

The Role of Quality Management in the Process of Innovation Development

Laura Baronienė, Bronius Neverauskas

Kauno technologijos universitetas
Laisvės al. 55, LT-44309, Kaunas

Many unusual questions have to be solved which are in touch with processes of innovation as Lithuania integrates into European space of processes and globalization of economics. Implementation of innovations gives an opportunity to modernize the structures of manufacturing and services, to improve products and technologies, to raise their international competition. Questions like what causes the rise and development of innovations are being raised in this article. What could quality management as science and as separate management methods do as innovations in this context? How the company could and should prepare for innovations? In this article the paradigm of innovation concept is presented, sources of innovations are presented and also the causes of development are described. Points of view to innovations are described (in governmental, company and organizational level), also quality aspects, attention is being paid to EU's innovation stimulation.

Conclusions of this article as propositions need deeper substantiation by providing theoretical analysis of possibilities and social researches.

Keywords: *total quality management (TQM), innovations, quality, ISO 9000.*

Introduction

Processes of globalization are changing the modern understating of management system – modern management is more and more involved into markets relationships, models of management and organizational forms are changing. Many unusual questions have to be solved which are in touch with the processes of innovation as Lithuania integrates into European space of processes and globalization of economics. Implementation of innovations gives an opportunity to modernize the structures of manufacturing and services, to improve products and technologies, to raise their international competition. The long term goals of innovations – raise of the international competition, stimulate use of science, technological solutions and organizational innovations in business.

Urgency of the article. After considering mentioned tendencies it is necessary to describe the place of quality in the process of innovation expansion, by understanding words “innovation” paradigm, external and internal conditions, which influence quality management as science and aspects of methods of quality management as the implementation of innovations in organizations.

Scientific problem, mentioned in this article, is understood from the answers to the questions – how innova-

tions could be integrated into organizations using quality management science? What is special about the integration of quality management systems in company? This problem has been analyzed by many academics – Andrew Schenkel (Conceptualizing and Exploring the Organizational Effects of ISO 9000: Insights from the Qresund Bridge Project), Tauno Kekale, Ingrid Fecikova, Natalia Kitaigorodskaja (To Make it “Total”: Quality Management over Subcultures), Stephen J. Warwood & Paul A. B. Roberts (A Survey of TQM Success Factors in the UK), David Gallear & Abby Ghobadian (An Empirical Investigation of the Channels that Facilitate a Total Quality Culture), Shams-Ur Rahman (The Future of TQM is Past. Can TQM be Restructured?), Ruzevičius J., Adomaitienė R., Sirvidaitė J (Motivation and Efficiency of Quality Management Systems Implementation: a Study of Lithuanian Organizations).

Goals. The problem is based on two factors – external conditions factor and organizations internal factors. Questions arise, what influences the origin and expansion of innovations? What could be the role of quality management as science and separate quality management methods? How organizations should prepare to develop and to adopt innovations? The goal of this article is to define the role of quality management in processes of innovation expansion in the stage of evolution of modern society of knowledge. The theoretical background of this article – the presumption about the necessities to apply management methods in evolution of knowledge society and the appearance of new requirements to form new paradigm of management.

Definition of innovations

In modern Lithuanian dictionary (Modern Lithuanian dictionary. III edition: 1993) we cannot find the word **innovation**, there is word “novelty”- *something new or just new*. In international dictionary (1993) there are no words like “innovation”, “invention”. In German, English and French this definition is translated by different words “innovation”, “novelty”. These words have different meanings and have to be understood from the context.

In the description of the innovation the paradigm arises – can every novelty be called innovation? Is it not concrete meaning? Maybe by describing innovations many criteria should be described?

Innovation by P. F. Drucker – it's ability to notice the change and to use it for business success (Drucker, 1986). Director of Lithuanian innovation center Dr. Kastytis Gečas says, that there are about one hundred descriptions of

innovation definition (Gečas, 2002). Mostly innovation is described as the usage of new knowledge in companies, which stimulates the production and release of technologically new products, and improves processes by presenting new products to the market.

It should be noticed, that scientists, manufactures, businessmen and others describe *innovations* very differently. Every interested group describes from the point of self interest, which can be completely different from other group description, because other group stresses other aspects. It is difficult to understand each other in discussions, if there is no agreed definition. So the most common definition of innovations, which also describes the information technologies used in micro and macro economics is the following one:

Innovation is a successful commercial adaptation of new technologies, ideas by providing or improving products to the market.

Sources and factors which affect innovations. A method of quality management – innovation or factor of internal company's surrounding, which makes it possible to implement innovations more effectively?

