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**THE SUSTAINABLE PERFORMANCE OF
SMALL AND MEDIUM-SIZED ENTERPRISES.
PROBLEMS AND SOLUTIONS**

Summary of Doctoral Dissertation

Branches: Economics and Management
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CONFIRMATION

I hereby confirm that I have worked out this Dissertation that has been submitted for review to Riga Technical University for the promotion to the degree of Doctor of Economics (*Dr.oec.*). This dissertation has not been submitted to any other university in order to receive any scientific degree.

Guna Ciemleja

December 6, 2010

The Doctoral dissertation is written in Latvian, and consists of introduction, 4 parts, conclusions and proposals, 31 tables, 57 figures, 11 annexes, and the total page count is 194. The Bibliography contains 240 sources of references.

The Doctoral dissertation and Summary are available at the Scientific Library of Riga Technical University, Kipsalas Street 10.

To submit reviews please contact Secretary of the RTU Promotion Council «P-09» professor, Dr.habil.oec. Anatolijs Magidenko; 1/7 Meza Street, Riga, LV-1007, Latvia
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GENERAL REVIEW

Topicality of the Study

An enterprise as a core of any economic system has a great impact on sustainable development of a state or region. Small and medium-sized enterprises are socially and economically important for their national economies, since they represent about 99 per cent of all active enterprises in the European Union. The importance of SMEs to the EU economy indicates a need to assess their performance in order to find appropriate performance measurement and management tools. These issues become very topical during the period of global economic recession.

Making a profit is most often mentioned as an integral goal of any enterprise. However, it should be emphasized that profit is the result of comprehensive process of the creation of added value. This process can be managed via using system approach. It means that the value maximization opportunities depend on harmonious and purposeful interactions between enterprise's separate processes or functional units.

Development of any enterprise is related to the future opportunities, risks and uncertainty. Therefore, profit making ability of an enterprise depends on managers' skills to apply modern business management methods and tools. The more mature is the business activities, the higher is the probability of an enterprise to face failure. Long-term existence of an enterprise depends on its ability to utilize resources efficiently and to create profit, taking into consideration influence of business environment and its related factors. While measuring the performance of an enterprise, the company's life cycle concept should be considered as well.

The problems within an enterprise arise from improper activities, incompetence or even negligence. Performance measurement system can significantly influence and support SMEs' organizational development. Effectiveness and efficiency shall be manifested in all business processes of an enterprise. Performance evaluation should be based on the criteria associated to the field of activities of a particular enterprise and particular manufacturing technology. The system should be comprised of measures, related not only to operations, but also to organization and management of the enterprise.

Previously conducted research works in the field of performance evaluation of SMEs have not solved all the arising problems due to the specific industry issues. Besides, several disputable questions exist, for instance, whether large companies' performance measurement models can be applied for the needs of small and medium-sized enterprises. It indicates the necessity for continuation of studying the above-mentioned issues in order to find practical solutions.

Goal and tasks of the dissertation

The **goal** of the doctoral dissertation is, studying the performance of small and medium-sized enterprises and the factors affecting performance achieving, to propose performance measurement concept encouraging the sustainable development of SMEs and to suggest performance evaluation approach.

To achieve the goal the following **tasks** have been carried out by the study:

- To study and assess contribution of small and medium-sized enterprises to the economy of Latvia;

- To evaluate performance and their affecting factors of small and medium-sized enterprises critically;
- To provide theoretical justification for and to develop a model of an enterprise sustainable development, and to define principles of choosing the elements of a model;
- To develop a mechanism for introduction of sustainable performance measurement and management of an enterprise of the sub-sector of manufacturing industry.

The Object and Subject of the Research

The **object** of the study is small and medium-sized enterprises from the sub-sector of manufacturing industry in Latvia.

The **subject** of the doctoral dissertation is the sustainable performance of small and medium-sized enterprises.

The limitations of the Research

The following **limitations** are in the doctoral dissertation: (1) to classify SME, the EU criteria are used; (2) only publicly available data is used in the study; (3) the number of respondents for the research is limited by the choice of printing sector of the manufacturing industry. The research period is years 2003-2008. However, certain issues were studied over a shorter or longer period.

The hypotheses of the research were determined, as follow:

- Introduction of the concepts of sustainable development and enterprise life cycle into the framework of traditional performance evaluation enhances the effective enterprise performance;
- It is possible to develop performance measurement and management approach, which can improve the process of enterprise performance management due to incorporation of the principles of the concept of enterprise life cycle;
- The performance measurement system of an enterprise should be based on the economic characteristics in accordance with life cycle stages, and the environmental and social characteristics corresponding to the industry specific features.

The doctoral dissertation is based on theoretical and practical findings of foreign authors (*P. J. Drucker, E. Penrose, D. J. Storey, C. Grey, E. Masurel, M. Levy, T. Dyllick, H. Westlund, M. Wilson, A. Neely, J. B. Barney, L. E. Greiner, I. Adizes, R.E. Quinn, K. Cameron, G. Shirokova* and others) and Latvian authors (*G. Olevsky, J. Klauss, J. Belchikov, V. Praude, I. Forands and others*) in the fields of SMEs' performance management and evaluation of performance affecting factors.

In the doctoral dissertation the following **sources are used**: data of the Eurostat data base, data and information published by the Central Statistics Bureau of the Republic of Latvia, LURSOFT data, statistical data of the Association of Latvian Printing Companies, publications in mass media, specialized publications and Internet, proceedings of international scientific conferences, as well as author's acquired

knowledge and professional experience, working at printing-house and performing duties of the expert in the Association of Latvian Printing Companies.

To achieve the goal of the dissertation, the following **research methods** were used: *quantitative and qualitative methods*, including monographic or descriptive method, analysis, synthesis method, and method of sociologic research – survey; *statistical research methods*, including grouping, comparison, analysis of relative and average indices, analysis of time series, graphic analysis and correlation analysis. Calculations and data processing were carried out using Microsoft Excel and Eview software.

The scientific novelties of the research and main results

Novelties of the doctoral dissertation are the following:

- The performance evaluation of Latvian small and medium-sized enterprises has been made, using added value and productivity indices as a basis. The principle of cascading was used – from the level of national economy to the level of enterprises united by the professional association of the particular sub-sector;
- The conceptual model of factors affecting enterprise performance was developed. The model provides a possibility to examine interconnections between factors and performance;
- Classification of the factors affecting enterprise performance has been made, according to the way of their manifestation and environment initiating the manifestation of the factor, which reveals its positive and negative expressions in compliance to the characteristics of the factor;
- On the basis of theoretical research the principles of an enterprise sustainable development have been defined, and functional elements-processes of the management levels supporting enterprise sustainability have been determined accordingly, where management of sustainability dimensions is being implemented through personnel as an element of the social capital;
- Factors influencing formation of social capital of an enterprise and connection with customer equity have been justified. Besides the management cycle of an enterprise social capital, which provides opportunities to acknowledge the connection of social capital with the enterprise sustainable performance, has been worked out;
- Actual, target and standard performance measurement on different management levels of an enterprise in the context of sustainable development have been defined;
- By using results of the empiric research: 1) significance of factors of external and internal environment influencing performances of an enterprise and 2) performance indicators that have to be principally supervised according to the enterprise life cycle phases, have been justified;
- Model of sustainable performing of small and medium-sized enterprises, taking into consideration the enterprise life cycle phases, has been worked out.

The approbation and practical application of the results of the research

Results of the research works have been discussed in Latvia, Belarus, Slovakia, Bulgaria, the Czech Republic and Lithuania, and it is confirmed by publications of the respective materials in scientific issues. Skills obtained during the research process have been used in execution of the Leonardo da Vinci Innovation Transfer Project LLP-LdV-TOI-2008-LT-0021 SOCIALSME (2008-2010). The author has used results working as the expert at the Association of Latvian Printing Companies, as well as in the study process at the Riga Technical University.

Results of the doctoral dissertation have been reflected in the following projects: «Assessment of Intellectual Capital Impact on Innovative Behaviour and Sustainable Development of Small and Medium-sized Businesses» (LR IZM - RTU ZP-2008/11; period from 01.10.2008 till 15.09.2009); «Analysis and Assessment of Factors Influencing Sustainable Development of Latvian Small and Medium-sized Enterprises» (RTU ZP-2007/15; period from 01.10.2007 till 15.09.2008); «Risk Capital and Entrepreneurship Directed towards Innovations in Latvia: Assessment of Factors Influencing Development» (LR IZM - RTU R7358; period from 01.03.2008 till 31.12.2008) and International Summer School for doctoral students «Creative Business Environment: Possibilities of Research».

Scientific publications

The results of the Doctoral dissertation are presented in 21 publications, int.al. 11 publications in **international generally recognised and reviewed collections of scientific proceedings**:

- 1) The role of intellectual capital in development of small enterprises / G.Ciemleja, N.Lace, N.Buldakova // III International science conference «Knowledge Society». IV International science conference for young researchers «Technical science and industrial management». Nessebar, Bulgaria, September 2–4, 2010 / KSI Transactions on Knowledge Society. Knowledge Society Institute. – Jan III.-Vol. 1. – March 2010.- pp. 13–18. – ISSN 1313–4787.
- 2) The role of intellectual capital in innovative development and financial performance of small enterprises / G.Ciemleja, N.Lace, N.Buldakova // VIII International scientific conference «Management and Engineering' 10» June 17-19, 2010 Sozopol, Bulgaria. Conference proceedings, Volume 1/117, Sofia Technical University, 2010. - pp. 414 – 426.-ISSN 1310-3946.
- 3) Quantitative harmonious model of sustainability factors: measuring contribution of financial viability / G.Ciemleja, N.Lace, N.Koleda // The 6th International Scientific Conference: «Business and Management 2010», 13 - 14 May 2010, Vilnius, Lithuania: selected papers / Vilnius Gediminas Technical University. – Vilnius: Technika, 2010, pp.104- 112.-ISBN 978–9955–28–311–9.
- 4) Sociālā kapitāla loma uzņēmuma aktīvu pārvaldībā / G.Ciemleja, N.Lāce // RTU zinātniskie raksti, 3. sērija. Ekonomika un uzņēmējdarbība. 19. sējums. - Rīga: RTU Izdevniecība, 2009. - 18. - 27. lpp.– ISSN 1407-7337.
- 5) Uzņēmuma sociālā kapitāla pārvaldība / G.Ciemleja, N.Lāce // RTU 50. Starptautiskā zinātniskā konference. RTU IEVF Ekonomikas un

- uzņēmējdarbības zinātniskā konference (SCEE'2009) 2009. gada 15.-16. oktobris, Rīga. Konferences rakstu krājums. Rīga: RTU Izdevniecība, 2009. - 39.-50. lpp.- ISBN 978-9984-32-173-8 (CD).
- 6) Challenges of an Enterprise Performance Management within its Life Cycle / G.Ciemleja, N.Lace // II International science conference «Knowledge Society». III International science conference for young researchers «Technical science and industrial management». Nessebar, Bulgaria, September 2-4, 2009 / KSI Transactions on Knowledge Society. Knowledge Society Institute. – Vol. 4. – pp. 28-31.-ISSN 1313-4787.
 - 7) Biznesa vadības instrumenti MVU attīstībai / G.Ciemleja, N.Lāce // RTU zinātniskie raksti. 3. sērija. Ekonomika un uzņēmējdarbība. 16. sējums. - Rīga: RTU Izdevniecība, 2008. – 25. –34. lpp. -ISSN 1407-7337.
 - 8) The role of customer capital for SME sustainable development / G.Ciemleja, N.Lace // Proceeding of the International Scientific Conference „Customer Relationship Management '08” (CRM 2008), 24 - 25 September 2008, Pardubice, Czech Republic. – pp. 30-37.- ISBN 978-80-7395-129-0 (CD).
 - 9) The factors determining innovation-based attitude of Latvian SMEs towards sustainability / G.Ciemleja, N.Lace // 5th International Scientific Conference Business and Management –2008, 16 – 17 May 2008 Vilnius, Lithuania: selected papers. / Infobalt Lithuania. Vilnius: Technika, 2008. – pp. 28 – 36.- ISBN 978-9955-28-311-9.
 - 10) Raising of SME Capabilities: the Case of Latvian Printing Companies / G.Ciemleja, N.Lace // Scientific papers. Volume III, Number 02(06), 2007. – Bratislava, Slovak Republic, Slovak University of Technology in Bratislava, 2007. – pp. 14 – 24. – ISSN 1336815X.
 - 11) Uzņēmuma darbības rezultātu rādītāju izvēle un pielietojums mazajos un vidējos uzņēmumos / G.Ciemleja, N.Lāce // Vadības zinātne: LU Zinātniskie raksti, 706. sēj. – Rīga: Latvijas Universitāte, 2006. – 186. – 198. lpp. -ISSN 1407-2157.

Other publications:

- 12) К вопросу об устойчивом развитии предприятия / Г.Циемлея, Н.Лаце // Мировая экономика и бизнес-администрирование. 8-я международная научно-практическая конференция, Белорусский национальный технический университет, 4 февраля -6 февраля 2010 г. - Минск: БНТУ, 2010. -140 – 145 с.- ISBN 978-985-525-338-0.
- 13) Uzņēmuma sociālā kapitāla pārvaldība / G.Ciemleja, N.Lāce // RTU 50. Starptautiskā zinātniskā konference. RTU IEVF Ekonomikas un uzņēmējdarbības zinātniskā konference (SCEE'2009) 2009. gada 15. – 16. oktobris, Rīga. Konferences ziņojumu tēžu krājums. Rīga: RTU Izdevniecība, 2009. – 19. lpp. – ISBN 978-9984-32-173-8.
- 14) SME Performance Management Using Life Cycle Stage Concept / Г.Циемлея, Н.Лаце // Мировая экономика и бизнес-администрирование. 5-я международная научно-практическая конференция, Белорусский национальный технический университет, Минск, 28 - 30 май, 2009 г. - Минск: БНТУ. – 119 – 127 с. - ISBN 985-479-525-86-0.

