economic conditions of the Republic of Moldova, establishing the role and functions of each actor within this system, highlighting the links and correlations between them, finding the functional elements and possible gaps and constraints to develop the most appropriate mechanisms for the most effective political coordination of the system, based on the goals to be achieved.

*2. Reinforce innovation policy by taking on international best practices:*

In order to optimally promote the production, distribution and use of new knowledge among others,

- expanding research-development-innovation demand by increasing the potential for innovation absorption by the business environment; Increasing its capacity to assimilate and

improve technologies and know-how; Developing human capital through education and training;

- development of a modern set of institutions and related mechanisms for the coordination and financing of public research organizations;

- improving synergies between the priority areas of innovation activities, spreading innovation beyond science parks and innovation incubators and promoting more market-based clusters and networks;

- strengthening the interaction between actors in the innovation system, in particular between public research organizations and industry;

- making foreign enterprises more active in the developing innovation system

### 3. *Deepening, expanding and systematically and radically complementing policies*

Traditional innovation through the creation of innovative and participatory governance models and methods, full review and continuous monitoring of methods, procedures and achievements within the various institutions, as well as interaction between them. Improving the regulatory framework for innovation through:

- encouraging the implementation of innovation management at the corporate level

- capitalization of OIP by reflecting their value in the financial statements and their depreciation;

- increase and facilitate the access of innovative enterprises to financial sources.

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## Multilingualism As A Contemporary Phenomenon; Its Potential for Teachers And Learners

Luminita DIACONU<sup>3</sup>

### Abstract

*Knowledge of teachers' beliefs is central to understanding teachers' decision-making in the classroom. The present study explores international language teachers' beliefs about multilingualism and the use of a multilingual pedagogical approach in the third-language (L3) classroom. This study analyzed data collected with 12 teachers of French (N = 4), German (N = 2) and Spanish (N = 6) using qualitative content analysis. Three main themes emerged from the analysis. (1) The teachers view multilingualism as a potentially positive asset. Although they think that multilingualism has benefited their own language learning, they do not conclude that multilingualism is automatically an asset to students. (2) The teachers claim to make frequent use of their students' linguistic knowledge of English when teaching the L3. However, the teachers rarely focus on the transfer of learning strategies because they believe that learning an L3 is completely different from learning the second language L2 English. (3) The teachers think that collaboration across languages could enhance students' language learning; however, no such collaboration currently exists.*

*Keywords: multilingualism,, learning teachers' beliefs, multilingual pedagogy, language awareness, third-language language learning strategies.*

### 1. Introduction

Multilingualism, which is defined as speaking two or more languages, is a growing worldwide phenomenon. Due to increased mobility and closely linked economies, many countries currently have significant multilingual populations in their workforces and educational systems. The demands of international commerce alone have risen a large amount of interest and attention to multilingual education and training programs. In this time of unprecedented contact among different language groups and cultures, speaking two or more languages can make a difference in where one lives and may determine educational and career choices. English, as a major language of international business, is spoken as a second (L2) or third language (L3) in many countries around the world. In fact, English “can be seen as a factor in the creation of multilingualism today” (Jessner 2006, p.2), and educational programs in English are in high demand. Students who study English as a Foreign Language (EFL) often already speak two or more languages. Speaking more than one language is a necessity for many people worldwide, whether it is because their parents come from different language backgrounds, because their home, regional, national, or school languages are different, or for

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<sup>3</sup> Luminita DIACONU - Senior university lecturer, Academy of Economic Studies of Moldova, e-mail: diaconulumi@yahoo.com

a variety of other reasons. Knowledge of more than one language is a valuable asset when one wants to learn subsequent languages; unfortunately, multilingual students often take the value of their own language knowledge for granted and do not take full advantage of what they already know how to do. Nevertheless, EFL teachers can tap into their students' familiarity with multiple languages to advance learning and accomplish what one EFL student referred to as "bringing one language to another." Engaging in and reflecting on activities that draw on multilingual experience is beneficial to students, their teachers, and to anyone who wants to add a new dimension to language teaching and learning. The goal is to connect the acquisition of English with the students' previous language knowledge and make this multilingual awareness a part of oral discussions, written assignments, and projects in the classroom. Growing numbers of schoolchildren in the European Union have a mother tongue other than the main language of instruction used in school. The proportion varies considerably between EU countries, ranging from 1% in Poland to 40 % in Luxembourg. Migrant children bring a multitude of languages and language skills to the classroom. This is a potential asset to the individual, schools and society at large. Linguistic diversity raises the issue of how schools can make best use of this potential Knowledge of teachers' beliefs is central to understanding their decision-making in the classroom.