Origin of the innovations could be determined by fortune or misfortune; inadequacy between reality model and facts; main process inadequacy; changes in structure of industry or market; demographical changes; changes in understanding; new knowledge.

These factors, which impact the expansion of innovations, should be mentioned:

- political-demographical – political climate in the country and its integration into the world community;
- juridical – how rights of citizens are ensured, how laws are co-ordinated;
- market-economic – countries ability to use the newest principles of management, work organization, when this knowledge becomes the base for country's economics. The main economic directions are linked to business consulting services;
- organizational-business – the innovative level of companies and adaptation to new market conditions;
- professional – changed work conditions, new professions related to management system development and their adaptation in companies;
- individual – individual reaction and adaptation to new conditions.

Theoretically it is possible to say, that as response to every mentioned factors company could use new quality management methods, which would ensure better preparation to react to external factors. In this case quality management methods would be treated as one of the company's internal space factors. Second, it is not possible to ignore, that quality management methods are also innovations, and their further development would be impacted by the mentioned factors. The solution of this dilemma could be an argument with the time parameter. In other words, if an organization wants to implement some kind of innovations, by already used quality management methods, then quality management would help to achieve the goal. But if the organization has only the knowledge about quality management methods, then the implementation of quality management method would be treated as

the first innovation.

Paying attention to the fact, that in innovation influence factors, the social-cultural factor is dominating, it should be understood, that unchanged innovations could be analyzed only in their creation area. Analyzing innovations in macro level, the country, that is adapting innovations from other countries, can only use the knowledge, but the social-cultural environment will raise modifications. Therefore it is necessary to pay attention to modification shifts, i.e. the direction it takes – positive or negative.

Approaches to innovations. Quality aspects of these views

By analyzing innovations in the **country level**, the priority is **set to the creation of innovation system**: improving activity of governmental institutions (national and regional), the collaboration based on partnership between these institutions, business associations and the like. Forces of local and governmental institutions are unified in order to establish and develop the law-economic base for innovations, international collaboration is propagated and stimulated in innovation development (Program of innovation in business, 2000 and 2003).

Analyzing innovation in the **company's level**, the priority is **set to innovational activity in company**: integration of innovational projects, commercial usage of results and the connections with science institutions; business internalization and taking part in international programs; change of view to innovations, intellectual and qualification knowledge supply to business (Program of innovation in business, 2000 and 2003).

Analyzing innovations in **organizational level**, the priority is **set to service of innovation support**: the creation and functionality of independent and active innovation service, providing these services to companies, making the innovational activity of companies, science organizations and others. In order to ensure the support of innovational service it is necessary to form the conditions to effectively use infrastructure elements of innovation support (technology pass, learning, consulting, finance and etc.) forming and implementing innovations (Program of innovation in business, 2000 and 2003).

In every of the mentioned views the quality factor is characteristic, but their adaptation level and dimension is different.

Analyzing the view to innovations in the country level and forming the innovation system, quality management methods should be used to improve the governmental institutions. In the company level the view reflects the internal company surrounding and the conditions to implement innovations by using TQM principles like orientation to client, involving the workers, process view, continual improvement. In organizational level the view reflects informational dispersion and useful connections to suppliers.

Stimulating innovational processes in the EU

In order to stimulate innovations in the EU, in 1996 European Commission accepted "The First Action Plan for Innovation in Europe". In this strategic document the common stimulation schema was provided, the most atten-

tion was paid to priority means, which European Commission should do as the executive agency of the European Union. Three directions were described: to stimulate the culture of innovations, to develop a positive surrounding for innovations and to get science oriented to industrial service realm. In 1998 the Fifth common science research, technological expansion and demonstration program was accepted, the goal of this program was to stimulate technical and science knowledge usage to satisfy European social and economic expansion programs. Innovation Relay Center was the foresight in this program to provide the interchange of technology. Middle and east Europe countries, including Lithuania, are taking part in it too.

In Lisbon 2000 European Council underlined the goal until 2010 to make the European Union the most competitive and dynamic economics in the world based on knowledge, where harmony economics expansion, employment of better quality with social union would be compatible. Many tools, described in Lisbon, are intergovernmental and are based on the coordination and benchmarking between country members. Lithuania as a new EU country has to do the same amount of work in developing of economics as other countries do (Implementing Lisbon strategy, 2004).

