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RTU Approach to pursuing excellence: sustainable integration of internal quality system in the strategy development. Pilot project review

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ABSTRACT

The aim of this article is to explore the pilot project dedicated to integration of internal quality system in the Strategy Development of Riga Technical University (RTU). Recent development of RTU has been mainly achieved due to the adopted RTU Development Strategy 2014 – 2020 and introduction of the European Foundation for Quality Management (EFQM) management model. RTU Strategy focuses on three pillars – high quality study process, research excellence and sustainable innovation and commercialization. RTU has introduced the EFQM management system as the basis for operations to support implementation of the strategy and to ensure process efficiency and quality. During this research, quantitative and qualitative analysis was performed. More than 150 experts and stakeholders participated in this research in order to evaluate the implemented pilot project. The proposed model and actions to introduce sustainable integrated concept are based on the Planning Stage, Approach, Implementation, Assessment and Refinement. The method how to define action plan priorities has been adopted to suit the needs of RTU. Results showed that this was

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Keywords: strategy, EFQM model, sustainability, internal quality assurance

INTRODUCTION

In the current volatile and demanding business environment, managers are eager to demonstrate that their organizations are excellent, which can mainly be achieved through continuous performance improvement. Based on the assessment of organizations, the EFQM Excellence Model is the most frequently applied and suitable tool that shows how successful they are in ensuring organizational excellence. [1]

In the recent period, RTU has grown to become the biggest university in Latvia by the number of students. In Times Higher Education ranking RTU was ranked among top 500 universities in the world, and collaboration with industry was marked as the strongest pillar. RTU has established Design Factory which is part of global Design Factory Network aiming towards more entrepreneurship focused university. It is clear that organizations must have an appropriate management system to succeed in this path. [2] Basu states that quality can be explored considering three dimensions (Design Quality, Process Quality and Organization Quality). [3] The researcher reflects on the lack of attention dedicated to Organization Quality. Main challenges associated with introduction of quality systems at the institutions of higher education are connected with lack of motivation, unwillingness of staff and lack of qualified personnel [4]. Human resources are "the living resource" of organizations, and as such are present in the evaluation criteria of all excellence models [5]. Therefore, administration of RTU created a two level strategy – general university strategy and action plan as well as the strategy of each faculty. This article focuses on the EFQM model and the ways how it can be effectively integrated into the strategy to enhance sustainable education, research and valorization.

1 STRATEGY AND QUALITY SYSTEM DEVELOPMENT

1.1 Development of the university strategy

Strategy defines a path for organizational development. The major goals are included in the core strategy document, but wider range of indicators can be defined in the action plan [6]. Careful and planned approach to execution is important for successful strategy implementation, and that is the factor on which organizations fail the most [7]. Research conducted by Rapert, Velliquette, and Garretson [8] shows that reaching internal consensus allows organizations to achieve better financial results and increases efficiency. Additionally, many authors maintain that management is responsible for developing and sharing the vision, encouraging innovativeness, supporting employee efforts and involving employees in the decision-making process [9]. To define general strategic goals a university must have a clear understanding of what it needs to deliver and perform gap analysis to understand its current position [10]. Along with general strategic goals, the management should define horizontal priorities – groups of tasks, which will allow a university to reach the aims of the core priorities. Horizontal priorities can be grouped in sections (no more than 3-6) and they should be incorporated in the core processes as shown in Fig.1.

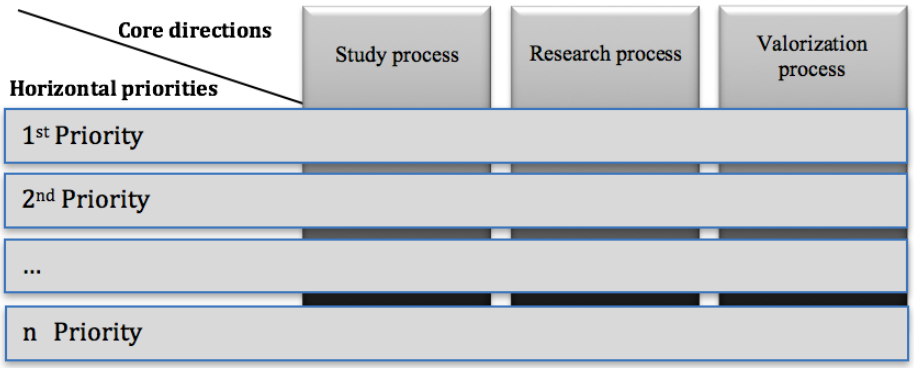

Fig. 1. Incorporation of horizontal priorities in the strategy.

1.2 Setting strategy KPI

Formulating its core action areas and defining general settings, a university sets the framework for all further actions and policies included in the strategy document. Academic and scientific personnel play an important role by setting the aims according to the existing tendencies and trends. When the requirements for reaching the desired strategic goals are set, the university should develop an action plan. These stages are integral elements of the process of university strategy development (Fig. 2).

