RIGA TECHNICAL UNIVERSITY
Faculty of Engineering Economics and Management
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STRATEGIC FIT ASSESSMENT FOR ENHANCING MANUFACTURING COMPANY'S DEVELOPMENT

Summary of the Doctoral Thesis

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DECLARATION OF ACADEMIC INTEGRITY

I hereby declare that the Doctoral Thesis submitted for the review to Riga Technical University for the promotion to the scientific degree of Doctoral of Economics is my own and does not contain any unacknowledged materials from any source. I confirm that this Doctoral Thesis has not been submitted to any other university for the promotion to other scientific degree.

Vladimirs Šatrevičs ……

___ November 2016

The Doctoral Thesis has been written in English. The Doctoral Thesis comprises an introduction, three chapters, conclusions and proposals, as well as bibliography with 467 reference sources; it has been illustrated by 23 tables and 56 figures. The volume of the present Doctoral Thesis is 169 pages, not including 23 appendices.

The Doctoral Thesis and Summary are available at the Scientific Library of Riga Technical University, 5 Paula Valdena Street 5.

To submit reviews, please contact the Secretary of RTU Promotion Council "RTU P-09", professor, Dr. oec. Konstantins Didenko, Riga Technical University, 6 Kalnciema Street, Riga, LV-1048, Latvia.
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INTRODUCTION

In most economies, both developed and developing, manufacturing is viewed as a necessary step towards economic development. Manufacturing in Europe plays a vital role in a sustainable economy, and the EU Commission considers that a strong industrial base will have key importance for recovery and competitiveness of Europe's economy.

The economic contribution from industrial activities is much greater than can be evaluated from the share of manufacturing sector in GDP. Competitive manufacturing sector is the major source of technological progress and a significant driver of total factor productivity (hereinafter – TFP). Manufacturing sector's TFP is outpacing the growth of total Europe's economy. Moreover, manufacturing sector is essential to the European economy since it is an important source of demand for many services due to the strong interdependences between manufacturing and services.

Transformation of a global economy and development of complex global production systems and networks have played a central role in scientific debates. Globalization has created market dynamics promoting contemporary strategies and demanding higher levels of efficiency. Developing economies experienced international patterns of competitive advantage, which are moving from traditional industrial production advantages to a direction of advanced economies and high industrial added value production, by joining global value chains. Latvia's manufacturing sector predominantly consists of small and medium sized enterprises that are integrated into global value chain markets. Nowadays manufacturing products with high added value are based on company's intangible assets. Drivers of this new industrial transformation are complex and include change in value, value factors and innovations in manufacturing technologies. Integration of services and manufacturing products creates new hybrid production systems and hybrid products. Traditionally, manufacturing was understood as a process focused on the transformation of raw materials into completed goods. New industrial revolution, after mechanization and automation, is the digitization and network connectivity of all industrial processes and products. Manufacturing process has become technologically sophisticated.

Nowadays manufacturing is a process that includes many knowledge-based values making industrial systems more competitive, since ensuring sustainable development requires radically new strategies. Competitive manufacturing sector is one of Europe's key strengths in the global market. This transformation in manufacturing value is the future of manufacturing and becomes a significant step towards development of new forms of advanced manufacturing or knowledge-based manufacturing.

Thus, the study of manufacturing companies and the process of industrial value transformation have attracted substantial attention. Modern organisation theory has generated important questions and challenges to conventional sociological and organisational theories and modes of analysis, along with a plenty of interpretations for contemporary organisation practices. These developments are related to "conditions of postmodernity" – dynamic environment and a post-industrial society with information and knowledge-based nonhomogeneous values as a central research topic. As a result, it should be stressed that nowadays manufacturing is directly linked to the adjustments in values as a shift to post-industrial modes of production. Current industrialisation concept should represent the intellectual capital approach, providing framework for the practical applications and explaining the modern company value creation process that corresponds to transformation into post-industrial economy.

The statements discussed above allow concluding that the development of conventional manufacturing companies is no longer dominant in the post-industrial economy. For the purposes of the modern approach, information and knowledge-based perspectives are useful in understanding the structural changes associated with the economy transition into post-

industrialism. Integrating new relationships with customers, information and knowledge-based perspectives and organisation development theory in dynamic environment in the context of industrialisation is a relevant and problematic issue of management science. The solution of it could expand the field of management research and fill the gaps of scientific discussion on the topic.

According to the arguments presented above in the Doctoral Thesis, the following **research questions** are formulated:

- What is the role of industrialisation in the development of a manufacturing company?
- What industrialisation factors affect competitive advantage of manufacturing companies?
- What are the characteristics of development for a manufacturing company in the dynamic environment?
- What is the impact of intellectual capital approach on competitive advantage creation for manufacturing company's strategic development?
- What is the role of strategic fit for competitive advantage development of a manufacturing company?

The aim of the research is to develop the model of strategic fit for manufacturing company's development within the dynamic environment of post-industrial economy, which allows managers to achieve maximum competitive advantage in the market and provide recommendations on value added management.

In order to reach the formulated aim, the following research objectives are set:

1. To determine the role of the industrialisation in the strategic development of a manufacturing company.
2. To identify the industrialisation factors affecting the development of manufacturing company using exploratory and field research.
3. To reveal the link between value added creation and competitive advantages of a company through industrialisation. To identify main competitive advantages in modern environment.
4. To determine framework for strategic development of a manufacturing company within the dynamic environment.
5. To explore the intellectual capital elements critical for strategic fit and evaluate the influence of intellectual capital on creation of competitive advantages for strategic development of a manufacturing company.
6. To investigate the role of strategic fit for manufacturing company competiveness.
7. To develop the model of strategic fit for manufacturing companies. To test empirically the models developed within conducted research on the base of manufacturing companies operating in Latvia, revealing the structure of relations among model elements.

The research object is Latvian companies working within the manufacturing industry.

The research subject is strategic development of manufacturing companies within the dynamic external environment of post-industrial economy.

Limitations of the Research

When examining differences of competitiveness evaluation in companies of different sizes and sectors, the groups have been comparatively small; therefore, any generalisations have to be made cautiously. Only publicly available data have been used in the research; research pool has been limited by the manufacturing industry up to 2015.

Structure and Volume of the Doctoral Thesis:
The Doctoral Thesis consists of the introduction, four chapters, conclusions, and recommendations. The volume of the Thesis is 168 pages, excluding appendices. The content of the Doctoral Thesis has been illustrated by 56 figures and 23 tables. The Doctoral Thesis has 23 appendices. The bibliography contains 467 reference sources. The content of the Thesis covers both a theoretical and empirical study. The author has published 15 articles about the topic of the study and its results, all of them have been published in peer-reviewed scientific proceedings. Results of the Doctoral Thesis have been presented at 10 international scientific conferences, approbated during EKOSOC-LV research and study process.

The Doctoral Thesis has the following structure:
INTRODUCTION
1 COMPETITIVE ADVANTAGES AND THEIR APPLICATION FOR THE DEVELOPMENT OF MANUFACTURING COMPANY
1.1 Manufacturing Industry Contribution to the National Economy of Latvia and EU
1.2 General Competitive Advantages of a Company within Economic Theory
1.3 Competitive Advantages of a Manufacturing Company within Different Stages of Industrialisation
1.3.1 Mechanisation and the 1st Industrial Revolution
1.3.2 Industrial District as a Result of the 2nd Industrial Revolution
1.3.3 Global Value Chains and the 3rd industrial revolution
1.3.4 Evolution of Industrial Values towards Post-industrial Society
1.4 Resource-Based View Approach in Creation of Sustainable Competitive Advantage for a Manufacturing Company
1.5 Relationship among Creation of Competitive Advantage, Strategy and External Environment
2 THEORETICAL FRAMEWORK FOR STRATEGIC FIT CREATION IN MANUFACTURING COMPANY
2.1 Organisation Development and Nature of Change
2.2 Strategic Context of Organisation Development for Strategic Fit Model
2.3 Elements of Intellectual Capital Crucial for Strategic Fit
2.4 Conceptual Framework of Manufacturing Company's Strategic Development
2.5 Quantitative Model of Competitive Advantage Assessment
3 STRATEGIC FIT MODEL FOR ENHANCEMENT OF MANUFACTURING COMPANY'S DEVELOPMENT
3.1 Research Design and Methods for Evaluation of Factors Effecting Manufacturing Companies Strategic Development
3.2 Questionnaire Structure and Profile of Respondents for Identification of Factors
3.3 Survey Results about Increasing Manufacturing Company Competitiveness
3.4 Quantitative Model for Evaluation of Manufacturing Industry Competitiveness
3.5 Creation of Integrative Model for Assessment of Manufacturing Company's Strategic Fit
3.6 Equilibrium Ratio as a Tool for Finding Manufacturing Company's Strategic Fit
3.7 Approbation of Integrative Model of Strategic Fit for Manufacturing Company
CONCLUSIONS AND RECOMMENDATIONS

Logical structure of the research is determined by the aim of the research and consistency of research objectives. Figure 1 shows the structure reflecting logics of the research.

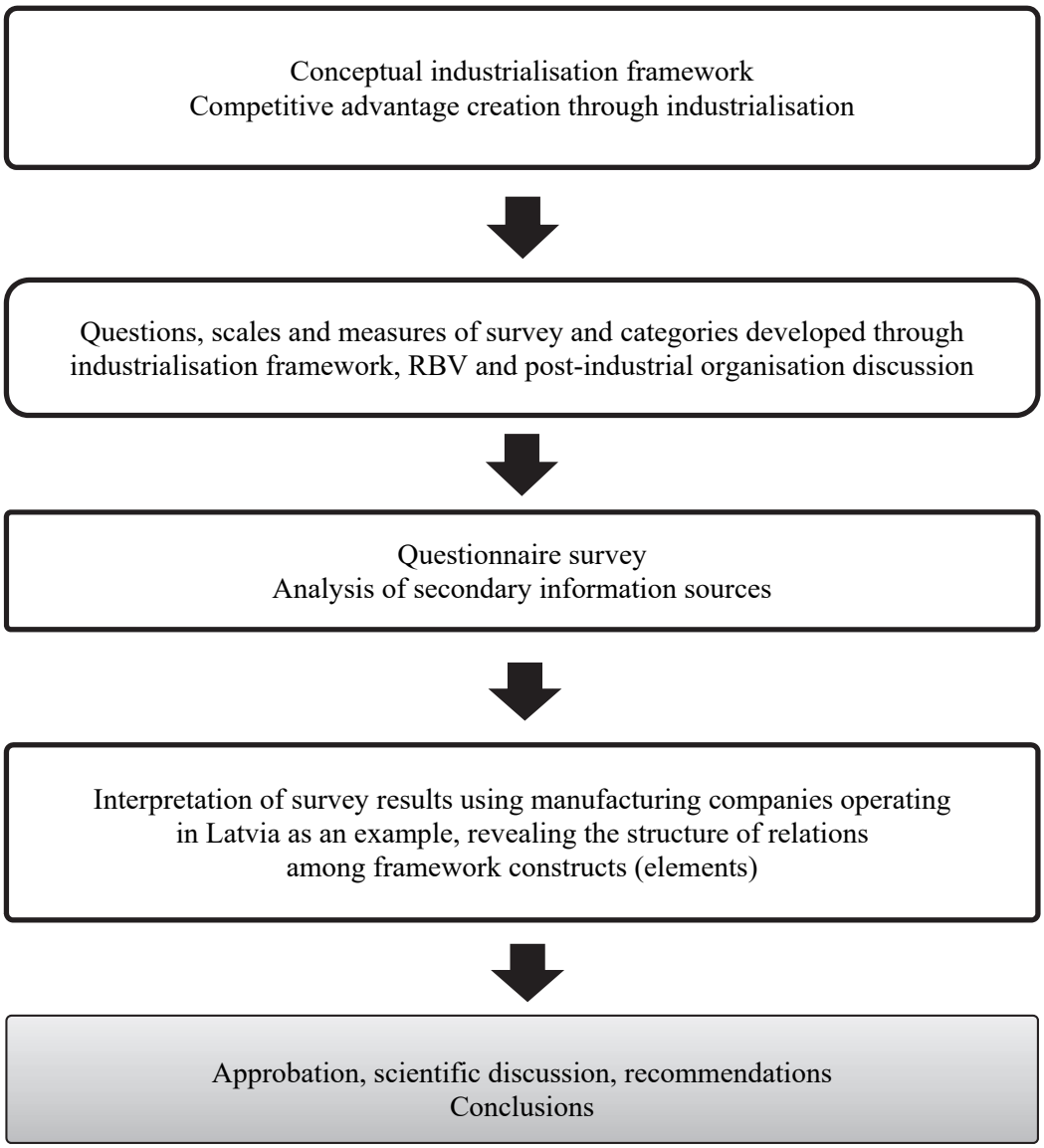

Fig. 1. Logics of the research.
Source: created by the author.

Chapter 1. At the beginning of the chapter, major competitive advantages in economic theory are discussed. The extensive analysis of industrialisation factors and investigation on the development of industrialisation and its influence on the traditional manufacturing company development are performed. Evolution of industrialisation framework is modelled and new industrial factor groups are discovered. Furthermore, the origin of the concept of postmodern organisation is examined; adjustments in values as a shift to post-industrial modes of production are discussed. An integrated model of modern production process in the manufacturing company is presented by the author. Resource-based view approach in creation of sustainable competitive advantage for a manufacturing company is overviewed. Moreover, the "change concept" and its nature as one of the fundamental aspects in the postmodern organisation, as we are operating in a dynamic environment, are discussed.

Chapter 2. On the basis of literature review, change as a central cornerstone for organisation development as well as transformational factors of change associated with the external environment are discussed. Secondly, the linkage between the external environment and strategy process is analysed. External environment, strategy and structure bi-directional relationship is also discussed by the author. Thirdly, IC approach is overviewed. IC elements

critical for strategic fit are investigated. Discovering competitive advantage creation through intellectual capital, model of intellectual capital and value creation relationship is presented. Finally, conceptual framework of manufacturing company' strategic development based on industrialisation factors and intellectual capital approach interrelation is presented by the author. Model for quantitative evaluation of competitive advantages based on manufacturing company's value creation and dynamic business model for manufacturing company's strategic development is proposed.