Baltic States in the context of innovations

Baltic States have their own original consumption culture. Because of global economics the Baltic region (Lithuania, Latvia, Estonia) is treated as one, except some differences. Lithuania's and Latvia's societies are treated as social priority model (like France, Italy), Estonia's society as individual searches (USA and Spain) model. Lithuania and Latvia meet changes and innovations more restraint than Estonia. Estonia treats the rising problems as challenge and tries to solve them. Baltic States, as purchase power allows, are ready to adapt new products, ideas, social acts and consumer style. On the other hand, they are united by small quantity of society members, who like the stability, status quo, order, duty, security (3-4 percent of citizens). "Frankness and wish of changes in society of Baltic States is clarified by saying that level of achievements is low, so the reached things are not appreciated" (Nečiūnienė, 2002).

Lithuania's conditions for innovation foundation and implementation. Finland's practice.

In Lithuania governmental support is not quite effective. There is no unified system, which would include the whole cycle of innovations – science and research works, applied research, commercialization of the product. Governmental support programs are fragmentary and sometimes they have to-do with innovations only in a formal way. There are many business incubators in the state, but they do not provide the main function – to develop new ideas into products. Practically they are like real estate companies, renting space for other without any consideration whether they create innovations or not.

There are many business support institutions, but their work is not well coordinated. It is necessary to analyse, what problems are the most actual to companies, what

most attention should be paid to. A net of institutions which could provide informational help to companies should be created.

Finland's TEKES program is a very good example of an informational system created, which helps in all areas, which has to-do with innovations: technological information, science research works, search for financial aid, management information, etc. The key issues of Finland's innovation system, which had developed for a quarter of century and then changed the economics after the crisis, are these (Ximanen, Kastels, 2002):

- countries active innovation politics, based on big investments for research, performed by Science and technology service;
- business innovations. The main reasons are capabilities of companies to support and use talented specialists – researchers and inventors; possibility to insure the base financial level to make it possible to produce products from innovations using the market and innovation cultures of companies;
- "hackers" innovations – they are invented by talented individuals, who are mainly supported by government sources, like free universities, using "hacking ethics" as innovation culture.

Some factors could be formed differently, detailed in different levels. It is important to notice, that the main moment of Finland's innovation system is the combination of all mentioned factors, coming out of a holistic view. For long time developed Finland's system has been a unique combination of element interaction, giving a synergetic effect. The elements of this system, system connections and the expected result was clearly oriented to reach the goal of economic model renewal and reorientation.

Innovations are based on new knowledge or new ways to adapt them, so science research and development (R&D) needs coordinated actions of researchers, business and government. Lithuania cannot claim any great knowledge in it. Finance of R&D is poor and ineffective, industry and science institutions do not interact sufficiently. This is visible in the results – weight of high-tech industry is very small. Lithuania is one of rarest patent countries. "It's a paradox, but we are preparing the biggest amount of specialist in Europe" (Andrikiene, 2004).

Lithuania has the opportunity to adopt the knowledge of modern countries and to avoid the search of our own way. But rapidly changing conditions, the effective solutions of yesterday or even today will make them useless tomorrow. "That's why creative search for our own way could be very hard, but it can be very effective, especially if this search is based on the knowledge of other countries" (Bosas, 2004).

Role of quality management in stimulation and realization of innovations

In rapid changing surrounding people, who have the newest knowledge and who can use it, are very important. It is noticed that traditional management does not suit the modern requirements. Management was effective in instable organizational structure and was common for the capitalism era, modern manufacturing and business be-

comes a result of human global activity. We can say that management control of owned resources, and entrepreneurship is the creation of resources and realization of opportunities in business. Classical forms of management: “from above” controlled structures, researched market, business plans, money is invested and the profit is planned do not fit the modern market. There is an impression that a tendency develops to change from traditional management to entrepreneurship. Formally it is a free enterprise, but it is not an accurate translation. Enterprise – company, business and also initiative, efficiency. It is not enough to direct, leading must become a leadership (Snitkas, 2003). Leading a modern and flexible system, a manager-entrepreneur should get oriented to tomorrow’s changes, look for new resources and opportunities, be able to make decisions at any time. Organizations should get oriented to quality management of human resources, which includes workers competition definition, theoretical and practical courses to maintain and raise the qualification and to get oriented to one of the main quality management principles – leadership.

TQM as innovations. Distinctions of its implementation

TQM impacts the organizational culture. Organizational culture is treated as the function of opinions, behavior. TQM is a paradigm for management, it propagates some defined values, behavior and methods of work (Gallear, Ghobadian, 2004). So, if we would treat TQM as program for changing organizational culture, then one of the reasons of the failure of TQM implementation would be wrong understanding of this program, which impacts only a partial implementation of TQM (Yong, Wilkinson, 1999). It is worth mentioning that the sections of organizational culture intersect with TQM areas, including ways of work and systems of values. Because of that we can assert, that organizational culture is changing because of TQM implementation.

