FUNCTIONING OF THE LOCAL PRODUCTION SYSTEMS IN BULGARIA, POLAND AND RUSSIA

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INDICATORS FOR LPS EFFECTIVE FUNCTIONING MEASUREMENT[1]

1. Introduction

LPS successful functioning depends not only on objective factors, but also on a number of subjective ones, among which one can mention: the strategic decisions taken by the LPS individual actors and their inscription into the overall strategy for regional development; the degree of development of the scientific and production potential of the organizations operating in the region; stimulating of ideas and good business practices exchange; the cooperation between LPS participants in order to guarantee

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a complex satisfaction of consumer tastes and preferences depending on their specialization in production; taking advantage of the LPS geographical location, thus enhancing the competitiveness and more.

In order to increase the efficiency of the use of objective and subjective factors, as well as to achieve LPS successful functioning, authors set out the purpose to reveal the effectiveness complex nature in terms of goals, resources, information flows, communication, adaptability, sustainability, life cycle and changes, and to develop a balanced system of indicators to measure it.

To achieve the goal of the present study, the focus of the research quests was oriented towards the following research tasks:

– justification of the limitations of traditional indices and decisions taken, related to the measurement of the efficiency of the LPS members, as well as of the system as a whole and to the means of its improvement; revealing the advantages of implementing the complex approach towards effectiveness;

– development of a balanced system of indices for LPS effective functioning measurement.

2. Traditional approach for the effectiveness and efficiency measurement

In management theory and practice, there is proven scientific research and contributions in the field of effectiveness measurement and the means of its improvement. However, the indices applied and decisions taken are limited in their character – they solve a strict set of problems only (financial, manufacturing, human resources, organizational, regional, environmental, etc.). Attempts have been made for one or several indicators to be brought to the forefront and to attribute a synergistic interpretation to them. These are considered as the focus of the variety of problems the respective economic system is facing in relation to effectiveness management. However, experience has shown that a particular effectiveness indices carry some limitations. These originate from the restriction of the particular indices in covering a complex manner the relationships and interactions that determine the effectiveness in the process of its measurement.

Within the context of the effectiveness and sustainable development management of the economic systems and of LPS in particular, a number of issues has to be solved, including:

– planning issues, arising, on one hand, from the need for a complex linking of the system of targets, resources, framework conditions and limitations, and on the other, from the inability to predict with sufficient accuracy the changes in global factors (financial and economic crisis, changes in international economic conditions, political situation, scientific progress, etc.),

– organizational consolidation of subsidiaries and associated companies to serve their operation from the parent company, which in many cases is inefficient in terms of cost, territorial proximity, identified priority markets service, etc.,

– country's accession to the European Union, which is a major challenge for the Bulgarian companies in terms of effectiveness, since the privilege for the Bulgarian exporting companies to recover VAT from the budget has dropped out. Furthermore, additional difficulties arise in connection with the intensification of the competition and the strong dependence of local businesses within the LPS on imported raw materials,

– Bulgarian organizations have difficulty in answering the question of where to set the weight of each activity in their portfolio. Accordingly, the role of advisory bodies in studying trends in supply, demand, individual market segments etc., is greatly increasing,

– indices used in the management practice cannot cover the efficiency in all its aspects and in the economic theory and practice there is no uniformity in the scope of the criteria for effectiveness assessment,

– limited character of the possibilities of the traditional approach for evaluating the effectiveness assessment does not allow the comparative analyzes by industry sectors and periods,

– insufficient experience regarding the effectiveness linking to the possibilities for LPS sustainable development.

Final evaluation of the effectiveness of the strategic changes in the organization and of LPS functioning could be done by using the "increasing productivity" index, "increasing competitiveness"

respectively, where the realization of the production has a leading role and its manufacturing is the result. To this end a suitable iterative procedure could be used.[2]

3. A new approach towards effectiveness measurement

Economic efficiency is the relationship between the results and the costs of achieving them. In the anti-crisis management terminology, production efficiency is defined as the ratio between the market value of the goods produced and the summary consumption of resources.