Chapter 3 includes the research methods, design and description of the processes for collecting and analysing data. The design, specific research questions, population and sampling frame are discussed. The topics of data collection and analysis techniques, validity and reliability, and the feasibility and appropriateness of the methodology are also explored. Survey data results are described. Different changes emerged in the survey data based on the interviewing process are analysed. Survey blocks are created as the description of the notions of the phenomenon studied. In the current chapter, an analysis of the survey data is performed through the evaluation of lived perceptions, perspectives and experiences of 368 manufacturing company's executives and non-executives who are directly or indirectly involved in the development and execution of the strategy for achieving and maintaining competitive advantage in the market. Equilibrium ratio as a tool for finding manufacturing company's strategic fit is created and approbation of integrative model of strategic fit of manufacturing companies is performed.

The Main Scientific Contributions and Novelty of the Doctoral Thesis:

1. **Major industrialisation factor groups** affecting creation of manufacturing companies' competitive advantages are identified (p. 16).
2. **Conceptual framework of manufacturing company' strategic development based on industrialisation factors and intellectual capital approach interrelation** is created (p. 21).
3. **Quantitative conceptual model** for evaluation of competitive advantages based on manufacturing company's value creation is developed (p. 22).
4. **Dynamic business model** for manufacturing company's strategic development based on industrialisation factors and intellectual capital approach interrelation is constructed as an alternative tool (p. 23).
5. **Approach for measuring competitiveness level of manufacturing companies** is developed (p. 26).
6. **Quantitative factor model** for assessment of competitiveness of manufacturing companies is elaborated (p. 29).
7. **Integrative model of strategic fit for evaluation of manufacturing company's development** is created (p. 31).

The hypothesis of the Doctoral Thesis is stated as follows: *Industrialisation factors in combination with intellectual capital are strengthening manufacturing company's strategic development within the dynamic environment of post-industrial economy.*

Thesis Statements to Be Defended:

1. It is possible to determine major factor groups within industrialisation factors affecting competitiveness of manufacturing companies.
2. Modern framework of manufacturing company's strategic development should be studied in the context of dynamic environment.
3. It is possible to develop a quantitative model for measuring manufacturing company's competitiveness.

4. Industrial factors in combination with intellectual capital approach determine manufacturing company's competitive advantages and sustainable strategy development.

Practical Contribution and Key Benefits of the Doctoral Thesis:
The practical contribution of the Thesis is the integrative model of strategic fit for manufacturing company's strategic development, providing identification of factors affecting competitiveness in the process of achieving sustainable strategic development and assessing company's individual competitiveness level in the industry. Empirical study of manufacturing companies operating in Latvia has practical contribution for industry experts and practitioners responsible for strategic planning. Evaluation of the effect of industrialisation factors on competitiveness helps in the strategic decision-making process.

International Scientific Publications on the Theme of the Research
The results of the Doctoral dissertation have been reflected in 15 scientific publications:

1. Shatrevich, V., and Gaile-Sarkane, E. (2015). A strategic fit relation model as a tool for organization development. *Cybernetics and Informatics*. USA, Orlando, pp. 94–99. ISBN 9781941763049.
2. Shatrevich, V., Ščeulovs, D., and Gaile-Sarkane, E. (2015). Success of a company through value approach. *Journal of Positive Management*, pp. 20–33. DOI:/10.12775/JPM.2015.008.
3. Shatrevich, V., and Strautmane, V. (2015). Industrialisation factors in post-industrial society. *Entrepreneurship and Sustainability Issues*, Vol. 3, pp. 157–172. ISSN 2345-0282. DOI:10.9770/jesi.2015.3.2(4).
4. Shatrevich, V., Ščeulovs, D., and Gaile-Sarkane, E. (2015). Dynamic intellectual capital model in a company. *Business, Management and Education*, Vol .13, No. 1, Iss. 1, pp. 76–94. ISSN 2029-7491. DOI: 10.3846/bme.2015.265.
5. Shatrevich, V., Tamošiūnienė, R., and Survilaitė, S. (2015). Intellectual capital approach to modern management through company's value added perspective. *Business: Theory & Practice*, Vol. 16, Issue 1, pp. 31–44. DOI: 10.3846/btp.2015.553.
6. Shatrevich, V., and Ščeulovs, D. (2014). Using of e-environment as a tool for value creation in a company. *The 18th World Multi-Conference on Systemics, Cybernetics and Informatics*, pp. 62–67. ISBN 9781941763049.
7. Shatrevich, V. (2013). Organizational structures in industrial organizations. *54th International Scientific Conference of Riga Technical University on Economics and Entrepreneurship (SCEE'2013)*: Proceedings, RTU Press. ISBN 9789934102943.
8. Shatrevich, V. (2014). Industrial structures as competitive factor in organization development. *Procedia Social and Behavioral Sciences: Contemporary Issues in Business, Management and Education*, Vol. 110, pp. 871–878. DOI:10.1016/ j.sbspro.2013.12.932.
9. Shatrevich, V. (2013). Industrial development for manufacturing companies. *Practice and Research in Private and Public Sector-13*, Mykolas Romeris University, pp. 141–149. ISSN 2029-7378.
10. Shatrevich, V. (2012). Competition factors for manufacturing companies in Latvia. *53rd International Scientific Conference of Riga Technical University (SCEE' 2012):* Conference proceedings, RTU Press, pp. 558–558. ISBN 9789934103605.
11. Shatrevich, V., and Zvanitajs, J. (2012). Competition and strategy for manufacturing companies. *International Academic Conference IISES*, University of Economics in Prague.

12. Shatrevich, V., and Zvanitajs J. (2012). Strategy role for manufacturing industry. *Economics and Management*, Vol. 17, Iss. 1, pp. 223–229. DOI: 10.5755/ j01.em.17.1.2271.
13. Shatrevich, V., and Zvanitajs, J. (2012). Industrialisation level and export performance. *Business and Management*, pp. 928–936. DOI: 10.3846/bm.2012.119.
14. Shatrevich, V., and Zvanitajs, J. (2011). Labor productivity research for Latvian production branch export companies. *Economics & Management*, Vol. 16, pp. 316–322. ISSN 1822-6515.
15. Shatrevich, V. (2011). Production function estimation in manufacturing industry of Latvia. *The 9th International Conference "Challenges of Europe: Growth and Competitiveness – Reversing the Trends"*: Conference proceedings. University of Split.

Other Publications:

1. Shatrevich, V., Ščeulovs, D., and Ozoliņa-Ozola, I. (2015). Development of E-recruitment as e-business model based on business model ontology. *Systémová integrace*, Brno University of Technology, pp. 402–414. ISSN 1214-6242.
2. Shatrevich, V., and Ščeulovs, D. (2015). Internet of Things as a framework for recruitment's business model? *Mathematics and Computers in Sciences and Industry: 2015*. Sliema: CPS, pp. 125–131. ISBN 978-1-61804-327-6.
3. Shatrevich, V. Small business' sustainable strategy. *Proceedings of the International Scientific Conference "Whither Our Economies"*. Mykolas Romeris University, pp. 54–62. ISSN 2029-8501.
4. Shatrevich, V. (2012). Industrialisation level and export. *2nd International scientific conference: Practice and Research in Private and Public Sector – 12*. Mykolas Romeris University, pp. 363–372. ISSN 2029-7378.
5. Shatrevich, V. (2012). Cost management evolution for manufacturing companies. *International Scientific Conference European Financial Systems*. Masaryk University, pp. 201–206. ISBN:978-80-210-5940-5. Web of Science: 000316422800035.
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8. Shatrevich, V., and Zvanitajs, J. (2011). Export competitiveness in Latvian manufacturing branch. *International Conference on Business, Finance and Tourism Management, WASET*. World Academy on Science Engineering and Technology, pp. 68–74.
9. Shatrevich, V., and Zvanitajs, J. (2011). Export and manufacturing productivity growth effect on macroeconomic situation in Latvia. *Practice and Research in Private and Public Sector -11*. Mykolas Romeris University, pp. 308–315. ISSN 2029-7378.
10. Shatrevich, V., and Zvanitajs, J. (2011). Export volatility and government policy for production branch. *52nd Scientific Conference on Economics and Entrepreneurship of Riga Technical University (SCEE'2011)*, p. 93.
11. Shatrevich, V. (2011). Export competitiveness: Latvian manufacture branch in the global market. *Proceedings of the International Scientific Conferences of Faculty of Social Sciences of Daugavpils University*. Daugavpils, pp. 171–178.
12. Shatrevich, V. (2011). Production branch development and government's economic policy. *1st International Scientific Conference "Whither Our Economies"*. Mykolas Romeris University, pp. 281–293.

13. Shatrevich, V. (2010). The impact of the government's fiscal policy on economic development. *International Scientific Conference on European Financial Systems 2010*. Masarykova Univerzita, pp. 167–171. ISBN 9788021051829.
14. Shatrevich, V., and Zvanitajs, J. (2010). Industrial production branch's development scenarios in Latvia's national economy. *Conference proceedings*, pp. 56–57. ISBN 9789934100611.
15. Shatrevich, V. (2011). Problems of legislative provision of innovation and business. *Legal Provision of Innovative Development of Society and the State*. Belorussian Government University, pp. 134–136. ISBN 9789855181461.
16. Shatrevich, V. (2010). Innovations in Latvian business environment. *XXI Management, Efficiency, Quality, Sustainable Development. X International Scientific Conference*. Herzen State Pedagogical University of Russia, pp. 236–238. ISBN 9785806416132.
17. Shatrevich, V., and Zvanitajs, J. (2010). The role of innovation in production and country growth. *Proceedings of the 1st International Conference of Young Scientists "Economics and Management 2010 (EM-2010)*. Publishing House of Lviv Polytechnic, pp. 62–64. ISBN 9786176070009.

Participation in Conferences:

1. Shatrevich, V., Ščeulovs, D., and Gaile-Sarkane, E. (2014). Dynamic intellectual capital model in a company. *Sustainable Economic Development*, Lithuania, Vilnius, 13–14 November 2014. Lietuva: VGTU.
2. Shatrevich, V., Tamošiūnienė, R., and Survilaitė, S. (2014). Intellectual capital approach to modern management through company's value added perspective. *Sustainable Economic Development*, Lithuania, Vilnius, 13–14 November 2014. Lietuva: VGTU.
3. Shatrevich, V. (2013). Industrial development for manufacturing companies. *3rd International Scientific Conference "Practice and Research in Private and Public Sector-13"*, Lithuania, Vilnius, 11–12 April 2013. Vilnius: Mykolas Romeris University.
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7. Shatrevich, V. (2012). Small business' sustainable strategy. *Proceedings of the International Scientific Conference "Whither Our Economies"*, Lithuania, Vilnius, 15–16 October 2012. Vilnius: Mykolas Romeris University.
8. Shatrevich, V. (2012). Competition factors for manufacturing companies in Latvia. *53rd International Scientific Conference of Riga Technical University (SCEE' 2012):* Conference proceedings, RTU Press Latvia, Riga, 12 June 2012.
9. Shatrevich, V., and Zvanitajs, J. (2012). Strategy role for manufacturing industry. *17th International Scientific Conference "Economics and Management-2012" (ICEM-2012).* 28–30 March 2012, Tallinn School of Economics and Business Administration of Tallinn University of Technology, Tallinn, Estonia.

10. Šatrevičs, V., and Zvanītājs, J. Labor productivity research for Latvian production branch export companies. *The 17th International Scientific Conference "Economics and Management" (ICEM-2012)*, Estonia, Tallinn, 28–30 March, 2012. Kaunas: Kaunas University of Technology.
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12. Shatrevich, V. (2012). Cost management evolution for manufacturing companies. *International Scientific Conference "European Financial Systems 2012"*. Masaryk University, Brno, Czech Republic, 21–22 June 2012.
13. Shatrevich, V., and Zvanitajs J. (2011). Export volatility and government policy for production branch. *52nd Scientific Conference on Economics and Entrepreneurship of Riga Technical University.* Riga, 7 October 2011.
14. Shatrevich, V. (2011). Export competitiveness: Latvian manufacture branch in the global market. *International Scientific Conferences of the Faculty of Social Sciences of Daugavpils University*. Daugavpils, 5 November 2011.
15. Shatrevich V. (2011). Production branch development and government's economic policy. *1st International Scientific Conference "Whither Our Economies"*. Mykolas Romeris University. Lithuania. 16–17 November 2011.
16. Shatrevich, V. (2011). Production function estimation in manufacturing industry of Latvia. *The 9th International Conference "Challenges of Europe: Growth and Competitiveness – Reversing the Trends".* Croatia, Split-Bol, 26–28 May 2011. Split: University of Split. Faculty of Economics.
17. Shatrevich, V., and Zvanitajs, J. (2011). Innovation problems in production branch in Latvia. *Enterprise and the Competitive Environment: 14th Annual International Conference*. Czech Republic, Brno, 10–11 March 2011. Brno: Mendel University.

1. COMPETITIVE ADVANTAGES AND THEIR APPLICATION FOR THE DEVELOPMENT OF MANUFACTURING COMPANY

At the beginning of the chapter, manufacturing industry contribution to the national economy of Latvia and EU is analysed. It is concluded that the manufacturing sector has great impact on technological progress and is a significant driver of total factor productivity. Manufacturing sector's TFP is outpacing the growth of total Europe's economy. Moreover, the manufacturing sector is essential to the European economy since it is an important source of demand for many services due to the strong interdependences between manufacturing and services. In the face of the challenge of global competition, it seems to be lacking clear sustainable competitive advantages in the development strategy of Latvian manufacturing companies. Their characteristics should be providing manufacturing companies with rare and hardly copied advantages.