Can TQM generally be in practice implemented? Researches show, that TQM is very rarely “all inclusive”. Implementing TQM, attention is paid to the cultural workers’ changes. Wilkinson (1992) separates three traditional TQM view alternatives. First view is oriented to “light” quality characteristics (personnel authorization, personal learning and etc.) and it obligates to define the style of management by delegating responsibility, to increase the independence of personnel. Second view is oriented to “hard” factors of production (system measurement, work control, usage of statistical procedures). The third view includes the elements from the first and second and is oriented to the need of scientific methods, understanding of workers as part of the team. To every cultural workers group one of these views could be applied, but only the usage of all three views will make it possible to successfully implement TQM in an organization. Assertion can be made, that by orienting to organizations culture factor, TQM can be implemented in two ways – cultural changes or less resistant way (Kekale et. al, 2004). Its necessary to pay attention to the fact that implementation of TQM in organizations should begin from the very top of management levels (Oztas, Ozbay, Yeginhobali, 2004).

Mentioned cultural factor is an internal condition of the organization, which decides the success of TQM implementation, but there are many external factors too, which are conditional – leadership, economic survival, global competition (Warwood, Roberts, 2004).

Will TQM remain essential to future companies? It is important to understand that today’s business surroundings are very unstable. To remain competitive under these conditions, companies should become more flexible, transform into a suitable form. One of possible transformation forms – modular corporations. Attention should be paid to the fact that “light” TQM factors have a strong impact on organizations’ activity. It is proven, that these “light” factors transform quality control system to TQM (Rahman, 2004).

We must confess that with the change of the surrounding conditions the view point to quality should also change. The connection between TQM principles and the implementation of innovations should be found in space of economic knowledge. TQM should help companies to solve innovation problems (Elshennawy, 2004).

Do innovations change continuous improvement?

TQM in the evolution process has undergone some forms of changes – checking, statistical quality control, quality assurance and TQM (Ahmed, Machold, 2004). In stable surrounding TQM constant improvement methods like PDCA (Plan-Do-Check-Act) cycle would be useful and affective. Contemporary company has to improve the ability to quickly adapt to changing business surrounding. Strategical goals should be more directed to the creation of higher quality product using innovations but not to improving of existing product (Rahman, 2004). Most important company’s management processes should be oriented to product, process and organizational methods innovation stimulation (Simpson, Hill, 2004). The main variables in the context of changes and innovations are organizational culture, structure, monitoring and measurements.

There are examples, when organization, which began the improvement process from quality control, has developed to the one defining customers demands, product improvements and innovations. This means, that TQM program can be started from quality control and assurance, integrating continuous improvement and in future get oriented to innovations (Prajogo, Sohal, 2004).

The surrounding itself presents examples of recognized system and knowledge theory (Stepanovich, 2004). Organizations, which are trying to adapt to changing surrounding and to survive in competition, are trying different methods of quality improvement – reengineering business processes, implementing management systems based on ISO standards, apply Six Sigma methods (Thawani, 2004).

Peculiarities of management systems implementation

Today the most spreading innovation in Lithuania is implementation of management systems. The main reasons, why companies decide to implement management

systems, based on ISO 9000 family, are these: hope, that implemented system will assure demands of customers and their satisfaction (Johnson, 1993), which foresee, how to become competitive by minimizing costs. Management systems are also implemented because of institutional reasons (Brunsson, Jakobson, 2000) and because it is essential to be competitive in European market (Bodinson, 1991). Research, made in Lithuania, showed, that 71.4 percent of responded companies hope, that the system will help to assure the common level of production, 61.9 percent hope, that system will help to improve their competitive abilities and to better define customer demands, and only 14.3 percent hope, that the system will help to reduce production costs (Ruzevičius, Adomaitienė, Sirvidaitė, 2004). This research showed, that after implementing the management system 90.5 percent responsibility was better delegated (they better do their own work), nonconformity is defined in the primary steps of product production (the amount, of nonconformity product, which reaches the customer reduces).

