

# CHANGING PARADIGM OF UNIVERSITIES MANAGEMENT IN COMPETITIVE ENVIRONMENT. MYKOLAS ROMERIS UNIVERSITY CASE

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## Abstract

Universities always had a unique self-organization and a privileged position compared with all other public sector institutions and retained their features to this day, but the processes of globalization, changing environment and completely new challenges brought new requirements for their management. Universities – one of the most stable organizational structures that have reached us from the early Middle Ages, today are changing not only structurally but also in terms of identity. It is impossible to cope with new challenges without integrating strategic organizations' management and process improvement with its human resource management.

The article presents the innovations carried out by Mykolas Romeris University, changing their approach to performance management. The paper presents a fragment of expanded and modified SWOT analysis, which included all university activities, with special emphasis on human resources. Due to exclusive mission of universities and their special place in society, they need a balanced development, therefore purely competitive strategies here may not be fully suitable. In this case, a more important criterion for assessing the effectiveness of the University strategy is sustainability of monitored performances indicators. University strategic plan mapped by the means of the balanced scorecard system turns to the internal communication tool, significantly contributing to the successful execution of the strategy.

To be successful is not enough to correctly select what to do, i.e. not enough only to create a good strategic plan. It is also very important to answer the question how to achieve the results sought. Sophisticated, comprehensive process improvement methodologies such as Six Sigma could be a later stage of implementation of quality management, while at the beginning starting with lean manufacturing or sometimes so called “workout” methods, used only in the most important points, gradually increasing the use of tools process improvement range and broadening their scope to all the activities. Process improvement similarly to strategic management should become a part of the organizational culture of the university.

**Key words:** universities, strategic management, process improvement, balanced scorecard, human resource management.

**JEL classification:** M12 – Personnel Management.

## 1. Introduction

Despite the fact that since ancient times universities had a unique self-organization and a privileged position compared with all other public bodies and retained the most of their features to this day, the processes of globalization, accelerating pace of change and completely new challenges brought new requirements for their management. Some countries have declared general objective of universal higher education, and it is becoming more and more common phenomenon. Continuous growth of the number of students, including not only the graduates, but much wider demographic strata brings to the University a dilemma – how to reconcile the mass scale of studies with a high quality. Universities in this regard are very similar to all other organizations that pursue performance efficiency as a primary goal. Growing competition in higher education is forcing universities to look for good practices not only among the leading universities, but also to learn from the most advanced organizations acting in other fields, and which sometimes are managed in more advanced manner than the higher education institutions. It is very important that this experience would not be transferred

mechanically, just blindly copying one or another management method or tool in isolation from the specific conditions, goals and problems faced by the organization, wishing to take advantage of accumulated experience. As an every change, no matter – successful or inappropriate, requires human, financial and time resources, it is essential to carry out it very rationally and deliberately. The University's mission and vision as well as specific internal and external factors affecting its performance are followed by strategic objectives, answering the question “what to do?” Appropriate strategic choice is a necessary but not sufficient condition for success, not least important is the correct answer to the question “how to do?” Getting the correct answers to these questions helps the knowledge and experience accumulated in strategic planning and process improvement areas. Until the recent time, just few decades ago, Universities somewhat loftily looked at the financial management, strategic planning, marketing and process improvement methods used in business organizations, but now there is no doubt that without these things successful development of Universities is impossible. Historically, performance measurement systems used in different management areas are quite distinct and very rarely integrated with other managerial tools. This is especially true for a very weak correlation between the measurement used in human resource management, quality management and process improvement on the one hand, and the organization's performance evaluation on the other.

## 2. Strategic Management of Universities

Socio-economic and political changes are forcing universities to apply strategies, which until now were mainly typical for business organizations (*Smenk et al., 2009*). This trend, known as the “New Public Management” or “Managerism” distinguished by using business administration methods and techniques in the public sector organizations may be useful as a positive impact on increasing quality of performance. In fact, Universities characterized as organizations having the most stable organizational structure that have reached us from the early Middle Ages, today are rapidly changing not only structurally, but also in terms of identity.