Major competitive advantages in the economic theory are discussed by the author. The basic starting point for understanding of competitive advantages crucial for manufacturing companies and, thus, value creation is an overview of the major competitive advantages in industrialisation development. The author highlights that in the economic literature better productivity of a manufacturing company has become synonymous with better efficiency. The author underlines that industrialisation in its core is also sharing the same concept – to improve the resource management efficiency through the development of technical rationalisation and efficient organisational structure.

The author finds that an attempt to identify the starting point for modern concept of industrialisation as an economic paradigm has its roots in resource efficiency of production process and as a result in productivity. The author defines the starting point for industrialisation in the process of technical modernisation. The author highlights that very often in the economic literature the efficiency of a company nowadays is expressed through productivity. Productivity played a major role in the company development. Fundamental basis for the fast evolution of the productivity theories was established by F. Taylor. Economist Daniel (Daniel, 1992) in his study also indicates that the concept of industrialisation revealed great opportunities and changed its development owing to the research by F. Taylor. Nowadays, a variety of economic theories offer a huge number of different ways to achieve efficient (utility of resources) use of company resources. Discussing the major schools of economic history, as a conclusion, the author underlines that industrialisation in its core is also sharing the same concept – to improve the resource management efficiency through the development of technical rationalisation and efficient organisational structure.

For company it is vitally necessary to build an effective production system at first and in order to be successful a company is developing, improving production process and supporting the organisation structure. Consequently, economists confirm that the fundamental basis and the purpose incorporated into the core model of behaviour of any company is a long-term ability (sustainable ability) to achieve or maintain the growth of the economic efficiency by managing its resources. It can be summarised by saying that modern industrialisation has core methods of improving productivity through centralisation of resources, organisation of labour, optimisation of company structure, technological innovation, and modern methods of mechanisation of the production process.

The analysis of industrialisation performed by the author in the present research begins with the indentation of the historical discussion of organisational analysis through the 20th century industrial modernity. In the research, new major industrialisation factor groups affecting creation of manufacturing companies' competitive advantages are to be discovered. In order to fully analyse and create a picture of changes and development of the national economy towards

modern society, it is necessary to follow the changes in the concept of industrialisation; management of production processes and the main directions of research in this field.

The author proposes to trace all the major stages of industrialisation and presents major factors that influenced world economy transformation during the First Industrial Revolution (FIR). Industrialisation at that time was an attempt to use more effective methods of production through mechanisation, division and special organisation of labour, as well as social organisation, processes of relation among the participants of the production process, which could provide a more efficient method of production, instead of traditional ones (Table 1).

Table 1

Major Factors Groups of Industrialisation that Influenced Transformation of World Economy during the FIR

Factorgroups	Impact description	Author
High productivity of labour through mechanisation	The process of industrialisation is essentially an effort to break with an economic order characterised by a low productivity, impossible or difficult to augment.	Orchard, 1960
	Impact of mechanisation during industrialisation 'eases the skilled labour shortage in many instances and lowers skill requirements' or gives 'the advantage to increase productivity even with less skilled labour.	Bright, 1958
	Industrialisation contribution to society development – industrial society is based on a labour theory of value.	Bell, 1973
	Increases in productivity as a result of the use of mechanical power and machinery, 'the displacement of traditional skills by machinery'	K. Marx 1884 Toynbee, 1969
Innovation in technology and organisational design	Technological and organisational changes in the cotton industry have been widely studied to understand the nature of economic change.	Postan et al., 1978
	Industrial revolution was triggered by the invention of the steam engine, the replacement of hand labour, and the shift to more capital-intensive methods of production.	Mantoux, 1983
	Economy development model based on industrialisation elements. Model reviews technology breakthroughs in production process on economy growth.	Mokyr, 1975
	Innovations in economic organisation, social relationships and technology as structural factors. "Innovative Leadership" effects. Concentration of capital and the creation of innovation relationship; an industry cluster presents new opportunities for innovation.	Schumpeter, 1939; Mariotti et al., 2008

Source: Major factor groups distinguished by the author based on Orchard, 1960; Brigh, 1958; Bell, 1980; Marx, 1884; Hobsbawm, 1968; Mantoux, 1961; Mokyr, 1976; Schumpeter, 1939.

The second factor category in the research entails external economic effects, including the urbanised economy, localised economy, and the extent of industry specialisation (Table 2). The second factor category is the major industrialisation factors that influenced world economy transformation during the Second Industrial Revolution (SIR). Numerous empirical data are obtained from areas in which there is a high concentration of capital. One of the favourite research cases was Chicago Manufacturing Belt. Debates about the rise of industrial concentrations such as Chicago have focused on the relationship among regional growth, interfirm relations and innovation. These concentrations have been given different names, from new industrial spaces and industrial districts to knowledge clusters and learning economies. In Europe, the concentration of capital is known from the economic research in Italy, Spain, France and other countries. Companies with large workforce, noticeable machinery and high degree of vertical integration are associated with concentration of capital. Large firms remained

centrally located because the problems and costs of moving were too great, and they continued to rely on proximity to other suppliers and customers, many of whom were centrally located. A large number of studies have identified industrial structure, capital density, technology adjustment capacity, labour quality, and agglomeration economies to exist among the main factors affecting urban productivity (Beeson & Husted, 1989; Moomaw, 1983; Williams & Moomaw, 1989).

Table 2

Major Factors Groups of Industrialisation that Influenced Transformation of World Economy during SIR

Factor groups	Impact description	Author
Internal capital concentration (industrial productivity)	Large, vertically-integrated structures embracing research and development, marketing and distribution, and manufacturing.	Chandler, 1995
	In neo-classical economic thought, industries typically move from simple to highly concentrated forms of organisation.	Scherer, 1980; Waterson, 1984
	Influential theory of industrial employment in a country. Economic growth leads to an increase of capital in industrial production.	Clark, 1957; Dodzin and Vamvakidis, 1999
	The density of the capital equipment and related maintenance downtime are associated with industrial productivity	Kim, 1997
	Large, vertically-integrated production unit generates better production efficiency through economy of scale.	Marshall, 1946
	Full usage of resources and production efficiency characterise industrial development progress and industry scale and positively impact local competitiveness.	Begg, 1999
	Higher "capital-labour ratio" or capital density.	Williams and Moomaw, 1989
	Manufacturers holding a higher "capital-labour ratio" have more advanced production technology.	Kendrick, 1977
External capital concentration (agglomeration)	A new industrial system has emerged, industrial districts' competitive advantages, and their strong propensity to export.	Bagella et al., 2000
	Large industries have accessibility to more extensive and cheaper financial and informational resources, and are more efficient in controlling and their existence is threatened less.	Rahnama et al., 2011
	In economics, there is a new concept – industrial cluster or agglomeration. The term "industrial cluster" refers to the company and institutions in close proximity to each other in a particular field.	Porter, 1998; Rosenfeld, 2007; Swann and Prevezer, 1996
	Industrial district innovative performance is correlated to its specialisation, the existence of suppliers, and social and business networks.	Boix and Galletto, 2009; Pyke et al., 1990; (Cossentino, Pyke, & Sengenberger, 1996); Becattini, 2004

Source: Major factor groups distinguished by the author based on Marshall, 1890; Bostic et al., 1997; Piore and Sabel, 1984.

The author summarises the third factor category during the Third Industrial Revolution (TIR), which began in the last half of the 1950s with the sudden explosion of U.S. corporations beyond national and continental limits, placed emphasis on more sophisticated cooperation between government and industrial structure. That next industrialisation development phase and factor category was focused on industrial productivity and agglomeration advantage categories. All these revolutionary approaches have led to significant changes in the direction

of development of the world economy and become a significant factor that should be constantly considered determining the newest trends (Table 3).

Table 3

Major Factors of Industrialisation Groups that Influenced Transformation of World Economy during TIR

Factor groups	Impact description	Author
R&D (scientific industrial districts)	Industrial zones help regional development in upgrading research technology.	Keeble, 1989
	Variations across sectors and over time depend on a number of factors related to the opportunities to develop an appropriate technology.	Robson and Rothwell, 1985
	In industrial districts (scientific industrial districts), concentration of capital is invested in innovation.	Koh et al., 2005; Hu et al., 2010
	Technology adoption is a critical factor in national competitive performance as part of national capabilities in Industrial Technology.	Mowery and Teece, 1993
	Benefits of industrialisation is stated in the concept of the "big push"; various sectors of the economy adopted increasing returns technologies simultaneously; they could each create income that becomes a source of demand for goods in other sectors, and thus enlarge their markets and make industrialisation more profitable.	Rosenstein-Rodan, 1943; Scitovsky, 1954; and Fleming, 1955
	Industrial development associated with a supposed "imperative" towards innovation. Innovation takes place in terms of both product improvement and process design.	Mansfield and Mansfield, 1993; Vernon, 1966
Multinational development	In these industries, companies manufacture many diverse products, operate in a large number of different countries, and employ hundreds of thousands of people.	Kurth, 1979; Leighton, 1970
	The global reorganisation of manufacturing, which is referred to as the new international division of labour, is considered by some to be the defining characteristic of the latest wave of globalisation.	Hoogvelt, 2004; Cattaneo et al., 2013
	Economic exchanges between relatively independent parties have been replaced by complex and highly interdependent systems of industrial production and economic exchange organised on a global scale.	Dicken, 2003; Gereffi, 1993
	Development strategies are based on economic change, which occurred in the past in already-industrialised countries.	Gore, 1996
	Economic growth strategies were emphasised on similarities and dissimilarities in the attitudes taken toward participation in the international division of labour.	Balassa, 1970
	Structural transformation of developing countries is characterised by a period in which primary production and a significant portion of manufactured goods begin to be exported.	Bergsman, 1979
	The structural transformation as part of development strategy for developing countries with industrial development as a core idea.	Ranis et al., 2006; ILO, 1976

Source: Major factor groups distinguished by the author based on Keeble, 1989; Koh et al., 2005; Mowery and Teece, 1993; Kurth, 1979, etc.

This is enforcing the fact that modern theories have a different focus, extensively discussing internal along with external reasons for pursuing specific courses of action. Based on this fact, the author emphasises that postmodern organisation problematics has generated important questions and challenges to conventional sociological and organisational theories and modes of analysis, as well as a plenty of interpretations of contemporary organisation practices. There is

a concept of a completely different form of organisation that has emerged in its place, with a variety of new names: the postbureaucratic organisation (Heckscher & Donnellon, 1994), the postentrepreneurial organisation (Kanter, 1989), the postmodern organisation (Clegg, 1990), the virtual organisation (Berkley & Nohria, 1991), the self-designing organisation (Mohrman & Cummings, 1989), the federal organisation (Handy, 1973), the intelligent enterprise (Quinn, 1992) and the organisation as carnival (Peters, 1992). As a result, it should be stressed that postmodern society is directly linked with changes in production – thus, postmodernism is the term we use to describe the culture that complements a shift to post-industrial modes of production (Lash & Bagguley, 1987). The author postulates that modern industrialisation concept should also represent the changes that correspond to the economic transformation into post-industrial. New economic paradigm creates a new concept appropriate to our postindustrial social conditions. As soon as the modern concept of industrialisation is far away from its roots, the author proposes analysing it as part of production process modernisation and considering from different perspectives by different scientists.

Therefore, in today's economy, manufacturing companies that are creating innovation products initially are trying to protect their inventions in order to get the maximum profit from their competitive advantage. Production process in the modern manufacturing company could be represented by the following model (Fig. 2).

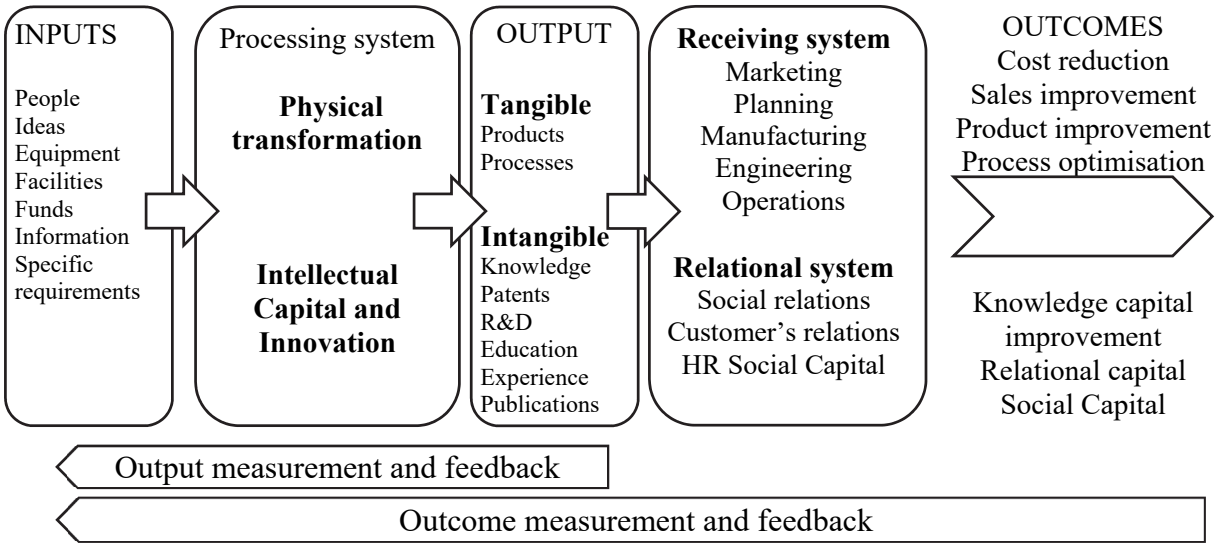


Fig. 2. Model of production process in the modern manufacturing company.
Source: the model created by the author based on Brauns and Svensons (M. G. A. Brown & Svenson, 1998).