Multilinguals differ from bilinguals and monolinguals in several respects. Research has shown, for example, that multilinguals demonstrate superior metalinguistic and metacognitive abilities, such as the ability to draw comparisons between different languages and to reflect on and employ appropriate learning strategies ( Cenoz, 2003, p.33-35) The role of mother tongue literacy in third language learning. (*Language, Culture and Curriculum*, 3(1), p.65–81.) emphasise that multilingualism does not automatically enhance further language learning; for example, when learners are not literate in their home language, when learners are not aware of the benefits of multilingualism and 'when children are not encouraged in the school situation to rely on their different languages and language knowledge as positive resources, Multilingualism may not provide an advantage. In fact, the general view within the field seems to be that learning multiple languages is best enhanced when learners are encouraged to become aware of and use their pre-existing linguistic and language learning knowledge and abilities. Moreover, in the school setting, the language teacher is the key facilitator of learners' multilingualism.

## **2. The potential of multilingualism for teachers**

It is easier to learn new languages because you see connections The more languages you know, the easier it is to learn new languages. The majority of the teachers regard this statement as true when thinking about their own history of language learning. A multilingual pedagogy should be regarded not as a unified methodology but as a set of principles that are used to varying degrees in different approaches depending on the teaching context, curriculum and learners (Neuner, G. (2004 ,p.46). Thus, rather than attempting to maintain learners' languages in isolation, teachers should help learners to become aware of and draw on their existing knowledge. Second, learners should draw on experiences from previous language learning when learning a new language. Learners should become aware of which learning strategies they have used previously as well as reflect on, test, and evaluate the extent



to which those strategies can be transferred to a new language learning context (Neuner, G. 2004,p.76). Clearly, a multilingual pedagogical approach in the classroom requires competent teachers.

Language teachers should ideally be able to meet several, if not all, of the following requirements:

- They should be multilingual themselves and serve as models for their learners.
- They should have a highly developed cross-linguistic and metalinguistic awareness.
- They should be familiar with research on multilingualism.
- They should know how and be able to foster learners' multilingualism.
- They should be sensitive to learners' individual cognitive and affective differences.
- They should be willing to collaborate with other (language) teachers to enhance learners' multilingualism.

### **3. The potential of multilingualism for learners**

They have to be able to take a step back and explore the languages they know. Notably, whereas all teachers consider multilingualism to be an asset to their own language learning, they cannot identify a clear advantage of multilingualism among their students – even among those students for whom French, German or Spanish was their L2 or L3. The teachers consider usually that these learners' achievements are as heterogeneous as those of the other students. Sometimes teachers emphasize that multilingualism as an asset is dependent on learners' awareness of their own knowledge. However, although the teachers believe that multilingualism as an asset depends on the awareness of learners, only a small number of teachers seems to encourage and help their students become aware of and use linguistic resources other than English. In some cases teachers consider that they do not provide such encouragement often because it is difficult to do so when you are not familiar with her students' home languages. The importance of previous strategy knowledge is a must because for example :learning French is completely different from learning English. Teachers' beliefs strongly influence their pedagogical decisions, and such beliefs are typically resistant to change ( Borg, S. (2006) p.143 ). In this particular study, teachers' beliefs refer to 'a complex, inter-related system of often tacitly held theories, values and assumptions that the teacher deems to be true, and which serve as cognitive filters that interpret new experiences and guide the teacher's thoughts and behavior' (Mohamed, N. (2006),p.78). Because teachers' beliefs are such a strong predictor of what occurs in the classroom, researchers in the field argue that insight into teachers' beliefs it is necessary to understand and improve language teaching and students' learning Aproximately all the teachers are positive about the benefits of comparing languages in the classroom. These contrasting findings may indicate that language teachers have a higher awareness of multilingualism than teachers of other subjects do. Such contrasting activities typically occur spontaneously and are rarely supported by teaching materials. Furthermore,, the majority of teachers are hesitant to bring other languages into the classroom unless they are familiar with them. The teachers are usually positive about activities that have the potential to promote multilingualism Usually experienced in-service teachers have greater multilingual awareness than pre-service teachers do. In addition, teachers who are multilinguals themselves appear to be more multilingually aware than teachers who have less language learning experience. What is more, the teachers'

