

Тенденції розвитку інноваційного бізнесу у Львівській області

Стаття присвячена вивченню тенденцій розвитку інноваційного малого бізнесу на регіональному рівні. Проаналізовано структуру інноваційного малого бізнесу Львівської області, а також досліджено інтерактивні процеси співпраці між сторонами, які зацікавлені в його розвитку. Наведено кількість інноваційно активних малих підприємств та кількість запроваджених ними інновацій у Львівській області за напрямками інновацій та видами економічної діяльності. Розкрито сучасні тенденції інноваційної діяльності підприємств Львівської області та оцінено фактори, які впливають на розвиток малого інноваційного бізнесу в регіоні.

Як показують результати проведеного дослідження, через низький базовий технологічний рівень більшості малих підприємств найменші модифікації у структурі або організації виробничих процесів уже вважаються інноваціями, тоді як на більш високорозвинених підприємствах такі б зміни вважалися незначними покращеннями. Таким чином, точкові інвестиції не створюють інноваційного мультиплікаційного ефекту, натомість вимагають великомасштабного партнерства і співробітництва в процесі інвестування.

Ключові слова: інновації, інвестиції, малий бізнес, економічна активність, Львівська область.

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Тенденции развития инновационного бизнеса в Львовской области

Статья посвящена изучению тенденций развития инновационного малого бизнеса на региональном уровне. Проанализирована структура инновационного малого бизнеса Львовской области, а также исследованы интерактивные процессы сотрудничества между сторонами, которые заинтересованы в его развитии. Приведено количество инновационно активных малых предприятий и количество введенных ими инноваций в Львовской области по направлениям инноваций и видам экономической деятельности. Раскрыты современные тенденции инновационной деятельности предприятий Львовской области и оценены факторы, которые влияют на развития малого инновационного бизнеса в регионе.

Как показывают результаты проведенного исследования, из-за низкого базового технологического уровня большинства малых предприятий даже маленькие модификации в структуре или организации производственных процессов уже считаются инновациями, тогда как на более высокоразвитых предприятиях такие изменения считались бы незначительными улучшениями. Таким образом, точечные инвестиции не создают инновационного мультипликационного эффекта, но зато требуют крупномасштабного партнерства и сотрудничества в процессе инвестирования.

Ключевые слова: инновации, инвестиции, малый бизнес, экономическая активность, Львовская область.

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Trends for Innovation Business Development in Lviv Region

The Article highlights trends of small business innovation development at a regional level. Small business innovation structure has been analyzed for Lviv region; interactive procedures have been researched referring to cooperation between the parties interested in its development. The amount of innovation-active small businesses and the number of innovations introduced in Lviv region have been mentioned by innovation trends and types of economic activity. Up-to-date trends in Lviv region companies' innovative activity have been revealed and factors influencing small business innovative development in the region have been outlined.

As the results of the research show, due to low basic technological level of most small businesses, even minor modifications in production procedure structure or organization are considered innovation whereas at a higher developed enterprises such modifications would be considered as minor improvements. Thus, the point investments are not able to make innovative multiplied effect but still it requires large-scale partnership and cooperation in the course of investing.

Keywords: *innovations, investments, small business, economic activity, Lviv region.*

Research Urgency: Describing the regional aspects of innovation activities in terms of Lviv region it should be recognized that the institutional, infrastructural, marketing and informational support takes a variety of forms, methods and tools contributing to a slow but progressive improvement. The timeliness of the article is stipulated with the fact that the formation of modern competitive economy can only be based on the promotion of innovative and investment activity with assignment of financial, technological and organizational resources for innovative targets set on macro-, meso- and micro levels.

The innovative activity of small business is a multi aspect phenomenon and its specific demonstrations differentiate with respect to the scale and quality of protection, the level of uncertainty, security and controllability depending on the sphere and dynamics of demonstration. Nevertheless the problems of interaction between the participants to innovative processes within the interactive environment have not been studied until present. Not enough attention has also been paid by the scientists to the problem of investment by the small business entities in fundamentally new technologies.

Recent Research Analysis: Scientific provisions of national and foreign academicians, in particular those of Vasylytsiv T.G., Borschevska V.V., Geets V.M., Semynozhenko V.P., Zhalilo J., Chervanyov D.M., Kuhta P.V. [6, 8, 11, 14] performed the initial theoretic foundation of the research. The methodological framework is based on the range of general and specific research methods used in modern economic theory [10], including self-carried out social studies. Statistical materials, laws and regulations [1-5, 7, 9, 13] have constituted informational background for the research.

The goal of present research is discovering of patterns and trends of development of innovative small business at the regional level.