Nowadays the use of cyber-physical systems is labelled as the 4th Industrial revolution. Cyber-physical systems (CPS) are enabling technologies, which bring the virtual and physical worlds together to create a truly networked world in which intelligent objects communicate and interact with each other. Cyber-physical systems represent the next evolutionary step from existing embedded systems. Together with the internet and the data and services available online, embedded systems join to form cyber-physical systems. The term of industry 4.0 is a further developmental stage in the organisation and management of the entire value chain process involved in the manufacturing industry. This term is also referred to as the "fourth industrial revolution".

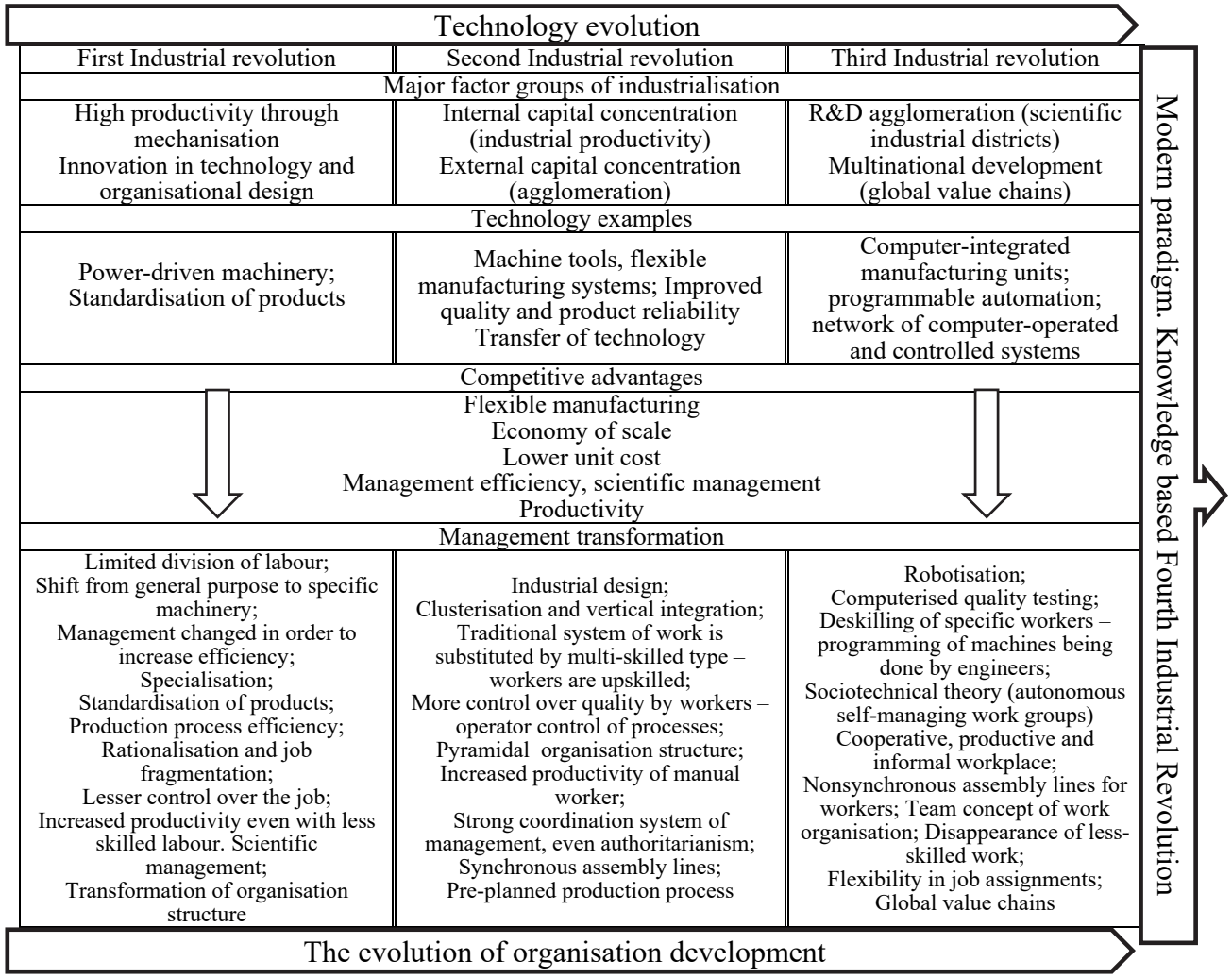


Fig. 3. Conceptual industrialisation framework and new paradigm. Major industrialisation factor groups.
Source: the model presented by the author using the research by Roy B. Helfgott, (Helfgott, 2015; Hoppe and Berv, 1967 and many others).

To summarise, decent industrialisation contribution to modern society relationship can be seen; industrialisation plays an imperative role in the strategy of the company and country. Analysis on postmodernism shows the dramatic changes from industrial to post-industrial modes of production. The author's goal is to integrate post-industrial realities into modern industrialisation concept, representing the new economic paradigm in the modern concept of industrialisation. The author, based on the above-mentioned numerous studies, suggests his own development model of industrialisation (Fig. 3). Superimposing the most fundamental "change aspect" of the new postmodern approach (analysing developing theories) and post-industrial society contribution to the value of information as company advantage, the author creates a modern relationship system and discusses it in the second chapter. Resource-Based View (RBV) of the company (Barney, 1991) states that sustained competitive advantage derives from the resources and capabilities of company. In this sense, a sustained economic advantage (rent) reflects the creative and entrepreneurial ability of companies to constantly discover how to generate value with their resources in the way that outside competitors cannot anticipate. The core idea is that even if a resource evaluated accordingly to VRIO framework is valuable, rare, and costly to imitate, but 'has strategically equivalent substitutes that are themselves not rare

or not costly to imitate, then it cannot be the source of sustained competitive advantage' (Barney, 2001a: 47). In other words, in order for a company to provide a source of sustained competitive advantage, the company should be organised to exploit the resource. Company requires having the systems (structure) and practices (management and methods) that allow exploiting (transform) their potential advantages. The question of organisation focuses its attention on systems (system-dynamic approach). This brings to company organisation as both driver for resources to become competitive advantage and instrument that can manage change in external environment exploiting external opportunities and neutralising threats. The author presents a sustainable competitive advantage (SCA hereinafter) framework that could include both internal and external factors important to show the relationship between competitive advantage creation, strategy and external environment (Fig. 4).

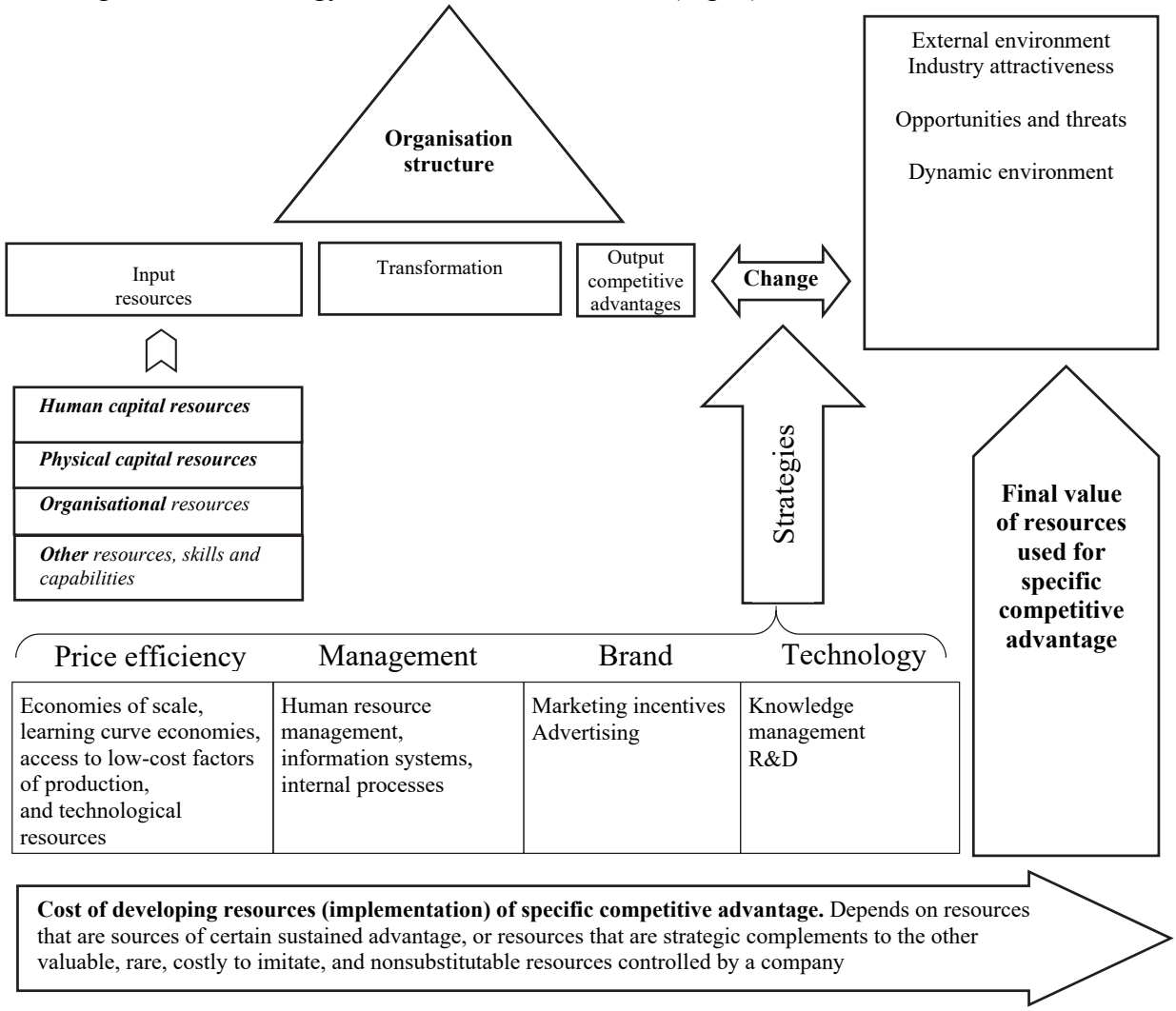


Fig. 4. Competitive advantage relationship system among competitive advantages (RBV), industry attractiveness and development theory (change concept)
Source: The author's model

For example, sometimes it might happen that company's resources will be consistent with several different strategies, all with the ability to create the same level of competitive advantage. In this situation, it is difficult to decide which of these several different strategies it should pursue. The framework presents implications for what types of resources can and cannot be sources of sustainable competitive advantage. In order for specific resources to develop and maintain as a source of competitive advantage, entrepreneurs and managers need to focus their

attention and activities toward those aspects of the company's resources that will provide such advantages. However, it may often be the case that the link between resources and the strategies that a company should pursue will not be so obvious (Barney, 2001).

2. THEORETICAL FRAMEWORK FOR STRATEGIC FIT CREATION IN MANUFACTURING COMPANY

Change concept is a pillar in the postmodern world. As we are living in a more dynamic environment, the author focuses his research of organisation development theory on change process. OD is also a term, which means conceptual, organisation-wide effort to increase organization's effectiveness and viability. The core of OD is a group working towards one or more common goals, development – the process that organisation uses to become more effective over time at achieving its goals. In Chapter 1, the author has postulated that the modern industrialisation concept should also represent the change dimension that corresponds to the economic transformation into a late capitalism. The need to understand the issue of change has become more and more crucial in the age of "permanent whitewater" (Marshak, 1993; Vaill, 1989; Weisbord, 2004) in which information, technology, markets, and people are emerging and advancing at breakneck speed (Beer, 2001; Marshak, 2002). If organisations become stationary for too long, it is inevitable that the gap will continue to widen and organisation ability to reach the planned change will quickly diminish. To remain in shape to make these moves, it is necessary for the development of organisational agility (Shafer, Dyer, Kilty, Amos, & Ericksen, 2001) and the resultant need for organisations to be in constant movement. This guides to the need of understanding the nature of change in organisations, not only from the measure of the ability to manage change, but also from a common framework by which organisations have been able to keep pace with change (Marshak, 2002), and in doing so, outperform other organisations. These thoughts (Cooperrider, 2000; Gergen, 2008) lead the organisation to manage the ability to respond to a rapidly changing environment. Ability to rapidly transform is what allows certain organisations to survive (S. L. Brown & Eisenhardt, 1997), outperform and create the appearance of "sustained performance" (Beer, 2001). Figure 5 shows organisation development common framework on change.

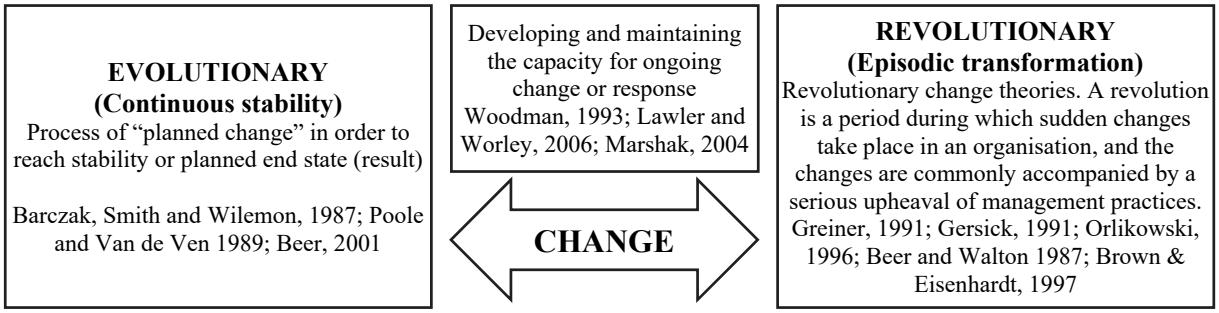


Fig. 5. Nature of change for organisation development.
Source: the model developed by the author based on Beer 2001, Marshak 2004, Barczak et al.