According to some authors, the effectiveness "presents the degree of achievement of goals and objectives set", while the efficiency characterizes "the optimization of the amount of resources used to achieve the objectives in terms of the actual result of the operation".[3] In other words, effectiveness implies "to do the right things" while efficiency, in turn, means "doing things correctly".[4]

In practice, in the analysis of the organizational effectiveness, the following indices based on the data from the profit and loss accounts (income statements) and in the balance sheets, are often used:

1. Profitability of sales (in %), defined as the ratio between net profit and net revenues from sales

2. Coefficient of cash flow, calculated as the ratio of cash flow from the core (operational) activity and sales net revenues. The coefficient characterizes the relative effectiveness of the company in terms of opportunities to generate positive cash flow from core activities. It shows what cash flow is able to generate 1 level sales revenues. Favorable values of the coefficient are greater than 1.

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[2] A. Kovatchev, *Restructuring – Productivity – Sustainable development of Economy*, "Economic Alternatives" 2006, No. 3, UNWE, Sofia, p. 3–12.

[3] M. Alexandrova et al., *Management. Theory and Practice*, Vezni-4 Publishing House, Sofia 2013, p. 16–17.

[4] J. Becker, *Marketing − Konzeption. Grundlagen des strategischen und operativen Marketing – Managements*, 6. Aufl., Verlag Franz Vahlen GmbH, München 1998, p. 836.

3. Turnover of inventories in days, of receivables and payables. The lower the values of these indices are, the more efficiently the company operates. Moreover, the values are affected by the organizations dependence on suppliers, operation seasonal specificity and other factors.

The most commonly used indices for the effectiveness of the investment projects are:

1. Net present value (NPV). It characterizes the ratio between income (received) and expenditure (outflows) cash flows. Projects with negative NPV are generating loses and should be rejected. While NPV equals 0 the investment is redeemed by its size. The project is selected when NPV>0 and has a maximum value.

2. Index of profitability of the investment project. It is the ratio between the present value of net cash flows and revenue cash flows. Acceptable values of the index are those which are greater than 1.

3. Internal rate of return, IRR. Required condition is that IRR is greater than the discount rate.

4. Period of return on investment. This is the number of years for the recovery of the investment or the year in which NPV becomes greater than 0.

The indices described above reflect primarily important financial ratios in the organizations, including local production systems, without offering options to compare with other organizations and LPS. In times of crisis, keen competition, largely saturated markets, scarce and expensive possibility for test reference comparison of the own achievements with the best in this field, or the best way to play (best practice), which has built in or outside the industry is of particular importance for an organization inside or outside given branch. The top result is referred to as a benchmark – expert standard, predetermined pattern, used as a reference point.

Compared to the traditional management methods, the benchmarking promotes efficiency and innovation in particular in terms of formulation of ideas and their practical realization: decision-making process improvement, organization weaknesses overcoming and competitive advantages creating, its strategic vulnerability reduction, attraction of new customer groups etc. The study of positive experiences is based on the European Benchmarking Code of Conduct, developed by the European Fund for Quality Management – EFQM.

Very often, the effectiveness is seen in its interaction with the target system of the enterprises and LPS. Thus, several questions are raised:

– target system is diverse in terms of their hierarchy, relative importance, the time factor. This significantly hampers the assessment of the effectiveness due to the need for interpretation of mixed indices. Furthermore, the different phases of the life cycle of the organization and relevant LPS are typical specific target priorities,

– objectives of the organization and LPS are characterized by relations harmony, competitiveness and indifference to each other,

– moreover, the effectiveness criteria are also diverse, and some of them are even contradictory: profit, quality, productivity, flexibility, agreement on goals, interpersonal communication, human resource management etc.,

– in the enterprises LPS there are difficulties with the use of appropriate activity measures and hence in measuring the degree of target achievement. On the other hand, many of the targets are not openly displayed or are not quantitative. This hampers the process of determining the resulting deviation between targets and achievements, and making sound decisions to address deviations.