Results of the research: The small business innovative component is called to stimulate economic activity of the population and meet growing demand which in its turn will lead to higher employment and the national income increase, i.e. the materialization of national interests. It is due to this that within recent years two-year development programs, i.e. one of the important tools implemented on both regional and state policy levels to support small business in general, the employment policy and investment and innovation strategy of the state, have been carried out in Lviv. Lviv City Council adopted a program to promote entrepreneurship in Lviv in 2011-2015 [12]. The program reflects the goals, objectives and a set of measures aimed at creating favourable conditions for the development of entrepreneurship in Lviv.

The program is prepared in compliance with the legal framework of Ukraine, taking into account the

recommendations of the State Committee of Ukraine for Regulatory Policy and Entrepreneurship [10]. The program generates investment environment and is part of the socio-economic and cultural development of the city for 2011-2015, coordinating the processes of creating positive business climate by promoting the improvement of the level of collaboration and enterprise cooperation with local government bodies and public authorities.

On the basis of statistical data an innovative activity of small enterprises in Lviv region has been studied. As reported by the Central Statistical Office in Lviv region 100 industrial enterprises which is 2 % less compared with a year earlier have applied the innovative measures to improve technical level and manufacture of new products in 2013 [9] The share of innovation activists in total equalled 13,2 % (against 14,2 % totally in Ukraine).

Taking Ukraine generally the majority of innovatively active enterprises introduces marketing innovations usually associated with organizational changes, 60 % of companies establish the production and sales of new products and only 41 % develop or introduce new technologies. Unfortunately, very few organizations apply the concept of continuity of inheritance properties in a number of system elements, because it requires the creation and update of suggestion boxes, introduction of technological innovations and the usage of effective systems of their selection and assessment.

However, despite the widespread opinion about the ability of private small business to maximize the mobilization of available resources, including new achievements in the technical, economic, organizational and informational spheres, the experience shows that changes most often refer to productive assets, industrial and job management as well as to product properties. Although basic technological innovations are commonly known to bring excess profits, the enterprises-followers quickly overtake the innovative ones. Maximum failure risk falls on the stage of implementation, while on the stage of growth the followers become more and more active, and the further the more competitors appear to rival the monopolist-innovator; this balances the market situation (conjuncture) and reduces the latter's excess profits dramatically. If we divide enterprises on the basis of innovation acceptance rate into four segments, i.e. innovators, early adopters, late followers and outsiders, the probability of a second type's successful activity is sometimes higher than that of first one.

The structure of the small business innovative activity in the Lviv region shows that product innovations are the most common area of improvements. Within 2013 119 varieties of new products and services making up 1.7 % more than in the previous year were totally supplied to the regional market [9]. This quantity includes small business enterprises which produced and promoted new

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or improved the existing products. Most innovative firms-commutants in the sphere of small business are focused on satisfying local needs, nevertheless among the acquired new products there are not only those traditionally correlated with small business sector, i.e. confectionery, food and beverages and soft goods, but also those traditionally associated only with heavy industrial production. Implementing the innovative cluster-scenario-based diversification strategies, satellite enterprises establish round powerful organizations and that results in the introduction of innovations thanks to promotion of their research and development activity and acceleration of transformation processes. This entitles us to complement the well-known typology of the management of innovation activities (explerents, patients, violents and commutants) with a new category of a «satellite enterprise».

One of such small enterprises (staffing table did not exceed 20 persons during the entire period of operation) Trambeton Ukraine LLC was founded in 1998 based on the facilities of Lviv Factory of Prefabricated Constructions. The company specializes in manufacture of plates to be installed under tramlines applying modern European technologies and possesses an active order book elaboration with the use of up-to-date developments in the field. The enterprise's participation in the city infrastructure development projects was the condition for its upgrading with imported equipment. According to the findings of the European Bank for Reconstruction and Development experts, the quality of the company's innovative product appeared to be one of the best among construction enterprises in Ukraine.

Online businesses, web-professionals and studios creating and promoting inventor's product/service are best examples of the innovative entrepreneurship peculiarities of the non-manufacturing business. These companies may include, for example, online stores (43 items in Lviv in 2012); some of them arrange their

activity on the «satellite enterprise» principles described above. Rapid development of IT services is also reflected in quantitative and qualitative increase of innovative products – about 50 Lviv small business enterprises develop and deploy software.