Thus, the author concludes – the change requires both sustaining existing equilibrium and breaking a present equilibrium. The maintenance of the existing equilibrium/balance requires following the planned process (addressed later in the author's model as a "red ocean strategy" and represented in Fig. 5 on the left). French philosopher Henri Bergson called this concept "*creative evolution"* (Bergson, Ansell-Pearson, Kolkman, & Vaughan, 2007); that we have a past that "does not leave us". Breaking of a current equilibrium is the movement to a newly created equilibrium (addressed later in the author's model as a "blue ocean strategy" described as "*creative destruction"* by Schumpeter and represented in Fig. 5 on the right).

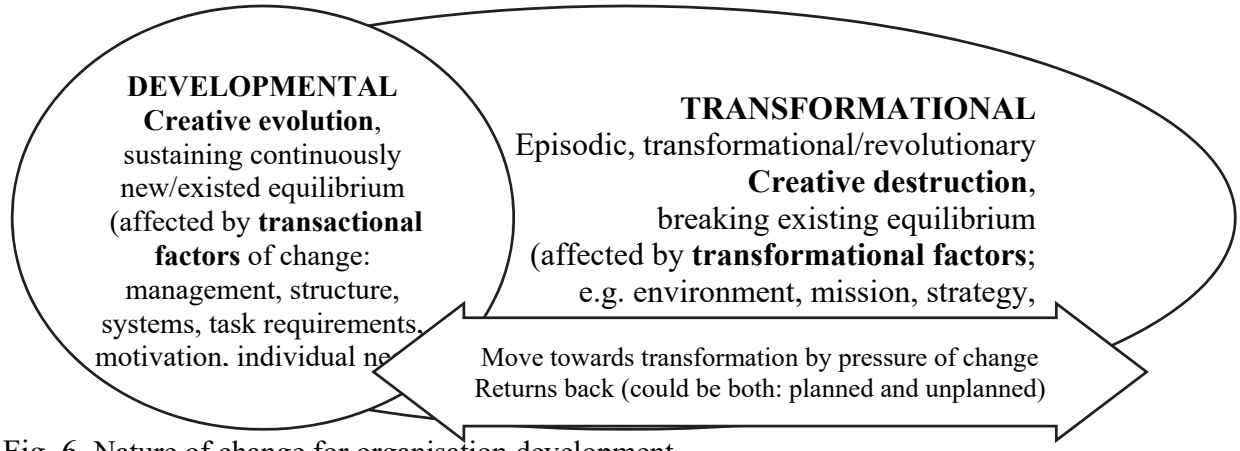
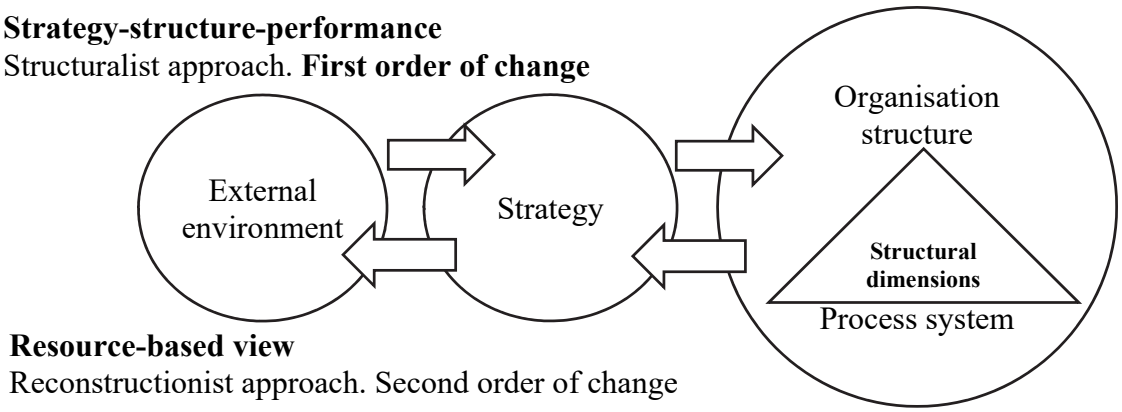


Fig. 6. Nature of change for organisation development.
Source: the model developed by the author based on (Porras & Robertson, 1991) model of Punctuated Equilibrium and Woodman's (Woodman & Pasmore, 2003) thesis.

The author states that equilibrium transaction process presented in "Breath" model could be represented in a different model created from the strategy perspective for value creation, with the integration of modern value elements of information society (Fig. 6). From the strategy perspective, factors affecting decision making through the periods of revolution or evolution are crucial, since the change could be planned or caused by external forces (e.g. increased competition, changes in customer demand, a lack of resources, or even sudden impacts of climate change, etc.). When needed, an organisation can impose a revolutionary change upon itself in order to make a leap forward in innovation. Some types of organisations are inert to innovate, because they fear negative economic impacts or a loss in competitive advantage due to the increasing cost. Gladwell (2010) describes a tipping point as a moment of critical mass that, once it occurs, inevitably leads to transformation. After analysing scientific literature, the author identified sources of main factors (transformational factors) of change associated with external environment. After identifying the main sources of transformational factors associated with external environment and crucial for the organisation development in strategic context, the author could create a model from the strategic perspective, integrating modern value elements of post-industrial society. After OD theory discussion, the author is establishing strategic context background for his model of OD that integrates modern value elements of post-industrial society (including such elements as organisation structures, processes, strategy as key element, change concept and external environment). The key feature of this discussion is the bidirectional relationship as shown in Fig. 7.



Fig, 7. External environment, strategy, structure of bidirectional relationship.
Source: Based on Christensen and Montgomery, 1981; Bettis, 1981 and Rumelt, 1982 with the author's comments.

The dominant relationship is unidirectional and hierarchical, i.e., the environment decides on the strategy, which in turn chooses the organisational form. The building blocks of the internal organisational structures are the functions with processes and systems being used as integrating mechanisms. This conclusion is important for the author, as it introduces a bidirectional relationship among the environment, strategy, structure, competence, and performance as represented in Fig. 7. The author supports the bidirectional approach, but states that the market structure is a primary factor (first order of change) affecting the profitability of corporate strategy, as it fits the empirical work of Christensen and Montgomery (Christensen & Montgomery, 1981), Bettis (Bettis, 1981) and Rumelt (Rumelt, 1982).

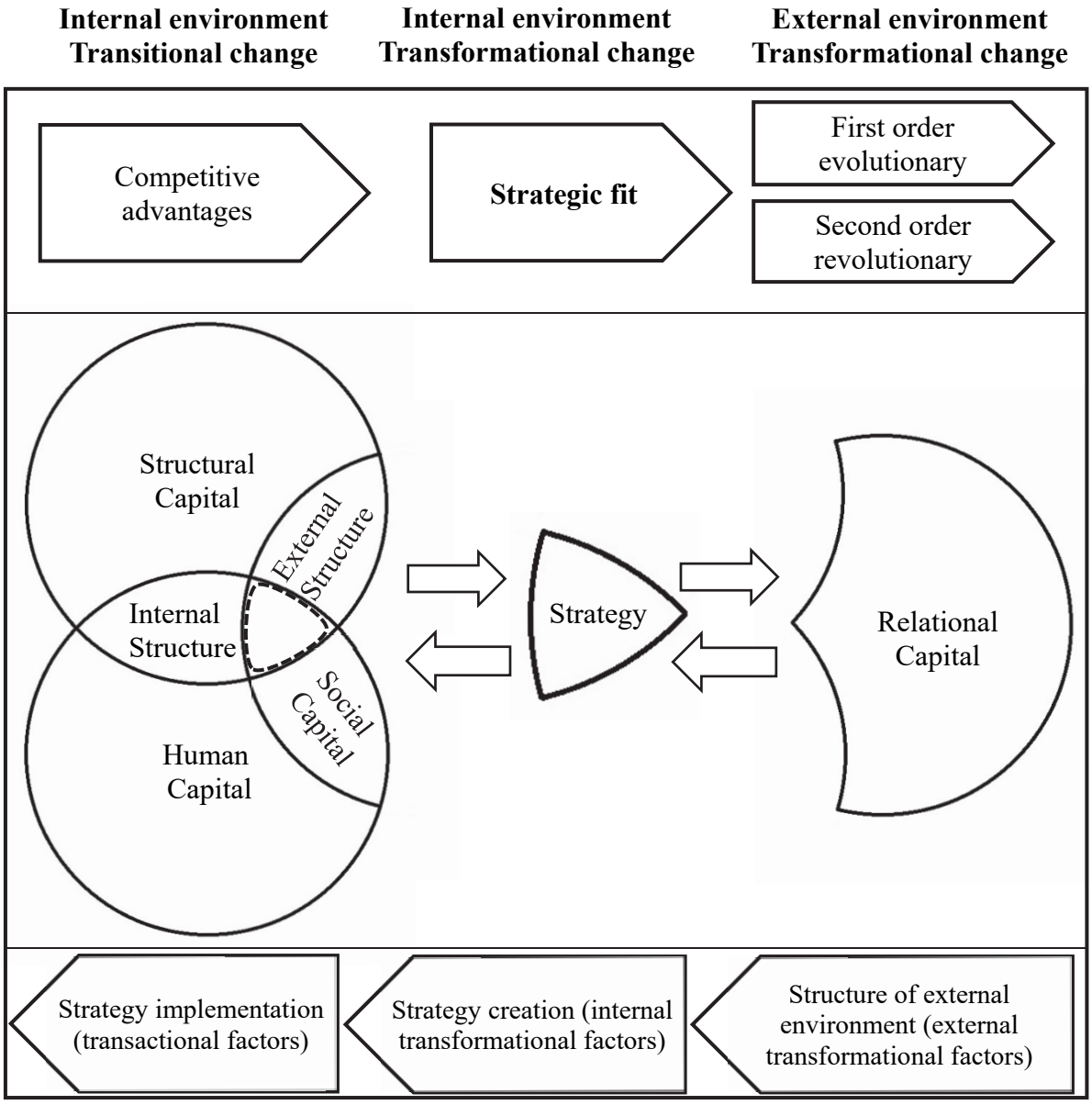


Fig. 8. Conceptual framework of manufacturing company' strategic development based on industrialisation factors and intellectual capital approach interrelation.
Source: the model created by the author based on Hermans and Kauranen (2005), (Bontis, 2000); Moon and Kym, 2006; Jardon and Martos, 2012.

The author would like to stress that some external factor variables and formal structural strategy integration processes (transactional factors processes) are out of scope of the Doctoral Thesis. Many investigators from different strategy schools have already massively studied a variety of structure elements, (Hall & Saias, 1980; Pugh, Hickson, Hinings, & Turner, 1968; Reimann, 1973) the processes of strategy and decision making in complex organisations (Carter, 1971; Mintzberg, 1973; Pettigrew, 1973; Quinn, 1980). Common relationship between strategy and organisational design and other strategy-making variables is discussed in the research (Daniels, Pitts, & Tretter, 1984; Daniels, Pitts, & Tretter, 1985; Egelhoff, 1982; Franko, 1976; Stopford & Wells, 1972). The author emphasises that the Doctoral Thesis is not focused on strategy implementation. In the scientific literature, the four main structural dimensions could be identified: integration, formalisation, centralisation, complexity and many minor dmensions (specialisation, size of administrative and staff components, vertical span, and number of operating sites, technocratization, mechanisation of production, relation/ communication devices, etc.) (Gibbs, 1971; Lawrence & Lorsch, 1986; Perrow & Woodward, 1967). These structural dimensions, nonetheless, play a major role for the strategy implementation, when discussing transactional factor relationship (Fig. 5). The identification of value-drivers in the intellectual capital system and strategic context is seen by the author as the key to value added. The author presents the model of organisation development based on the RBV and intellectual capital approach interrelation, describing how both tangible and intellectual capital resources are used for competitive advantage generation (increase value added). Building framework with superimposed layers could be a representative link to strategic perspective and concepts of organisational change, showing interaction between external and internal factors from various perspectives (Fig. 8). The author considers strategic fit as a core element of this model. The optimal strategy-structure match would have a superior performance when compared to other organisations in the same adaptive state. After discussing the value creation model, the author continues identifying the key value drivers of the IC system and creating measuring model of competitive advantage for tangible resources and intellectual capital. Initially the investment made by the company to the IC, comparing to the abnormal revenue flow generated by the IC, and intangible value created should be calculated (Fig. 9). (For the tangible resources, see the SCA framework for cost of developing resources (implementation) of specific competitive advantage.)

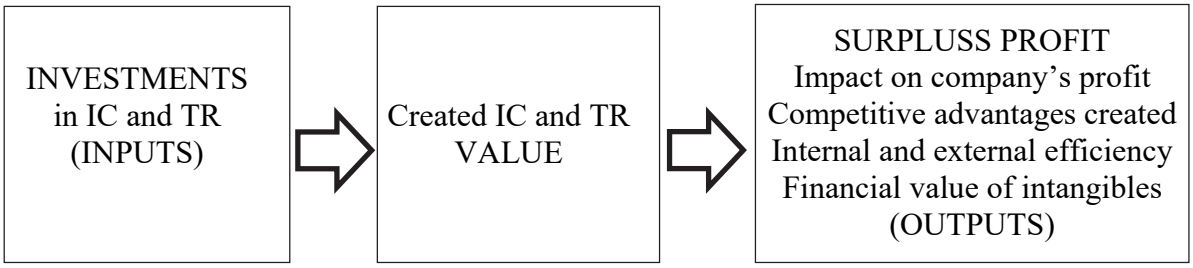


Fig. 9. IC, TR and value creation background.
Source: the model created by the author based on Pullic Ante, 2000.