In this time of the permanent change it is impossible to survive without structuring and planning the future activities, so first thing facing universities – strategic management and strategic planning issues. Although the term “strategic management” is widespread and its definitions are more or less known but its meaning is interpreted in very different ways by different authors (*Sudnickas, 2011*). In 2007 R. Nag, D. C. Hambrick and M. J. Chen (*Nag, Hambrick & Chen, 2007*) performed an expert analysis of over five hundred publications on this topic trying to understand what each of the authors had in mind referring to the term “strategic management”, but they failed to define this meaning unambiguously. The authors, summarizing the content of articles analyzed, only stated that „the field of strategic management deals with the major intended and emergent initiatives taken by general managers on behalf of owners, involving utilization of resources, to enhance the performance of firms in their external environments.“ The authors believe that one of the reasons for this uncertainty is highly variable and ambiguous nature of the object of study which is overlapping with such areas as economics, sociology, marketing, finance, even psychology. Although the concept of strategic planning is more settled, but a viewpoint to its relationship with strategic management is also different. Some of the authors consider strategic management as one of the strategic planning stages, while others, on the contrary – treat strategic planning at as an integral part of strategic management. Both positions are based on their own logic and understanding that it is only a matter of agreement, for the sake of convenience, we assume that strategic planning is an integral part of strategic management.

A. D. Chandler defines strategy as „the determination of the basic long-term goals of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals,“ (*Chandler, 1962, p. 3*). The strategy concept is discussed since ancient times, 2500 years ago Sun Tzu, Chinese philosopher, wrote ”The Art of War „, in 1832 was published uncompleted famous work of Austrian military theorist Karl von Clausewitz „On war“. These two books have made a huge impact on subsequent researchers in this field, and their claims set out with minor modifications remains relevant in our times, especially when we are talking about the competitive strategies, which still can be called „Win/Lose” strategy, or strategies, of which one side wins on expense of the other side. Competition among universities in the study area, where incessant rivalry for students is going on, enables universities to include competitive strategy elements into its arsenal. However, the strategies of “Win/Lose” items can be hardly implemented in the area of scientific research, where different points of view can coexist. Sustainable development and the pursuit of the demands of all interested parties, which do not compete, should be called “Win/Win” strategy.

J. M. Bryson reasons the need of the strategic plan by some factors, which are more suitable for sustainable development strategy than competitive (*Bryson, 2004*):

- Assist the organization to organize and execute the changes.
- Improve decision making.
- Increase the efficiency of the whole organization (this factor is determined by two preceding factors).

Strategic planning, especially in case of public sector organizations, goes beyond the limits of single organization efficiency, it also contributes to the improvement of broader social environment. However, even Win/Win strategy plan raises the question of its efficiency. How strategy effectiveness should be measured? What criteria are to be selected? This question attempted to answer Henry Mintzberg, who formulated some criterions which, in his opinion could be applied to the analysis of selected strategies (*Mintzberg et al., 2003*):

- Clear, decisive goals and objectives.
- Maintaining the initiative: i.e., whether it is focused on supporting initiatives, rather than the passive response to emerging situations.
- Concentration. Does the strategy concentrate superior power at decisive place and time?
- Flexibility. Are there any resources to provide reserves for possible manoeuvres?
- Co-ordination and committed leadership.
- Surprise. Has the strategy made use of speed, secrecy and intelligence to attack, exposed or unprepared opponents at unexpected times?
- Security. Does the strategy secure resources bases and all vital operating points for the enterprise?

According to H. Mintzberg all these criteria are equally suitable for a wide range of strategies – whether it be military, business or state governance. In fact, all above mentioned cases, except state governance, are examples of a competitive strategy application. However, when we talk about sustainable development in universities, these strategy quality criteria may not fully reflect the quality of the strategy. In our case, a more important criterion for assessing the effectiveness of the strategy is a balance of defined and observed performance indicators. Adequate strategy top-down decomposition going from the highest to the lowest management levels could also indicate the strategy quality. The latter criterion can be useful for organizations operating in a competitive environment. Competitive and sustainable strategies could be illustrated with the analogy of the human organism: a competitive strategy

is like using drugs, when very strong concentration of the active material is affecting damaged body's function and sustainable strategy – a balanced, full-fledged diet that helps to develop harmoniously in order to prevent diseases and ailments (*Sudnickas, 2011*). University, as well as any other organization's strategic planning process begins with the mission, or, in other words, the organization's life meaning, its purpose explicit formulation. Then follows the vision that describes what University we want to see in the future. Analysis of the current situation is another very important step necessary to create an appropriate strategy.

### 3. Strengths/weaknesses and threats/opportunities (SWOT) analysis

The most well known and most widely used method called SWOT analysis was suggested by Alfred Humphrey, a researcher at Stanford University. The purpose of SWOT is to analyze the internal and external environment in order to identify and assess the organization's external threats in relation with the organization's internal weaknesses and determine the internal organization strengths trying to use them to exploit external possibilities. SWOT analysis is a basis for generation of various strategic alternatives. Original way of linking the western two-dimensional SWOT matrix with Chinese five-element theory was proposed by Kuang-cheng Wang (*Wang, 2007*). The five elements or five changes include: birth, growth, harvest, storage and transformation (Figure 1).