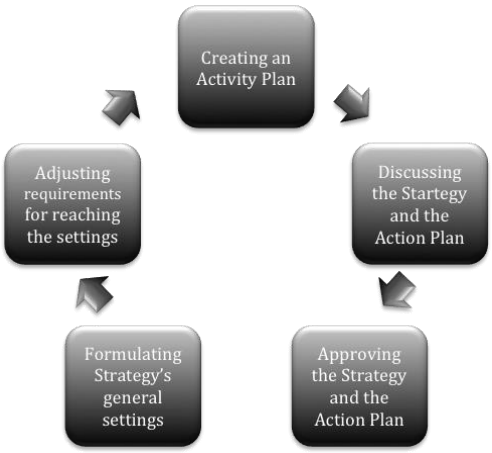

Fig. 2. Development of the Strategy and Action Plan.

To ensure the university's strategy is implemented effectively it is recommended to develop an action plan setting detailed strategic targets – KPI (Key Performance Indicators), based on which the university is able to plan clear tasks, select measurable indicators, appoint responsible units and set deadlines.

1.3 Strategy development at Riga Technical University

RTU has developed the strategy for the period of 2014-2020 (approved in October 2013) and has drawn up an action plan that sets the core priorities and detailed key performance indicators that allow monitoring strategy implementation. At first, management work group performed benchmarking and SWOT analysis. Based on the information obtained through benchmarking and SWOT analysis, the management work group together with the Rector worked on the mission that would reflect three core objectives of RTU – high quality study process, research and innovation, and commercialization. The work group introduced horizontal priorities, which include internationalization, interdisciplinarity, organizational efficiency, financial efficiency and infrastructure efficiency, and these priorities should have been incorporated in all three objectives as seen in Fig. 3.

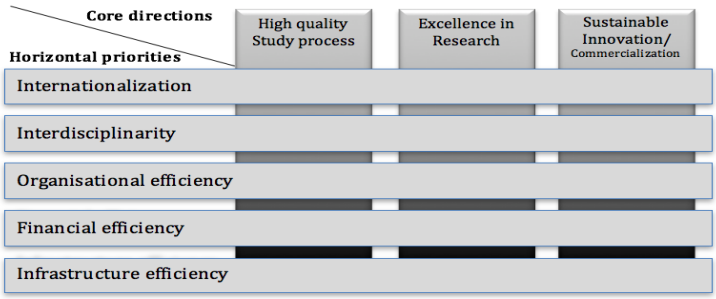

Fig. 3. Horizontal priorities of the Strategy of Riga Technical University.

1.4 Quality system concept in RTU

According to Calvo-Mora, Navarro-García & Periañez-Cristobal, organizations need to establish an appropriate management system to achieve success, irrespective of the sector, size or structure. [11] There are two ways in which firms in Western countries are addressing quality management issues. On the one hand, implementation and certification of quality management systems according to ISO 9000 standard are undoubtedly the most popular methodology. On the other hand, evaluations based on the EFQM are gaining ground in improvement processes. [12] As Escrig & de Menezes point out, the EFQM was launched in 1991 as a non-prescriptive framework based on nine criteria. [13] The present version of the model and respective weights are shown in Fig. 4. Each criterion encompasses several sub-criteria, thus leading to a total of 32 sub-criteria. RTU Quality System is based on the EFQM Excellence Model.

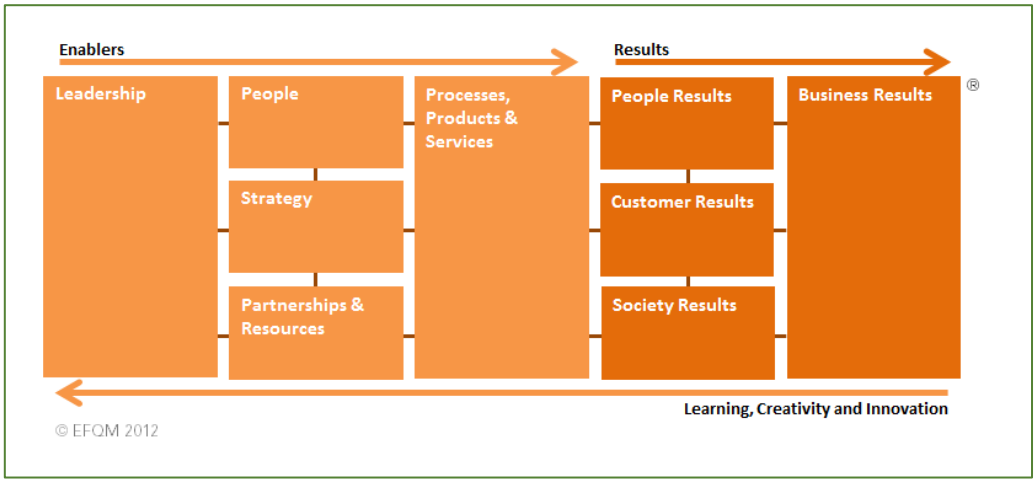

Fig. 4. EFQM Excellence Model. Source: EFQM (2015).