The author's quantitative model is predominantly based on VAIC (Value-Added Intellectual Coefficient) approach, mathematical calculation discussed in the Thesis (Formula 1):

$$\mathrm{VA}_t = \sum_{i=1}^{n}((\alpha_{i,t}^{'}\mathrm{HR}_{i,t} + \alpha_{i,t}^{''}\mathrm{SC}_{i,t} + \alpha_{i,t}^{'''}\mathrm{RC}_{i,t}) + \beta_{i,t}\mathrm{AP}_{\mathrm{i,t}}) \cdot \delta_{\mathrm{i,t}}\mathrm{IV}_{\mathrm{i,t}}\ , \qquad (1)$$

where n – a number of investments made to specific IC or TR project or competitive advantages;

$\alpha_{\mathrm{i,t}}$ – the coefficient representing significance for strategy of specific investment (function of time-series properties);

$HR_{i,t} + SC_{i,t} + RC_{i,t}$ – investments made by company to a specific main component of IC and TR project or competitive advantage at time t;

$\beta_{i,t}$ – the coefficient representing significance of received profit for the specific project or competitive advantage (function of time-series properties);

$AP_{i,t}$ – an abnormal profit generated by company through IC and TR project or competitive advantages per period t;

$\delta_{i,t}$ – representing intangible value (IV) significance for strategy at time t;

$IV_{i,t}$ – intangible value generated by IC at time t (coefficient).

As it has been mentioned, the author does not conduct empirical research on the intangible value generated by the IC, but in common cases IV_t can be written as a function of factors $R_1^{(t)}, R_2^{(t)} \dots R_m^{(t)}$:

$$IV_t = \Phi\left(R_1^{(t)}, R_2^{(t)} \dots R_m^{(t)}\right), \quad (2)$$

and consequently, for linear function Φ:

$$\Phi_i\left(R_1^{(t)}, R_2^{(t)} \dots R_m^{(t)}\right) = \sum_{j=1}^{m} \mu_{i,j} R_j^{(t)} + \mu_{i,0}, \quad (3)$$

where m – a number of IC factors used by company's strategy for VA assessment;

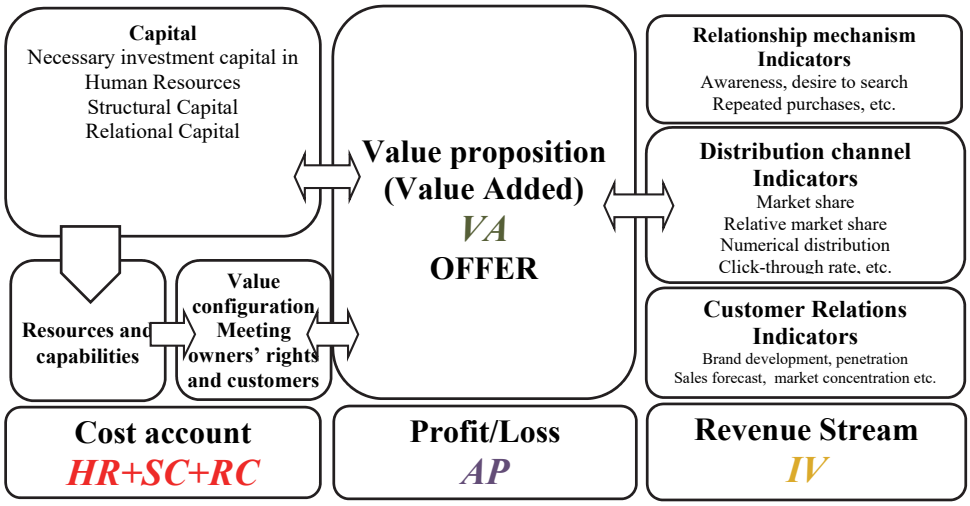
$R_j^{(t)}$ – IC factors at time t (presented in the Doctoral Thesis);

$\mu_{i,j}$ – the significance coefficient for a specific factor;

i=1, 2, 3, … – the corresponding IV_t value index for a specific project;

j=1, 2, 3, … – the corresponding $R_{i,j}^{(t)}$ factor.

The author agrees with Bontis's conclusion (Bontis & Girardi, 2000), and emphasises that every company could include or exclude their own indices based on the specific market condition and working profile, that is why the presented function could be modified. The author understands the business model as a conceptual tool that contains a set of elements and their relationships allow expressing the business logic of a company (Fig. 10).



$$VA_t = \sum_{i=1}^{n}((\alpha'_{i,t} HR_{i,t} + \alpha''_{i,t} SC_{i,t} + \alpha'''_{i,t} RC_{i,t}) + \beta_{i,t} AP_{i,t}) \cdot \delta_{i,t} IV_{i,t} \quad (1)$$

Fig. 10. Dynamic intellectual capital business model for manufacturing companies' development.

Source: the model created by the author based on the Business Model ontology.

In other words, it describes the value that the company offers (what?) to one or several segments of customers (who?), and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital (how?) in order to generate profitable and sustainable revenue streams (how much?). Good visualisation is the characteristic of this business model that allows understanding value creation logic. The author concentrates on integrating the IC into the value creation intermediation of the company to conceptually represent the way a specific company does business and its logic as to earning revenues (see Fig. 10). The proposal of further direction of empirical research has been developed as the author also created a list of factors and value drivers, which can be evaluated and assessed by various experts or respondents of the chosen target group. The empirical research would be helpful in order to crystallize and set aside value drivers that do not exert a significant influence over the value added of the respective company in the context of the IC.

3. STRATEGIC FIT MODEL FOR ENHANCEMENT OF MANUFACTURING COMPANY'S DEVELOPMENT

Research Period

Exploratory research of the theoretical part covers period from the 16th century until present days. *Empirical research* based on theoretical findings was performed from July 2013 to September 2014. Expert interviews for data validation were conducted from July 2013 to September 2014. To perform *statistical data analysis* of Latvian manufacturing companies working in the manufacturing industry, data from 2007 to 2013 was used.

Informative Basis of the Research

Exploratory research was based on foreign scientific literature reviews, articles and papers, economic magazines and books, conference materials, internet database resources, empirical surveys. Statistical data analysis of Latvian manufacturing companies was based on Latvian scientists' publications, research reports on industrial production of Latvia. During the empirical research, the information provided by the respondents was used.

Document and Data Analysis

Document analysis was performed according to the pragmatism paradigm, research design was planned and conducted based on research questions; and the result was pragmatic knowledge. The author performed identification of categories and factors describing industrial competitiveness, which according to the experts' opinion were the best, most precise and most significant. The author additionally used a quantitative approach – survey in statistics and data analysis, targeted to produce numerical and objective information. Data were collected through semi-structured expert interviews and survey.

Research Methodology

Multiple techniques were used to improve the construct validity and reliability and improve scientist's judgments and data truthfulness. The author chose *triangulation* (Fig. 11) – a strategy (test) for improving the validity and reliability of research or evaluation of findings. The author used the General Inductive Approach. This approach is evident in various qualitative data analyses (Backett, 1995; Bryman & Burgess, 1994; Campbell et al., 2003; Dey, 1993; Jain & Ogden, 1999; Marshall, 1999). With regard to knowledge epistemological orientation, the author's mixed research could be called "*dialectical pragmatism*". The author chose the philosophy of mixed research since it "carefully listens to ideas, assumptions and approaches found in qualitative and quantitative research and in any other relevant domain" (Ketner, 1995).

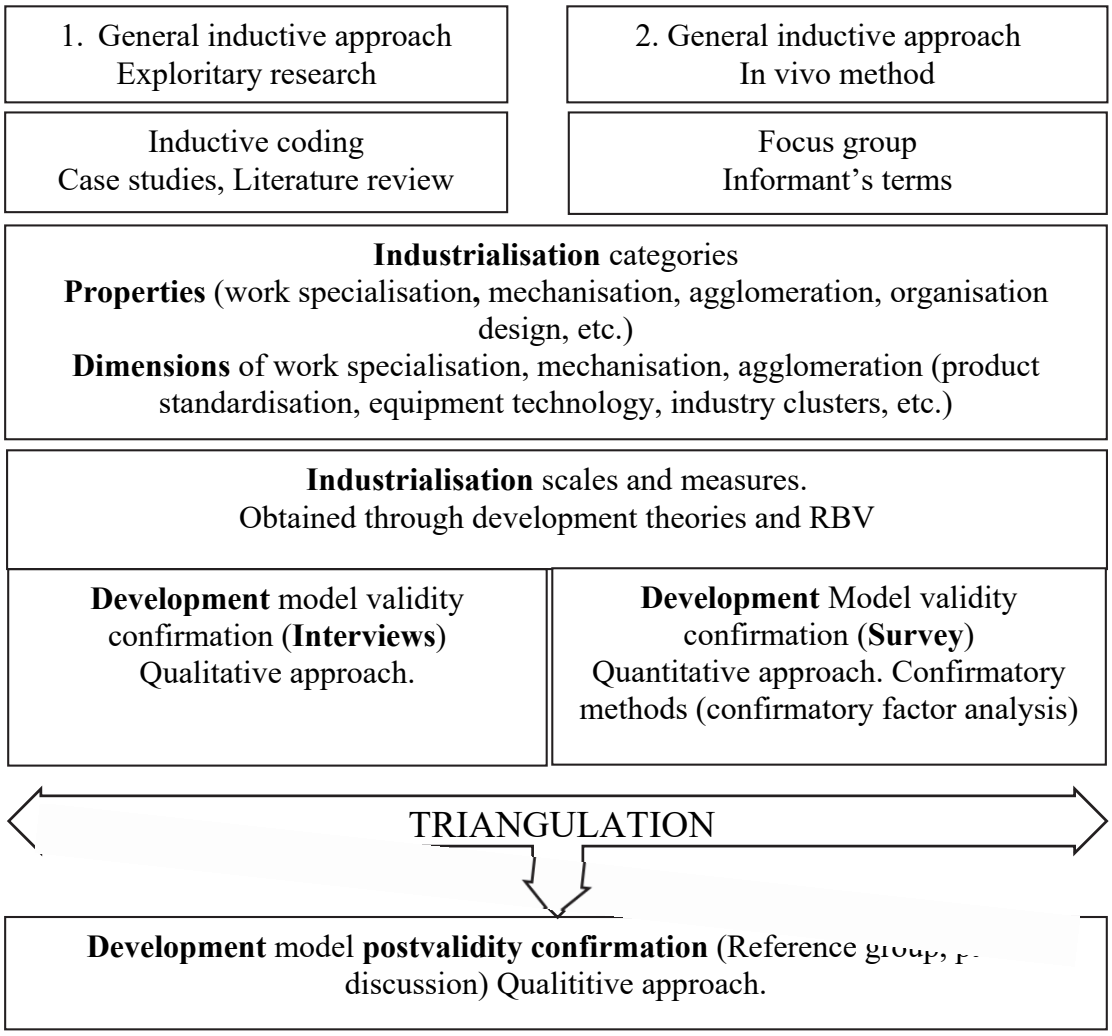


Fig. 11. The scheme of research design.

The author compared the provided information on advantage rarity (how rare a certain resource is) to summary statistics obtained through the survey. As a result, "supported by organisation" statistics was compared with company market evaluation. When a rarity value evaluated by the company was "3", it was interpreted as follows: the respondent did not have precise information about that (Table 4).

As a result, new evaluation groups were identified. Analysing VRIO "advantage parity", the author observed a situation when companies evaluated certain resources to have poor rarity and imitation according to the original VRIO methodology. In the author's opinion, this evaluation could be developed if scientist had reliable information about resource rarity on the market. When a resource is broadly used in the market (its rarity is poor), but it is difficult to imitate by competitors it still has an additional advantage in the industry compared to easy imitable one.

During interviews, the author found out that company executives identified some advantages as "indispensable"; nonetheless, these advantages were widely known by competitors. These advantages serve as a barrier by preventing new companies from entering the market (difficult to imitate for new entrants).

Table 4

Modified VRIO Evaluation Framework

Description	Value	Rarity	Imitation	Organisation
1st group Weak (disadvantage)	No <4	-	-	-
2nd new group (easy parity)	**Yes V>3**	**No R>3, or R=3 when summary statistics O>50 % (advantage of gets a new value - 4),**	**No I<4**	**-**
3rd new group (strategic parity)	**Yes V>3**	**No R>3, or R=3 when summary statistics O>50 % (advantage of gets a new value - 4)**	**Yes I>3**	-
4th group temporary advantage	Yes V>3	Yes R<3, or R=3 when summary statistics O<50 % (advantage of gets a new value - 2),	No I<4	-
5th new group Potential sustainable advantage identified	**Yes V>3**	**Yes R<3, or R=3 O<50 % (advantage of gets a new value - 2)**	**Yes I>3**	**No O<4 O<50 summary statistics**
6th group Sustainable advantage	Yes V>3	Yes R<3, or R=3 coef. O<50 % (advantage of getsa new value - 2)	Yes I>3	Yes O>3 O<50 summary statistics

Source: the evaluation developed by the author based on the VRIO framework, with evaluation from five-point Likert scale (1 – not important, 5 – strong).

Population and Sample Identifying Approach

The population for expert interviews and the questionnaire survey was *manufacturing industry enterprises where industrial manufacturing was carried out* and which were represented by specialists working in these enterprises. The sampling of the survey was entire population – 8981 enterprises, 6340 of the recognised population (using public email) were invited to participate in the questionnaire survey (online). Information about respondents was obtained from the database of the Central Statistical Bureau (CSB). Database information for 2012 covered 8 981 enterprises belongng to the C group (NACE 2nd Ed.).

Selection of In-depth Interview Respondents (Sample Identifying Approach)

One of the most important preconditions for the research is the selection of respondents. This study includes 156 in-depth interviews (telephone or personal interviews with enterprises) among respondents. The respondents comprised 54 random companies and 102 companies within the association of MEMI (MASOC) – author's special interest group (SIG) with a high level of association confidence.

Pilot Tests

In order to validate the survey instrument in the same type of atmosphere, in which it was designed to be used, a pilot test was run on small respondent population. During 4 weeks, the survey among company executives was made. All respondents agreed to evaluate survey questions. An analysis of the independent variables in the pilot test suggested that 46 % of questions needed further clarification.