It is worth mentioning that after the implementation of management systems, organizations become more oriented to targeted criteria's, they react more operatively to the changing internal and external conditions and become more open to innovations. We can assert that organizations are prepared to implement other innovations. Second, not always implemented quality management system is effectively functioning in the organization. In these cases the "rejection" reaction comes out, and people's social-cultural definitions or insufficient qualification of consultants conditions the negative effect in organization. The situation, when organizations pay not enough attention to quality management, but make only the paper preparation without getting involved into modern ideas, is also possible. Maintenance of quality management system, successful functioning, affectivity, questions or results – are the problems, actual for organizations, which do not wanted to show the international certificate, but to have a management system as a tool to successful control of business. The research of Lithuania's organizations confirmed that the management system model, oriented to ISO 9001:2000 family standard, stimulates organizations to implement the management system more than the earlier standard (ISO 9001:1994) (Ruzevičius, Adomaitienė, Sirvidaitė, 2004).

Practical researches show, that the implementation of management system (based on ISO 9000 families standards) impacts not only the specifics of workers intercommunication, but also thinking and ways of getting jobs done (Schenkel, 2004). Standards help organizations to communicate with each other. ISO 9000 is today's universal and standard quality language (Conti, 2004).

Successful implementation of innovative quality management methods gives the possibility to better adapt to changing conditions and to better adapt to different innovations. Although quality management methods are considered as a management innovation, their implementation in company interacts with risk of negative modifications.

Conclusions

- Competition makes companies to create innovations. Innovations are "materialized" knowledge, so the ability of economics to create and use innovations depends on the current knowledge and quality.
- Unchanged innovations can be analyzed only in their creation space.
- Social-cultural space creates modifications by integrating innovations created in another cultural surrounding.
- Quality factor is characteristic to views (in state, company or organizational level), but its application level and size differ.
- Frankness and wish of changes in the societies of Baltic States is clarified by saying that level of achievements is low. Thus the reached things are not appreciated.
- State support for innovations is not efficient in Lithuania.
- Lithuania has the possibility to take the experience of modern countries, and to avoid search of its own way. But rapidly changing conditions will make yesterday's solutions worthless tomorrow. Creative search of the own way is hard, but the results can be great, especially if this search is based on the experience of other countries, which have solved such problems.
- In conditions of knowledge society development organizations should get oriented to quality human resources management, including the definition of workers competence, theory and practical training in order to maintain qualification and orient to one of the main principles of quality management – leadership.
- Changes, made by implementing TQM, influence organization's cultural changes.
- With the change of surrounding conditions, the view to quality should also change. In the space of knowledge economics the connections between TQM principles and innovation implementation should be found.
- Management systems (based on ISO 9000 families standards) implementation influences not only the specifics of workers' intercommunication, but also thinking and the process of getting job done. Standards help organizations to communicate with each other. ISO 9000 is a modern universal and standard quality language.
- Successfully implemented innovative methods of quality management give the possibility for organizations to better adapt to changing surrounding and easier adapt different kinds of innovations.
- The quality management methods should be treated as management innovation, because of that, their implementation in organizations is connected to possible negative risks of modifications.

References

1. Ahmed, P. K. The Quality and Ethics Connection: Toward Virtuous Organizations / P. K. Ahmed, S. Machold.// Total Quality Management, 2004. Vol. 15, p. 527-545.