- 15) Selecting the KPI of SME by incorporating life cycle stage approach / G.Ciemleja, N.Lace // Problems of development of national economy and entrepreneurship: proceedings of the international scientific conference, RTU 49. Starptautiskā zinātniskā konference, 2008.gada 9. –13. oktobris, Rīga. Konferences ziņojumu tēžu krājums. Rīga: RTU Izdevniecība, 2008. – 32. - 34. lpp.- ISBN 978-9984-32-567-5.
- 16) The role of customer capital for SME sustainable development / G.Ciemleja, N.Lace // CRM 2008, International Scientific Conference Customer Relationship Management '08, Czech Republic, Pardubice, 24 – 25 September, 2008. – p. 11.- ISBN 978-80-7395-130-6.
- 17) The factors determining innovation-based attitude of Latvian SMEs towards sustainability / G.Ciemleja, N.Lace // 5th International Conference Business and Management' 2008. Conference proceedings, 5th International Conference «Business and Management' 2008», Lietuva, Vilnius, 16–17 May 2008, VGTU Publishing house Technika, 2008. – pp. 18–19.-ISBN 978-9955-28-268-6.
- 18) Применение современных инструментов управления бизнесом для повышения рентабельности малых предприятий в Латвии / Г.Циемля, Н.Лаце // Мировая экономика и бизнес-администрирование. 6-я международная научно-практическая конференция. 6-й международный научно- практический семинар «Мировая экономика и бизнес - администрирование малых и средних предприятий», 31 декабрь - 2 февраль 2008 г. -Минск: БНТУ. – 231 - 235 с.- ISBN 978-985-479-826-4.
- 19) Biznesa vadības instrumenti MVU attīstībai / G.Ciemleja, N.Lāce // Tautsaimniecības un uzņēmējdarbības attīstības problēmas. RTU 48. Starptautiskā zinātniskā konference. 2007. gada 11. – 13. oktobris, Rīga. Referātu tēzes. – Rīga: RTU Izdevniecība, 2007. – 16. lpp. - ISBN 978–9984–32–769–3.
- 20) Evaluation of Entrepreneurial Environment of Latvian Polygraphic Industry / G.Ciemleja // The Internatioal Scientific Seminar. Small business management: innovation, strategy, values. – Rīga: RTU Izdevniecība, 2006. – 11. – 12. lpp. - ISBN 9984-32-383-8.
- 21) Uzņēmējdarbības vides novērtējums poligrāfijas rūpniecības nozarē / G.Ciemleja, N.Lāce // Tautsaimniecības un uzņēmējdarbības attīstības problēmas. RTU 47. Starptautiskā Inženierekonomikas fakultātes 40. gadadienai veltītā zinātniskā konference. Referātu tēzes. – Rīga: RTU Izdevniecība, 2006. – 18. lpp.- ISBN 9984-32-539-3.

The results of the Doctoral dissertation are presented and reported at the following **international scientific conferences:**

- 1) Technical University of Sofia 8th International Scientific Conference «Management and Engeneering' 10» Sozopol, Bulgaria, (17. - 19.06.2010.). Title of report: «The role of intellectual capital in innovative development and financial performance of small enterprises».
- 2) Belarusian National Technical University 8th International Scientific Conference «Science for education, production, economy», Minsk, Belarus,

- (4. - 5.02.2010.). Title of report: «К вопросу об устойчивом развитии предприятия».
- 3) Riga Technical University 50th International Scientific Conference, Riga, Latvia, (15. - 16.10.2009.). Title of report: «Uzņēmuma sociālā kapitāla pārvaldība».
 - 4) 2th International Scientific Conference «Knowledge Society» Nesebar, Bulgaria, (2. - 4.09.2009.). Title of report: «Challenges of an Enterprise Performance Management within its Life Cycle».
 - 5) Belarusian National Technical University 5th International Scientific Conference «Science for education, production, economy», Minsk, Belarus, (28. - 30.05. 2009.). Title of report: «SME performance management using life cycle stage concept».
 - 6) Riga Technical University 49th International Scientific Conference, Riga, Latvia, (13. - 15.10.2008.). Title of report: «MVU efektivitātes kritēriju izvēle piemērojot dzīves cikla posmu pieeju».
 - 7) University of Pardubice and Technical University of Liberec International Scientific Conference «Customer Relationship Management '08», Pardubice, Czech Republic, (24. - 25.09.2008.). Title of report: «The role of customer capital for SME sustainable development».
 - 8) 5th International Scientific Conference «Business and Management' 2008», Vilnius, Lithuania, (16. - 17.05.2008.). Title of report: «The factors determining innovation- based attitude of Latvian SMEs towards sustainability».
 - 9) Belarusian National Technical University 6th International Scientific Conference «Science for education, production, economy», Minsk, Belarus, (1. - 2.02.2008.). Title of report: «Применение современных инструментов управления бизнесом для повышения рентабельности малых и средних предприятий Латвии».
 - 10) Riga Technical University 48th International Scientific Conference, Riga, Latvia, (11. - 13.10.2007.). Title of report: «Biznesa vadības instrumenti MVU attīstībai».
 - 11) Slovak University of Technology 17th International Scientific Conference «Modern Approaches to Corporate Management», Bratislava, Slovak Republic, (6. - 7.09.2007.). Title of report: «Raising of SME capabilities: the case of Latvian printing companies».
 - 12) Latvia University 65th International Scientific Conference, Riga, Latvia, (02.02.2007.). Title of report: «MVU attīstību ietekmējošo ārējās vides faktoru novērtējums».
 - 13) RTU 47th International Scientific Conference, Riga, Latvia (21. - 23.09.2006.). Title of report: «Uzņēmējdarbības vides novērtējums poligrāfijas rūpniecības nozarē».

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In **the first chapter** «*Theoretical aspects of performance of small and medium-sized enterprises*», the author analyzes advantages and disadvantages of performance of small and medium-sized enterprises, as well as studies their significance for the economies of European Union and Latvia. The author evaluates tendencies of enterprises demography and structure, and revises factors influencing effective performance of small and medium-sized enterprises, as well as manifestation of factors' influence.

In **the second chapter** of the dissertation «*Methodological justification of an enterprise sustainable development*», the author rationalizes factors, which maintain and drive enterprise sustainable development, as well principles of sustainable development. Substance of elements-processes supporting sustainable development of an enterprise, as well as importance of innovations and social capital in ensuring sustainable development, are explained. Basic principles of system of sustainable performance indicators have been defined. Application of business management tools has been evaluated. According to the principles of sustainable development, the concept of enterprise life cycle has been analyzed, as well as methodological problems of the concept have been acknowledged through evaluating possibilities of the practical application of enterprise life cycle approach.

In **the third chapter** of the dissertation «*Model of an enterprise sustainable performance*», the author creates a model of sustainable performing of small and medium-sized enterprises, using results of the empiric research, where external and internal business environment factors influencing effective performance of the enterprise and performance indicators that are to be supervised principally, according to the enterprise life cycle phases, are included.

In **the fourth chapter** of the dissertation «*Performance assessment of an enterprise of printing industry*», the developed model of enterprise sustainable performing has been tested in the sector of printing in manufacturing industry.

In the final chapter of the dissertation, the most important **conclusions and proposals** obtained during the research work are summarized.

The research tasks set for the doctoral dissertation have been solved and the aim has been achieved.

The doctoral dissertation has been written at the Department of Economics of Production and Entrepreneurship of the Faculty of Engineering Economics and Management of the Riga Technical University, in the field of Management Science (Business Administration) according to the requirements defined in the Law «On Scientific Activity» (05.05.2005), in correspondence with the Regulations of the Cabinet of Ministers (No1001 from 27.12.2005), and according to the requirements of the Latvian Council of Science and Doctoral Studies Provisions of the Riga Technical University (29.06.2009).

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Main scientific achievements

1. THEORETICAL ASPECTS OF PERFORMANCE OF SMALL AND MEDIUM-SIZED ENTERPRISES

The chapter consists of 49 pages, 10 tables and 20 figures.

Through studying and analyzing works of various authors (Dideriks, 2000; Olevsky, 2007; Duan, Kinman, 2000; Hilton, 2000; Drucker, 2007.; McLarty, 2005, and others), the author of the doctoral dissertation concludes, that the «small enterprise» as an economic category, occupies a significant place in the science of economics. According to the science of economics, maximization of the enterprise profit is the main target of business, and necessity to carry out performance analysis in small and medium-sized enterprises (SMEs) is being defined by the following: 1) effectiveness and efficiency of the implemented business processes, where transformation of tangible and intangible resources is carried out and economic benefits as a result of these processes; 2) small enterprises problems related to access to financial and organizational resources; 3) necessity to improve management culture, to invent new approaches and methods also in the organizational management of small enterprises.

Interest in management problems of SMEs has increased in Great Britain as a result of activities of Bolton Commission (1971), which stated that the size of an enterprise can be relatively connected with market size of the sector and number of competitors in the particular economic sector, as well as described features, which are characteristic to this group of enterprises: 1) comparatively small market share; 2) an enterprise does not have a possibility to influence the level of market prices; 3) owner or co-owner takes part in decision-making related to enterprise management; 4) employees involvement in decision-making is minimal; 5) business is institutionally independent, however, liberty of decision-making can be restricted by existing participants (family business, capital company).

Summarizing cognitions expressed by theoreticians and practicing businessmen concerning advantages of SMEs and their substantial differences from large companies, the author would like to emphasize that it is crucial for all enterprises, irrespective of their size, to understand the most important processes and resources that are value carriers, to evaluate expenses, which are connected with creating value, and to focus on costs management by using performance indicators.

The author examines economic significance of SMEs in the European Union (EU) and Latvia, because it is emphasised in documents of the World Bank that importance of SMEs in the economy of a particular state is formed based upon contribution of these enterprises in creating work places, increasing income and decreasing poverty. SMEs create stability in the national economy, because they are flexible in their decisions and activities. They can act fast in changing the field of activities and be more flexible in responding to changes in market demand. Also small enterprises of the EU have to be considered the main driving force in inventing and implementing work places and innovations. Since January 1, 2005, in the EU, it has

been officially stated that enterprises, in which the number of employees does not exceed 249 and which do not depend on bigger enterprises, belong to the category of micro, small or medium-sized enterprises. More than 99% of enterprises in the territory of the EU comply with the category of SME, and these enterprises employ approximately 67% of all the employed people. These are microenterprises (1-9 employees), which account for the biggest proportion (91.85%), although the average number of employees in one microenterprise is only two employees. In small enterprises (10-49 employees), on average, 19 employees work, but in medium enterprises (59-249 employees) the actual average number of employees is 101.

Total contribution of SMEs into the added value, that is created in the EU, in 2005, demonstrates that the group of these enterprises accounts for 99.8% of the whole structure, and produces 57% of the added value. Large enterprises, in turn, occupy only 0.04% of the total structure of the number of the enterprises, employ approximately 33% of the total number of the employed persons and produce 42% of the total added value. The author points out the labour productivity per one employee as an important result indicator of SME contribution. It is characterised by the following tendency: the group of microenterprises shows the lowest labour productivity, reaching just 70.69% from the average labour productivity among 27 EU Member States. In the group of small enterprises, labour productivity is higher and reaches already 91.49% of average, but labour productivity, in turn, in the group of medium-sized enterprises exceeds the average by 5.91%. The group of large enterprises shows the highest labour productivity compared to the average labour productivity, reaching 128.61%.

In the Baltics, indicators of labour productivity, in the period from 1997 until 2007, fall behind the average level of the EU. In 2008, Latvia enterprises reach return from one employee amounting to just 51.1% of the EU average level, and it is lower than in Estonia (64.6%), Lithuania (61.4%), the Czech Republic (72.3%) and Poland (62.8%).

In Latvia, during the period 2004-2008, the enterprises, which employ less than 50 workers, account for the biggest proportion among economically active enterprises (more than 97.5%), and this proportion tends to increase. However, indicators of survival capacity of newly founded enterprises in 2006, in Latvia, is not that high in figures (72.9%), as, for instance, in France, where the above mentioned indicator reaches 76.55%, in Great Britain –79.24%, in Slovenia – 84.21% and in Sweden – where it reaches even 87.25%. According to available information, Latvia has the highest indicator in the Baltics, because in Estonia it is 64.58%, but data about Lithuania are not available. Information is not available about Poland, either, but, on its turn, in the Czech Republic it reaches 64.11%, and it is lower than in Latvia.

The most popular form of business in Latvia is the limited liability company (Ltd. (SIA)), which according to LURSOFT data, in the period from 1991 until 2010, accounts for approximately 60% of the total number of registered companies. Using LURSOFT data about the registration and liquidation of this particular form of business in period from 1991 until 2009, the author presents longevity of enterprises in Figure 1.

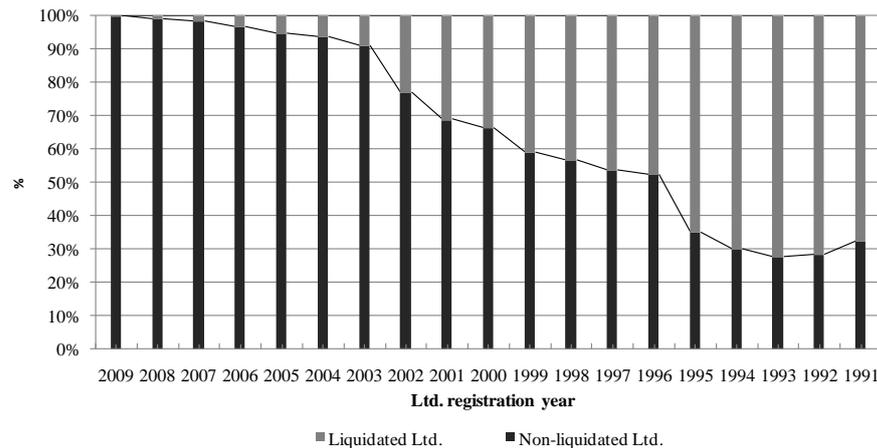


Figure 1. Longevity of enterprises: liquidated and not-liquidated Ltd. (SIA) to the date 5.12.2009 from Ltd. (SIA) registered in the respective year (Lursoft Statistical data processed by the author)

The author concludes that 1278 Ltd (SIA) have not survived until the age of 7 years, and it corresponds to 22.9%, but among enterprises, which would have to reach the age of 15 years, more than 70% have been liquidated. Analyzed statistical data prove that the total number of businesses increases by approximately 50% of the increase in the number of newly founded businesses, thus indirectly indicating problems of enterprises viability and long-term performance, which creates a necessity to evaluate SME performance results. On its turn, large proportion of small enterprises in the total number of enterprises, proves significance of these enterprises in the national economy and indicates a big investment resource, particularly in attracting labour force. The author evaluates Latvia SMEs performances using added value and productivity indicators, applying the principle of cascading– from national economy to the level of enterprises united by the professional association representing the particular sub-sector.