EFQM 2013 states that each of the nine criteria has a definition, which explains the weight and implication of each criterion. Every criterion comprises a number of elements formulated as statements that describe examples of what can typically be seen in excellent organizations and what should be considered part of self-evaluation, which, in its turn, is part of the quality system. The model is based on eight fundamental concepts of excellence (adding value for customers; creating a sustainable future; developing organizational capability; harnessing creativity & innovation; leading with vision, inspiration & integrity; managing with agility; succeeding through the talent of people; sustaining outstanding results). [14]

2. PILOT PROJECT OF INTEGRATION OF THE EFQM CRITERIA WITH KPI

In order to synchronize processes of university strategy development and monitoring and quality system pilot project was launched to combine these platforms. Objectives of process synchronization was to make both platforms more integrated and systemic, that would lead to increased efficiency, reduce duplication of data management and quality indicators play more significant role in determining universities strategy. Method to evaluate process was quantitative and qualitative analysis. As for quantitative analysis surveys were sent out. Qualitative analysis was conducted through individual meetings and interviews. In this article, the authors consider integration of RTU KPI in RTU EFQM quality system model. In case of RTU, all KPI can be classified as EFQM result criteria, see Fig. 4. More than 150 experts and stakeholders participated in the research to evaluate correspondence of each of RTU 32 strategy KPI with the EFQM criteria and corresponding sub-criteria. Afterwards, interviews with some RTU staff

members, students, project managers and other stakeholder were carried out. Completing the questionnaires, respondents, based on their opinion, had to evaluate which KPI fits best a with certain EFQM sub-criteria. In some cases, results were equally divided between two or more criteria, then this indicator was represented in more than one slot. Table 1 shows integration of strategy indicators in the EFQM result criteria, more detailed sub-criteria relations were not included in this paper. This analysis was very useful to set a framework for EFQM quality system that later was used to draw up a fact-based self-evaluation report.

Table 1. Integration of RTU Strategy indicators in the EFQM result criteria

No.	Indicator	EFQM Result Criteria			
		Customer Results	People Results	Society Results	Business Results
	Study indicators				
1.	Total number of students	X			X
2.	Number of graduates			X	X
3.	Student drop-out rate	X			
4.	Number of foreign students	X			X
5.	Number of study programs	X			
6.	Average age of academic personnel		X		
7.	Number of study programs in English	X			
8.	Number of study programs implemented jointly with other universities	X			
9.	Number of study subjects implemented in English	X			
10.	Average rate of faculty evaluation done by students	X			
11.	Relative number of academic personnel with Doctor's degree		X		
12.	Number of foreign guest professors		X		
	Scientific research process indicators				
13.	Number of scientific research staff		X		
14.	Number of scientific research staff (FTE)		X		
15.	Average age of research personnel		X		
16.	Relative number of research personnel younger than 35 years		X		
17.	Implemented scientific projects financed by external funding				X
18.	Attracted external research funding ('000 EUR)/ Number of scientific research staff (FTE)		X		
19.	Publications and citations				X
20.	Number of organized seminars and conferences			X	
21.	Effectiveness of doctoral promotion – number of defended doctoral theses/ number of enrolled doctoral students	X			
22.	Number of scientific journals cited in SCOPUS				X
23.	Number of foreign scientific research staff		X		
	Innovation and commercialization process indicators				
24.	Number of patent applications		X	X	
25.	Number of granted patents				X
26.	Number of signed intellectual property licensing agreements			X	
27.	Earned income from signed intellectual property licensing agreements				X
28.	Number of prepared commercialization offers		X		
29.	Number of signed agreements with companies			X	
30.	Earned income from signed agreements with companies				X
31.	Number of created new spin-offs			X	
32.	Number of created new spin-offs active for at least 2 years			X	

RTU Approach to Pursuing Excellence defines the following steps to achieve sustainable development of RTU: stating and planning required results, Approach, Implementation, Assessment and refinement, as it can be seen in Fig 5.

Fig. 5. Stages of RTU Approach to Pursuing Excellence. Source: RTU Approach to Pursuing Excellence (2017).