2. Bodinson, G.W. Warning: ignoring ISO standards may be harmful to your company's future// *Industrial Management*, 1991, March/April, p.11-12.
3. Bosas A. Strateginis valdymas: nuo korporacijos iki valstybės. Klaipėda, 2004, p. 441-442, 489.
4. Brunsson, N. *World of Standards/ N. Brunsson, B. A. Jakobsson// Oxford:Oxford University Press, 2000.*
5. Conti T. How to Conceptually Harmonize ISO 9000 Certification, Levels of Excellence Recognition and Real Improvement// *Total Quality Management*, 2004 Vol 15, p. 665-677.
6. Dabartinės lietuvių kalbos žodynas. III leidimas, 1993.
7. Elshennawy, A.K. Quality in the New Age and the Body of Knowledge for Quality Engineers// *Total Quality Management*, 2004, Vol. 15, p. 6-3-614.
8. Galliar, D. An Empirical Investigation of the Channels that Facilitate a Total Quality Culture/ D.Galliar, A. Ghobadian// *Total Quality Management*, 2004 Vol 15, p. 1043-1067.
9. Inovacijų versle programa, patvirtinta Lietuvos Respublikos Vyriausybės 2000m. gegužės 9d. nutarimu Nr. 528.
10. Inovacijų versle programa, patvirtinta Lietuvos Respublikos Vyriausybės 2003m. liepos 15d. nutarimu Nr. 911.
11. Johnson, P. *ISO 9000: Meeting the New International Standard// New York: McGraw Hill, 1993.*
12. Kekale T. To make it "Total": Quality Management over Subcultures/ T. Kekale, I. Fecikova, N. Kitaigorodskaja// *Total Quality Management*, 2004 Vol 15, p. 1093-1108.
13. Nečiūnienė, L. Baltijos šalių vartotojiška kultūra// *Verslo žinios*, 2002, p. 12.
14. Oztas A. Current Status of Total Quality Management Implementation in the Turkish Cement Industry/ A. Oztas, E. Ozbay, A. Yeginobali // *Total Quality Management*, 2004 Vol 15, p. 985-999.
15. Paukštys J.S. VŠĮ Raudonojo Kryžiaus klinikinė ligoninė. Lietuvos sveikatos priežiūros įstaigų kokybės vadybos sistemos/ J. S. Paukštys, L. Šileikienė// *Gydymo menas*, 2004. Nr.6.
16. Prajogo, D. I. The Sustainability and Evolution of Quality Improvement Programmes – an Australian Case Study/ D. I. Prajogo, A. S. Sohal // *Total Quality Management*, 2004 Vol 15, p. 205-220.
17. Rahman, S. The Future of TQM is Past. Can TQM be Resurrected?// *Total Quality Management*, 2004 Vol 15, p. 411-422.
18. Ruzevičius J. Motivation and Efficiency of Quality Management Systems Implementation: a Study of Lithuanian Organizations/ J. Ruzevičius, R. Adomaitienė, J. Sirvidaitė// *Total Quality Management*, 2004 Vol 15, p. 173-189.
19. Schenkel, A. Conceptualizing and Exploring the Organizational Effects of ISO 9000: Insights from the Qresund Bridge Project// *Total Quality Management*, 2004 Vol 15, p. 1155-1168.
20. Simpson, R. Squaring the Circle: Managing and Measuring Organizational Performance whilst Stimulating Change and Innovation / R. Simpson, F. Hill // *Total Quality Management*, 2004 Vol 15, p. 689-697.
21. Stapanovich, P. L. Using System Dynamics to Illustrate Deming's System of Profound Knowledge// *Total Quality Management*, 2004 Vol 15, p. 379-389.
22. Thawani, S. Six Sigma – Strategy for Organizational Excellence// *Total Quality Management*, 2004 Vol 15, p. 655-664.
23. Warwood, S. J. Survey of TQM Success Factors in the UK/ S. J. Warwood, P. A. Roberts// *Total Quality Management*, 2004 Vol. 15, p. 1109-1117.
24. Ximanen, P. Informacionnoje obščestvo I gosudarstvo blagosostojanija. Finskaja model/ P. Ximanen, M. Kastels/ Moskva, 2002.
25. Antreprenerystė pradeda keisti tradicinę vadybą. Prieiga per internetą: < <http://news.mireba.lt/ml/188/antrepr.htm>>
26. Kad žinios virstų pinigais. Prieiga per internetą: < <http://www.ebiz.lt/article.php3/17/2927/0>>
27. Konkurencingos Europos dalis – Lietuva: Lisabonos strategijos įgyvendinimas. Prieiga per internetą: < http://www.zef.lt/w/lisabonos_str.php>
28. Lietuvos pramonė po gegužės 1-osios: iššūkiai, problemos, perspektyvos. Prieiga per internetą: < <http://www.culture.lt/LLA/?pramone>>
29. Pagal Innovation and Entrepreneurship. Prieiga per internetą: < <http://www.atgimimas.lt/articles.php?id=1056646201>>

Laura Baronienė, Bronius Neverauskas

Kokybės vadybos vaidmuo inovacijų plėtos procese

Santrauka

Lietuvai integruojantis į europinės erdvės procesus bei ekonomikos globalizavimą, neišvengiamai tenka spręsti daugelį netradicinių uždavinių, susijusių su inovacijų procesu. Inovacijų diegimas ir plėtojimas suteikia galimybę modernizuoti gamybos bei paslaugų teikimo struktūras, tobulinti produktus bei technologijas, didinti jų tarptautinį konkurencingumą. Šiame straipsnyje keliami klausimai, kas sąlygoja inovacijų atsiradimą ir plėtrą? Koks galėtų būti kokybės vadybos kaip mokslo bei atskirų kokybės vadybos metodų kaip inovacijų vaidmuo šiame kontekste? Kaip organizacijai pasiruošti kurti bei priimti inovacijas? Straipsnyje pateikiama inovacijų sąvokos paradigma, apibūdinami inovacijų šaltiniai bei inovacijų plėtrai įtaką darantys veiksniai, pateikiami požūriai į inovacijas (valstybės lygiu, įmonės lygiu bei organizacijos lygiu) bei kokybiniai šių požūrių aspektai. Akcentuojama, jog kiekvienam iš minėtųjų požūrių būdingas kokybinis aspektas, tačiau skiriasi jo pritaikymo lygmuo bei mastas.