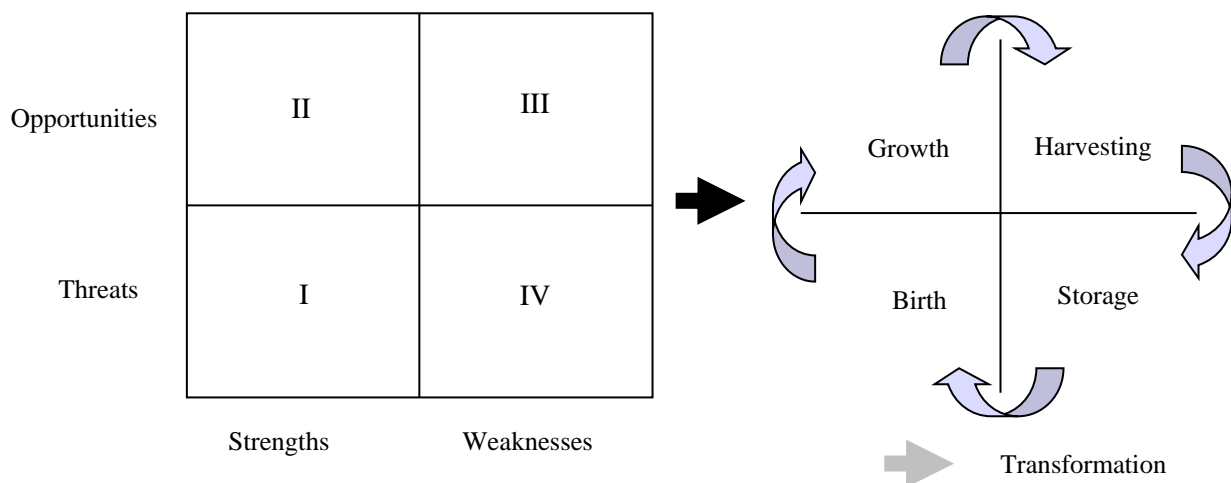


Figure 1: Five-change process and matrix of SWOT model (*Wang, 2007*)

Integration of five changes with SWOT analysis enables policy-makers to gain additional insight into how to develop effective strategies. Transformation assumes the role of coordinator between the other four steps: birth, growth, harvesting and storage. Unfortunately, the importance of the transitions from one step to the next often remains underestimated.

According to Kuang-cheng Wang: “Strengths – Threats“ strategy (quadrant I) could rely on the “birth” in which organizations should spend more time and allot more resources for new product or service development in order to get bigger market share and become better known for its potential customers. It is expected that during this period the organization will develop their ability to respond quickly to changing or unmet needs. Organizations using previously conducted research work, could offer outstanding products and services.

The transition from “birth” to “growth” mode is the most favourable moment to reduce or avoid competitive struggle because favourable external possibilities make a positive impact

on the internal organization's development. Weaker competitors can be removed, thus expanding the market share.

“Strengths – Opportunities“ strategy (quadrant II) could be based on “growth”. At this stage, the organization should try to look for new directions of its activity, to maximize sales and revenue, taking advantage of scale effects to become a leader in its own market segment. When the user understands that the organization's products are useful for him and gradually adopt them, the activities of the organization moves into the growth stage. In this stage organization, as a rule, appears on the peak of its life cycle and its sales are growing as fast as never before. As a result, marketing budgets are growing, the organization successfully competes and ultimately becomes a market leader. But at the same time, there is a risk that the rapid development may adversely affect the quality of production and service, and cause the customer's dissatisfaction.

The status change from “growth” to “harvest” is the most appropriate time to assess your activities profile. This is the moment when the external opportunities are outgrown by external threats, and it becomes important for organization to abandon some of its activities that are incompatible with its main goals and to focus on the most important directions only. On the “harvest” stage organizations may still grow, but they do not improve. Inertia always stems from formulas of previous success, when managers often do not realize that organization reached a critical point.

“Weaknesses – Opportunities” (Quadrant III) strategy could be based on the “harvest”. In this phase, the organization slows down the pace of production or service development. The market brings new players and pace of sales slows down. The market share is still significant and still generates high revenues. At this time, profitability is the highest, the organization limits the marketing expenditures, pays less attention to development and focuses mainly on the needs of existing customers.

The strategic problem of transition from “harvesting” to “storage” stage is to gather resources and prepare for the next step when the internal weaknesses diminish internal strengths. The organization should refuse unprofitable products and services. The energy should be accumulated for the next cycle. All the resources are assigned for the development of new products or services.

“Weaknesses – Threats” (quadrant IV) strategy could rely on the “storage”. At this stage, organizations should focus on the development of their core competencies, preparing for possible major changes. Sales and profits begin to decline, and the market share is shrinking as well as. Price adjustment could still stimulate some growth, unprofitable products should be updated, replaced, or removed from circulation. At this stage, the organization should initiate essential changes or transformation. More resources should be allocated to the future oriented research and design activities.