proficiency in the L3 seems to correlate with the level of awareness. As usual, the teachers are reluctant to refer to other languages when teaching English. Furthermore, teacher education programmes rarely seem to advocate the potential benefits of employing a multilingual pedagogical approach. Whereas all the teachers make frequent linguistic comparisons between L1 and L2 English and encourage the learners to identify similar linguistic patterns, the situation is quite different in reflecting on previous language learning experiences from L2 English and the extent to which these experiences can and should be transferred to the L3 learning context. Besides, teachers list a number of reasons that learning strategies cannot easily be transferred from L2 English to a L3. First, English is learned beginning in the first year of primary school, whereas the L3 is introduced seven years later. Thus, the teachers commonly assume that learners have forgotten how they learned L2 English. Second, the different ages at which students first learn L2 and L3 imply a need for different teaching approaches: Third, teachers sometimes consider that learners are surrounded by English in their daily lives: they are likely to spend several hours every day processing input from English-language popular culture, whereas their exposure to input from the L3 is limited to two hours a week in school in addition to some homework assignments. Although L3 input is also easily available on the Internet, only the most dedicated students take advantage of this resource to enhance their language learning.

#### **4. Results and Conclusions:**

As a conclusion, I can affirm that using multilingual approaches involves:

- Recognizing and valuing the multilingual nature of societies, schools and classrooms.
- Using pedagogical strategies that encourage inclusive education within a supportive multilingual learning environment.
- Being aware of beliefs about speakers of other languages and how they can impact on establishing and maintaining an inclusive learning environment.
- Assessing individual learners in a manner that takes their linguistic background into account.
- Giving learners appropriate opportunities to use their home languages to support and demonstrate their understanding of learning content.
- Making pedagogical choices that respect and capitalize on learners' linguistic diversity.
- Reflecting on how effective the implementation of multilingual approaches is in promoting learning.

The use of multilingualism provides rich insight into the teachers' beliefs. Thus, teachers' beliefs regarding L3 motivation and contextual factors. Show that their results are quite similar in many respects: teachers in all countries have positive beliefs about multilingualism and think that multilingualism should be promoted, but they do not often foster multilingualism (i.e. make use of learners' previous linguistic knowledge) in their own classrooms. Teachers do not feel competent at doing so, and many are concerned that it could disrupt further language learning.

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## Supporting English Language Learners through ICT

Serghei VASILACHI<sup>4</sup>

### Abstract

*Teaching students to be literate is a high educational priority in the Republic of Moldova, as it is certainly throughout the world. The purpose of the article is to show why the classroom environment undergoes a constant change, and how teachers face the challenge of combining the traditional instruction with the computer-assisted one. For those students who want to become proficient in a new language it is a very difficult transition. Instructors who have taught students learning English as a foreign language know that any language support is helpful for their language acquisition. The methods proposed by Liaw and Kang have demonstrated that students who learn English need a variety of language experiences. We believe that ICTs along with computer literacy can play an integral part in providing ELL students with valuable language experiences as they learn a new language in the context of its both domestic and foreign social value growth.*

*Keywords: technology, learner, proficiency, CAI, fluency, comprehension, software, interaction*

### 1. Introduction

The article's premise is that technology can be used as an effective teaching tool for English language learners. The author discusses a variety of research illustrating how teachers can help English language learners develop their language skills through the use of Internet-based applications for foreign language instruction. During the research, the author will try to elucidate the issue how, first, the Internet can be used to motivate students in their efforts to acquire English proficiency skills, and, second, what are the learning outcomes that the use of the Internet can support, given various kinds of interaction.

### 2. Computer-assisted Interaction

#### 2.1. Interaction through speaking

According to Liaw, teachers should offer English language learners a language-rich environment in which students are constantly engaged in language activities. Students need to be able to interact with each other so that learning through communication can occur. Computers can facilitate this type of environment. The computer can act as a tool to increase verbal exchange. In a study conducted by Liaw, computers applications were used to investigate whether computers increase verbal interaction between students. These computer

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<sup>4</sup> Vasilachi Serghei - University lecturer, Academy of Economic Studies of Moldova, e-mail: vasilachis@gmail.com

applications are interactive stories that appear on the computer screen as an actual book with text and illustrations. There are also a variety of interactive choices students can use to read the story, including: real voices that read aloud, music, and sound effects. The story is also highlighted so readers can follow along with the text (Liaw, 2007).