Business incubator, a part of the Lviv Polytechnic National University science park, provides technical support of small business through programs of cooperation with various public and innovative funds and advises them on innovative entrepreneurship. Along with the State Centre for Science, Innovation and Information System Development the project of creation of Lviv City innovative business incubator «InLviv» has been developed. Lviv City Council, Civil Research and Development Foundation, Techinvest Venture Company and Elex IT Company have signed Memorandum of Cooperation for creation of Lviv Innovation Centre, «From Idea to Product» and «From Idea to Implementation» handbooks have been published describing the patenting and licensing processes of innovations as well as business planning, training and presentation holding. To achieve favourable conditions of best practices sharing and improve the competitiveness of small business enterprises which employ resource-saving and environment friendly technologies and introduce new management systems a number of conferences are held. Nonetheless local innovation zones in the form of science parks are ineffective due to the low sensitivity of the real economy to innovations.

Thus the practice of innovation activities' support indicates the attempts of introducing of its various forms taking into account both foreign experience and the peculiarities of economy itself.

In the view of peculiar Lviv small business sector structure the below given groups of innovatively active enterprises distinguished by the types of business activities and innovation trends may be spoken about (Table 1).

Table 1

Innovatively active small business enterprises in Lviv region distinguished by innovation trends and economic activity types in 2013 (according to [13])

Branch	Total innovatively active enterprises	Quantity of innovations introduced			
		process	product	marketing	organization
Industry	262	474	558	57	44
Manufacturing industry:	643	442	519	65	78
• food industry	81	220	160	20	19
• consumer goods industry	173	75	165	17	22
• woodworking	237	104	179	19	25
• other	150	42	15	10	12
Retail trade	435	37	48	112	99
Restaurant business	219	47	78	142	447
Hotel business	211	111	57	419	262
Total	1770	1110	1260	795	930

In 2013, 1770 small business enterprises in Lviv region (11.8% of total number) performed whatsoever innovations. The reasons for the low activity of innovation introduction shown by the companies are first and foremost their low scale and low profitability. Among the innovatively active enterprises of the sector

processing industry small business enterprises predominate with a share of 36.3 %, whereas the retail trade takes 24.6 %. The main innovative trends are acquisition of machinery, equipment and manufacturing of new products. To improve product quality is the main purpose of introduction of innovations in the frames of

manufacture; to reduce reaction time for meeting of the customers' and suppliers' needs is the key idea of non-manufacture industry. The strategic goal of marketing innovations of most of companies appeared to be the increase or maintenance of market share. It is worth mentioning that both in marketing and management generally not only new or totally modified products are considered innovative ones, but also those perceived as updated or improved by real and potential consumers.

Process and product innovations (acquisition of machinery, equipment, vehicles, computers etc.) require major expenditure at manufacturing plants, while most of facilities are spent on marketing and organizational changes in the sphere of non-manufacture. Almost complete dependence solely on their own accumulated financial resources indicates financing expenses of the innovative activity in small business. Because of the high cost and difficulty of access to banking products virtually bank small business lending is not a lever for innovative changes. State and local budgets still allot insignificant funds for innovative measures. There is no mechanism of financial resources concentration in intellectual assets. State regulation and stimulation of small business innovative activity is ineffective either due to the lack of direct or indirect financing and subsidy schemes. For example in the Russian Federation the innovative business support mechanism includes technological, manufacturing and innovative, regional venture capital support funds.

However, it should be noted that small business innovations very rarely occur in isolation; it is more likely an interactive process of stakeholders' collaboration. The companies receive information (knowledge) from many sources through partnerships or cooperation with other entities by purchasing licenses (immaterial resources). Science parks and business incubators the membership of which allows considerable cost saving in terms of business operations thanks to the tax burden lowering, are of great importance for innovative enterprises' technological breakthrough. For example, 'Soft-Serve' LLC participation in Lviv Polytechnic National University Science Park (the company specializes in developing software for both Ukrainian and foreign markets), let it become a large enterprise employing more than 300 highly qualified specialists today. Innovation incubators help small and medium-sized high-tech innovation implementing firms utilize modern technology that allows production and development at a high technical level and requires relatively affordable expenditures. From the very start Lviv business incubator was the organizer and co-organizer of about 30 conferences and seminars, and provided services to more than 1,000 customers, about 500 students have been trained during training sessions.

A questionnaire survey has been performed to obtain more objective evaluation of the small business entrepreneurs' own vision of the opportunities and precautions in the innovative activity. The results showed significant limitations to creation and introduction of innovations. Financial capacity of the company was considered one of the major constraints in a significant number of cases. This limitation often occurred in the

companies the innovative behaviour of which is predetermined with transformation of the economy, as well as in the enterprises which started operating in the period of macroeconomic changes.

The respondents believe government policy of taxation for small and medium-sized businesses which reduces price-related competitiveness of innovative products is a serious problem.