The completion of the last stage of the cycle, “storage”, and the transition to the first phase of a new cycle of “birth” raises the question how to find a new niche in the market when the external opportunities outweigh external threats. At this stage, the market always opens up new opportunities, but the organization's leaders should be careful to evaluate the experience of past failures. The organization should pay due attention to the market research, taking into account the customer's needs creating new products and entering the market.

#### **4. Different variants of the strategic plans of universities**

Don Anderson, Richard Johnson and Bruce Milligan (*Anderson et al., 1999*) investigating university's strategic planning has identified two planning methods, which called respectively biological and teleological: Planning is called biological, when an

institution “mutates” adapting to changing external conditions, to become a leader, teleological model defines a situation where the existing institutional behavior is determined by modelled future perspective. In the first case, it is recognized that the University must be adaptive in order to survive successfully, but the planning is limited to responding to environmental changes. This method can be considered as reactive. The second method provides deliberated planning and purposeful strategies to enable the University to move toward desired goals, and can be considered as proactive.

The same authors, considering Australian universities, noticed a difference between the various plans developed by universities and grouped them into three types:

1. Publicly accessible strategic plans, which include the University’s mission, vision, as well as the general objectives and targets. Sometimes a more detailed information reflecting the quantitative expression of plans is provided, in that case a strategic plan is often divided into two parts – the more general information in an attractive format is presented to public at large while more detailed information, operational plans, etc. are included into supplements. According to the particularity of information the plans of this type, in turn, are also divided into several groups:
  - Detailed plans, where together with the vision and mission provided elaborated information about the objectives and tasks, deadlines, responsible persons, links with the projected budget, performance indicators, target values.
  - Provided the vision, mission and the context of strategic objectives, but all operational details are disclosed.
  - Provided the vision, mission and the main strategic directions only.
2. Confidential strategic plans, which include financial information, some of the planned actions related to a possible collaboration or partnership with other educational institutions, whose disclosure could provide an opportunity for competing organizations to use this knowledge to gain an advantage.
3. Strategic plans that are not written-down, and only kept the in the minds of the managing persons. These plans are sometimes referred to as the real plans and are related to the expected structural changes or unpopular decisions to reduce the number of training programs or staff. Mykolas Romeris University strategic plan (<https://>, 2010) can be assigned to the first type of plans. It is placed on the University's website and made available to the public. It is also possible to state that this strategic plan is enough detailed.

## 5. MRU SWOT analysis

Mykolas Romeris University SWOT analysis was made by joint group of the University and faculties council members. For their expert evaluation was submitted a list of internal factors (Table 1), which was created according to the best foreign universities practice. On the basis of personal information and available data on Mykolas Romeris University, participants were asked to assess each of the internal factors in two aspects:

1. Factor’s condition compared to the competitors – other Lithuanian universities – rated on a scale from 1 (very unsatisfactory performance) to 5 (excellent performance).
2. Factor’s importance for our university evaluated on a scale from 1 (not important) to 5 (very important).

The table 1 consists of 4 columns: serial number of the factor, the factor’s name, factor’s condition and factor’s importance.

Factors, which importance was evaluated lower than 3.5, were neglected as unimportant. Factors, which condition and importance were evaluated higher than 3.5, were considered as Mykolas Romeris University strengths.

Table 1: Internal factors (own study)

No	Factor	Condition	Importance
1	Native students	4.00	4.22
2	Foreign students	1.44	3.89
3	Location	3.11	3.50
4	Accessibility	4.00	3.94
5	Organizational culture. Microclimate	3.00	4.72
<b>Human Resources</b>			
	Teachers		
6	Scientific skills	3.06	4.00
7	Pedagogical competencies	3.22	4.50
8	General competencies	3.11	4.00
9	Ability to change	2.72	4.56
10	The ability to integrate into international higher education area	2.00	4.11
11	Support staff	2.40	4.20
<b>Material financial resources</b>			
12	Facilities for students	2.00	3.94
13	Facilities for teachers	2.33	3.94
14	Office equipment	3.06	4.33
15	Financial resources	3.33	4.56
<b>Study programs</b>			
16	Orientation to the needs of the market	3.56	4.61
17	Popularity	3.61	4.17
18	Diversity	3.29	3.50
19	Profitability	3.00	4.28
20	Quality recognition (accreditation. certificates)	3.28	4.61
<b>Study form</b>			
21	Distance learning	3.22	3.89
22	Traditional studies in auditorium	3.00	4.22
<b>Research</b>			
23	Notoriety	1.72	3.89
24	Profitability	1.78	3.61
25	Conformance to study programs	2.72	3.94
26	Relevance	3.06	4.50
27	University support	2.24	4.28
28	Scientific journals	3.11	4.50
<b>Projects/expert evaluations/consulting services</b>			
29	Profitability	2.67	4.33
30	Conformance to research directions	3.25	4.22
<b>Professional training programs</b>			
31	Orientation to the market needs	2.39	4.50
32	Popularity	2.22	4.06
33	Profitability	2.06	3.78
34	Applicability to various forms of delivery	2.46	4.00