Therefore, as the study shows, students interact while using the computer books. Students can be arranged in groups of three to read the stories. Their types of speech used with each other are analyzed. Even though the children have limited English language proficiency, they are engaged in various modes of language functions to accomplish their reading of the computer books. They may make many commands to each other and also share opinions and make suggestions. They tend to ask a lot of questions to their partners and are given responses. The amount of computer-related talk and story-related talk can be measured. Initially, there might be a lot of computer-related talk, but as the students become more familiar with the format of the stories and software, their talk become story-related in subsequent sessions. Overall, verbal interaction and the use of a variety of language functions by English language learners can be facilitated by the use of the computer. The group's computer book reading environment fosters language development by providing an opportunity for verbal interaction. The use of the computer can be a useful supplement to the traditional curriculum of the ELL classroom by promoting verbal communication and the acquisition of the English language for foreigners.

## **2.2. Interaction through Vocabulary**

One way to use computers for English Language Learners is to teach vocabulary. Kang and Dennis write “Any attempt to treat vocabulary learning as learning of isolated facts certainly will not promote real vocabulary knowledge” (Kang and Dennis, 2005, p.26). Students need to learn vocabulary in context and with visual clues to help them understand. Computers can provide this rich, contextual environment. The computer also allows students to become active learners in a one-on-one environment. Computers can incorporate various learning strategies as well as accommodate a variety of learning styles. “Context group subjects need a period of time to get used to their instructional treatment before they can take advantage of this more engaging type of instructional approach” (Kang and Dennis, 2005, p.27). Hence, the contextual approach proved to be much more effective in promoting long-term recall of vocabulary. This learning process was made possible and more effective by the use of computers.

## **2.3. Interaction through Reading**

There are several ways in which technology can be used to improve reading ability. Most simple reading texts are also very primary in content. Computers can increase the interest level for students while keeping the text simple and easy to read. Another benefit of using computers for reading instruction is that the computer offers immediate feedback on performance. They also can provide added practice when necessary. According to Case and Truscott, students have been able to improve their sight word vocabulary, fluency, and comprehension. Computer-based reading instruction also allows for “increased interaction

with texts, attention to individual needs, and increased independence through an ability to read texts they would not otherwise be able to read” (Case and Truscott, 2009, p.362). The computer software provides many fun opportunities for students to practice literacy skills. There are numerous software packages for improving spelling, phonics skills, and grammar and sight word vocabulary. When English Language Learners are learning their foreign language, any and all language experiences are valuable to assist in reading ability.

#### **2.4. Interaction through Writing**

As demonstrated, computers and software can help English language learners develop vocabulary skills and knowledge. Computers can also help ELL students develop their writing skills. Lewis recommends that composition for beginning learners should be a guided activity so students do not become frustrated. Writing essays in a language that is still somewhat unfamiliar to students can be difficult. When using a computer, however, the use of graphics can make this much more enjoyable. Using clip art can also help students to convey their thoughts more clearly (Lewis, 2007).

Grammar skills can also be demonstrated and reinforced using computers. The teacher can direct students to somehow highlight a specific part of speech (e.g. nouns) throughout their writing. To highlight, students have a lot of choices, such as underlining, italicizing, or changing the font size, color or type. Using a computer as a medium for studying grammar is much more motivating for a student as opposed to writing with a pencil.

#### **2.5. Interaction through E-mails**

Using electronic mail as a supplement to the classroom curriculum can be effective. The students voluntarily use the e-mail in English. They are self-motivated to use their new language in a new and creative way for them. One of the benefits of using electronic mail includes the scrolling feature that allowed the students to view the incoming message and use its structure as a model for creating a response. The scrolling feature also allows students to easily edit and revise. The major benefit of using e-mail as a language learning activity is the fact that students are using meaningful language and authentic text.

#### **2.6. Interaction through Skype**

Using Skype as a communication tool allows users to make audio and video calls easily over the Internet, since calls to other Skype users are free. Skype also offers a computer-to-land-line service for both local and international calls, as a fee-based service. Similar to needing an e-mail address to send e-mails, a Skype account is required in order to make and receive calls. Users choose a user name, which remains with them for as long as the account is active.

Once the user has the necessary equipment and an account set up, he or she can begin using Skype to make computer-to-computer calls. If both the account holder and the party on the other end have web cams, they can make a point-to-point video call. Users can see each

other throughout the call. If the connection is slow or if users do not have web cams, they can still make audio calls.

It is important to remember that Skype works computer-to-computer, not necessarily person-to-person. One computer may be hooked up to a large screen and presenter slides may be projected onto that large screen to a group of people sitting in a theatre-style classroom. In this way, Skype may be used to teach groups of people. For teaching, it is key to know that Skype may be used to connect individuals, one individual to a group, or one group to another group. Although Skype could arguably be considered less sophisticated than other web or video conferencing tools, it has some advanced features that make it useful for teaching English, which include Conference Calls, Instant Message or Chat, File sharing and Screen Sharing.