Fig. 5 presents the process cycle of ensuring excellence. Initially, RTU Mission, Vision and Values are set by RTU Senate and administration. They are mainly focused on setting achievable goals, developing and reinforcing more competitive national economy through creation of additional value for perspective graduates and existing students. Keeping this in mind, RTU has set its goals that are implemented within RTU Strategy, which focuses on high quality study process, excellence in research and sustainable valorization. Once all strategic objectives are set, action plan is drawn up listing concrete activities how to improve university performance and to help achieve the targets set previously. Implementation phase begins with systematic process oriented review of the real time data. Analyzed data is used to further enhance the process or make conclusions on the set targets. This is conducted by RTU Quality Management Unit. Once a year, the university prepares a self-evaluation report to analyze the processes and consider possible improvements in the future in terms of Action Plan and Strategy implementation process. After self-evaluation and analysis of performance data, proposals for administration to introduce further changes for continuous improvement are made.

3. DEFINING ACTION PLAN PRIORITIES

Creation of the Action Plan means defining clear tasks, and that allows setting detailed key performance indicators, appointing responsible units and setting deadlines. This year, the pilot project dedicated to the introduction of new methodology how to develop an Action Plan at RTU has been launched. Various stakeholders were involved as participants in creating Strategy Action Plan, which is managed by administration of the university. Challenge is to have the mechanism on how to select ideas that should be included in the strategy. In case of RTU, this becomes even more challenging as the current process allows collecting proposals and ideas from a variety of sources. Focus group reviews indicate that more input sources lead to more proposals and pool of action ideas. This makes development of the strategy action plan more effective. It

helps to include employees, mid-level managers, and other stakeholders in the decision-making process, increases awareness of the strategy, quality of action plan and helps to implement the strategy in general. Certainly, it is not possible to implement all actions included the Strategy due to numerous reasons but mainly due to lack of resources. Ideas should be prioritized and RTU has created the methodology to do so. In case of RTU, the Action Plan is reviewed annually. Input for the Action Plan is generated from the review of the previous Action Plan results; senior management input; self-evaluation group input; quality management unit input; employee surveys, and the input from internal and external auditors. All Action Plan proposals are evaluated with action coefficient Eq. (1) where based obtained results list is prioritized list is generated. Pool of ideas is rated as shown in Table 2 at strategy review meetings, usually led by Vice-Rector in each of strategy field (Fig.1) with representatives from all faculties and some central units. The bigger A_c, the more actions should be included in the Strategy.

Table 2. Action prioritizing

Action (A_c)	*Importance (I)*	*Urgency (U)*	*Needed resources (R)*	*Impact on strategy implementation (S)*	*Priority group*
1st action	1 to 10	1 to 10	1 to 0,1	1 to 10	1 to …n
2nd action	1 to 10	1 to 10	1 to 0,1	1 to 10	1 to …n
n action	1 to 10	1 to 10	1 to 0,1	1 to 10	1 to …n

The maximum score for A_c is 1,000 if the action has high importance and urgency, it does not require a lot of resources and has significant contribution to implementing the general strategy. After all actions are scored and A_c is calculated according to Eq. (1), results priority group is given as shown in Table 2. It is decided by the senior management on how to prioritize the list.

$$Ac = I * U * R * S \quad (1).$$

This leaves the window for senior management to decide what action should be listed in the lower priority group. The final decision on the priority groups to be included in the Strategy is made by the Rector. Research showed that introducing periodic reviews of the Action Plan has changed organizational culture as more people feel involved. For example, respondents indicated that since their inclusion in the process, they more actively support the overall strategy implementation and that the quality of their work has been influenced.

4. SUMMARY AND CONCLUSIONS

The pilot project to integrate Strategy development with the EFQM system can be considered successful at RTU to combine strategy and quality system platforms. Complete cycle of stating and planning required results, Approach, Implementation, Assessment and refinement has been developed. The research showed which Strategy KPI's should be included in the EFQM criteria and analyzed in the self-evaluation report. Employees have better understanding of which outcomes of their work are expected and will be evaluated. Overall support to strategy implementation has increased. Action Plan tasks are prioritized by evaluating and scoring their importance, urgency, required resources and impact on strategy implementation. Research findings confirmed that the EFQM Model integration in strategy development has had a positive effect on achieving key performance indicators. More comprehensive action plan development process has been introduced, which is based

on input from various stakeholders. Further analysis should be conducted to evaluate the impact of EFQM enabler criteria on KPI. Because of pilot project both platforms of strategy and quality monitoring were combined, making strategy development aligned with quality system and quality system more supporting of strategy KPI. Pilot process showed, that if people working on both processes work together then it leads to increased efficiency and better governance of data. This helps both units to use the date for analysis and better understand each other. This also eliminates waste in working hours as it reduces duplication of data management. Employees connected with both processes confirmed that data analysis is quicker than if both units do it separately. Another conclusion with closer integration is that quality indicators play more significant role on processes to support strategies KPI. This has led to more increased KPI influence on process outcomes.

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