<b>Main processes</b>			
35	Studies (lectures. seminars)	3.33	4.90
36	Innovative methods	2.88	4.33
37	Study programs development	3.38	4.60
38	Research	2.82	4.40
<b>Auxiliary processes</b>			
39	Management	3.19	4.39
40	Publishing	2.41	3.56
41	Employees' performance appraisal	2.65	4.24
42	Compensation systems	3.67	4.44
43	Studies service	3.18	4.28
44	Science service	2.47	4.22
45	Quality management of studies and research	2.65	4.28
46	Employees' training and development	2.59	3.89
47	Marketing	2.53	4.17
48	Public relations	3.18	4.00

Factors, which condition was assessed lower than 3, and estimated importance scored higher than 3.5, were considered as weaknesses. The remaining factors (condition between 3 and 3.5 and importance higher than 3.5) were not assigned to strengths neither to weaknesses which means that compared to our competitors activities in these areas were undistinguished.

Table 2: External factors. Opportunities (own study)

No	Opportunity	Probability (score)	Attractiveness (score)
1	Non-decreasing contests on demand programs	3.9	4.5
2	EU Structural Funds and other programs, and additional financial resources	3.5	4.2
3	Information technology development in providing services to external stakeholders	3.5	4.0
4	Researcher exchange programs of support for the adoption of internships and teaching of foreign scientists	3.5	4.3

### 5.1. MRU external factors (opportunities and threats)

The same group of experts on the basis of the conducted PEST (political, economic, social and technological factors) analysis, as well as the legal environment analysis, assessed external factors – threats and opportunities that may affect Mykolas Romeris University (MRU) strategic decisions. The experts were asked to assess the opportunities in two aspects:

1. The probability of the opportunity – measured on a scale from 1 (very unlikely) to 5 (very likely).
2. The attractiveness of the opportunity – measured on a scale from 1 (unattractive) to 5 (very attractive).

Threats were also assessed in two aspects:

1. The probability of the threat – measured on a scale from 1 (very unlikely) to 5 (very likely).
2. The subsequence of the threat – measured on a scale from 1 (invisible subsequence) to 5 (very severe subsequence).



The results of evaluation of main external factors (opportunities and threats) were summarized in Tables 2 and 3.

Table 3: External factors. Threats (own study)

No	Threats	Probability (score)	Subsequence (score)
1	Smaller contribution of Lithuania's GDP to higher education sphere	4.2	3.7
2	Deteriorating demographic situation increase competition among similar programs operating in	4.8	3.8
3	Only a part of students' education is free, and this part is likely to decrease	4.1	3.7
4	20-29 years persons are likely to represent the largest part of the emigration in Lithuania	4.0	4.0
5	Negative government's orientation towards social sciences and humanities	4.3	4.2
6	External pressure to comply with formal requirements of various rating institutions	4.2	4.3

## 5.2. Strengths/ weaknesses and opportunities/threats correlation matrix

The same group conducted MRU strengths/weaknesses (Table 1) links with the opportunities (Table 2) expert assessment which is reflected in MRU's strengths/weaknesses and opportunities correlation matrix (Table 4) as well as strengths/weaknesses (Table 1) links with the threats (Table 3) correlation matrix (Table 5). Correlation matrix's rows reflect internal factors (strengths and weaknesses), and columns – opportunities/threats, numbered from 1 to N (matrix column number corresponds to the number of possibilities/threats (Table 4/Table 5). If the internal factor and the possibility/threat are logically connected, the corresponding row and column intersection is marked by the symbol x. If it is associated with a significant opportunity/threat, column and row intersection is marked by the symbol X.