### **3. Conclusion**

Computer-assisted instruction has been shown in a range of studies to facilitate learning in a variety of ways. Computers can be used to aid in teaching English Language Learners in core academic subjects, such as reading and writing. Computers can aide in vocabulary development as well as verbal language development. Ultimately, however, it is important to recognize that computers are not a substitute for effective teaching. Computers are a tool - they are simply one type of supplement to the regular curriculum in teaching English Language Learners as they develop their English language skills.

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## Rolul Managementului Inovațional în Activitatea Antreprenorială a Agenților Economici Din Republica Moldova

Elena SIMCIUC<sup>5</sup>, Dragoș CIMPOIEȘ<sup>6</sup>

### Abstract

*Gestionarea cu succes a activităților inovaționale a devenit premisa de bază pentru dezvoltarea atât a companiilor, cât și a economiilor naționale. La nivel național, guvernele formează sisteme de inovare al căror scop principal este crearea condițiilor în care știința, managementul și tehnologia pot să înflorească, prin urmare să își transfere prin agenții economice rezultatele în noi succese inovaționale solicitate de piața de desfacere de mîine. Pentru a concura și păstra poziția supremă antreprenorii sunt nevoiți să utilizeze toate mijloace posibile, în primul rînd, legate de capacitățile intelectuale ale omului, cum ar fi creativitatea; agilitatea de a se adapta rapid la mediul înconjurător, cerințele clienților care se schimbă în mod constant și capacitatea de a face față concurenței tot mai intense. În acest caz, managementul inovațional reprezintă o posibilitate de punere în aplicare a factorilor care fortifică mediul inovațional organizațional, cum ar fi: cultura inovațională, spiritul antreprenorial și orientarea spre piață. În asemenea condiții, este logic să examinăm rolul și importanța managementului inovațional pentru agenții economice din Republica Moldova.*

*În acest articol sunt prezentate rezultatele cercetării datelor primare privind implementarea managementului inovațional de către antreprenorii din Republica Moldova în perioada 2011-2015. Scopul principal este analiza datelor colectate pentru evaluarea unui asemenea tip de management. **Metodele de cercetare sunt:** observația, sondaj de opinii, analiza documentelor, analiza datelor cantitative și analiza datelor calitative. Prezentarea concluziilor referitor la problema evaluării rolului și importanței managementului inovațional pentru agenții economice din Republica Moldova.*

*Cuvinte-cheie: management inovațional, sector antreprenorial, perioadă de tranziție*

### 1. Introducere

În ultimii ani, Republica Moldova a înregistrat schimbări majore în sistemul său politic și economic. Aceste schimbări au un impact semnificativ asupra mediului extern al sectorului antreprenorial și asupra capacităților lor competitive (Kubes, M. and all, 1994). Contextul socio-economic care influențează sistemul de inovare, în țara noastră, include întregul proces de tranziție spre restaurarea rapidă a capitalismului și valorilor sale primare - proprietatea privată și democrația. Pe măsură ce restabilirea acestor valori a fost realizată într-un sens tehnic prin privatizare și prin sistemul multipartid, contextul socio-cultural al semi-

<sup>5</sup> Elena SIMCIUC - doctoranda, Universitatea Agrară de Stat din Moldova, e-mail: [simciuc.elena@gmail.com](mailto:simciuc.elena@gmail.com)

<sup>6</sup> Dragoș CIMPOIEȘ - doctor habilitat în științe economice, conferențiar universitar, Universitatea Agrară de Stat din Moldova, e-mail: [dcimpoies@uasm.md](mailto:dcimpoies@uasm.md)



modernismului postsocialist a rămas în mare parte neschimbat (Svarc, J.,2006, pp. 144-159).

## **2. Identificarea rolului managementului inovațional pentru agenții economici din Republica Moldova**

Una dintre problemele cu care se confruntă, actualmente, cel mai mult Republica Moldova este faptul că anii economiei bazate pe ofertă au făcut companiile naționale foarte lente și inflexibile în ceea ce privește așteptările clienților lor (Tomislav Baković, 2010, pp.1-6). **În astfel de mediu, nu au existat stimulente economice pentru ca antreprenorii să dezvolte abilitățile, precum: flexibilitatea, creativitatea, activități inovaționale.** Nu numai că acest fapt îi împiedică să fie competitivi pe piețele externe, dar chiar și pune în pericol supraviețuirea în mediul lor intern. În situația actuală valoarea adăugată stagnează la un nivel, care, în țările Uniunii Europene, este doar o fracțiune, rentabilitatea capitalului este redusă și nu permite investiții în noi tehnologii (Bastic, M., 2004, pp.65-79) . Prin urmare, dezvoltarea abilităților manageriale inovative este o soluție binevenită pentru Republica Moldova, ținând cont de faptul că infrastructura necesară pentru crearea produselor sau serviciilor inovaționale, practic, nu există în țara noastră.