Tendencies of 2008 compared to those of 2003 demonstrate decrease in added value, number of employees and labour productivity in the national economy. Only in 2004, increase of real wages in the Latvian national economy has been balanced with the growth of productivity. On its turn, starting from 2005, increase of real wages overtakes not only the growth of productivity, but also the increase of GDP during the period from 2006 until 2008.

Data about the labour productivity indicate that from 2005 until 2008, productivity differs in different branches according to the size of the enterprise. It displays the following tendencies: 1) the number of employees in all the examined branches has not changed significantly; 2) positive dynamics of average productivity indicators has been observed in all the branches; 3) positive increase of productivity in all the groups of enterprises; 4) large enterprises of the trade sector (G) were not able to improve their productivity significantly within three years, thus demonstrating not only lower level in comparison to the return of the labour force of small and medium enterprises, but also falling behind the average indicators of the sector. In 2005, small enterprises of the building sector showed higher labour productivity than medium-

sized enterprises and represented the average indicator of the branch. However, in 2008, despite the increase of labour productivity by 23% in comparison to 2005, small enterprises have lagged behind the average productivity indicators of the sector by 2.5 thousand LVL per employee or by 23.8%. On its turn, in the medium-sized enterprises of electricity, gas and water supply (E) sectors, the return of employees is lower in comparison to small and large enterprises. During last three years small enterprises of manufacturing industry (D), hotel and restaurant industry (H), and transport, storage and communication industries (I) demonstrate labour productivity of lower level than enterprises, which employ more than 50 workers. The only sectors, where labour productivity indicators of small enterprises overtake the average productivity indicators of the sector, are the ones representing operations with real estate, computer services, science and other commercial services (K).

In Latvia manufacturing industry, which is being formed of many production sectors, the following tendency has been observed in the period from 2002 until 2008: proportion of both microenterprises and large enterprises decrease, but the number of small and medium-sized enterprises increases. Manufacturing sector in Latvia is the second biggest industry as regards the number of employees; therefore, the author evaluates return and productivity of the manufacturing industry enterprises in 2008 (Table 1) in each group of enterprises.

Table 1

Characteristic features of companies according to the size of enterprises in Latvia manufacturing industry (NACE 1.1. ver. C) in 2008

Characteristic feature	Group of enterprises				Total
	SME			Large	
	Small	Medium-sized	Total		
Number of enterprises (thousand)	6.758	0.521	7.279	0.67	7.949
Proportion in the number of enterprises (%)	85.02	6.55	91.57	8.43	100.00
Number of employees (thousand)	51.524	53.697	105.22	36.055	141.28
Proportion in the number of employees (%)	36.47	38.01	74.48	25.52	100.00
Added value (LVL, thousand)	355.219	558.927	914.15	397.357	1311.50
Proportion in added value (%)	27.08	42.62	69.70	30.30	100.00
Productivity (LVL, thousand per employee)	6.894	10.409	8.688	11.021	9.283
Relation to average labour productivity (%)	74.27	112.13	93.586	118.72	100.00

Examining changes in added value per employee (Figure 2), the author bases on the assumption, that labour force is the basic factor for creating added value, because ability of enterprises to create high added value is related to good indicators of profitability.

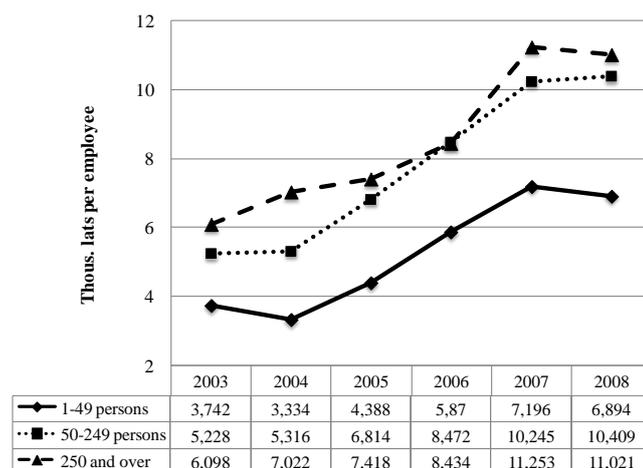


Figure 2. Added value per employee in the enterprises of manufacturing industry in Latvia (2003–2008, thous. LVL)

Added value, which has been created in the group of small enterprises, per employee in absolute figures is lower than in enterprises, which employ more than 50 workers. In the studied period, the created added value has increased in all the enterprises, irrespective of the number of employees, however, no tendency that small enterprises would approach results achieved by medium-sized enterprises has been observed. If in 2003 the difference of value created per employee by small and medium-sized enterprises amounted to 1.486 thousand lats, in 2008 this difference has more than doubled and reached 3.515 thousand lats. It should be concluded that in the period from 2005 until 2008, medium-sized enterprises have approached the capacity of large enterprises.

For the purpose of characterizing performance of the manufacturing industry enterprises, the author uses commercial profitability (profit or losses before taxes against the net turnover), because when commercial profitability increases, also total capital profitability increases, and this indicator indicates qualitative changes in the management of enterprise (Table 2).

Table 2

Dynamic ratio of the commercial profitability in enterprises of Latvia manufacturing industry (2000–2008, according to the number of employees)

Group of enterprises	2000		2001	2002	2003	2004	2005	2006	2007	2008
	Absolute quantity	Dynamic ratio								
Small (1-49)	-2.92	1.0	1.7	2.2	2.5	2.8	3.0	3.9	3.4	1.7
Medium-sized (50-249)	-0.61	1.0	3.6	6.1	7.4	7.3	8.0	10.8	9.5	4.7
Large (more than 250)	3.54	1.0	1.1	1.4	1.1	0.9	1.1	1.2	1.2	0.1

Initial results of 2000 prove inefficiency of small enterprises. Despite positive dynamics in the coming years, indicators of small enterprises significantly lag behind dynamics of indicators of medium-sized enterprises. Dynamics of commercial profitability confirm that in enterprises, which employ not more than 49 workers not only return of resources and created added value are lower, but also profit increase is slower in comparison to medium-sized enterprises.

Year 2008 affirms the uniform negative tendency in all groups of enterprises, where, in 2008, commercial profitability in the group of small enterprises actually returns to the level of 2001, and it is characterized by losses. In 2008, commercial profitability of large enterprises in absolute figures is on the level that is ten times lower than in 2000, because it reaches only 0.34 LVL per one lat of turnover. Decrease of commercial profitability indicates, that enterprises have lost previous sources of income because of either decreasing number of customers, amount of sold products/services or too high costs that shall be optimized.

Increase of return of the use of resources in the particular sector, and thus increase of contribution to GDP from the particular segment of enterprises is possible by revising approaches to achieving results and what is more important – evaluation of achieved results and management. Therefore, within the doctoral dissertation, the author focuses on effective performing of small and medium-sized enterprises in the framework of a particular sub-sector of the manufacturing industry – printing sector.

During last ten years, average increase of printing sector – sub-sector of manufacturing industry – has been approximately 8% per year. Sector enterprises, basic economic activities of which correspond to the classification DE21 or DE222 of NACE ver. 1.1., produce similar profile products, which can be used for the needs of both intermediate consumption and final consumption. In order to analyze tendencies of performance and development of SMEs from the printing sector, the author uses the following figures: turnover per employee; productivity; dynamics of value added.

In enterprises, which produce paper products – labels and packaging materials (DE21), in 2008, turnover per one employee reaches 42.93 thousand lats, and it is higher than in printing sector enterprises dealing with publishing books, magazines and newspapers (DE222) – 28.42 thousand lats, and in manufacturing industry in total (D) – 35.46 thousand lats.

After a rapid decline in 2004, labour productivity in printing sector enterprises shows a tendency of improvement during proceeding years. In 2008, value added that is created in manufacturing industry enterprises in total, has decreased by 2.8%. However, printing sector enterprises have managed to improve return from employees by more than 13%. Labour productivity (thousand lats per employee), in 2008, in manufacturing industry (D) in total is 9.23 thousand lats, in enterprises dealing with production of labels and packaging materials (DE21) – 13.19 thousand lats, but the ones dealing with publishing books, magazines and newspapers (DE222) – 11.31 thousand lats.

The author evaluates labour force return, using ratio between created added value and wage. There is a uniform tendency in manufacturing industry in total and in the printing sector particularly – increase of wage is not associated with creation of a product carrying sufficient added value for enterprise development. In this situation, it can be concluded that created added value is mostly being used for hiring labour force.

If in 2003, added value in relation to one lat of personnel expenditure in manufacturing industry was 2.19 lats in total, then in 2008 – only 1.62 lats. On its turn, in 2003, in enterprises of the printing sector added value in relation to one lat of personnel expenditure was 2.49 lats (DE21), 2.97 lats (DE222), and these figures in 2008 have decreased till 1.95 lats (DE21) and 1.89 lats (DE222).

Analyzing results of performance of the printing sector enterprises by groups according to the size of enterprises, in the period from 2003-2007, exactly in the small printing enterprises (1-49 employees) turnover per employee has grown 1.5 times. Actually, turnover has decreased by 9.8%, and, simultaneously, number of employees has also decreased by 40%. If years 2007 and 2003 are compared, medium-sized printing enterprises (50-249 employees) show double turnover increase per employee, but actually this turnover has increased 3.9 times and number of employees has increased 1.86 times.

Currently (June, 2010) the Association of Latvian Printing Companies unites 46 printing enterprises that produce approximately 70% of the printed products in the state, which corresponds to the classification D222 of NACE ver. 1.1. Information about the average indicators in 2008, provided by members of the Association, testifies that 57% of enterprises are unable to reach the average indicator of 2008, which is 28.42 thousand lats turnover per employee. Among these «failures» there are even medium-sized enterprises, which are unable to reach 10 thousand lats annual turnover per employee. It indicates ineffective use of labour force, low level of applying technologies, as well as problems in planning and utilization of resources in general.

Low level of productivity, which in the result is reflected in indicators of commercial profitability of enterprises of the particular sector, deserves not only criticism, but also shows a necessity to find a solution for the problem, because, taking into consideration concerns of different parties, aims of assessment, parameters selected and factors of influence, performance of the particular enterprise won't be unequivocal. Performance may consist of several levels, and the simplest one can be interpreted as quantitative, where the manufactured final product depends on the amount of invested resources. In this case the goal is to produce bigger amounts of final product without any changes in the amount of investment. Results of the next level reflect changes in decision-making processes that are directed towards simplification of the procedure and improvement of coordination. Results, which characterize improvements, where the enterprise is seen as a system capacity, are more difficult to evaluate. However, they are of the same importance, because results achieved in each previous level determine results of the next level. As the last, but not the least, enterprise value systems and changes in strategy and ideology, which indicate enterprise progress towards the ideal state, shall be mentioned.

The author concludes that in difference from M. Porter's model of five forces, which is based on external forces (external competition environment) and according to which internal environment of the enterprise hasn't been revised, exactly resource-based approach (resource-based view on the firm) unites influence of external environment and abilities and resources possessed by the company. Within this theory, an enterprise is being viewed as a collection of unique resources, which unites not only physical and human, but also organizational (abilities) resources. The author holds a view that the totality of all the resources of enterprise forms factors influencing the

offer of the enterprise. In the context of the enterprise effectiveness, the author summarizes factors of external and internal environment in a conceptual model (Figure 3).

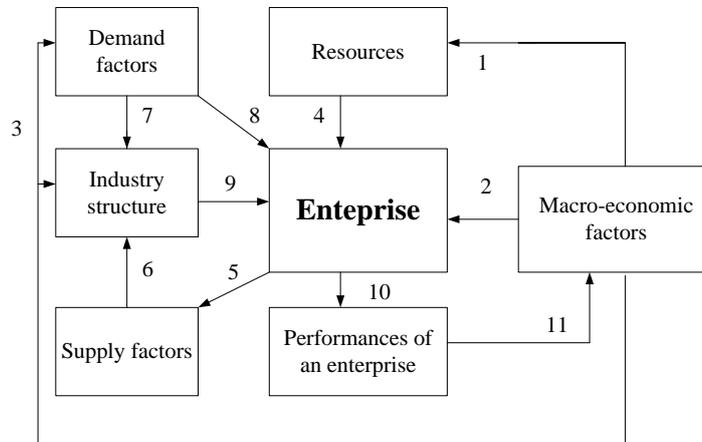


Figure 3. Conceptual model of factors influencing performances of an enterprise

According to the author's viewpoint, performances of an enterprise are influenced by three important factors blocks: macroeconomic factors, demand factors and structure of the sector. Factors of influence are mutually interactive, and they are affecting the enterprise in the following way: 1 – quality and availability of resources are related to the national economy, its infrastructure and other macroeconomic factors; 2 – macroeconomic factors determine the form, liabilities and duties of formation and organization of an enterprise as an economic subject; 3 – structure of the sectors and market orientation depend on the economic policy implemented by the state, as well as on provided support tools for development of the sector, which form requirements of the intermediate and final consumption market, including consumer purchasing power; 4 – for operations of the enterprise, resources, which are mainly found outside the enterprise, are needed; 5 – resources, after arriving to the enterprise and in combination with technologies and other internal factors of the enterprise, form the totality of offer factors, which characterizes, for instance, a certain assortment of products and possible production capacities; 6 – enterprise with its potential and actual amount of products is to be considered as an element belonging to the particular sector, and it influences development of the sector; 7 – basis of demand factors are clients: both legal and physical entities, who create demand for the production manufactured by the enterprise or services provided by the latter. Economic benefits created by the enterprise are classified according to the particular sector; 8 – demand of clients is a basis of enterprise performance. It is based upon the particular amount of products and parameters of price and quality, and it has been completed with expressions of intangible forms; 9 – enterprise depends on transformations and development of the sector, and this expression contains both stimuli and restrictions to the performance of the enterprise; 10 – result of the performance depends on the fact whether an enterprise is able to combine, organize and manage resources, taking into consideration demand, specifics of the sector and macroeconomic factors; 11 – achieved results of the performance return to the national economy through taxes and duties, thus influencing fulfilment of the state functions and business environment.

