

The Model of Innovation Influence to Competitiveness at Recession

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Abstract: The article deals with influence of innovations on enterprises competitiveness. The different concepts of competition, from D. Ricardo and H. Adams up to M. Porter and Kim Chan and R. Mouborgne are analyzed.

The importance of innovations for competition of enterprises is disclosed. The definitions of innovation and competitiveness of different authors are submitted. Innovation as risky process in competition from J. Shumpeterian economic view to innovation up to P. Drucker and McMeekin and D. Soutterton commercialization as well as EU innovation policy are analyzed. Short analysis of Lithuania's position in the EU economy and Lithuania on innovation is made. The importance of innovative enterprises of Lithuania for the competitiveness of Lithuanian economy is stressed. It well demonstrates analysis of innovation activity of 27 Lithuanian enterprises. Methodology for construction the model of direct and indirect influence of segregated elements of innovation management on segregated criteria of organizational competitiveness is provided. The main suggestion is to enhance the activity of organizations at recession by improving strategies mainly by fastening the implementation of innovations, training the personnel and management improvement.

Keywords: innovation, innovative models, competitiveness.

1 Introduction

Although there are many scientific publications on the subjects of innovations and competitiveness, but the interaction is still not discovered between them suitably.

The M Porter's Diamond model to demonstrate the role of some factors for competition is often used by different authors as background for analysis of competition factors. The modified Diamond model and conclusions are formulated on basis of research and data from research booked by the Ministry of Economy and European Commission and Innovation tools research. Data on activity of the Lithuanian entities are collected from information published in different information sources and interview of experts.

Subject of research – Innovation models proposed in scientific literature, situation on implementation of innovations in world economy and Lithuania and activity of 27 enterprises in Lithuania.

The goal of research – is to determine the influence of innovations for competitiveness and to suggest the model of interaction between innovation elements and competitiveness criteria. The methodology of research – logic comparative analysis of scientific literature, reports, statistic data published and formalized interview of experts of 27 Lithuanian enterprises on closed

responses questionnaire in May 2009, of which 3.7% were upper level managers, 63% medium and lower level managers, 61.9% man, 88.9%, aged 25–45, i.e. those that better fell the role of innovations at operational level.

2 Conceptual overview of competition theories

The essence of competition was analyzed by many authors, who examined the conception of monopoly and oligopoly price discrimination, and dynamics of processes in the markets. At the end of XX century has been spread concepts of market share, scale economies, generic strategies, mergers and acquisitions, competitive environment etc. The variety of concepts still exist and are commented differently by different authors (see Table 1).

Table 1. Concepts of competition. Source: Šliburytė L. (2000. p. 34)

Authors	Concepts (statements) of competition
Vanberg (1996)	Framework of rooles, conditioning peculiarities of functioning and could serve as target for purposeful undertaking of human beings.
International Vocabulary (1990, 2000)	1) rivalry of manufacturers for favorable economic conditions. (economic aspect) 2) one of the forms of fight for the same conditions for existence or reproduction of single or few organisms (biological aspect)
Saviotti Kraft (2004)	Style that companies compete for products selected by consumers. The interaction intensity proportional to product advantages.
M.Porter (1990)	Dynamic developing process, sustainable developing area in which appear new products and marketing streamlines, new markets and market segments and new manufacturing processes.
Kerber (2006)	„Test of hypothesis on competition“ were the knowledge are generated and promulgated through imitation.
Jucevičius (2006)	Competition is notably complex category but not situation or mode measured by one or few parameters by using all possible conditioning within the frame of con-centric range of competition and right for free choose.

The concepts of competition has been changing according to changes in Generic Management concepts from F. Taylor up to e- governance as well as competition theories from A. Smith and D. Ricardo up to intelligence in rivalry and „Blue ocean“ strategy.

Main competitive advantages of the firm can be grouped in 8 groups: 1) people/competence; 2) product/quality; 3) promotion/enhancement; 4) price/profitability; 5) selling power; 6) organization ability; 7) opportunities/chance; 8) image/branding.