Cercetările noastre au permis să deducem că evaluarea rolului managementului inovațional în activitatea organizațională a companiilor, care contribuie în mod direct la apariția inovațiilor, este o întrebare foarte problematică în Republica Moldova. Astfel, noi am revizuit literatura de specialitate și am atestat că, încă, nu există un model teoretic unanim acceptat privind criteriile/indicii de evaluare a performanței organizaționale. Aceasta se datorează faptului că managementul inovațional este un subiect, încă, foarte tînăr. Actualmente, există doar un set de condiții-cadru recunoscute și aprobate la nivel academic. De asemenea, este evident că în literatura de profil există un șir de lacune privind definirea și evaluarea managementului inovațional, deoarece natura lui este una foarte complexă și multilaterală – anume această ultimă caracteristică contribuie cel mai mult la metodologia aleasă și utilizată de autorii prezentei lucrări. Prin urmare, ținând cont de faptul că subiectul în cauză are nevoie de mai multe cercetări în domeniu, este clar, că natura studiului este exploratorie.

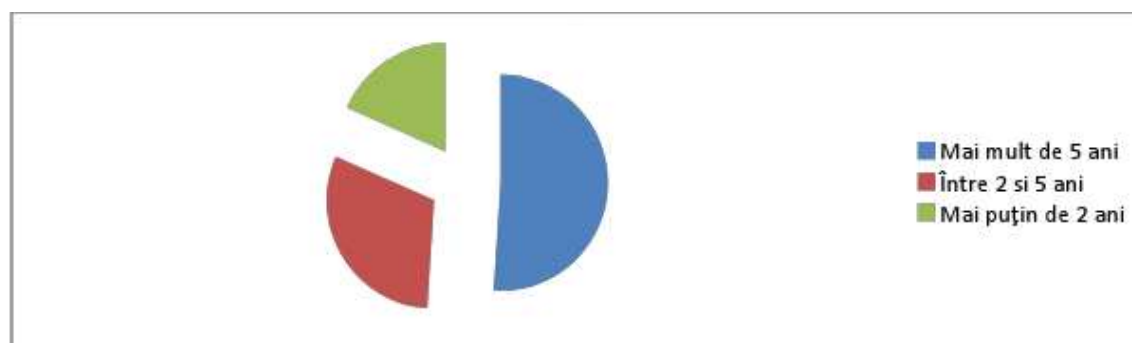
Printre condițiile-cadru pe care se bazează managementul inovațional și care se bucură de o atenție sporită din partea mediului academic sunt: cultura, spiritul antreprenorial și orientarea spre piață.

*Cultura* cu orientare către activități organizaționale inovative, este adesea calificată ca o capacitate de bază pentru procesul de inovare. Inovarea este cu adevărat îmbunătățită atunci cînd este susținută de întreaga organizație. În companiile creative structurile organizaționale au tendința de a fi flexibile, cu un număr nesemnificativ de reguli, reglementări și cu autonomie ridicată. *Antreprenorul cu spirit inovativ* se deosește prin capacitatea sa de a promova schimbare și de a reacționa rapid devenind flexibil, dar în același timp preocupat de angajații săi (Naman, S.L., Slevin, D.P., 1993, pp.137-153) . *Orientarea spre piață* este considerată o parte importantă a culturii organizaționale. Clientul este plasat în centrul intereselor firmei, devenind prioritatea principală atît pe plan strategic, cît și pe plan funcțional.

În acest sens, investigațiile desfășurate de autori au urmărit obiectivul de colectare a informațiilor cu privire la implementarea managementului inovațional și rolul pe care el îl are în activitatea agenților economici naționali. Antreprenorii au fost chestionați on-line. Ne-am propus selectarea unui eșantion de 150 de întreprinderi din diferite domenii de activitate, ținând cont de specificul țării noastre, și anume de situația economică, teritoriul mic și numărul limitat de întreprinderi care dețin statut oficial de companie inovativă. Însă, am primit doar 45 de răspunsuri. Astfel, din grupa țintă au făcut parte rezidenții parcurilor științifico-tehnologice, întreprinderile inovative din sectorul privat și întreprinderile din sectorul privat fără statut de rezident ai parcurilor științifico-tehnologice naționale.