Conceptual model of factors influencing performances of an enterprise gives an opportunity to view interconnections of influence as: 1) influence of macroeconomic factors through laws, taxes and duties policy implemented by the state, as well as through implemented incentives for starting up business, provided support and infrastructure services; 2) influence of demand factors, which results from the level of market development, according to which «minimum set of requirements» for the performance of the enterprise in the particular sector is being formed; 3) offer factor, influence of the sector's structure and influence of its transformations on results of the enterprise performance.

After analyzing works of different authors (Hart, 2004.; Beck, 2006.; Dunphy et al., 2000.; Black, 2003.; Bosma, 2004.; Mcadam, 2004.; Gruber, 2004.; Hall, 1992.; Neely, 2002.; Storey, 1996.; Probst, 2006.; Barney, 1991, and others), the author of the dissertation concludes that several approaches in classification of factors influencing performance of the enterprise exist: 1) traditional classification of factors: factors of internal and external environment; 2) external environment factors with direct influence (external micro-environment) and with indirect influence (external macro-environment); 3) by carrying out research in the particular field, factors are classified within that particular research work. For instance, factors of influence for assessing e-commerce investment are classified as follows: strategic factors, structural factors, enterprise management factors.

Using content analysis of the literature sources, the author classifies factors according to their way of manifestation (Figure 4), as well as according to the environment, which maintains or initiates influence of the factor in a way that it could be connected with achieved results.

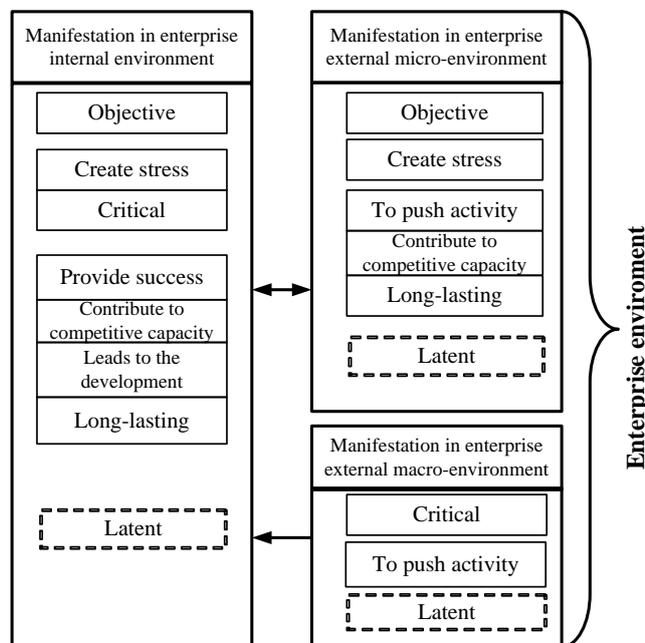


Figure 4. Ways of manifestation of factors influencing performance and development of the enterprise in content of environment, based on the analysis of literature content

The author illustrates classification of factors influencing performance of the enterprise according to the way of their manifestation and environment initiating respective expression of a factor, which according to the characteristics of the factor reveals its positive and negative manifestations. Manifestation of factors may be as follows: 1) objective, based on facts – possessed exactly by small enterprises; 2) it may create stress conditions (pull); 3) critical, because it may influence existence of the enterprise; 4) it may serve as encouragement or push to activity (push); 5) it may drive the enterprise towards development 6) it may form competitiveness of the enterprise; 7) it may ensure success; 8) it may work in long-term – connection with the length of enterprise life cycle; 9) difficult to identify, it may stay hidden (latent).

In order to study attitude of entrepreneurs towards influence of external environment factors, the author carried out empiric research work with an aim to assess influence of sixteen external environment factors on performance of the enterprise, using survey carried out among entrepreneurs from mechanical engineering and metal working sub-sector of the Latvian manufacturing industry (53 enterprises). The split of respondents was as follows: 52% - Riga and Riga region; 13% - Kurzeme; 13% - Zemgale; 13% - Vidzeme; 9% - Latgale. Respondents confirmed significance of the factor's influence by the following choices: high influence; medium influence; small influence; insignificant influence. To estimate obtained answers the following evaluation system was used: high influence – 3 points; medium influence – 2 points; little influence – 1 point; insignificant influence – 0 points. MS Excel PivotTable tools were used to generalize, group and range data. Taking into consideration the foundation years of the enterprises, respondents were united in groups: 1st group - 11 enterprises (21%), which have been registered till 1991 (older than 14 years); 2nd group - 19 enterprises (36%), which have been registered during the period from 1991 till 1997 (8 till 14 years old); 3rd group - 23 enterprises (43%), which have been registered after 1997 (less than 8 years old).

In data processing, a range for a particular factor was created. It was done using the average evaluation and additional analysis of how respondents estimate external environment factors according to significance of their influence, as well as taking into consideration regional affiliation of respondents. Further ranging was made according to the enterprises age group, where an average index for each factor of the entrepreneurship environment was determined. In addition, the author's classification according to the environment of manifestation of the external environment factors influencing entrepreneurship (external macro-environment and external micro-environment) and way of their expression (obstructive or driving) was used.

In the result of the study, the author comes to the following conclusions: 1) the longer the enterprise operates, the bigger significance it assigns to all factors of external environment; 2) despite different age groups, factors creating stress conditions and critical impact on the enterprise performance are considered more important; 3) as enterprise gets older, evaluation of importance of positive and driving factors that promote competition significantly increase; 4) among three age groups, the lowest evaluation of critical factors is presented by the group of the youngest enterprises.

Simultaneously with constantly changing external factors of influence, also the enterprise faces constant process of changes, because its performance and development is cyclic, and it indicates that: 1) influence of external environment

factors on the performance and development of the enterprise is not the same during the whole period of enterprise existence (start-up, activation and development of business); 2) age of enterprises and their operational experience differ, and this may be connected with different needs during the enterprise development cycle; 3) influence of the factor may be strengthened or weakened by other factors, or new factors, existence or significance of which haven't been evaluated before, form according to the actual economic situation.

2. METHODOLOGICAL JUSTIFICATION OF AN ENTERPRISE SUSTAINABLE DEVELOPMENT

The chapter consists of 56 pages, 8 tables and 16 figures.

According to the author's opinion, sustainability of an enterprise on micro level has certain similarity with the conception of sustainable development on macro level; for this reason economic development and sustainability of the state and region can be reached, if their structure elements – industry sectors, enterprises and organizations are viable. Basing on various scholars' researches on issues of sustainable development (Cameron, 1987.; Dixon, 2003.; Hockerts, 1999.; Fiksel, 2001.; Banerjee, 2003.; Bansal, 2005, and others) the author concludes, that the main point of a concept of «sustainable development» is - coordinated and systemic advancement of economic subject towards the aim takes place only when all three dimensions of sustainability: social, economic and ecologic - are incorporated simultaneously into subject's activities. In this respect the following factors of sustainable development, that are common to all enterprises, can be mentioned: 1) income, which is formed by consumers (clients) utilizing products and services, produced by the enterprise; 2) financial stability and positive dynamics of profitability; 3) competences and skills of the personnel; 4) inclusion of ecological issues in the enterprise's management process; 5) positive attitude of the society towards the performance of the enterprise. In conformity with these factors it can be concluded that several sub-systems exist within the enterprise simultaneously, and they can be characterized by variability and dynamism. On its turn, sustainability of the system demands stability and continuity. Principle of the system homeostasis foresees ability and tendency of the system to reach stability, which is the basis of equilibrium state. In order to enable the enterprise to develop sustainability, taking into consideration social responsibility and business ethics as well as stakeholders' interests, all sub-systems of the enterprise have to be transformed under the action of dimensions of the sustainability. In the author's opinion, principles of sustainable performance and development of the enterprise can be determined by the following: 1) principle of the system, which foresees self-preservation of the system, interaction among elements of the system, and system's ability to accumulate material, information and energy flows that are utilized in realization, cooperation and coordination of functions; 2) principle of continuity determines system requirements for a correction mechanism, which supports, helps to adjust in changing situations and to react to changes in due time; 3) principle of adequacy determines mutual compliance and compatibility of the system elements with sub-systems of the enterprise and external environment, and in practice it is manifested as a united approach to the realization of probability cases; 4) principle of

efficiency determines necessity that economic result from the activities exceeds expenditures.

The author concludes that the sustainability of the enterprise depends on the management system of the enterprise, which provides effectiveness and efficiency of sub-systems, taking into consideration deviations from the state of equilibrium. It demands concretization of the possibilities of practical application of sustainable development concept in the enterprise, taking into consideration that all the processes supporting sustainability of the enterprise are mutually connected, interact, and functional process of each management level is being implemented through dimensions of sustainability. Thus, the quality of the enterprise management influences total result, taking into consideration innovative potential of the enterprise, which includes: 1) management systems (speed of decision-making, delegation of powers, management style); 2) finances (possibilities to attract funds, amount of equity); 3) employees (qualification, motivation); 4) technologies (complexity of processes, flexibility, expansion possibilities); 5) production (market share, sale segments, proportion of quality and price).

On his turn, a human being as a special element and factor of the enterprise system complicates functionality of the system with his social expressions, because only a human being can create an idea in this system and implement it. The author concludes that viability of the enterprise in a long-term period depends on the innovative potential, which is based upon a creative approach that is being implemented by all the stakeholders of the enterprise – not only employees, but also shareholders and customers. It is justified by the results of the implemented activities – discussions in the enterprises, obtained during the SOCIALSME project funded by the Leonardo da Vinci Program.

Important factors for the sustainability of the enterprise are being formed in the social environment. Social capital can be considered as one of the potentials of the enterprise development, which increases return from the use of other capitals. Therefore, to provide a possibility to acknowledge the linkage of the social capital with the enterprise performance in the context of sustainable development, management of social and customers' capital has become of vital importance. It influences productivity, competitiveness and sustainable development of the enterprise (minimizes operative expenditures for obtaining information, accelerates circulation of information, lessens asymmetry of information and enhances development of new knowledge).

In order to improve efficiency of the system, which results from both enterprise's management and government efficiency, also small enterprises shall seriously turn to evaluation of its performance. Performance measures characterize the fulfilment of goals, but they can be used also as a strategic tool of the enterprise management.

Completing Stafford Beer's (1981) idea about the significance of enterprise indicators (liquidity, profitability and productivity) in providing sustainability of the system, the author considers that three levels of performance are being formed in the enterprise: *actual, target (planned) and standard (see Figure 5)*.

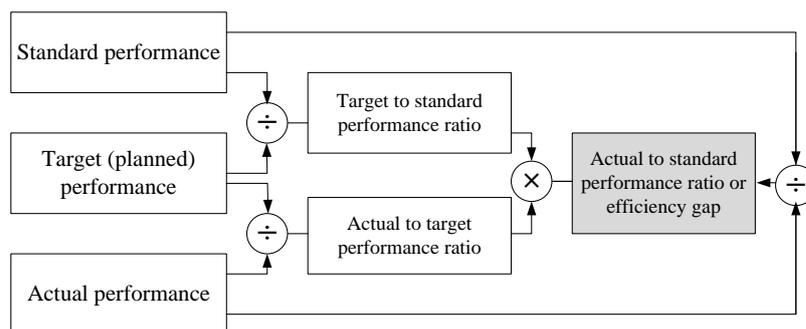


Figure 5. Author's proposal for performance measurement on different management levels of an enterprise.

Actual performance of the enterprise is being formed in the current time as an actual return from the utilization of existing resources, taking into consideration existing restrictions. *Target (planned) performance* corresponds to the return that the enterprise plans to obtain from the utilizing of existing resources, taking into consideration existing restrictions. On its turn, *potential (standard) performance* of the enterprise is an eventual return that can be obtained by the enterprise if it develops existing resources, takes off the restrictions and uses the opportunities, which can be achieved taking into consideration influence of factors maintaining sustainable development of the enterprise. Potential performances of the enterprise include unused opportunities, which are the subject of possible development through using innovations and competent enterprise management.

The author considers that it is possible to improve efficiency by utilizing the enterprise's performance measurement system, which includes dimensions of sustainable development in combination with the elements – processes supporting sustainable development of the enterprise: 1) *production process* is characterized by specifications of technical equipment and exploitation of production technologies (capacity, economy, modification possibilities); 2) *sales process* incorporates strategically justified choice of products and market orientation; 3) *personnel management process* provides rational and stable internal structure of the enterprise, coordination between structural units; 4) *financial management process* incorporates circulation, structural efficiency and utilization of financial resources; 5) *accounting process* results in forming the grounds for management decision-making by using synthesis of management functions.