A significant obstacle is the substantial risk of innovation introduction due to possible errors in the market size and payback period assessment due to entrepreneurs' lack of expertise in business activity. In addition, newly established enterprises consider lack of sufficient information about customers' needs and market segmentation to be significant complication for introduction of innovations.

Another frequently found obstacle on the way of changes implementing was staff perception. This issue becomes particularly important in the non-manufacturing business sector where the staff contacts with the customers directly. Staff resistance was mostly caused with dissent from organizational changes, redistribution of duties and the need for retraining etc. Personnel often perceive implementation of quality control as excessive and unjustified intrusion into privacy.

Besides common problem the respondents often marked was the lack of time of line managers who simultaneously perform their everyday duties, find solutions to strategic issues and reorganize the working processes.

Generally speaking in the process of negotiations with difficulties two types of standpoints of enterprises in reference to introduced business innovations may be distinguished. Some of them did not show any interest to receiving help from outside, others were largely interested in creating a national system of innovation support aimed at the development of small and medium enterprises. In addition, the companies believed the absence of R&D institutions the research results of which should be used by small and medium enterprises to be a significant limitation in creating innovations.

As small business sector is considered to be highly sensitive to innovative developments (what is a common yet practically unconfirmed argument) special attention has been paid to this aspect of study. The susceptibility of enterprises to innovations is influenced by a number of factors. The research intensity of products determined with the usage of new scientific and technological achievements while designing of their properties is one of the crucial ones. The science-intensive products are being produced by a small proportion of entrepreneurs. They are mainly IT-companies equipped with special means with highly scientific and engineering personnel engaged. However, in terms of the perception of innovation within organization the impact of science-intensive production is rather contradictory. On one hand, the higher the research intensity of products is, the more the company is ready to provide readjustment for radical innovation. On the other hand, the increase of research intensity of manufactured product is accompanied with its increased complexity which makes it difficult to be used by consumers. The higher the research intensity of production is, the more

active the changes are, and the more open technological system is for thoroughgoing innovations.

The variability of technology is another factor which influences the susceptibility. The companies manufacturing processes of which are based on stable technology operating in most industries mostly work in small business: trade, real estate, hotel and restaurant business, educational, medical, household services. The scientific and technological development in this type of technology can be only implemented through modernizing of production and improvement of individual parameters of the technological system. On the stages of the demand acceleration and growth stable technology provides increased profitability which is supported by both the staff and organization as a whole, that is progressive perception of such innovations is characteristic.

Industrial manufacturers of construction materials, textile, leather, footwear, pharmaceuticals, chemicals, rubber and plastic products, partially wood (furniture) and petroleum refining industries players use fruitful technology. The technological system development is being introduced through the replacement of elements. Furthermore basic technology is being stored for a long time whereas new generation of upgraded products with the best quality indicators appear in the mode of 'innovation production line'. The design and development of new product samples are crucial for economic success. This policy of technological development is able to provide not only the production recovery, but also the continuation of the life cycle of technology or products, that is enhancement of technological fertility. At the same time, management should be aimed at gradual financing of investment in the development of production at the expense of profits and depreciation fund; this contributes to positive perception of innovation within the company.

Conclusions: Thus, the low level of innovation activity of enterprises operating in Ukraine indicates lack of drives for the resource capacity building as well as underestimation of the impact of promotion of innovative functioning on business results. Similar trends can be observed in small business where from total number of enterprises – in the Lviv region particular – only 11.8% have introduced innovations of whatsoever type, despite the fact that small business is considered to be the main initiator of innovations by classical theory of small business innovation studies. Business incubators play a discrete role in the development of innovative development of the small business entrepreneurs. They provide significant support to development of new ideas, creating a new generation of national business – Small Business Innovation Cluster.

Scientific and technical level of the technological system is by no means less important factor influencing the susceptibility to innovation. As the results of survey has proved, the lower it is, the greater technological jump should be taken by the company and, therefore, the greater the gap of the properties of substituting items is, the more difficulties it will meet on the way of perception of innovation within the company. So, taking it generally, the susceptibility of the organization to innovations is determined with certain structural and organizational,

socio-economic components as well as with the parameters of its management. The qualitative analysis of the small business innovative sector in the Lviv region indicates the absence of an integrated system with a predominance of recombination and modification changes in terms of fundamentally new products. The peculiarity of innovative changes in small business exhibits in the innovation reflecting mainly. Due to the low basic technology level of most enterprises, slightest modifications in their structure or operating processes organization are considered innovative changes while more advanced enterprises would have taken them for minor improvements. To conclude, point investments do not contribute to a multiplier effect of innovation, but require large-scale partnership and cooperation in the process of investment.

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