Accentuating the role of human resources for firm competitiveness Ch. Kim and R. Mauborgne (2005) stressed that organization can become great only if it recognizes people as main factor of activity effectiveness: here has to be included all kind of resources as well as psychological ones.

3 Conceptual analysis of innovation theories and policy

There are different concepts of innovation provided in scientific literature. Most of innovations are treated as risky process oriented for change for converting knowledge into competitive product. A. McMeekin and D. Southerton (2007) stresses that invention becomes innovation only when it is commercialized. A. Jakubavičius, R. Strazdas. K. Gečas (2003) stressed that it doesn't matter what would be a technological invention, it will be never accepted as an innova-

tion, if it doesn't stimulate the economy and solid-profit increase. To better understand the innovation it is suggested to classify the features of innovation by criteria as it is shown in Table 2.

Table 2. Classification of innovations by criteria

No	Criteria	Criteria disclose
1.	Newness	Original/modification
2.	Content	Product/technology/social
3.	Implementation extent	Onetime/multifold
4.	Effect	Economic/social/ecologic/complex
5.	Results	Fundamental/experimental/basic/diffusive/conditional
6.	Entity linement	Single entity/interentity
7.	Character	Quantitative/qualitative/complex
8.	Spreading area	Individual/entities/industry/country/global

Innovative activities are the creation, adaptation and adoption of the new products, processes or services According to European Commission, innovation policy – as a generic policy – is set of actions intended to raise the quantity and efficiency of innovative activities. Thus the companies ought to follow S. Derry's (2009) suggestion quickly and effectively weed out those ideas and innovations that do not meet five basic selection criteria: value, suitability, acceptability, feasibility, endurance.

According to Innobarometer (2004) estimation Lithuania was on the 5th place from the bottom between EU countries on intellectual property, on 7th place in knowledge creation and only on entrepreneurship and innovations – on the middle of the line and that $\frac{3}{4}$ of Lithuanian entities does not provide aggressive innovative activity.

4 Innovation as key factor of competitiveness at recession

Special attention to innovations ought to be paid at recession period because there is little chance to invest for market expansion at recession time. According to G. Brennan (2009) (352 companies investigated) innovation climate has improved in 47.5 % of companies, and only for 25.9 % – has worsened, in 28.2 % companies innovation budgets has increased.

Though Innobarometer (2007) investigation shows that Lithuanian enterprises are quite innovative (9th position in EU 27, with innovation score 3.7, i.e. 0.6 score higher of EU average), our research provided in May 2009 (mentioned in introduction), shows that only 14.8% of Lithuanian enterprises investigated collaborate with technology parks, and that one of the main ways to become competitive is implementation of perspective innovations.

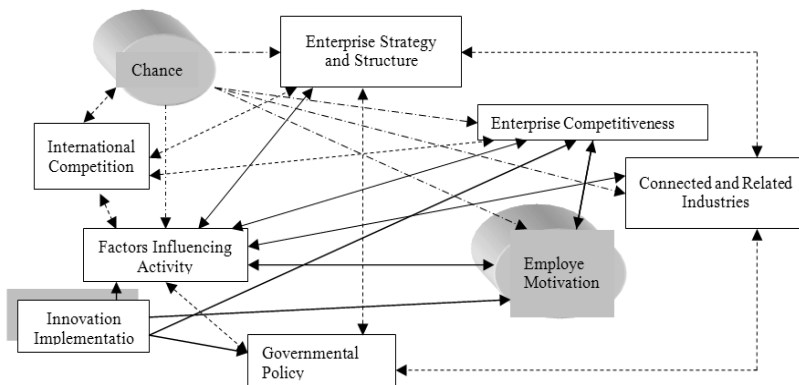
5 Innovation and competitiveness interaction models

In the chain of competition models described in literature, very important role plays M. Porters' 5 market forces and Diamond and Dubble diamond models and latest modifications made by different authors, including Nine factors model. The weak points of the Diamond model has been analyzed by the authors are submitted in the Table 3.