As a result of interaction between management levels and functional fields and taking into consideration management level, the following issues and characteristics incorporated in performance measures are being formed: 1) strategic level – strategic layout of production machines, choice of placement, development of new products, planning of labour force long-term development, providing profit, selection of accounting technical solutions; 2) administrative level – management of production flows and schedules, development of production price policy and sales promotion campaigns, providing wages, social benefits and acquisitions, analysis, budget planning, supervision of expenses and income, supervision of prime costs; 3) knowledge level – development and designing of new products, analysis of the market situation, research, identification of clients, forecasting employees development and

careers, analysis of customers cash flow and survey of possibilities for decreasing risks, forming investment portfolios; elaboration of accounting methodology in the enterprise; 4) operational level – performance of production machines, load control, quality and material consumption analysis; resources and time invested in customers’ service; personnel training and environment maintenance expenses, supervision of customers’ cash flow and accounting transactions, implementation of accounting operations.

According to the author’s viewpoint, sustainable development drives the enterprise to changes, which are connected with a process of achieving results and their assessment: 1) on the level of enterprise management, especially in strategic and knowledge management level and 2) in functional fields, where the role of personnel as an element of social capital is emphasized. The author demonstrates their approach to enterprise performance measurement in the context of sustainable development, which is incorporated in the levels of enterprise management and functional areas, in a pyramid shape Figure 6.

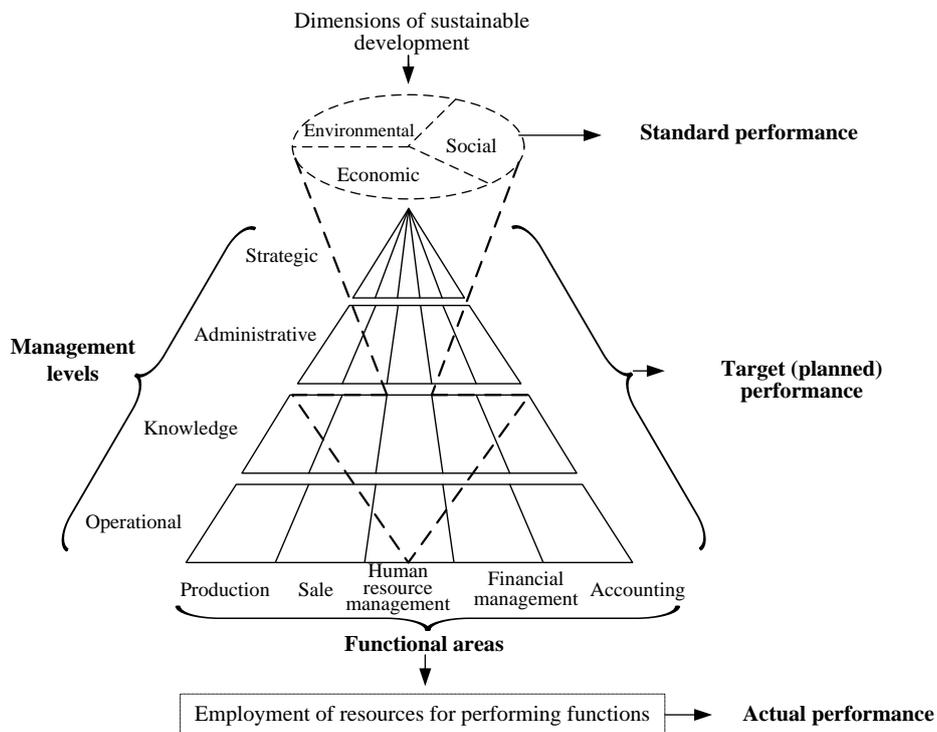


Figure 6. Application of an enterprise sustainable performance measurement system

The author considers that it is impossible to apply standardized, identical indicators for performance assessment to all enterprises, because each enterprise is a unique formation, which is characterized by its belonging to the particular sector, organizational structure, enterprise management style, sector’s market share and other significant differences.

Works (Kaplan, 1983., Hayes et al., 1988.; Neely, 1999.; Barni, 1991.; Laitinen, Chong, 2006.; Gulbro et al., 2000.; Basu, 2001.; Barker, 1995, and others), where different authors study methods of results assessment, indicate two directions of

research: 1) which indicators are to be included in the system of performance assessment and 2) which characteristics indicators of an integrated results assessment system should possess. It is being recognized that models and proposals for effective management, which are created based upon research carried out in large companies, are not to be applied to small enterprises directly, not only because of limited resources, but also due to other factors, for instance, kind of management organization differs. The author concludes that: 1) financial and intellectual capital resources are more available in large enterprises; 2) issues concerning enterprise management systems and evaluation methods are being solved more often in large enterprises than in small ones; 3) irrespective of the size of the enterprise, assessment of results plays a crucial role for sustainable development 4) it is possible to use different tools for performance management.

Business management tools (BMT) are means used for achieving business goals, implementing business processes or improving performance. Business management tools differ according to their complexity and application handiness, and entrepreneurs accept them differently. After classification and assessment of BMT, the author concludes that popularity of the used BMT and satisfaction about them changes if they are compared over years, because: *current needs of the enterprise are satisfied and particular goals are achieved; situation in the enterprise changes, new needs form; the use of a tool has not justified expected improvements in value terms.* The author creates classification of business management tools taking into consideration dimensions of sustainable development, as well as levels and functions of the enterprise management. The author arranges BMT according to the direction of tool's operation, and it is demonstrated in the Figure 7.

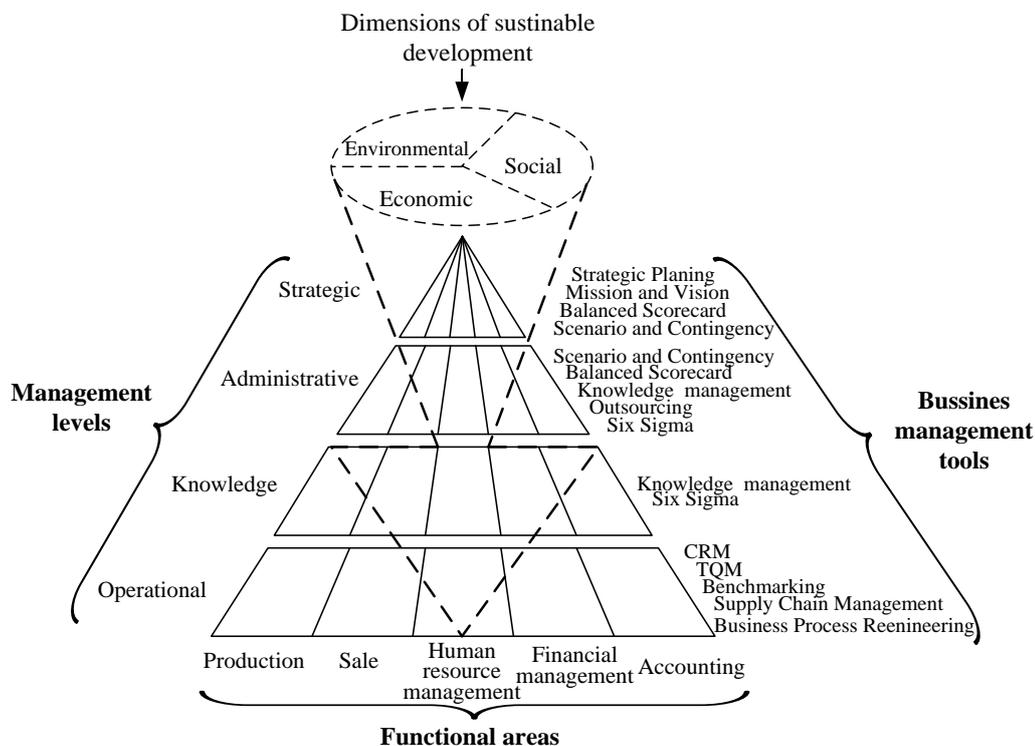


Figure 7. Business management tools for implementing management in the context of sustainable development

Management methods used in small enterprises are less formal, and decision-making processes are more emotional. Besides, the management sphere is significantly broader, therefore, time for fulfilling particular management tasks is shorter and effectiveness of the use of management tools shall manifest faster.

During the period of its existence, the enterprise as a social-economic system passes through different functional stages, which in literature are defined as enterprise life cycle. Concept of the enterprise life cycle (ELC) was created within the enterprise management theory with an aim to explain changes in the enterprise in the context of time. The life cycle of a particular enterprise is tightly connected with a life cycle of the sector, which, on its turn, is determined by the life cycle of a particular industry, enterprise and product or service. According to the author's point of view, there is an interaction among these levels of economic manifestations, and it is shown in the Figure 8.

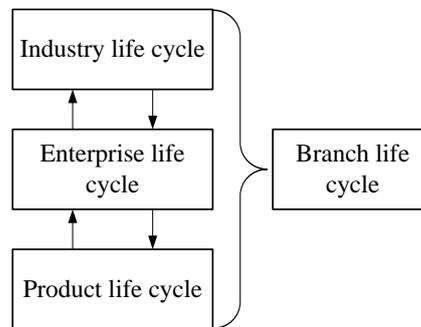


Figure 8. Interaction and interconnection of life cycles of a branch, industry, enterprise and product

Several related industries may operate within one branch. They may be in a certain life cycle stage (growth, maturity, decline), where enterprises operate in different stages of their development and produce goods, which, on their turn, are subjected to evolutionary processes in the same way. Life cycle stages of the industry may be different in different countries, because needs of customers differ according to their life level.

Total life cycle of an enterprise consists of phases and stages. Phase is period of time, during which organization changes substantially, for instance, system of values or management approaches. According to the aim, phases may be divided in stages. One phase may include several stages and each of these stages possesses characteristic features. In literature there is no uniform division of enterprise life cycles in stages, as well there is no uniform approach regarding number of stages and methodological grounds for defining the stages. Defining borders of the stage period is difficult, because: 1) particular characteristics are being observed through the whole life cycle of the enterprise and have no defined boundaries; 2) different authors use different approaches to divide enterprise life cycle emphasizing various unique parameters of the cycle stages, which may be connected with different objects chosen for research. A common feature of all the models of the enterprise life cycle is that cyclic development of the enterprise can be foreseen, and the enterprise shall be able to function under the

existing conditions with a future vision, where development possesses consequent and qualitative changes.

After being introduced to opinions of experts about the opportunities and limitations of the use of ELC concept, the author defines the practical opportunities and limitations of the use of enterprise life cycle phases in the Table 3:

Table 3

Opportunities and limitations of the use of enterprise life cycle model

Opportunities	Limitations
1. To foresee consequent stages of enterprise development	1. Impossible to define unequivocally separate stages
2. To characterize qualitatively each stage of enterprise development	2. Impossible to define particular time of the beginning and end of the stage
3. To choose the most appropriate performance strategy for the particular stage of development	3. Impossible to define length of the stage

The author concludes: 1) enterprises can get through separate stages (phases) at a different pace; 2) age of the enterprise is not tightly connected to life cycle stages (phases); 3) each of these stages (phases) possesses different problems, which are determined by qualitative and quantitative changes in both external and internal environment of the enterprise; 4) enterprise performances are connected with certain parameters, which change along with a transfer from one stage (phase) of life cycle to another; 5) threats and risks in different stages (phases) of life cycle differ.

Therefore, enterprise management, which is oriented towards solving problems, which are characteristic to the particular stage (phase) of enterprise life cycle, shall be considered as a condition enabling the enterprise to maintain sustainable performance.

3. MODEL OF AN ENTERPRISE SUSTAINABLE PERFORMANCE

The chapter consists of 30 pages, 8 tables and 12 figures.

In all phases of the enterprise life cycle, irrespective of the size and sector of the enterprise, for the purpose of assessment of enterprise efficiency two complex criteria, which characterizes an enterprise performance, can be used: 1) *achieving aims based on rational use of resources and coordinated functioning of internal processes* and 2) *satisfying needs of parties concerned*. However, combinations of performance indicators can differ in different periods of the life cycle. According to the author, meaning of «enterprise life cycle» from the point of view of assessment of enterprise performance and management approach is: *totality of the enterprise development stages, which form phases that are characterized by specific aims and tasks, implementation of which drives the enterprise to sustainable development in full*.

According to the developed «Conceptual model of factors influencing performances of an enterprise» (Figure 3), and defined processes supporting and influencing sustainable development of the enterprise, the author carried out empiric research with an aim to find out opinion of respondents (experts) about external and internal factors influencing the enterprise's performances, significance of performance

measures in different stages of the enterprise's life cycle, and how the process of achieving goals is influenced by cooperation with business partners.

Survey questions were about the linkage between macroeconomic factors and factors determining demand and enterprise internal environment factors, which influences an enterprise performance in general. Survey contained 89 questions, which formed qualitative evaluation of problems faced during achieving performance. Questions were divided into 6 groups: the 1st group characterized critical influence of macroeconomic external environment and demand factors on the enterprise performance in different phases of ELC (questions 1–6); the 2nd group comprised questions about level of skills and abilities to be identified in the internal environment of the enterprise, which define forming of the enterprise offer and influence also performance (questions 7–21); questions of the 3rd group are about performance features, which are the basis for indicators describing performance (question 22–28); the 4th group represents questions connected with the social dimension of the enterprise sustainable development, which is characterized by social relations between employees and customers and the influence of these relations on achieving goals of the enterprise and its performance (questions 29–50); questions of the 5th group are about acknowledging significance of various resources according to investment of these resources into the final product (questions 51–57); the 6th group contains questions, which are about identifying unfavourable factors that are being formed in both external and internal environment of the enterprise and on the level of social relations (questions 58–63).

In total, 23 questionnaires were processed, and they present the following statistics: 1) according to the position of respondents in the enterprise, 13.0% of them are owners–managers of the enterprise; 2) 5.3% – hired managers of the enterprise, 21.7% respondents correspond to the status of medium level managers; 3) according to the size of the enterprise – 13.0% of them belong to the group of microenterprises, 65.2% – comply with the parameters of small enterprises and 21.8% are medium-sized enterprises; 4) according to the length of enterprise existence – 21.7% of these enterprises exist for less than 5 years, 43.5% are 5-10 years old and 34.8% are older than 10 years; 5) according to the affiliation to the sector – 82.6% of them are connected to the manufacturing industry, but 17.4% – with trade.