Table 4: Internal factors/Opportunities (own study)

	Opportunities	1	2	3	4
<b>Strengths/weaknesses</b>					
Factor 1 .....		X			
Factor 10 .....					x
Factor 17 .....		X			
Factor 23 .....			x		
Factor 42 .....				X	

Table 5: Internal factors/Threats (own study)

	Threats	1	2	3	4	5	6
<b>Strengths/weaknesses</b>							
Factor 1		x	x			x	
Factor 2							
.....							
Factor 9			X				
Factor 10							
.....							
Factor 17						x	
Factor 19			X	X			
.....							
Factor 24		X					
.....							
Factor 45							x

## 6. Performance measurement in Mykolas Romeris University using Balanced Scorecard

In 1992 Robert Kaplan and David Norton (*Kaplan & Norton, 1992*) presented their Balanced Scorecard system. This concept is based on the assumption that the manager must have a balanced set of measurable indicators, reflecting financial, customers, internal processes, and learning and growth perspectives. For the sake of visualization authors compare the system with the aircraft dashboard. To ensure a successful flight, the pilot of an airplane must receive timely information about many aspects of flight: the height, speed, amount of fuel available, the flight plan, the final destination, and so on. The pilot, depending on the flight parameters takes one or other decisions that could be crucial for both the crew and the passengers. The managers of modern organizations, including and universities, are facing similar problems. To remain successful in increasing competition and accelerating change environment, they are required to see a multidimensional view of their organization's performance.

A. Neely (*Neely, 1999*) lists several reasons which led to the increase of interest in this discipline, forcing many organizations to rethink radically their performance measurement policy: the nature of work changes, increased competition, the quality improvement initiatives (total quality management, Six Sigma process improvement methodology, Taguchi methods etc.), national and international quality awards (Malcolm Baldrige quality Award, European Foundation for Quality Award, and others).

The initial version of the balanced scorecard system has been developed for business organizations. Retaining a traditional aspect of financial activity tracking, balanced scorecard enables to look at the business from four different perspectives, each of which gives an answer to four essential questions for any organization:

- a) Finance – how will we look to our shareholders to be financially successful?
- b) Customers – how we should look to our customers to achieve our vision?
- c) Internal processes – to satisfy our shareholders and customers, at which business processes must we excel?
- d) Learning and growth – How our people must learn, work together and communicate to achieve our vision?

Properly constituted balanced scorecard is a very handy tool which can accurately convey the organization's strategy starting with its vision and ending with action plans for its implementation. The all four reflected perspectives are linked by cause-effect relationships.

Financial and customer perspectives deals with already achieved performance results, so we can say, that these two perspectives reflect the organization's past, internal processes – reflects the present, and the learning and growth perspectives of is related to our ability and potential, and therefore reflects the organization's future.

Although the idea of the balanced scorecard system arose from the need for performance measurement, and initially it was merely the instrument for measurement, subsequent studies (*Kaplan & Norton, 2004*) have extended this viewpoint, looking at the balanced scorecard system as a strategic management instrument that transforms the strategic plan into a backbone of the organization. Balanced scorecard is a core, which is based on four very important managerial processes (*Kaplan & Norton, 1996*):

- Strategy clarification and its translation into a concrete action program.
- Relating strategic goals with their measurement and communication to the organization's employees of all levels.
- Target goals setting and harmonization of initiatives to achieve them on different levels of the organization.
- Improving strategy execution feedback.

Upon establishment of new public management concept in the public sector, organizations, operating in both business and the public sector are getting more and more similar. On the other hand, there is a wide variety of university status, changing from private, profit-making organizations to state-owned non-profit institutions, but as universities are of special significance and importance for each country and society, they can hardly be levelled to ordinary „knowledge production” companies. Therefore R. Kaplan and D. Norton proposed model can't be applied for universities in the form in which it is applied in profit-making organizations. It has to be adapted to be more efficient. This is caused by the nature of universities, which are focused on the research and educational mission, opposite to business companies, whose primary motivation is profit maximization.

Howard Rohm (*Rohm, 2002*) proposes to distinguish the mission statement in balanced scorecard systems for non-profit organizations, to reverse cause and effect relation for financial and customer perspectives, to expand the meaning of the customer perspective, including here all stakeholders from all related to her public organizations. Learning and growth perspective rename to staff competence and organizational capacity perspective, emphasizing the importance of human resources. These changes would reflect the universities specifics well enough. Other authors (*Olve et al., 1999*) propose to introduce a fifth – stakeholder perspective, next to the customer perspective, but even in this case, the main idea of D. Norton and R. Kaplan remains the same – the organization's strategy stays the corner stone of the whole management system, ensuring the balance between the different perspectives that are linking by cause and effect relationships, perspectives reflects the organization's past, present and future.

The University's vision and mission, main strategic directions and critical success factors should be reflected in each of the balanced scorecard system perspective. Together with the objectives should be provided indicators for measuring progress, as well as a target, i.e. value the indicator should take (sometimes a range is pointed out – maximum and minimum), and finally – an initiative or concrete action program to implement the objective. A fragment of Mykolas Romeris University Balanced score card is provided in Figure 2. Most of the indicators of the financial perspective, as a rule, do not have associated initiatives. The

change of financial indicators, similarly to customer satisfaction perspective indicators is related to internal processes as well as learning and growth perspective indicators.