Atsižvelgiant į tai, jog inovacijų plėtrai įtaką darančių veiksnių erdvėje dominuoja sociokultūrinis aspektas, būtina suvokti, kad nepakitusias inovacijas galima nagrinėti tik jų sukūrimo erdvėje. Analizuojant inovacijas makrolygmenyje, šalis, adaptuojanti kitoje šalyje sukurtas inovacijas, gali pritaikyti tik žinias, tačiau sociokultūrinė aplinka neišvengiamai sukelia modifikacijas.

Lisabonoje 2000 m. Europos Taryba pabrėžė tikslą iki 2010 m. Europos Sąjungos valstybių ekonomiką paversti konkurencingiausia ir dinamiškiausia žinių pagrindu augančia ekonomika pasaulyje, kurioje būtų suderinta darni ekonominė plėtra su didesniu ir geresnės kokybės užimtumu ir tvirtesne socialine sanglauda. Daugelis Lisabonoje numatytų priemonių yra tarpvyriausybinių pobūdžio ir remiasi valstybių narių koordinacija bei lyginamąja analize (angl. *benchmarking*). Lietuva – naujoji ES šalis – privalo įnešti tokį pat indėlį į bendros ekonomikos kūrimą kaip ir kitos šalys.

Lietuvoje nepakankamai efektyviai vykdoma valstybės parama inovacijoms. Nėra vientisos sistemos, kuri apimtų visą inovacijų ciklą – mokslo tiriamuosius darbus, taikomuosius tyrimus, produkto komercializavimą. Veikia daug paramos verslui institucijų, bet jų veikla menkai koordinuojama.

Labai geras pavyzdys yra Suomijos TEKES programa, apimanti sukurtą informacinę sistemą, teikiančią pagalbą visose su inovacijomis susijusiose srityse: technologinė informacija ir mokslo tyrimo darbai, finansavimo paieškos sistema, vadybos informacija ir pan. Pagrindiniai Suomijos inovacinės sistemos, evoliucionavusios daugiau nei ketvirtadalį amžiaus ir galų gale po krizės pakeitusios ekonomiką, elementai yra šie (Ximanen, Kastels, 2002):

- Aktyvi valstybinė inovacinė politika, pagrįsta stambiomis investicijomis tyrimams ir išradimams, vykdoma Mokslo ir technologijos politikos tarnybos;
- Verslo inovacijos. Pagrindinės jų priežastys yra kompanijų galimybės išlaikyti ir išnaudoti talentingus specialistus – tyrinėtojus ir išradėjus; galimybė užtikrinti pakankamą finansinį pagrindą siekiant paversti inovacijas gaminiais, išnaudojant rinkos mechanizmą ir inovacines organizacijų kultūras.
- „Hakerinės“ inovacijos – jas kuria talentingi individai, dažnai palaikomi valstybinių šaltinių, tokių kaip nemokami universitetai, naudodami „hakerinę etiką“ kaip inovacinę kultūrą.

Inovacijos remiasi naujomis žiniomis ar naujais jų pritaikymo būdais, todėl mokslo tyrimai ir plėtra (MTP) reikalauja koordinuotų tyrėjų, verslo ir valdžios veiksmų. Lietuva negali pasigirti dideliais pasiekimais šioje srityje. MTP finansavimas yra menkas ir neefektyvus, pramonė ir mokslo institucijos sąveikauja nepakankamai. Tai atsispindi ir rezultatuose – mažas aukštųjų technologijų pramonės svoris, Lietuva – viena iš rečiausiai patentuojančių Europos šalių. „Paradoksalu, tačiau tuo pat metu techninio profilio specialistų su aukštuoju išsilavinimu daugiausia parengiama Europoje“ (Andriekienė, 2004).

Lietuva turi galimybę perimti valstybių, kurios laikomos moderniausiomis, patirtį, ir taip išvengti savo kelio paieškų. Tačiau vis sparčiau kintančios sąlygos dar vaker ar netgi šiandien buvusius efektyvius sprendimus rytoj pavers beverčiais. „Todėl kūrybinė savo kelio paieška, nors ir sudėtinga, gali pasirodyti esanti labai rezultatyvi.“

Ypač jei šis savo kelio ieškojimas bus paremtas kitų valstybių, sprendusių analogiškas problemas, patirtimi” (Bosas, 2004).