Data obtained from the questionnaires were generalized, grouped and ranged by using *MS Excel PivotTable* tools. In order to obtain ordinal scale (rank) measurement, a bigger or smaller rank has been assigned to each factor on the ordinal scale. According to answers given by respondents, evaluation is made according to a 5-point system according to 5 criteria: *does not influence at all* – 1 point; *does not influence significantly* – 2 points; *partly does not influence* – 3 points; *influences* – 4 points, *influences a lot* – 5 points. The author accepts that separate phases of the cycle form the total life cycle of the enterprise, and obtained evaluations are gathered to assess influence of each element over the whole life cycle of the enterprise.

As in analysis process of separate factors, conditional evaluation, which is based on determining ranks, was used, for defining interaction (linkage closeness) between separate factors and features, the author carried out a correlation test. Coherence of rank features are defined using Spearman's (r_s) and Kendall's (r_k) rank correlations coefficients (using Eviews 6.0 software). In order to obtain statistically valid

determination of interaction between separate external environment factors and other manifestations influencing effectiveness of enterprise performance over different phases of ELC, the author selects those pairs of factors, which are characterized by Spearman rank correlation coefficient r_s at the n number of observations ($n=23$), with the degree of freedom $v = n-1$, if the following conditions is fulfilled: 1) coherence is statistically significant at the two-sided significance level with validity level ($\alpha = 0.05$), if $r_{s\ apr} \geq r_{kr}$, where $r_{s\ kr} = 0.428$; 2) coherence is statistically significant at the one-sided significance level with validity level i ($\alpha = 0.05$), if $r_{s\ apr} \geq r_{s\ kr}$, where $r_{s\ kr} = 0.368$.

In order to evaluate influence of external environment, the author chose six external environment elements/ factors of influence. The author justifies classification of factors and her choice with theoretical and empiric research work, which has been carried out in the 1st part of doctoral thesis: 1) *obstructive factors, expressions of which may cause stress, critical impact on enterprise performance and results* – tax law; availability of qualified labour force; availability of financial resources; infrastructure of business; 2) *driving factors, which create positive influence enhancing competitiveness* – consumer purchasing power, entrepreneurship support policy.

Results of the empiric research work on the critical influence of the enterprise external environment during different phases of the enterprise life cycle.

Whilst the enterprise is being formed and grows (growth phase) majority of external environment factors are critical (1st rank) (three most critical factors – tax law, consumer purchasing power and business infrastructure). When the enterprise has reached optimal production amounts and stability (maturity phase), significance of external environment factors are still on high level (three most critical factors – consumer purchasing power, qualified labour force and tax law). For the enterprise, which loses its potential and starts aging, consumers purchasing power and tax law are of the most critical influence. According to significance, evaluations of both factors correspond to the 1st rank. The author concludes that, first of all, in different phases of life cycle, number of factors of influence changes according to the length of enterprise existence, because sequence of ELC phases is logical and connected with the time factor. Secondly, directions and manifestations of factors' influences become more complicated, when the enterprise reaches maturity and aging phases.

Results of the empiric research work on the significance of influence of the enterprise internal environment during different phases of the enterprise life cycle.

New enterprises (performance experience up to 5 years) connect enterprise performance (1st rank evaluations), first of all, with image and reputation of the enterprise, personnel qualification and level of employees satisfaction. In achieving goals orientation is towards the importance of relations with external clients. Respondents (enterprises) that operate for 5 to 10 years, mention ability to improve enterprise inner processes as the most significant factor. In achieving goals, they mention timely information exchange among employees and mutual reliability among employees as significant. Respondents (enterprises) that have been operating for more than 10 years, give high assessment (in the level of the 1st rank) only to secure and

stable relations with customers, and see an opportunity to achieve goals based upon employees loyalty towards the enterprise, which is supplemented by timely information exchange.

Quality level of clients' service and social contacts on the level of employees and cooperation partners affecting achievement of enterprise goals and creating linkage with other manifestations (with value system of the enterprise, which corresponds with the one of business partners and united value system in the enterprise itself), influence enterprise performance in its growth phase as central factors that correlate with other factors.

Results of the empiric research work on the significance of enterprise performance features during different phases of the enterprise life cycle.

All the performance features during ELC are being considered as important (1st rank). However, the three most important features in the whole ELC are the following: 1) rate of asset turnover (4.81 points), which is being preserved also in growth, maturity and aging phases; 2) ability to provide revenues (4.69 points), which is recognized as important during growth and maturity phases, and 3) ability to ensure achievement of the goal – profitability (4.68 points), which is being considered as an important performance feature during enterprise decline phase.

It can be stated that the following statements are statistically valid (more than 95%) and are characterised by significant density:

1) during the enterprise growth phase there is very significant linkage between rate of asset turnover and cost structure ($r_s = 0.61$; $p\text{-value} = 0.0022$), where cost structure demonstrates significant closeness with broad range of goods and services ($r_s = 0.44$; $p\text{-value} = 0.0348$); product promotion campaigns ($r_s = 0.45$; $p\text{-value} = 0.0297$) and possibilities to plan and coordinate the performance of the enterprise ($r_s = 0.49$; $p\text{-value} = 0.0181$);

2) during the enterprise maturity phase the same performance measures as in growth phase are significant and very significant, linkage between structure of assets and: 1) cost structure ($r_s = 0.68$; $p\text{-value} = 0.0004$), 2) ability to fulfill obligations ($r_s = 0.70$; $p\text{-value} = 0.0002$) and 3) ability to achieve goals (productivity) ($r_s = 0.68$; $p\text{-value} = 0.0004$), are mentioned.

3) during the enterprise decline phase performance measure – profitability demonstrates the linkage with the group of factors, which incorporates social relations within the enterprise and with clients: 1) transactions with equal partners ($r_s = 0.60$; $p\text{-value} = 0.0027$); 2) contacts of business partners in governmental and municipal institutions ($r_s = 0.55$; $p\text{-value} = 0.007$), 3) business contacts of the enterprise employees ($r_s = 0.54$; $p\text{-value} = 0.0276$).

Results of the empiric study confirmed the results of the theoretic research results and the approach for assessing effectiveness of SME performance according the ELC phases. External and internal factors influencing performances of the enterprise and erformance indicators to be supervised principally according to the phases of the ELC in correspondence with their significance, were justified, as well as model of sustainable performing of small and medium-sized enterprises, taking into consideration phases of the enterprise life cycle, was elaborated (Table 4).

Table 4

Factors influencing the enterprise performance and performance measures
corresponding to the phases of ELC according to their significance

	ELC phases		
	Growth phase	Maturity phase	Decline phase
<i>Factors of external environment influencing performances according to their significance:</i>			
External macro-environment	Tax laws (OF)	Tax laws (OF)	Tax laws (OF)
External micro-environment	Consumer purchasing power (DF) Qualified labour force (DF) Contacts with business partners in external environment (DF) Resource access (OF)	Consumer purchasing power (OF) Qualified labour force (DF) Obtaining new information (DF) Equal partners (DF)	Consumer purchasing power (DF) Qualified labour force (DF) Availability of external financial resources (OF) Relations with clients (DF)
<i>Factors of internal environment influencing performances according to their significance:</i>			
Social	Quality level of clients' servicing Secure and stable relations with clients Intercommunication among employees	Quality level of clients' servicing Secure and stable relations with clients Intercommunication among employees	Secure and stable relations with clients
Environmental	Ability to improve products	Ability to improve products Wide assortment of goods and services Ability to react to changes in market Ability to introduce innovations	Ability to improve products Wide assortment of goods and services Ability to react to changes in market Possibilities to improve manufacturing processes
Goal achievement	Value system of the enterprise, which is suitable for business partners; enterprise-wide uniform value system; mutual trust of employees		
Performance features according to their significance	Rate of asset turnover Ability to provide revenues Cost structure	Rate of asset turnover Ability to achieve goal (productivity) Ability to provide revenues	Ability to achieve goal (profitability) Rate of asset turnover Cost structure
Performance indicators to be supervised principally according to their significance	Liquidity Marginal revenues + Indicators of social and environmental factors according to the specifics of the sector	Liquidity Productivity + Indicators of social and environmental factors according to the specifics of the sector	Profitability Liquidity + Indicators of social and environmental factors according to the specifics of the sector

OF – obstructive factors; DF – driving factors

Taking into consideration significance of the performance features in each phase of ELC, in each phase of life cycle a totality of performance indicators that are to be supervised principally, is being formed. It indicates enterprise ability of sustainable development in long-term period, taking into consideration requirements of short-term stability, which provide possibility to manage the enterprise effectiveness. In the model of SME sustainable performing several stages are mentioned and performance of them shall be in a particular order, which is demonstrated by the author in the Figure 9.

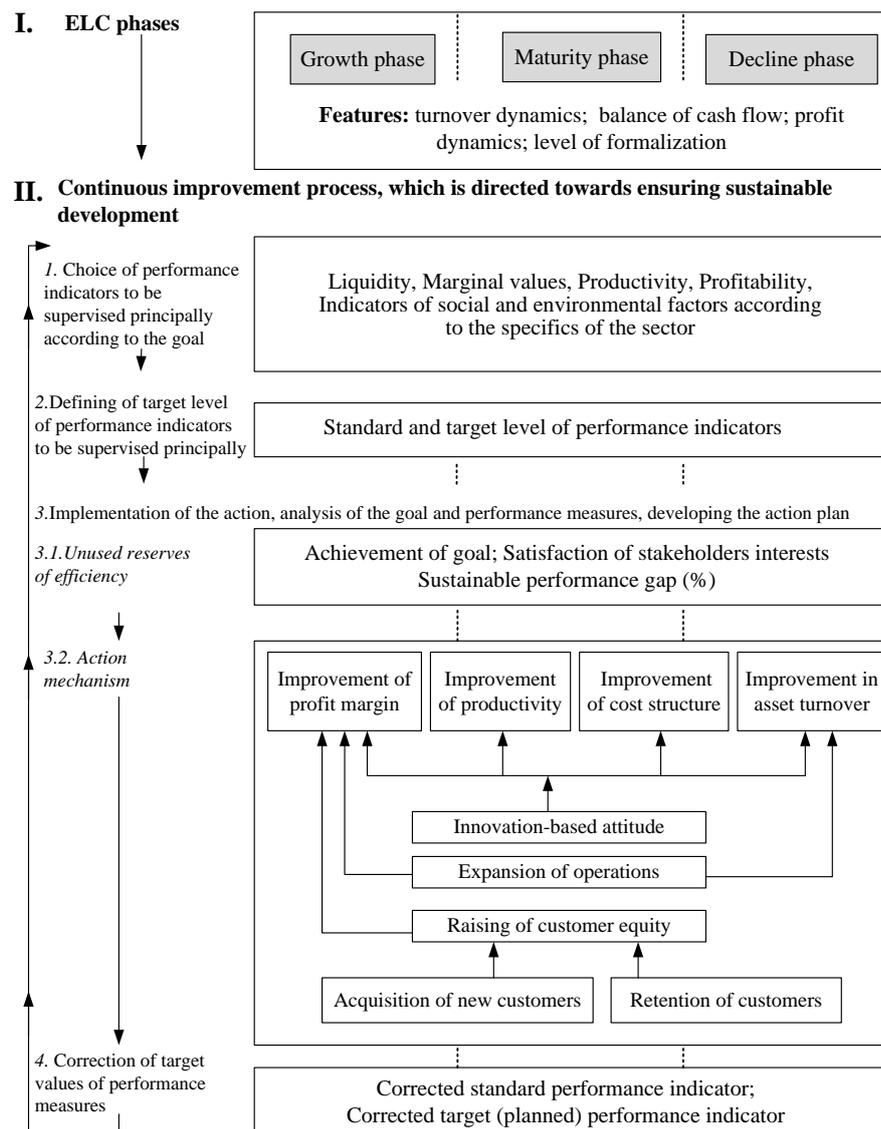


Figure 9. Model of sustainable performing of small and medium enterprises in the context of ELC

First of all, the *phase of enterprise life cycle* shall be determined. Afterwards *continuous improvement process, which is directed towards ensuring sustainable development*, shall be implemented (determining performance measures to be supervised principally and their target values, according to the goal; performance and analysis of the goal and performance measures; development of the action plan and adjustment of the target values of performance measures).

4. PERFORMANCE ASSESSMENT OF AN ENTERPRISE OF PRINTING INDUSTRY

The chapter consists of 16 pages, 5 tables and 9 figures.

To test the model of the sustainable performing of SMEs the author applied the model in the medium-sized enterprise from the printing sector, observing the order of several, sequent stages.

I. Phases of the enterprise life cycle. Basing on the theoretical study of ELC, the author suggests using the following parameters for identifying the phases: 1) turnover dynamics, which is connected with forming of customers' basis as the source of enterprise revenues; 2) profit dynamics 3) balance of cash flow; and 4) level of processes' formalization (Table 5).

Table 5

Identification parameters in the context of enterprise life cycle

Identification parameter	ELC phases		
	Growth phase	Maturity phase	Decline phase
Sector growth rates (Tn) compared with the enterprise commercial turnover growth rate (Tu)	Tu>Tn (Pronounced growth dynamics Tu)	Tu ≈ Tn (Slow pace of growth rate Tu, the same tendency as Tn)	Tu<Tn (Growth is not observed Tu)
Dynamics of enterprise profit (Pu)	Tu>Pu	Pu>Tu	Pu dynamics is negative
Balance of cash flow (CF) (operative - OCF, financial - FCF, investments - ICF)	OCF+ FCF+ ICF-	OCF+ FCF- ICF-	OCF+/- FCF+/- ICF+/-
Level of formalization	Low (till 20% of total processes)	High (40-80% of total processes)	Very high (above 80% of total processes)

In order to define enterprise compliance to a certain ELC phase according to the developed conceptual model of factors influencing results of the enterprise performance (Figure 3), the author took into consideration regularities of enterprise and sector development, which are summarized in Table 6. For featuring dynamics of characteristic parameters of the printing industry, the indicator of chain changes is being used.