The logic of the Balanced Scorecard system is based on the customer needs which is a crucial factor in determining how a university reacts on the market opportunities and challenges. The mission, vision and values determine the University's organizational culture and leads to strategic objectives, which can be measured by performance indicators, setting specific target values for each of them. In turn, the indicators are associated with the initiatives we are undertaking in order to reach a target value of indicator. The initiative is based on resource and budget allocation and coordination, and ultimately they turn into a concrete action program. Thus, the University's strategic plan, displayed by balanced scorecard system, becomes an internal communication tool.

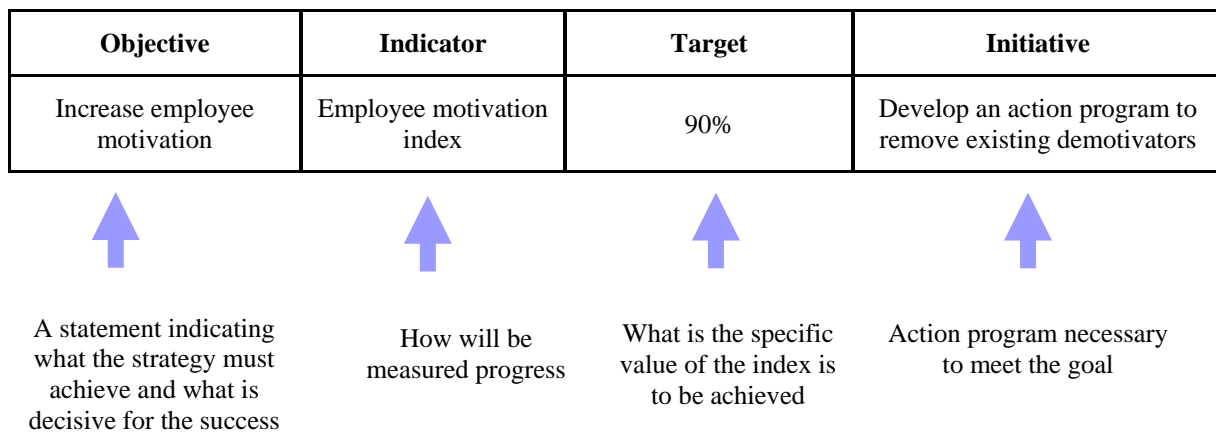


Figure 2: Fragment of MRU Balanced Scorecard (own study)

## 7. Process improvement and performance optimization in Mykolas Romeris University

The balanced scorecard framework lets us to monitor organizations internal processes by means of internal perspective indicators, but the only appropriate choice of these indicators is not a sufficient condition to ensure continuous process improvement. Strategic indicators of internal perspective may remain the same for a longer period of time, however, process improvement and quality management requires a variable set of indicators. Currently, there is a wide range of quality management and process improvement methods and in all cases those indicators are selected which at a particular time and in a specific situation are the most important for quality and which may indicate the narrowest places in the process (*Gražulis et al., 2012*). For a long time it was customary to treat an indicator of the product or service quality as a measure of product compliance with the specification, and these measures have been focused on the number of defects, and in one or another way were related to the quality costs or, in other words, the costs caused by quality problems.

After World War II, the United States had a reputation of a highest quality standard producer, so not finding adequate interest in their homeland, William Edwards Deming and Joseph Juran, ideologists and pioneers of process improvement methodology, chose Japan as the polygon for their ideas. In that period, Japan, unlike the United States, faced very serious quality problems. The main quality management and process improvement tools and techniques have been developed in Japan in 1950 – 1970 (known as Total Quality Management) and enabled the companies of this country to achieve an unprecedented high

level of process efficiency and production quality. Japan started to fill the U.S. market with audio equipment at the beginning, and later with what was considered to be the pride of the U.S. – automotive production. As a result, TQM began to attract an active interest in the U.S. initially, and then in Western Europe.

Some of these techniques have been developed, widely applied and spread by Six Sigma name. Such American companies as General Electric and Motorola became pioneers of this methodology and significantly contributed to its development.