Expert Survey, Interviews and Reference Group (Panel Discussion)
Expert survey and reference groups are the second most important research phase. The objective of the interviews was to explore the competitive advantage evaluation practices in the manufacturing industry of Latvia so that this information could be used to develop a questionnaire for the quantitative study. On the basis of the information provided by the MEMI (MASOC) and recommendations regarding enterprises, a list of 368 potential respondents of interviews was selected. The expert reference group (panel discussion) discussion helped to improve validity of the research.

Survey
Based on the experience gained from the pilot test and interviews, the author made several changes to the execution of the actual study. Firstly, concerning respondents' response on question clarity, it was determined that some questions lacked clarity. Secondly, the author gathered significantly more detail on each advantage, especially regarding the interpretation of the advantage. There are several conditions that need to be observed to create questionnaire – structure: introduction, main part and conclusion. The optimal questionnaire completion time is considered to be less than 20 minutes, but the time given for the respondents is approx. 35–45 minutes. Questionnaire should take into account the scale of assessments, ways how to use words or phrases in order to determine the range of assessment options (such as dissatisfied, moderately satisfied, very satisfied, completely satisfied). Research results revealed industrialisation distribution problems for manufacturing companies (use of industrialisation advantages). The calculation of the manufacturing companies' industrialisation distribution is performed by using formula (4):

$$IndDistr = \frac{\bar{R}_j}{\overline{Impl}_j}, \quad (4)$$

where $IndDistr$ – the distribution assessment of industrialisation factors among manufacturing companies in the manufacturing industry;

$\overline{Impl}_j = \frac{\sum_{i=1}^{n} Impl_i}{n}$ – the average evaluation of the industrialisation factor implementation by the company, using 6-point Likert scale; n=368;

j= 1,2,3…m – the industrialisation factor number;

$\bar{R} = \frac{\sum_{i=1}^{n} R_i}{n}$ – the average role of the industrialisation factor for value added, using 6-point Likert scale.

The author would like to highlight industrial cluster advantages from work agglomeration (4A, 4B, 4C, 4D; 4E, 4F, 4G, 4H, 4I, 4J). Figure 12 shows that average evaluation of cluster advantages is moderate. These results are controversial because during the in-depth interviews the author concluded that the reason for moderate evaluation was association activity perception. Respondents were unaware of cluster advantage possibilities and were sceptical about current association and government relations. Future development was also questioned by the present association members. During in-depth interviews, the author asked about the possible contribution of cluster advantages, in case of strong relations between government and associations. Most respondents mentioned successful examples from neighbour countries (usually Poland and Lithuania). Throughout the in-depth interviews, the author discovered that associations provided only several valuable advantages. The obtained results provide necessary information about the direction of the future development and research. Cluster advantages have a high growth potential for local manufacturing companies. The author concludes that implementation of industrialisation factors is insufficient to create high value added products for manufacturing companies (30 % – implementation of average industrialisation factors by companies for top ten valued factors) (Fig. 12).

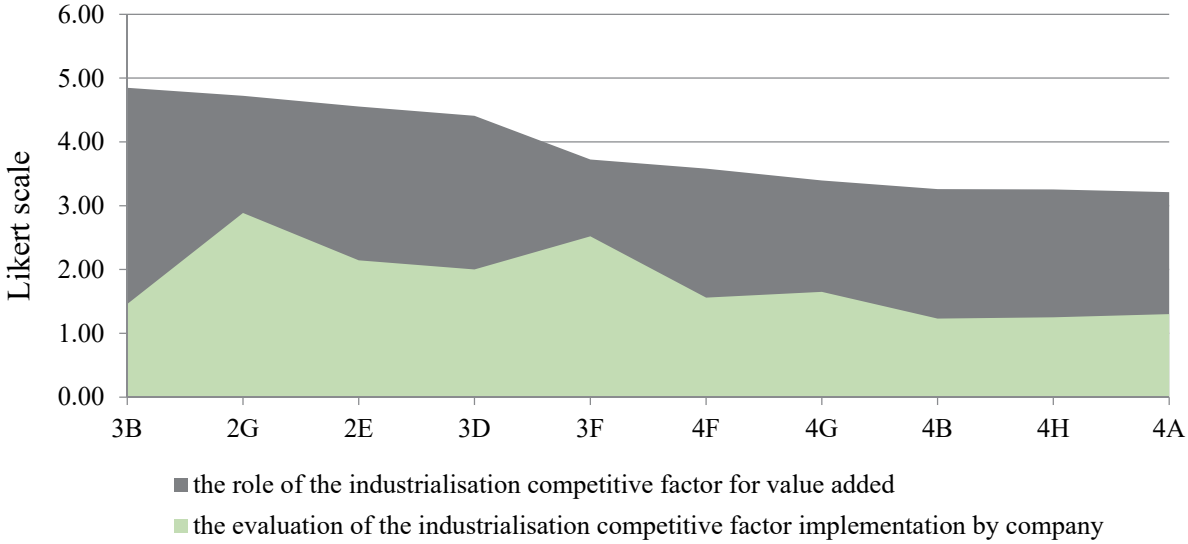


Fig. 12. Evaluation of the top 10 industrialisation factors and their support by companies. Source: Survey data analysis.

Development of the Quantitative Factor Model for Assessment of Competitiveness of Manufacturing Companies

The next most important phase of the research is the development of the model, within which competitiveness function of manufacturing companies is compiled. To increase construct validity, specific groups were created. An average score per question and total score per category were calculated. Ultimately, this scoring methodology established the assumption that a high total score in any of the survey categories gave us better advantage validity. Given the dependent and independent variables, the following are final theses of this research.

Table 5

Factor Dispersion Analysis
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.832	18.025	18.025	8.832	18.025	18.025	7.135	14.562	14.562
2	6.978	14.241	32.266	6.978	14.241	32.266	6.363	12.985	27.547
3	4.301	8.778	41.044	4.301	8.778	41.044	3.242	6.616	34.163
4	3.521	7.186	48.229	3.521	7.186	48.229	3.129	6.386	40.549
5	3.059	6.243	54.473	3.059	6.243	54.473	3.039	6.201	46.751
6	2.228	4.547	59.020	2.228	4.547	59.020	2.920	5.960	52.710
7	2.012	4.105	63.125	2.012	4.105	63.125	2.617	5.340	58.051
8	1.817	3.709	66.834	1.817	3.709	66.834	2.311	4.716	62.767
9	1.728	3.527	70.361	1.728	3.527	70.361	1.958	3.995	66.762
10	1.533	3.128	73.490	1.533	3.128	73.490	1.922	3.923	70.684
11	1.386	2.829	76.319	1.386	2.829	76.319	1.683	3.435	74.120
12	1.243	2.538	78.856	1.243	2.538	78.856	1.656	3.379	77.499
13	1.117	2.279	81.136	1.117	2.279	81.136	1.556	3.176	80.675
14	1.044	2.131	83.267	1.044	2.131	83.267	1.270	2.591	83.267

Extraction Method: Principal Component Analysis.

In order to better understand the outcome of the study as well as to measure its validity, a confirmatory factor analysis (CFA – construct consistently) was completed. Confirmatory factor analysis (CFA) was conducted to evaluate the overall fit of measurement items in the conceptual model. The CFA tested how well all the measured variables represented the number of constructs.

The author obtained the significance coefficients (α) for the factors determining competitiveness of manufacturing companies. For the determination of the competitiveness level of manufacturing companies in a particular area, the author used respondents' evaluation significance. According to the above-mentioned function of manufacturing companies' competitiveness evaluation, the author derived the particular respondent's value, which enabled to rank it in one of the scale groups. The results of the companies' component significance are shown in Table 5.

The starting model of manufacturing companies' competitiveness with 14 factor components is expressed by formula (5):

$$CompLv = \sum_{i=1}^{n} \alpha_i C_i + \alpha_0, \tag{5}$$

for

$$\alpha_0 = 1 - \sum_{i=1}^{n} \alpha_i, \tag{6}$$

where i - the respective component index, n = 14;

$CompLv$ – the competitiveness of manufacturing companies in the manufacturing industry;

$\alpha_1, \alpha_2, \alpha_3, \ldots, \alpha_{14}$ – significance coefficients;

α_0 – gross unrecognised factor effect.

As a result, using factor dispersion analysis (Table 5) the author derived the particular respondent's value, which enables to rank it in one of the scale groups:

$$\begin{aligned} CompLvL = {} & 14.56C_1^h + 12.99C_2^e + 6.62C_3^i + 6.39C_4^i + 6.20C_5^e + 5.96C_6^i + 5.34C_7^h + 4.72C_8^e \\ & + 4.00C_9^i + 3.92C_{10}^i + 3.44C_{11}^i + 3.38C_{12}^i + 3.18C_{13}^h + 2.59C_{14}^i + 19.32\alpha_0, \end{aligned} \tag{7}$$

where $CompLvL$ – the competitiveness of manufacturing companies in the manufacturing industry as a score.

After calculating competitiveness of manufacturing companies, within the framework of the Thesis, the author added index for components as follows:

C^i – components with internal factors,

C^h – hybrid components, components with both external and internal factors.

C^e – components with external factors.

Components (C_i) – the factors of:

C_1^h – manufacturing competitiveness, product (service) high value added and company information channel;

C_2^e – cluster utility;

C_3^i – marketing and technology of an enterprise;

C_4^i – company initiative (pro-activeness);

C_5^e – external environment;

C_6^i – operation management efficiency;

C_7^h – external environment and internal environment;

C_8^e – external environment;

C_9^i – management efficiency;

C_{10}^{i} – patents, knowledge management and motivation system;
C_{11}^{i} – leader experience and knowledge;
C_{12}^{i} – price leadership;
C_{13}^{h} – external environment;
C_{14}^{i} – internal environment;
α_0 – gross unrecognised factor effect, %.

Component indexing allows for a reasonable understanding of "change" concept promoted in the author's model of external and internal relationship. Based on the author's analysis of the literature on competitiveness, the author developed a hybrid factor concept, influencing the competitiveness of the manufacturing companies. The core idea is based on transformation relationship between internal and external environment discussed in Chapter 2. As soon as the internal factors based on SCP paradigm are affected by transformational power of external factors, the author can clarify the transformational power in this model.

Figure 13 represents the change affecting different dimensions of the equilibrium. Dimensions deal with the transformation ratio shown in Fig. 13 (Lewinian feedback Loop A and B).

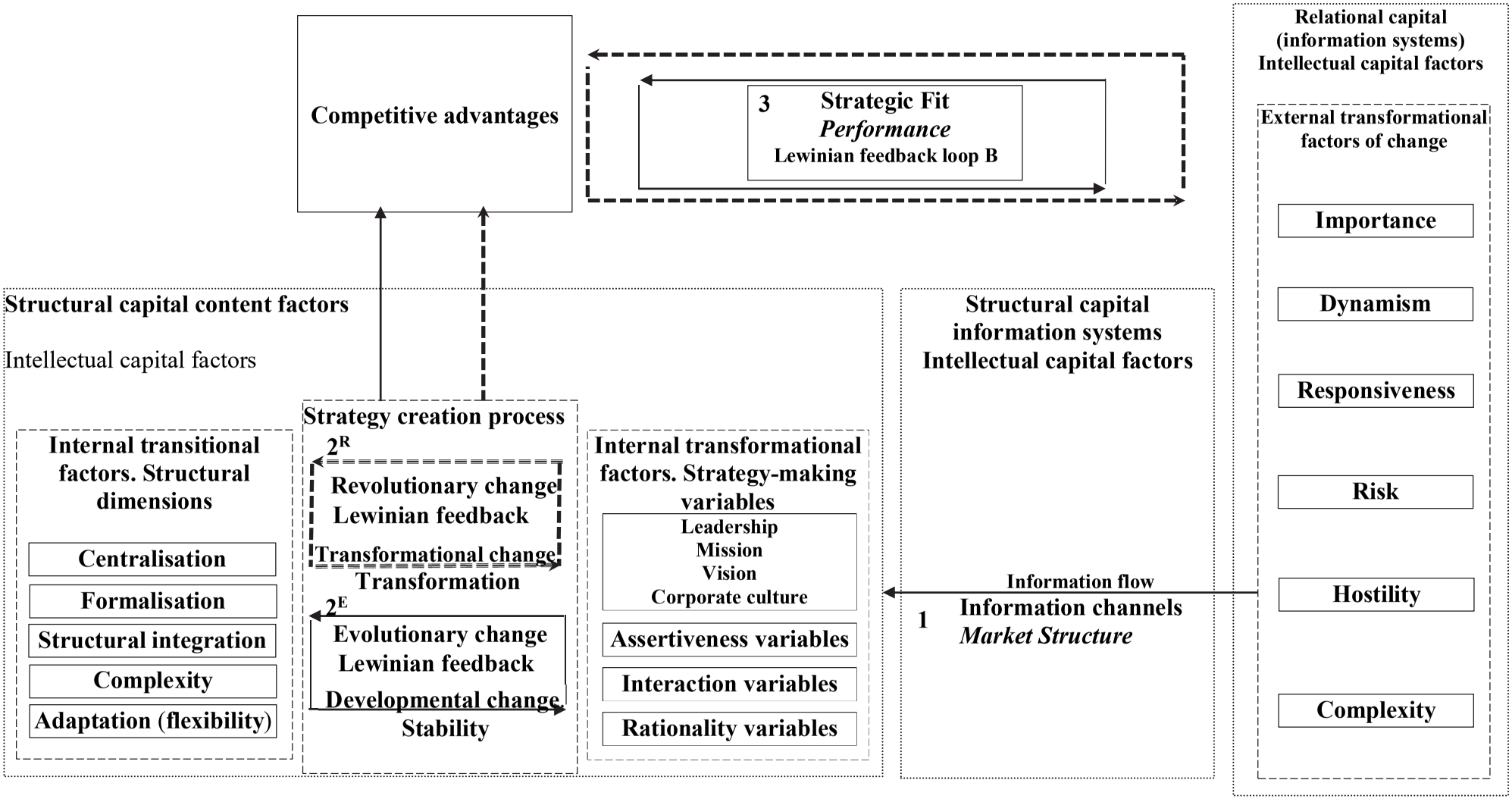


Fig. 13. Integrative model of manufacturing companies' strategic fit based on conceptual framework of manufacturing company's strategic development with industrialisation factors and intellectual capital approach interrelation.
Source: the model created by the author.