A key objective of LPS management is to ensure their sustainable development. It is therefore appropriate that the effectiveness and sustainability are considered in their connection and interdependence. According to experts of the World Bank, sustainable development in global aspect implies an oriented towards the preservation and multiplication of the human capabilities management of the society aggregate capital with a focus on economic, social and environmental sustainability.[5] Valuable conclusions concerning the nature and guidelines of sustainable development are laid down in both the concept and policy for sustainable development (Agenda 21, Rio de Janeiro 1992 and Johannesburg 2002); in the deployment of modern strategic alliances (established on a contractual basis) between firms; in the implementation of the new overall marketing conception. "Sustainable development realization proposes a change from process-oriented to the re-

[5] Jose I. dos R. Furtado, T. Belt, R. Jammi, *Economic Development and Environmental Sustainability: Policies and Principles for a Durable Equilibrium*, World Bank Publications, 2000.

sult-oriented production approach, its »dematerialization«, successively moving to the most economic use of the limited earth resources, maintaining the ecological balance of the planet, abandonment of the consumer lifestyle, humanization of the relationship between living now and future generations".[6] The purpose of that development includes not only the growth revival and changes in its quality, but also meeting the needs of jobs, energy, water and health, maintaining a stable population size, preservation and expansion of the resource base; redirecting technology and risk management and integrating environmental and economic decision-making.

Sustainable development should be considered at different levels of management: at the level of the organization, sector, region, and national economy. It requires achieving the target system, harmonizing the interests of all public entities, skillful use of the environmental factors. LPS sustainable development involves sustainable development in its economic, social, environmental and institutional subsystems in compliance with the development priorities defined.

Against that background, several conclusions could be made. The most important are as follows:

– effectiveness is a complex concept, that reflects the complex relationships within the economic systems and in particular in the LPS, in terms of objectives, means, information flow, communication, adaptability, growth, life cycle changes,

– effectiveness should be defined within the concept of LPS' long-term success and sustainable development,

– effectiveness should reflect LPS' readiness for flexibility and change,

– it is necessary to point out that the effectiveness characterizes LPS interaction with its external environment, as well as the particularities of its internal variables management,

– effectiveness should reflect the expectations of the LPS different groups of influence in terms of the analysis of the relationships interests – specific objectives – effectiveness criteria from the given group point of view. Within that context, it is necessary to find a reasonable compromise and balance between different interest groups.

[6] A. Kovatchev, *Management of the Economy*, Siela Publishing House, Sofia 2001, p. 214.

4. Possible solutions

Based on the conclusions drawn above, we would like to recommend into consideration the use of the balanced scorecard for performance assessment (Balanced Scorecard) in its capacity of an appropriate tool for solving the diverse and sometimes contradictory tasks related to management effectiveness. The Balanced Scorecard is the result from research on management effectiveness and ways of its improvement through the implementation of alternative methods based on non-financial indices.[7] Moreover, the methodology allows not only the development of a short-term comprehensive concept for LPS management. Through its implementation, it becomes possible to stimulate the strategic initiatives oriented towards key processes and activities improvement, as well as to encourage the changes and effectiveness increase in long-term perspective. By specifying the target system within the model, individual perspectives and the motivation of the employed persons could be increased through the system of effectiveness measures used, and the rapid feedback. Thus, according to the authors, LPS sustainable development could be defined as: harmonious movement of LPS within the individual perspectives of Balanced Scorecard aimed at ensuring long-term success.

Within the Balanced Scorecard for LPS performance assessment, the following perspectives could be defined:

– human resourses perspective – indicators: number of organizations involved in LPS (business organizations, research and development organizations, NGOs and other institutions providing support to LPS); total number of employees in the LPS-forming organizations; average age of the employees; share of the employees with secondary and higher education; staff turnover., administrative capacity at municipal and regional level; managerial staff number in LPS-forming organizations; number of internal seminars and programs for qualification up-grading; number

[7] D. Norton, R. Kaplan, *The Balanced Scorecard − Measures that drive performance*, "Harvard Business Review", January−February 1992, p. 71−79; D. Norton, R. Kaplan, *Putting Balanced Scorecard to work*, "Harvard Business Review", September−October 1993, p. 134−147.