Toate companiile chestionate la momentul completării sondajului au activat pe piața de desfacere națională și/sau străină cel puțin 2 ani. Forma lor organizatorico-juridică este privată.

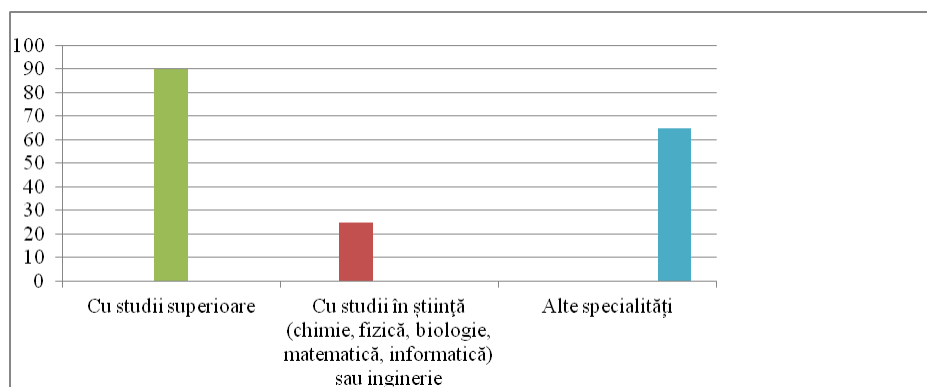
**Figure 1.3. Perioada de activitate a întreprinderilor**



Sursa: Elaborat de autori

Unul dintre principalii factori care influențează caracterul inovativ al companiei este nivelul de calificare a angajaților. Cu cât mai mulți angajați au studii superioare cu atât activitatea va fi mai productivă. Aproape 90% din angajații din cadrul întreprinderilor chestionate au studii superioare. Din aceste 90%, 25 % din angajați fac parte din domeniul real de studii, iar ceilalți 65% au studii în domeniul științelor umaniste.

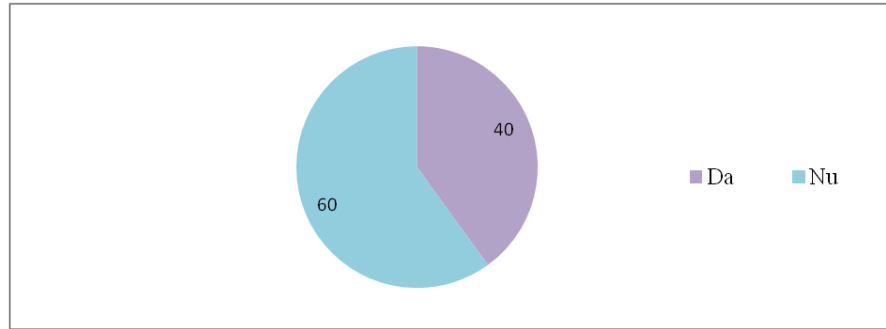
**Figure 1.4. Nivelul de calificare a resurselor umane**



Sursa: Elaborat de autori

Avînd în vedere că, strategia de inovare este o parte componentă a culturii inovaționale, antreprenorii erau rugați să răspundă, dacă ei au pus în aplicare o astfel de strategie sau au modificat în mod semnificativ strategia precedentă.

**Figure 1.5. Ponderea întreprinderilor care aplică o strategia de inovare**

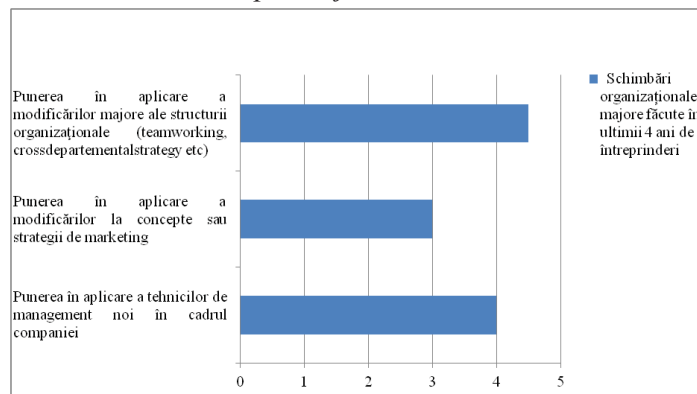


*Sursa:* Elaborat de autori

Fig.1.5 ilustrează că mai mult de 50% din agenți economici nu au o strategie de inovare. Însă, respondenții care o utilizează, au specificat că au folosit-o mai mult de 3-5 ani. Managerii companiilor, care folosesc strategiile de inovare au remarcat că, propria performanță a angajaților este privită ca parte componentă a culturii organizaționale a întreprinderii, angajații sunt încurajați să-și asume riscuri prin experimentarea unor noi metode pentru îndeplinirea sarcinilor.