Table 6

Changes in characteristic parameters of the performance of enterprises of the printing industry (2005-2009, as to previous period, %)

Indicator	2005	2006	2007	2008	2009	2010*
Changes in paper and paper products manufacturing amounts, %	3.3	7.0	13.3	-9.5	-11.3	x
Changes in amounts of printing and records reproduction, %	23.7	8.2	-8.2	-1.4	-19.1	x
DE – manufacturing of wood-pulp, paper and paper products; publishing and printing turnover dynamics, %	14.4	24.9	13.1	x	x	x
Turnover dynamics of the members of the Association of Latvian Printing Companies, %	23.2	5.9	11.1	10.0	-13.7	10.0

* - forecast; x - no information

The author considers that performance of the sector enterprises can be characterized using data gathered by the Association of Latvian Printing Companies about turnover dynamics of the members of the Association (Table 6). In order to enable an enterprise to form the budget for the next periods, taking into consideration

the tendencies of the sector, the ALPC forecasts for the near future (1 to 3 years) can be used. Forecasts are being obtained based upon the evaluation of the sector experts and taking into consideration processes and tendencies in the European and global printing production market. Using data of the particular printing enterprise, the author determines the enterprise compliance to a certain phase of ELC (Table 7) according to «Model of sustainable performing of small and medium enterprises in the context of ELC» (Figure 9) and «Identification parameters in the context of the enterprise life cycle» (Table 5).

Table 7

Identification of life cycle features of the printing sector enterprise according to the ELC phases

Indicator	2003	2004	2005	2006	2007	2008	2009
Enterprise commercial turnover chain growth rate (Tu), %	4.5	0.6	12.6	7.8	16.7	-2.7	-36.5
Gross profit chain growth rate (Pu), %	-41.2	-6.6	115.2	6.3	30.4	-12.6	-64.0
Balance of cash flow (CF)	-	+	+	-	+	-	-
Operative cash flow (OCF)	+	+	+	+	+	+	-
Financial cash flow (FCF)	-	-	-	+	+	-	-
Investments cash flow (ICF)	-	-	-	-	-	-	+
Chain growth rate of number of clients, %	-1.8	34.3	-12.0	-5.4	3.5	-7.2	-7.0
Level of formalization, %	40	40	40	40	40	40	40
Sector's turnover chain growth rate (Tn), % (ALPC data)	8.3	6.2	23.2	5.9	11.1	10.0	-13.7
Comparison of enterprise turnover dynamics with dynamics of the sector (Tu to Tn)	<	<	<	>	>	<	<
Comparison of enterprise turnover and profit dynamics (Pu to Tu)	<	<	>	<	>	<	<

According to the data of Table 7, the particular enterprise is in its decline phase and according to the performance features and measures (Table 4) of the decline phase, in this phase of ELC: 1) actual level of the indicators to be supervised principally – profitability and liquidity, shall be determined; 2) social and environment influence indicators shall be determined according to the specifics of the sector.

II. Continuous improvement process, which is directed towards sustainable development, foresees the choice of the indicators, that are to be supervised first of all, according to the goals. One of the most important goals of the enterprise performance is connected with sustainable development, taking into consideration the needs of the stakeholders. In order to provide it, indicators that are to be supervised principally, shall be defined according to each phase of ELC: liquidity, marginal revenues, productivity, effectiveness, and indicators of ecological and social influence corresponding to specifics of the sector and in accordance with the concept of

sustainable development. In compliance with the worked out model (Figure 9), the assessment, where according to the phase of the enterprise life cycle, enterprise standard and planned indicators of both profitability and liquidity, which, on their turn, are connected with other indicators characterizing enterprise performance, is being made.

In order to determine **standard value of performance measures**, it is necessary to use characteristics of the sector, which are connected to the turnover per employee or productivity.

Three approaches can be used: 1) to use Central Statistics Bureau of the Republic of Latvia data on turnover per employee in sub-sectors of the manufacturing industry. In this case, size of standard indicator shall be determined according to the structure of enterprise production, that has been analyzed in correspondence with classification (DE 21 and DE 22) of Nace ver. 1.1; 2) to use ALPC data. Then turnover per employee is being determined without taking into consideration structure of the production; 3) it is possible to make a selection of enterprises (competitors), which present similar market position, and using annual reports of the enterprises available in LURSOFT data basis, generalize data and calculate an average turnover per employee.

In calculating planned indicators, the author uses data provided by the ALPC: in 2008, average turnover per employee is 27 007 lats; forecast for 2009 is the following: influenced by reduction of economic activities, turnover of the sector enterprises in relation to 2008 is to decrease by approximately 10%. On January 1, 2009, 65 employees work at the enterprise. It is possible to determine planned and standard indicators of liquidity and profitability by using planned and standard indicators of the net turnover for forecasting results of the financial reports.

2. Defining target values of performance measures. In order for the enterprise to have a possibility to assess achieved effectiveness level, it is necessary to define indicators, which are to be compared with actual figures. Besides, they have to be defined in accordance with quantity and quality of resources attracted, technologies, and demand of the manufactured economic benefit products. The author considers that in accordance with acknowledged, probable levels of effectiveness, totality of potential/ standard and target/ planned indicators shall be formed.

Potential/ standard indicators are connected both with enterprise *maximal possible sales* and *maximal possible rate of production*, that provide revenues and which is defined by the market and enterprise position in the market.

Target/ planned indicators present correction through set restrictions of *possible production and sales rates*. Restrictions are formed along with changes in the market demand and as a result of enterprise internal technical and organizational solutions. These indicators are defined during the process of forming budget, which foresees possibility to use different approaches.

For calculation of liquidity plan and value of standard indicators, enterprise financial stability standard calculation method, which anticipates defining satisfactory level of liquidity for each enterprise, taking into consideration structure of its resources and capital, is being used.

To observe social and ecological indicators in the printing industry, the following indicators connected with production process and realization of the finished product can be chosen: indicator of effective use of paper, which characterizes level of

technology; dynamics of environment expenditures connected with packaging, which includes nature resources tax, nature pollution authorisations and packaging management costs that are related to turnover.

In the group of social impact indicators, the author chooses dynamics of changes in number of sick-leave days, which according to employee's length of service and long-term sick-leave can be related to occupational sickness, as well as dynamics of expenditures allocated to compulsory health checks. As an important indicator, the author mentions expenditures allocated to improvement of professional skills of employees of the enterprise, per employee per year, because it indicates a possibility of enterprise sustainable development using innovations and knowledge as an element of support mechanism.

Basing on data provided by the ALPC and the printing enterprise, standard, target (planned) and actual performance measures of the enterprise according to the decline phase of ELC, are summarized in the Table 8.

Table 8

Standard and planned indicators for the printing enterprise in 2009

Name of the indicator	Size of indicator		
	Standard indicator	Planned indicator	Actual indicator
Turnover, LVL	$0.9 \times 27000 \times 105 = 2\ 502\ 900$	10% decrease of enterprise turnover in 2008 i.e. 1 100 000	838 928
Profitability, %	3.85	1.00	-0.29 (to equalize to 0)
Liquidity, coefficient	Coefficient of satisfactory liquidity= 2.01	Coefficient of satisfactory liquidity = 1.76	Coefficient of actual liquidity = 1.41
Coefficient of effective use of paper	0.85	0.79	0.82
Expenditures allocated to improvement of professional skills per employee, per year, LVL	Aspiration to max. rational possible level	25.00	12.89
Number of sick leave days per employee per year, days	Aspiration to min. rational possible level	11.00 (level of 2005)	17.73

3. Implementation of the action, analysis of the goal and performance measures, developing the action plan. Enterprise obtains actual indicators at the end of a certain period, using information gathered and processed by the enterprise financial and accounting management.

3.1. Unused reserves of efficiency. Determining the unused efficiency is necessary to identify reserves that exist in the enterprise in the context of sustainable development. Analysis of calculation of balance and profit or losses does not reveal

the way enterprise progresses within its life cycle with an investment into sustainable development. On its turn, by using such an approach of unused efficiency reserves, a possibility *to implement activities* exactly for achieving sustainable development, taking into consideration both parties concerned and goals, occurs.

Indicator of liquidity characterizes turnover speed of inventories and debtors, as well as the expediency of investments in the enterprise assets, but the achieved level of implanted plans (0.80) indicates the problems in circulation of assets. The relevant levels of the enterprise liquidity indicator for 2009 are presented in Figure 10.

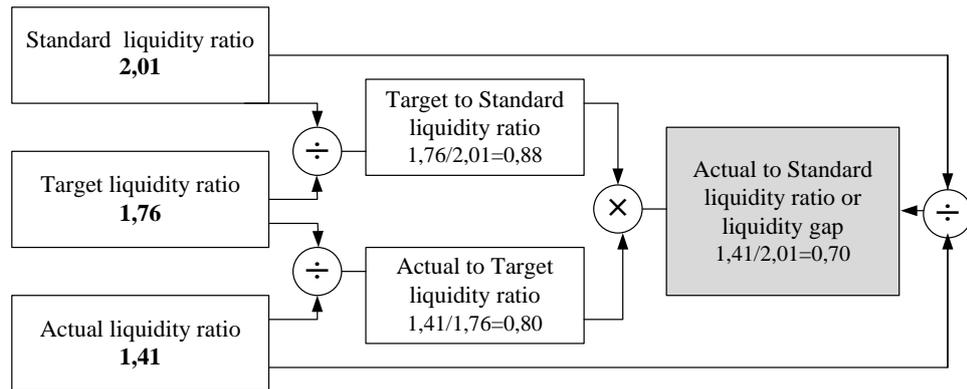


Figure 10. Assessment of the enterprise liquidity indicator

If debtors are one of the main elements of assets in the enterprise, it should be related to inefficiency of the credit-policy developed by the enterprise.

The relevant levels of the enterprise profitability indicator for 2009 are presented in Figure 11.

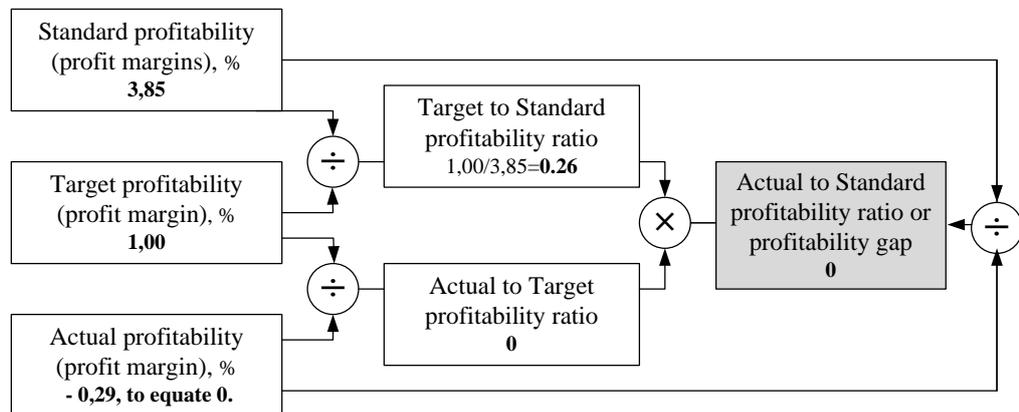


Figure 11. Assessment of the enterprise profitability indicator

Results obtained for comparison (Figure 11) are the following: actual profitability – 0.29; planned – 1.00 and standard – 3.85 shall be standardized, because from the point of view of mathematics, operations with an indicator, which is below or equal to zero (≤ 0) are not possible. In this particular case, size of compensation will be 0.29. Then the actual indicator of profitability is equal to zero, target indicator is 1.29, but standard one, in its turn, is 4.14. Default of the planned is 129%, but of the standard – 414%.

The relevant levels of the indicator of useful consumption of the enterprise paper for 2009 are presented in Figure 12.

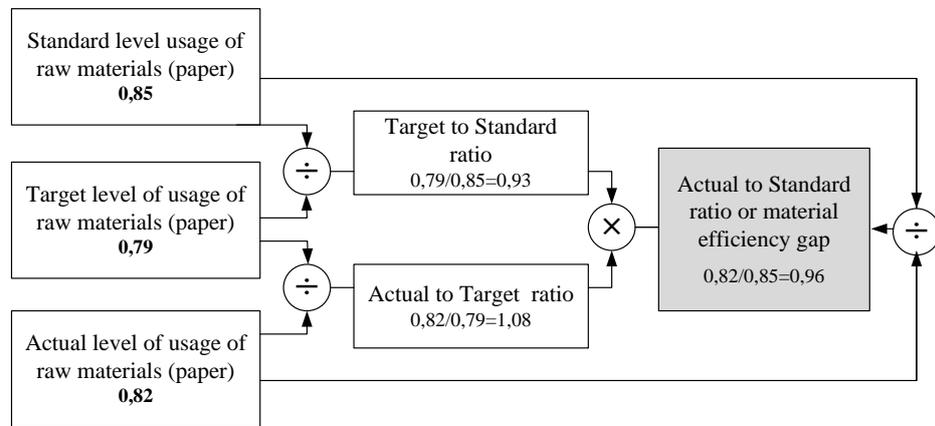


Figure 12. Assessment of the indicator of useful consumption of the paper by the enterprise

Indicator of useful consumption of the paper by the enterprise (Figure 12) indicates that as a result of economic and effective use of the resource, the actual indicator exceeds the planned level by 8%. It means that as a result of implemented management activities, which are connected with improvements of printing process, value of finished product has been maximized. It is important, because in expenditures of raw materials, paper accounts for the biggest proportion not only in quantity, but also in terms of value. Therefore, indicators of useful consumption of paper influence waste paper stock, and coordination of new orders and purchases.