Equilibrium Ratio

In order to reveal the equilibrium ratio – the total ratio between two gross transformational factors, the author created the following equation:

$$equillibrium\ ratio = \frac{internal\ \ factor\ transformation}{external\ factor\ transformation}, \tag{8}$$

This ratio shows the relation between internal and external factors inside the component regarding company transformation ratio based on external factor dynamics. Organisation management proportionally transforms into internal factors in order to keep a certain level of equilibrium. In case of dramatic change, equilibrium shifts to another level.

In order to represent the equilibrium ratio, the author developed the corresponding equation:

$$\sum_{k=1}^{8} \alpha'_k C_k^i + \sum_{k=1}^{3} \alpha'''_k C_k^h \leftrightarrow \sum_{k=1}^{3} \alpha'''_k \frac{1}{C_k^h} + \sum_{k=1}^{3} \alpha''_k C_k^e\ , \tag{9}$$

where $\alpha'_k, \alpha''_k, \alpha'''_k$ – significance coefficients for components;

$C_k^i = \sum_{j=1}^{n_{k,1}} \mu_{1,j}^{(k)} f_j^i$ – components with internal factors;

$C_k^h = \frac{\sum_{j=1}^{n_{k,1}} \mu_{1,j}^{(k)} f_j^i}{\sum_{j=1}^{n_{k,2}} \mu_{2,j}^{(k)} f_j^e}$ – components with external and internal factors;

$C_k^e = \sum_{j=1}^{n_{k,2}} \mu_{2,j}^{(k)} f_j^e$ – components with external factors;

k – a number of components;

j - 1,2,3…n – a number of internal factors inside the component;

$\mu_{1,j}^{(k)}$ – significance coefficients inside the component for internal factors;

$\mu_{2,j}^{(k)}$ – significance coefficients inside the component for external factors;

f_j^i – internal factors inside the component;

f_j^e – external factors inside the component.

This equilibrium shows a certain transformation ratio inside the industry. As a reaction to overall change or corresponding factor of external environment, an organisation will accordingly change the current overall internal factor. Nonetheless, it is difficult to predict the exact internal factor to be developed, but organisations usually try to pursue factors with high competitive advantages.

Creating an analysis tool for a traditional strategic analysis, business model proposition provides a framework for the question of sustained competitive advantage.

The author concludes that the sustainability of the competitive advantage depends on the ratio of strategic fit. In this model, strategic fit is a function of the competitive advantage values (discussed in RBV) and value added generated from them (Fig. 13).

Figure 14 integrates the strategy and business model for sustained competitive advantage. Figure 14 illustrates how a given company performs based on the strategic fit between the X and Y axis.

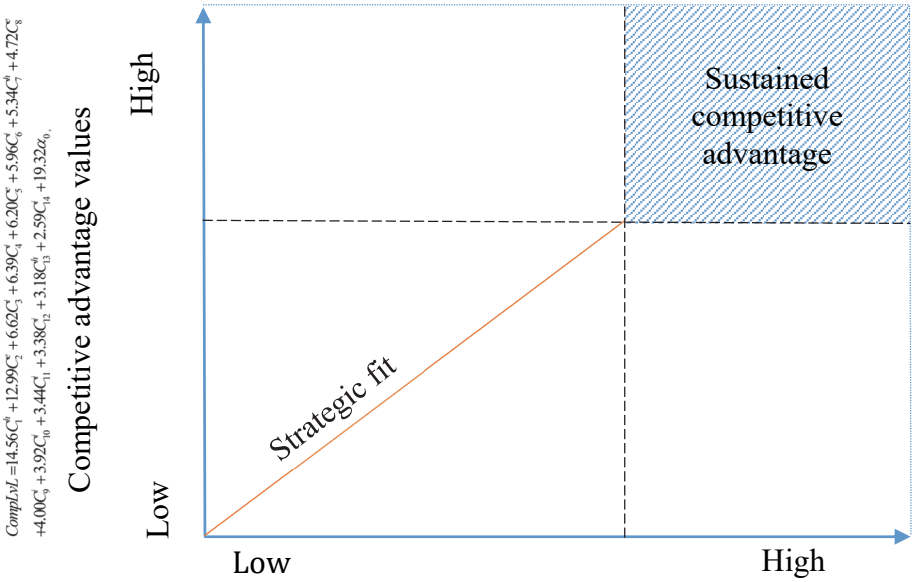


Fig. 14. Strategic fit relation model between the company strategy and the business model as a tool for organisation development.
Source: the model created by the author based on Korsaa, 2010; Seddon et al. 2004 (Korsaa, 2010; Seddon, Lewis, Freeman, & Shanks, 2004).

Using empirical research data, the author defined Y-axis values based on the survey questions (quantitative factor model (Formula 7) was used for the determination of the competitive advantage values Y-axis). X-axis values were defined through the survey (value generated for a specific advantage in a company), for results that were more detailed it was also possible to use the quantitative conceptual model for the evaluation of manufacturing company's value creation model proposed by the author (Formula 4). Accordingly, the contribution from the business model literature is represented by the X-axis, where the value added generated from competitive advantages can vary from weak to strong. The strategic fit (Fig. 14) is an important tool illustrating how the business model components relate to and reinforce one another, i.e., it is the whole system of reinforcing activities rather than an independent set of advantages. The competitiveness model for manufacturing companies in the Latvian manufacturing industry was analysed and approbated.

The author identified the factors influencing competitiveness of manufacturing companies in the manufacturing industry. Based on the performed research of the factors influencing competitiveness, the equilibrium ratio (interconnection) model of internal and external environment factors was created. The created model shows the relationship between internal and external environment and its impact on the company competitiveness (factors in the equilibrium ratio were explained in Formula 9). Approbation of four manufacturing companies in the manufacturing industry was conducted. Summarising the results of the Thesis, the author concludes that the use of the methodology and the model confirms its validity in selected examples. Thus, in the author's opinion, the model approbation results positively reinforce model validity.

CONCLUSIONS AND RECOMENDATIONS

Durig preparation of of the Doctoral Thesis, the topicality of strategic development of manufacturing companies within dynamic external environment of post-industrial economy has been confirmed. To increase the company's competitiveness, the professionals can use the author's integrative model of manufacturing company's strategic fit within the dynamic environment. By following recommendations, regarding company strategic development discussed in the Doctoral Thesis; the company managers can improve the strategy planning process. Summarising the results of the doctoral thesis, the author has made the following conclusions:

1. Theoretical and practical research has confirmed simultaneous development of economic theory and practice within which the evaluation of industrialisation has become increasingly important, especially for manufacturing companies in the manufacturing industry.
Industrialisation has initiated world economy transformation through high productivity of labor through mechanisation, innovation in technology and new organisational design. Industrialisation has important role for company and country strategic development and strengthening close relationship among companies, population, resources, technology, and institutions.
2. As a result of the scientific literature analysis devoted to the research of industrialisation impact on the manufacturing company development, key factor groups have been determined: innovation in technology and organisational design, industrial productivity, agglomeration, scientific industrial districts and etc. These industrialisation factors groups are affecting competitive advantage of manufacturing companies. In modern conditions the manufacturing company's strategy still includes the efficiency of the production process as a major competitive advantage in the market.
3. The concept of industrialisation is based on the modernisation of the production process, but is considered individually by different scientists. The research confirmed that RBV gives the efficient fundamental approach to precisely reveal the link between value added creation and competitive advantages of a company through industrialisation. Manufacturing companies should think about using RBV approach in strategic planning.
4. The performed analysis of both post-industrial society characteristics and organisation development theory, has confirmed that it is imperative to create a framework of the modern manufacturing company in the context of the dynamic external environment. That provides company with the extra potential for rapid adaptation to the external environment.
5. Based on the analysis of industrialisation studies, its importance at the national industry and company levels, it has been concluded that industrialisation launched and influenced the innovation concept, strengthening the role of intellectual capital in the competitive advantage of a modern manufacturing company.
6. Modern industrialisation concept should integrate the change dimension as an ability to respond to a rapidly changing environment. Today's manufacturing development is organised through complex networks of companies, which are sometimes labelled as Global Commodity Chains or Global Value Chains.
7. Postmodern problematics has generated important questions and challenges to conventional concept of industrialisation as a result, a modern relationship system between competitive advantage creation, strategy and external environment has been investigated. The author has incorporated a change concept in the framework of manufacturing company's strategic development.

8. Organisation development theory as part of the framework for manufacturing companies investigates a response to change to increase an organisation's efficiency and viability, addressed as a shift to an environment of constant change. Nowadays, industrialisation is a powerful method of achieving sustainable development of the company, but it needs to be efficiently integrated into the modern post-industrial organisation realities.
9. Integration of the intellectual capital to the concept of strategic development of the modern manufacturing company allows the company to comprehensively estimate its competitive advantages. As a consequence of the analysis of company's intellectual capital evaluation methods, the author has concluded that in the process of the development of strategic plans there is a need to combine the industrialisation factors with the elements of intellectual capital, reflected in the quantitative conceptual model for evaluation of competitive advantages.
10. Intellectual capital approach is a tool to identify modern value elements critical for the strategic context, such as embedded system production technologies and smart production processes. IC approach helps develop a strategy that is focused on intangible resources and allows managing them more efficiently in the process of increasing the shareholder value. As a result, modern knowledge-intensive companies have extra advantages in the value chain.
11. The quantitative conceptual model for the evaluation of competitive advantages based on manufacturing company's value creation has been developed. Dynamic business model for manufacturing company's strategic development based on industrialisation factors and intellectual capital approach interrelation has been constructed. It can be employed for evaluating of intellectual capital.
12. The role of strategic fit for company's competitiveness is based on the fit between strategy and the proportion of organisational and environmental compatibility. Strategic fit is strongly associated with a strategic choice, which changes organisation's environment. The company with optimal strategic fit would have a superior performance when compared to other companies. The author considers strategic fit as a core element for this model.
13. Manufacturing company's strategic development should be elaborated through optimisation of strategic fit in order to achieve sustainable development. Optimisation is attained by promoting the strategy creation process through the evolutionary or revolutionary change pattern provided by a link between the external environment and company's management. As a result, it is possible for a company to achieve sustainable development.
14. Integrative model of manufacturing company's strategic fit within the dynamic environment has been created and aprobated. The author's developed integrative model of strategic fit is enhancing the growth opportunities for manufacturing companies within the manufacturing industry.
15. Based on testing of the integrative model of strategic fit, the author concludes that is possible to apply the model for evaluation of a company's individual competitiveness level in the industry. Summarising the results, it can be concluded that in the selected examples the methodology and the model have confirmed their validity.
16. The analysis of competitiveness leads to a conclusion that surveyed respondents were able to manage most advantages in strategic fit. The author emphasises that competitiveness is insufficient for further industry development, and advantages from sustainable advantage sector should be implemented. As a result, manufacturing companies have potential to use the capacity of advantages from a sustainable advantage sector.
17. Based on the research, the author has concluded that the Latvian manufacturing companies cannot take full advantages of industrialisation factors. Exploiting economies of scale and transactional cost factors can significantly reduce operations cost and increase profit margin. At present Latvian manufacturing companies exploit operations management and flexible manufacturing system. In the case of Latvian manufacturing companies, associations and Industrial Parks could provide necessary reduction in transactional costs.

18. On the basis of the author's created approach for measuring a competitiveness level of manufacturing companies, the quantitative factor model for assessment of competitiveness has been elaborated. The elaborated quantitative model provides improved understanding of the factors determining the manufacturing company's competitiveness, reflecting correlations of the contributing factors. Approbation of four manufacturing companies in manufacturing industry was conducted, approbation results positively reinforced model`s validity and confirmed stated hypothesis.

Based on the research results, the following recommendations have been made:

For researchers and academicians

1. Development and promotion of a conceptual framework of manufacturing company's strategic development, supplementing a traditional approach with evaluation based on interrelation of industrialisation factors and intellectual capital approach is recommended.
2. It is suggested to integrate the intellectual capital into modern company's strategic development model, since the information and knowledge-based perspectives should be used to understand the structural changes correspond to economy transformation into post-industrialism, providing a framework for practical applications and explaining the value creation process in a modern company.
3. Further studies testing the functionality of model proposed in this research need to be conducted in order to raise a further discussion between academics and practitioners reducing the gap between theory and practice in the industrialisation evaluation.

For industry specialists

4. To achieve the sustainability of a manufacturing company, the integrative model of strategic fit elaborated and approbated by the author for the manufacturing company's strategic development should be applied. The flowing industrialisation factors providing the sustainable competitive advantages are the most important ones for company competitiveness:
   - production process continuity,
   - mass production,
   - vertical integration system,
   - automated and synchronised manufacturing system advantage.
5. The author's developed quantitative factor model for assessment of competitiveness of manufacturing companies should be used to increase their performance. The aim of this evaluation model is to determine key factors for strategic planning of a company.
6. The empirical results of factors influencing the company's competitiveness can be used to improve the strategy planning process. The results are based on empirical study of Latvian companies' and can be used to improve the evaluation process of competitive advantages.

General recommendations

7. When developing the intellectual capital elements critical for the strategic fit, it is recommended to use a quantitative conceptual model for the evaluation of competitive advantages based on manufacturing company's value creation proposed by the author.
8. Further research should be focused on testing the author's dynamic business model for manufacturing company's strategic development based on the Business Model Ontology. The proposed dynamic business model has a potential to become a practical tool for the assessment of company's value added on based on interrelation of industrialisation factors and intellectual capital.

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