Six Sigma enables to discipline and manage quality improvement process. This method uses a modified so-called Deming cycle (PDCA: Plan – Do – Check – Act), which W. E. Deming itself named as Shewhart cycle (PDSA: Plan – Do – Study – Act), the first step deals with the planning of the upcoming change, the second step – implementation of the change, it is desirable to start at a lesser extent, the third step – study or analysis of obtained results, and the last, the fourth step – adoption or refusal the planned change (*Deming, 1994*). Today it would be hard to imagine the leading companies producing cars, planes, computers not using these methods. Of course, applying these methods on full extent is very complex and time-consuming work. Methodology Six Sigma can be considered one of the first, which has proposed a universal measure of quality – sigma (*Pyzdek, 2003*). Sigma ( $\sigma$ ) – a Greek alphabet letter is used to denote the concept of mathematical statistics – standard deviation.  $\sigma$  allows to assess deviations of quantitative characteristics of the any real process. Six Sigma methodology is based on the assumption that the detecting process's "defects" or, in other words, deviations from the standard and systematically removing them we can come close to desirable version of the process. The  $\sigma$  value defines the quality level of the process (Table 5).

Table 5: „Sigma table“

Sigma	Defects per million
$2\sigma$	300 537
$3\sigma$	66 807
$4\sigma$	6 210
$5\sigma$	233
$6\sigma$	3.4

The methodology has been named on behalf the highest quality standard, which accounts for only 3.4 deviations from the million options – Six Sigma. Although the Six Sigma methodology consists of a multitude of separate approaches and techniques, but all of them can be summarized in five steps model – define, measure, analyze, improve and control (DMAIC). The first step defines the project's purpose and scope. Background information on the process and customer is collected. The result of this step is a clear statement of intended improvement, map of the process and so called "voice of the customer" – list of information what is important to the customer. In the second step we measure current parameters of system, and gather all needed information on the current situation. The third step is for the existing system analysis which is based on objective measurement results. The verified causes will form the basis for the solutions in the next step. The fourth step is to implement solutions that address root causes, and the last fifth step is to evaluate the solution, prepare complete documentation of results, lessons learned, and recommendations.

Mykolas Romeris University carried out doctoral degree studies process improvement using some Six Sigma methodology elements (*Jankauskienė et al., 2008*). The high level doctoral degree studies process map was created, the needs of the different stakeholders –

doctoral students, university researchers, for doctoral study process responsible administrators, etc. were defined. Three specific questionnaires explored the university graduates, executives and management attitude towards doctoral studies and the quality of their organization. Identification of key weaknesses of the current situation was based on the measurement of the collected data. The result of this step was a tested and proven hypothesis about the cause of defects in all stages of doctoral study: the quality assessment of accession and admission to doctoral studies, dissertation preparation and defense quality assessment, doctoral studies funding sufficiency, mobility opportunities for doctoral students, and doctoral professional career assessment.

The research results were used to provide suggestions on how to improve the quality of doctoral study process and recommended instrumental tools for systematic measure of process changes and evaluation and improvement of quality. Also is recommended to use the instruments of this methodology to perform doctoral process quality assessment at university periodically every 3 – 5 years. During the project primary database of doctoral studies process parameters was created.

Together with all existing Six Sigma methodology advantages there is one drawback – it's difficult enough to implement it in the organization. Recently, many organizations, including universities are starting to implement “Lean manufacturing” methodology (*Bhasin & Burcher, 2006; Mark & Nash, 2003*) which is very quickly getting more and more popular. “Lean manufacturing” is considered rather organizational philosophy, corporate culture or way of life than just a technique, which focuses on reducing non-value added activities. Peter Hines, Pauline Found, Gary Griffiths and Richard Harrison (*Hines et al., 2008*) identified seven activities not generating any value:

- Overproduction;
- Defects;
- Unnecessary inventory;
- Inappropriate processing;
- Excessive transportation;
- Waiting;
- Unnecessary motion.

Getting rid of unnecessary activities leads to the production stabilization, i.e. performance variability and volatility is eliminated.

## 8. Conclusions

While the University is one of the most stable organizational structures that have reached us from the early Middle Ages, they are currently changing not only structurally, but also in terms of identity. Socio-economic and political changes force universities to apply strategies that have so far just used by typical business organizations. This tendency is known as the “New Public Management” or “Managerialism” and characterized by using of business administration methods and techniques in the public sector organizations. It may be useful as a positive impact on quality of performance

Exclusive University mission and its special place in society, requires a balanced development of universities, therefore purely competitive strategies here may not be fully suitable. In this case, more important criterion for assessing the effectiveness of the University strategy is sustainability and balance of performance indicators. University strategic plan mapped by the means of the balanced scorecard system turns to the internal communication tool, significantly contributing to the successful execution of the strategy.

For University business success is not enough to correctly select what we will do, i.e. not enough only to create a good strategic plan. It is also very important to answer the question how to achieve the results sought. Sophisticated, comprehensive process improvement methodologies such as Six Sigma could be a later stage of implementation of quality management, while starting with lean manufacturing or sometimes so called “workout” methods, used only in the most important points, gradually increasing the use of tools process improvement range and broadening their scope to all the activities. Process improvement methodology should become a part of the organizational culture of the University.

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