Sparčiai kintančioje aplinkoje labai svarbų vaidmenį atlieka žmonės, turintys naujausių žinių ir sugebantys jomis naudotis. Pastebima, kad tradicinė vadyba (angl. *management*) jau nebeatitinka nūdienos keliamų reikalavimų. Vadyba buvo efektyvi palyginti stabilių organizacijų struktūroje, o dabartinė gamyba ir verslas tampa žmonijos globalios veiklos padariniais. Atsižvelgdamos į šią tendenciją, organizacijos turėtų orientuotis į kokybinį žmogiškųjų išteklių valdymą, apimančią tiek darbuotojų kompetencijos nustatymą, tiek teorinius bei praktinius mokymus siekiant išlaikyti kelti esamą kvalifikaciją ir orientuojantis į vieną iš pagrindinių kokybės vadybos principų – lyderiavimą.

Organizacinės kultūros bei visuotinės kokybės vadybos sritys susipina ir apima darbo atlikimo būdus bei reikšmių sistemas. Dėl šios priežasties galima būtų teigti, jog pokyčiai, sąlygoti diegiamos visuotinės kokybės vadybos, pirmiausia veikia organizacinės kultūros pokyčius.

Ar visuotinė kokybės vadyba praktiškai gali būti įgyvendinta „visuotinai”? Išsamūs bei įvairiapusiai tyrimai rodo, kad visuotinės kokybės vadybos programa organizacijose retai būna visaapimanti. Tyrimuose taip pat atsispindi faktas, kad įgyvendinant visuotinės kokybės vadybą retai atkreipiamas dėmesys į kultūrinius darbuotojų skirtumus.

Ar visuotinės kokybės vadyba liks svarbi ateities organizacijoms? Svarbu suvokti, kad šandieninė verslo aplinka labai nepastovi ir nestabili. Siekdamas išlaikyti konkurencingumą šiomis sąlygomis, organizacijos privalo tapti lankstesnės, todėl turi transformuotis į tinkamesnes formas. Reikia pripažinti, kad besikeičiančios aplinkos sąlygomis turėtų keistis ir požiūris į kokybę. Žinių ekonomikos erd-

vėje būtina rasti ryšį tarp visuotinės kokybės vadybos principų ir inovacijų įgyvendinimo. Visuotinės kokybės vadyba turėtų padėti spręsti organizacijoms inovacines problemas (Elshehawy, 2004).

Stabilioje aplinkoje visuotinės kokybės vadybos nuolatinio gerinimo metodai, tokie kaip PDTV (Planuok-Daryk-Tikrink-Veik) ciklas, būtų tinkami ir efektyvūs. Šandieninėje situacijoje organizacijos privalo vystyti gebėjimą greitai prisitaikyti prie besikeičiančios verslo aplinkos. Strateginiai organizacijos tikslai turi būti nukreipti labiau į naujo, aukštesnės kokybės produkto kūrimą, pasitelkus inovacijas, nei į esamo produkto tobulinimą (Rahman, 2004).

Šiuo metu Lietuvoje sparčiausiai plintanti vadybinė inovacija yra diegiamos vadybos sistemos. Pagrindinės priežastys, dėl kurių organizacijos nusprendžia diegti vadybos sistemas pagal ISO 9000 šeimos standartus, yra šios: tikimasi, jog įdiegta vadybos sistema užtikrins vartotojų reikalavimų ir lūkesčių patenkinimą (Johnson, 1993), numatys, kaip organizacijoms tapti konkurencingesnėmis minimizuojant kaštus. Vadybos sistemos taip pat diegiamos dėl institucinių priežasčių (Brunsson, Jakobson, 2000), taip pat dėl to, kad tai – būtina sąlyga konkuruoti Europos rinkoje (Bodinson, 1991).

Sėkmingai diejami inovatyvūs kokybės vadybos metodai suteikia galimybę organizacijoms geriau adaptuotis prie kintančių sąlygų ir lengviau adaptuoti įvairaus pobūdžio inovacijas. Vis dėlto patys kokybės vadybos metodai traktuotini kaip vadybinė inovacija, todėl jos įdiegimas organizacijose susijęs su neigiamos modifikacijos rizikomis.

Pateiktos straipsnio išvados kaip teiginiai reikalauja išsamesnio pagrindimo atliekant teorinę galimybių analizę bei socialinius tyrimus.

Raktažodžiai: *visuotinės kokybės vadyba (VKV), inovacijos, kokybė, ISO 9000.*

The article has been reviewed.

Received in November, 2004; accepted in June, 2005.

DOI: 10.5755/j01.ee.43.3.11280