Mai mult ca atât, respondenții care folosesc activ strategia de inovare, remarcă că în scopul atingerii obiectivelor strategice, un astfel de instrument, reprezintă un sprijin valoros fiindcă ajută la îmbunătățirea rutinelor manageriale, întărirea cooperării interne, asigurarea satisfacerii clienților.

**Figure 1.6. Schimbări organizaționale majore (structura organizațională, tehnologii de marketing sau management) făcute în ultimii 4 ani de întreprinderi. Scorul este calculat în dependență de frecvența elementului scării (mare, medie, joasă, nu este aplicabil) și punctajul asociat (3,2,1,0). Modul este calculat înmulțind frecvența cea mai mare cu punctajul asociat**

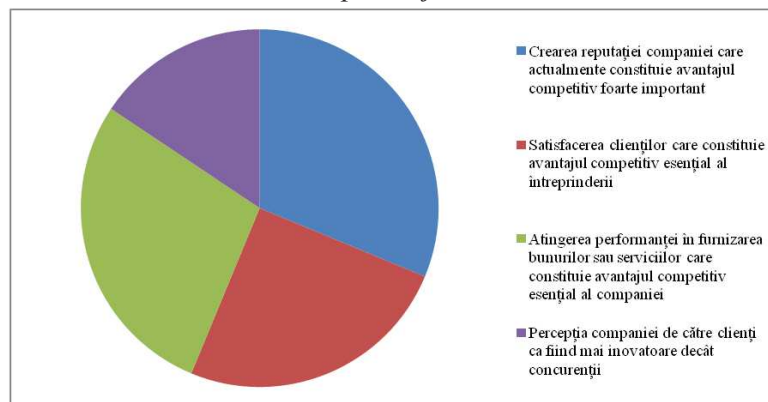


*Sursa:* Elaborat de autori

Din figura 1.6 se poate observa că la majoritatea respondenților schimbările organizaționale majore se asociază cu modificarea structurii organizaționale, astfel, conducătorii întreprinderilor chestionate au contribuit activ la simplificarea comunicării formale în cadrul companiei în scopul creării unui mediu creativ și mai puțin formal. Cea ce ține de tehnologii de management noi în cadrul companiilor, mai mult de 50% de întreprinderi chestionate au specificat că ei au utilizat activ planurile și procedurile operaționale pentru urmărirea dezvoltării întreprinderii, angajații acestor companii trebuiau să urmărească schimbările noi apărute în tehnologii. De asemenea, lucrul în echipă era privit ca o performanță a companiei pe termen lung. În privința modificărilor la concepte sau strategii de marketing, respondenții au evidențiat importanța satisfacției clientului în privința corelației preț-calitate și în mod deosebit anturajul încăperiilor/ambianța.

**Figure 1.7. Rezultatul atins datorită implementării inovațiilor organizaționale**

*Scorul este calculat în dependență de frecvența elementului scării (mare, medie, joasă, nu este aplicabil) și punctajul asociat (3,2,1,0). Modul este calculat înmulțind frecvența cea mai mare cu punctajul asociat*



*Sursa:* Elaborat de autori

Prin urmare, schimbările organizaționale majore legate de strategia de inovare, structura organizațională, tehnologii de marketing sau management au contribuit în mod semnificativ la crearea reputației companiei, satisfacerea clienților într-un mod mai bun, atingerea performanței în furnizarea bunurilor sau serviciilor, crearea imaginii unei companii inovatoare.

### 3. Concluzii

În urma investigațiilor efectuate, în vederea identificării rolului și importanței managementului inovațional pentru agenții economici din Republica Moldova, am atestat o interdependență dintre eforturile depuse și rezultatele finale obținute. Astfel, rezultatul final din realizarea managementului inovațional duce la îmbunătățirea performanței organizaționale și asigurarea avantajului competitiv al companiei, care se exprimă în crearea reputației companiei, satisfacerea clienților într-un mod mai eficient, atingerea performanței în furnizarea bunurilor sau serviciilor și crearea imaginii unei companii inovatoare.

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