of employees in research and development within the LPS; education and training costs per associate; number of innovative and innovation proposals; average wage growth;

– financial perspective – indicators: ross value added dynamics; profitability, profitability of the investments, growth in net sales, working capital., funds for joint projects implementation incl. co-funding of initiatives of organizations belonging to LPS, NGOs, local authorities; external funding of initiatives of LPS-forming organizations, funding the construction of office premises of laboratories to be used by LPS- forming organizations;

– processes perspective – indicators: average execution time of a standard contract, number of standard contracts, quality of production, level of technology compared to the most advanced solutions, labor productivity, average time for decision-making, quality of products and services; interaction between the LPS organizations; technology transfer between the LPS organizations; number of integration events; joint training activities; number of implemented joint procurement and contracts; number of established joint distribution channels; market information exchange between the LPS organizations; number of joint participation in exhibitions and fairs; system used for visual identification and a joint website etc.);

– results perspective – indicators: measures taken to increase employment in the LPS organizations; number of training programs for LPS staff delivered; relative share of LPS staff with increased professional qualification; share of products for the domestic market; share of products for foreign markets; number of attracted new businesses in LPS; number of innovations in LPS; share of R & D expenditure in total expenditure on innovation; number of implemented, resp. declared joint projects co-financed by the EU; number of implemented, resp. declared international projects with other external funding; number of agreements for cooperation with foreign companies etc.;

– potential perspective – indicators: communication strategy; business capacity of and traditions in the LPS; joint initiatives implemented for the development of the organizations functioning in LPS; attractiveness of the region for the investors; new initiatives and projects; crisis

impact on the development of the LPS-forming organizations as well on the LPS as a whole; financial support for LPS development; degree of novelty of the techniques and technologies used; investments in IT; partners' number: high-tech and research organizations; employment dynamics in the region; number and size of organizations in the LPS; changes in LPS structure; partners' joint actions effects; investments in the conquest of new markets; investments in human resources development; education system relevance to LPS needs; partnership with central and local authorities; market structure availability; LPS leading role in regional economic environment etc.;

– ecological perspective – indicators: composition and characteristics of the production resources, discharges of polluting substances from the activities implemented, administrative activities related to environmental and technical control and trials, cost-efficient use of natural resources (energy, soil, water), costs for reducing the harmful effects of production processes on the environment, costs for industrial waste water treatment, soil remediation, and waste recycling etc.).

5. Conclusions

In the Balanced Scorecard for LPS performance assessment, the perspectives defined allow the problems of LPS strategic development to be reduced to an analysis of a number of dichotomies of the evolution, such as: predictability – unpredictability, appropriateness – inappropriateness, success – failure, unsteadiness – steadiness, balance – imbalance, stability – instability.

Results of the analysis allow the comparative analysis of the results of LPS establishment and functioning, as well as the evaluation of their impact on local economic and social development, and beyond. These could be used while seeking institutional support to facilitate and intensify cooperation within the LPS. Europe of the Regions supports the efforts in this direction through a number of initiatives, including: Europe 2020 strategy, Monitoring Platform, the European Entrepreneurship Region Scheme, The Industrial Policy for the Globalization Era Forum etc.

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of socio-economic disparities among countries in the global context of EU expansion, "Acta Oeconomica", No 23, Univerzita Mateja Bela v Banskej Bystrici, Ekonomicka faculta, in co-authorship, p. 72).

Abstract

In the present work, the authors, using the complex approach, consider the efficiency of the local production systems (LPS) functioning in the context of the statement, that the traditional approach in evaluating the effectiveness is not only a carrier of unduly restricted interpretation of the factors that affect it, but also affects the relationships between them. This significantly distorts the reality and reduces the quality of the managerial decisions taken. In order to overcome the limited capacity of the traditional approach for LPS effective functioning assessment, a system of criteria for evaluating their effective functioning is proposed, combined with indicators for effectiveness measurement.

Key words: local production systems, measurement, balance scorecard, quality management.