According to data presented in the Table 4, before the aging phase enterprise gets though the maturity phase with its characteristic features and indicators to be supervised principally – liquidity and productivity. Monitoring of these indicators, and especially that of productivity according to standard, planned and actual levels, helps the enterprise in maintaining effective management. The goal of the above mentioned might be prolonging maturity phase as much as possible in order to transfer into the new quality – in the growth phase again, and not to transfer to the decline phase. Problems of the decline phase, which occur in connection with low levels of profitability and liquidity, limit abilities of the enterprise to receive external financing support (bank credit, leasing) which is necessary in this phase to renew technologies and re-structure the enterprise. The author considers that enterprise position in the decline phase indicates the competence level of the enterprise management.

3.2. Action mechanism. *Activities to be implemented* to improve enterprise unused efficiency and effectiveness, according to the author shall be connected with: 1) improvement of the value created by existing and new clients, and revealed by the commercial profitability; 2) improvements, connected with rising productivity, in use of labour force as the basic element of social capital; 3) optimization of cost structure with an aim to reach the lowest possible level of marginal revenues; 4) increasing efficiency of assets utilization. Commercial profitability of the enterprise may change if terms of enterprise income tax (tax rate; algorithm, which is used in tax calculations; cases when enterprise has obtained durable items – equipment and utilities) change.

However, this indicator reflects how profit is being formed during manufacturing and sales of products and services. Knowledge and skills are of crucial importance in promoting innovations. Therefore, innovations, which currently cannot be envisaged without a social cooperation among enterprises and other market players, have to be considered as an element of the possible action mechanism, which provides an opportunity to improve the current level of effectiveness.

The printing enterprise in the decline phase can improve its performances by investments in innovations and technologies, taking into consideration that also the structure of production shall be changed. It can also be done by increasing customer equity, which is connected with revision of relations with existing clients and development according to the chosen strategy. Thus, one of the solutions is connected with increasing customer equity and it allows improving commercial profitability. The author demonstrates parameters of the customer equity of the printing sector enterprise in Figure 13.

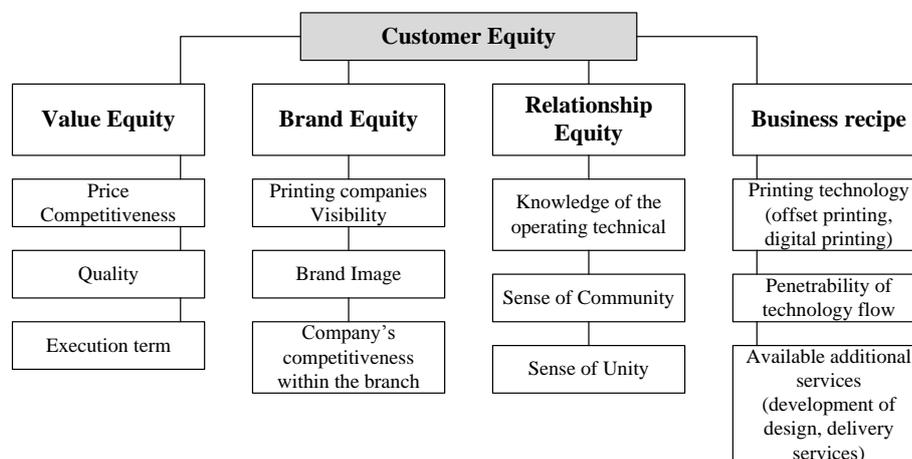


Figure 13. Elements of customer equity in the printing enterprise

The enterprise shall relate management of customer equity with «business technologies», which incorporates technologies of the respective sector and management of resources flows. Thus, the enterprise shall base upon capacity of human capital, because social capital allows human capital to reach its most productive combinations and results. It leads to conclusion that social capital in combination with value system of customer equity delivers the most productive result of cooperation with clients.

Structure of production is being formed from the total annual turnover of the enterprise. Each kind of production relates to a number of clients. However, from the point of view of clients' capital management, the most important clients are the ones with the biggest annual turnover, repeating orders on regular basis. For assessment of customer equity, Pareto principle «80/20» can be used. Assumption, that 20% of existing clients provide 80% of enterprise income, is being applied. The most important parameter of customer equity is the cash flow generated by clients at the present situation and in the future. Therefore, the author made a calculation over one year, in order to find out the number of clients that account for 80% of the total turnover, and how it is reflected in the assortment of the enterprise production. Using

statistical data and selection of clients according to the Pareto principle, the biggest proportion in the products assortment structure belongs to periodicals (newspapers and magazines). It accounts for 37% of total income, which increases up to 44%, if 20% (110 clients) of the total number of clients, which corresponds to the 86% of the total volume of output, are revised. If clients are determined according to 80% of turnover, only 12% (66 clients) of the total number of clients in the particular period corresponds to it, but proportion of periodicals in the products' assortment structure increases up to 49%. From the point of view of customer equity management expenditures for 110 or 66 clients are different. In case the enterprise is small, formalized procedures can be used with those clients, who order products with low structure indicator.

Using changes in assortment of production and clients, thus making products appreciated by clients, as well as amount of income and influence on cash flow more visible. Low coefficient of debtors' turnover demonstrates that clients pay for services late and that payment system used in the enterprise might not correspondent to characteristics of the particular sector. The above mentioned is determined by the settlement policy developed in the enterprise and quality of its debts collection procedures.

It means that from the viewpoint of interaction between the management of customer equity and social capital, qualitative structure of debtors, speed of circulation, proportion of doubtful debtors and lost debts, as well as pace of changes can be mentioned as a result. By changing principles of cooperation with customers, number of contacts has increased (negotiations face-to-face, conversations by telephone, electronic correspondence). The enterprise has created also an interactive homepage. The way the results of the above-mentioned activities influence ability to recover the value of production sold to customers (structure of the payment terms with regard to debtors' cash flow), is presented by the author Figure 14. In general, it can be considered a positive tendency in management of debtors' loans.

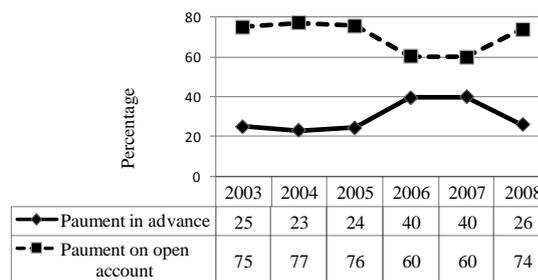


Figure 14. Structure of customers' payment terms in the printing enterprise

Implementation of the credit policy is methodical work, which demands balancing concerns of the enterprise with wishes of the client, and where the element of social capital plays a crucial role. In Figure 15, the author presents implementation of the credit policy over a period of 10 years, using chain growth rate in the printing enterprise.

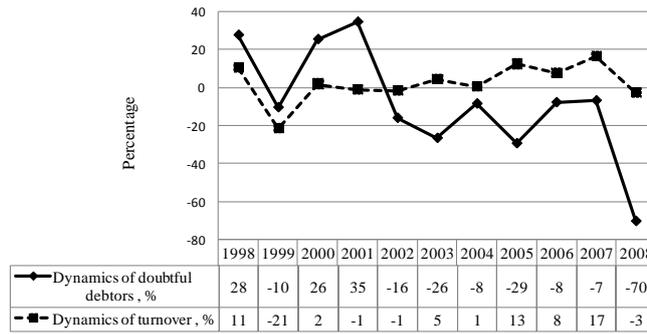


Figure 15. Dynamics of turnover and doubtful debtors in the printing enterprise in period 1998–2008

Customer equity is a value, which is based on reliable, sustainable and mutually beneficial relations between a client and the enterprise. Qualitative management of it shall be carried out, taking into consideration elements, which determine formation of customer equity, as well as a direction of activities between the enterprise and clients. The management of social capital shall be implemented using systemic approach. Attitude, motivation and professional skills of human capital form a certain totality of values, which in synergy of customer equity determine the financial results of the enterprise.

4. Correction of target values of performance measures. Foreseen activities demand revision of target/planned indicators. On its turn, when technical units (number, capacity), number of employees, or space of used facilities of the enterprise change, also potential/standard indicators will change. When the enterprise grows and develops the importance of kind of resources changes respectively, this is a significant parameter for monitoring cost structure from the viewpoint of the enterprise performance. It is also an important parameter, because of the fact that different processes of planning and controlling resources demand different approaches.

During developing the doctoral dissertation, the following **conclusions** have been made:

1. Studies of the cognitions made by theoreticians of the economics field indicate both the significant role of the economic category «small enterprise» in the science of economics and difference of opinions regarding factors influencing performance of these enterprises, especially taking into consideration the transfer from advantages created by physical work to the ones based upon knowledge.
2. From the gathered statistical data, it can be concluded that taking into consideration the big number of small and medium-sized enterprises, which indicates a big investment resource, particularly in attracting labour force, this group of enterprises possesses weak viability and low efficiency. Assessment of the enterprises performance on the level of the national economy, branch and sector reveals problems of low labour productivity, which are also reflected in the financial indicators of enterprises.

3. Factors influencing an enterprise performances form interrelations of conceptual impact. The sector is one of the most important factors of influence, which can both endanger existence of SME and provide new opportunities for this group of enterprises in particular.
4. In addition to traditional classifications of factors influencing enterprise performance, the factors of influence can be grouped also according to their ways of expression and environment that sustains the manifestation of the factor. Thus, possibilities to identify performance features according to their significance and to manage continuous process of improving have been provided.
5. The results of empiric research revealed that the influence of certain external environment factors, which are connected to the age of the enterprise, is not steady as regards the enterprise performance over a long-term period. It is so, because enterprises are located in different regions, their development is cyclic and influence of the factor may be strengthened or weakened by the other factor. Besides, new factors, existence or importance of which has not been evaluated earlier, are developing.
6. Ability of the enterprise to function in a coordinated and systemic manner, without losing capacity of performance in indefinite future, shall be connected with long-term development, which incorporates all three dimensions: social, economic and ecologic. The basis for implementing sustainability is formed by the enterprise management systems, which provide functional efficiency and effectiveness of sub-systems, taking into consideration principles of sustainable performance.
7. Taking into consideration the fact that all the dimensions of sustainability are equally important, the enterprise viability in long-term depends on the enterprise innovative potential, which is based on creative approach that is implemented by all stakeholders – not only employees, but also shareholders and customers.
8. Significant factors providing sustainability of the enterprise are formed in the social environment, because, in the context of an enterprise performance, management of knowledge, human and social capital is the «process of value creation», which shall be maintained taking into consideration the peculiarities of human resources management.
9. Recognition of social capital as the economic category indicates the influence of the latter on the enterprise capacity to secure productive and competitive performance and sustainable development. It is because the above-mentioned factor minimizes operational costs allocated for obtaining information, speeds up circulation of information, lessens asymmetry of information and promotes development of new knowledge.
10. Assessment of results is a crucial condition for providing sustainable development. It is enhanced also by knowledge, professionalism and skills of the subjects involved in the process of assessment, as well as by compliance of the above to the needs of the particular enterprise.
11. Choice of tools for assessing results and business management is broad, and it provides an opportunity to use particular tools also for providing

sustainable development. However, each enterprise shall evaluate, which method or approach is the best taking into consideration specifics of enterprise activities, structure of management and resources available.

12. It is impossible to apply standardized, identical indicators for performance assessment for all the enterprises, because each of them in a way is a unique formation identified by belonging to a particular sector, as well as organizational structure and management style of the enterprise.
13. Development of the enterprise is cyclic. It is being created as a totality of stages, which forms uniform phases characterized by specific goals and tasks. Fulfilment of which fully drives the enterprise towards sustainable development.
14. An enterprise sustainable performance is connected with certain parameters, which change along the transfer from one stage of the life cycle to another. These parameters change, because goals, strategy, organizational structure, processes, technology and culture change. Thus the enterprise management, which is directed towards solution of the problems that are characteristic to the respective phase of the enterprise life cycle, is to be considered as a pre-condition enabling enterprise sustainable performance.

During elaborating the doctoral thesis, several **proposals** how to increase efficiency and effectiveness of small and medium-sized enterprises were made:

1. In order to improve results achieved by small and medium-sized enterprises and maintain sustainable development, the author recommends complementing indicators of the enterprise management system with economic, environment and social indicators, which correspond to the specifics of the sector of the particular enterprise. It shall be done to define standard and planned indicators in each dimension of sustainability.
2. Indicators, which are to be supervised principally and correspond to the phase of enterprise life cycle, shall be included in the competence of the enterprise financial and management accounting along with other indicators selected by the enterprise and characterizing enterprise performances. It shall be done to provide sustainable development and management decision-making in due time to reach this goal.
3. In case factors influencing an enterprise performances change or new ones that are unknown up to the current situation and related to the latter, develop, methodology, according to which significance of factors influencing enterprise performance and performance measures in correspondence with phases of the enterprise life cycle is determined, shall be improved. Specifying manifestations of factors of influence, the enterprise performance can be increased.
4. Taking into consideration phases of enterprise life cycle and applying the developed model of sustainable performing for small and medium-sized enterprises that can be used for performance control and management in the context of sustainable development, SMEs can improve their action mechanism according to the actual needs of the enterprise.

5. In order to obtain complete quantitative information about processes that characterize investment of enterprises in solving environmental and social issues by sectors and in the state in general, which is necessary to determine standard performance measures of the enterprise, the following shall be done. Publicly available statistical data shall be complemented with the following indicators: investments in human resources – *improvement of knowledge and professional skills, which is financed by the employer, and number of sick-leave days (hours) within the accounting period.*
6. In order to improve performances of small and medium enterprises, which is based upon vast knowledge about the enterprise «from its birth till death», it is necessary to include issues connected with development regularities of enterprise life cycle, its linkage with cyclic development of the sector and economics at large, in the curriculum of management sciences and incorporate the above-mentioned in the program of subjects related to business economics.