On the basis of the publications new Diamond model, modified by the author is proposed in picture 1. The main improvement of the Diamond model is incorporation of innovation as the very important influence factor for organizational competitiveness at recession.

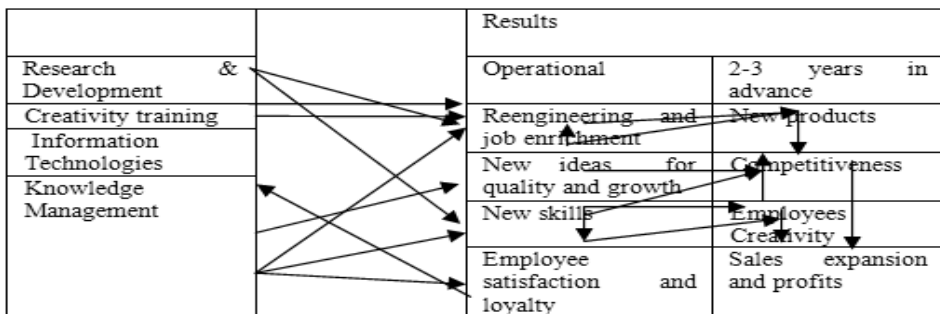
Table 3. Some drawbacks of M. Porters' Diamond models

Authors	Short comments
K.Lancaster (1966), C. Baird (1975)	Customers get satisfaction from and are oriented to characteristics of goods/services but not form goods itself
V. Kvainauskaitė, V. Snieska (2003)	The model is difficult to implement in practice, and in well-stocked markets it is about impossible to get enough information on every product.
S. Oster (1994)	Model can not discover competitiveness factors in integrated economies.
A. Rugman (2000)	Model does not fit correctly for developing economies: it has been constructed for well developed ones.
Č. Pūrlis	Model does not estimate innovations as factor influencing competitiveness

**Picture 1.** Modified model for research of competitiveness (M. Porter, 1990)

As it is proposed in the model, implementation of innovations play few roles: it influences competitiveness directly by price wars and offensive („red ocean“) strategies and indirectly through motivation of employees and all factors of enterprise activity and sometimes via lobby activity through governmental policy. Thus it is good time to invest in research and renew the products, processes, structure and management as main elements of competitiveness, as it has been recommended by Lisbon strategy and European Commission. In turn every of advantages are complex.

Thus model of interaction between main innovation management factors and competitiveness at recession period ought to be as shown in picture 2.

**Picture 2.** Interaction model of innovation and competitiveness (by author)

Research showed that the very important elements of competitiveness are skilled employees and quality of products (software and equipment) and services in software implementation. Concentration of resources for creativity training and knowledge management at recession period is most important and effective strategies for competitiveness in nearest future.

6 Conclusions

Innovations are engine of competitive company. The ability to accumulate ideas and produce innovative product using the advanced technologies becomes the dominant source of competitive advantage in knowledge society.

Investigation of scientific literature, Innobarometer 2004 and 2007 reports also Lithuanian government documents, shows that the situation in Lithuania in innovation policy and Lisbon strategy implementation are not among the best among EU countries. Though the reports of ministry of Economy, the data of Department of statistic and Innobarometer research shows that situation on innovation implementation in Lithuanian organizations ranks near the average in EU 27, our research (on 27 Lithuanian enterprises) shows that reality in Lithuania is even worse. Very few enterprises collaborate with technology parks and research institutions or participate in international research, only 14,8 % has scheduled financing for innovations for 2009.

To get the best out of the recession situation the companies ought to: 1) pay more attention to develop some innovation strategies at recession; 2) pay much attention to get foundation from EU funds for innovation; 3) to reduce current operating costs using innovation; 4) use open innovation to implement the best practice of other enterprises; 5) use time and resources available for skill and creativity development and knowledge management.

To better explore the Lithuanian government opportunities in supporting and enhancement innovations in private enterprises much attention must be stressed for implementation of special support programs, especially in supporting cooperation between enterprises and universities, speeding up creation of technology parks and valleys, spreading the network of business incubators etc. as well as improving different forms of creativity training.

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