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STRIVING FOR PERFORMANCE EXCELLENCE IN THE QUALITY OF UNIVERSITY

У цій статті висвітлені аспекти управління якістю в університетському середовищі, інтегровані в складові сфери діяльності освіти, досліджень і соціального співробітництва. Мета полягає в досягненні високої якості роботи шляхом творчого застосування загальновизнаних принципів і методів управління професійною якістю, які зазвичай використовуються в усіх видах організацій суспільства і забезпечують стійкий успіх університету. Суспільство змінюється, тому університети повинні змінюватися і знаходити інноваційні оперативні рішення для задоволення потреб і очікувань суспільства.

Ключові слова: якість, передовий досвід, університет, управління якістю, організаційне навчання.

The quality management aspects in the university environment are presented in this article integrated within the composite activity sectors of education, research and societal collaboration. The aim is at performance excellence through creatively applying recognized professional quality management principles and practices, which are generally used in all kinds of organizations of the society, and ensure sustained success to the university. Societies are changing, hence also universities must change and find new innovative operational solutions to meet the needs and expectations of the society.

Keywords: quality, excellence, university, quality management, organizational learning

Introduction. Higher education and research play a crucial role in supporting regional social cohesion, economic growth and future competitiveness. Given the desire to become increasingly knowledge-based, higher education is an essential component of socio-economic and cultural development [7]. At the same time, an increasing demand for skills and competences requires higher education to find or create the new ways to operate.

Quality is imperative in all educational institutions [22] but especially its importance is emphasized in all of the different activities of universities including the composite activities of education, research and societal collaboration. The university should strive for excellent performance [16] throughout the university activities by using in a creative way the general professional quality management approach including recognized quality management principles and practices [11] that are used in all kinds of organizations of the society. Only excellence in performance can ensure sustained success.

Quality of the university activities is an extensive multidimensional challenge. Universities are multi-faculty entities, and especially services to the companies and other organizations of the society set severe quality requirements. In fact, universities should be pioneers or at least 'Primus inter pares' in the their quality approach. Universities should not be isolated institutions. It is not enough that universities only follow the quality references of the education sector, but also the best general professional business references applied in the other organizations of the society should

be taken seriously and implemented with innovations. Quality is a global issue and it applies to all business sectors. Harmonized quality concepts, principles, and practices are foundations of the professionalism and support collaboration.

The term «performance excellence» in the context of universities refers to an integrated quality approach within the management and operations of the university and its units, which results in (a) the delivery of ever-improving value to the stakeholders and contributing to organizational sustainability, (b) the improvement of overall organizational effectiveness and capabilities, and (c) the organizational and personal learning [15]. Competitive advantages of the universities can be very versatile.

Faculties, institutes or other specialized unit of the university may be very different, and they also may be at different development stages. Hence, those units also should have different quality management approaches. When dealing with the quality management in the universities, one should consider both the university (the university corporation) as a whole and all different operational units. In this article the general word organization is used in this context to mean the whole university or its single units.

Successful excellent operation requires surpassing challenging references and continual organizational learning. This includes:

- Exceeding organization's own performance goals and targets.
- Succeeding in the organizational performance within own academic branch in average and being among the best reference universities.
- Evidencing world class performance, including benchmarks and best practices among other organizations of the society outside the university sector.

Hence, performance excellence represents the highest level of quality in an organization. The overall performance of the organization is a broad concept including four main categories of performance [15]:

- Stakeholder-focused performance: Organization's performance seen by its stakeholders or interested parties [11].
- Operational performance: Organization's internal performance including hard process performance (for instance cost efficiency, throughput or lead time) and soft performance (for instance workforce skills).
- Product performance: Characteristics of the products including goods and services [11]. The products of universities are mainly services.
- Financial and market performance: Operational costs, productivity, competitiveness, and market share, etc. Also universities compete with other educational institutions globally.

Conceptual, methodological and organizational challenges. The educational sector is in a paradox situation with regard to quality. The absolute importance of quality is highlighted in the speeches and writings but its professional conceptualization and implementation is indeterminate or ambiguous [5]. The prevailing practices are fragmented and inconsistent; even top universities have not necessarily explicit professional understanding or creative implementation for quality, or they follow obsolete approaches. Difficulties for the universities' quality management include:

- Basic professional concepts of quality, quality management, quality improvement and quality assurance are not well-known although they are widely used in all other business sectors globally and even internationally standardized.
- Quality approaches in universities, for instance according to the Bologna process [8], are based on old-fashioned formal quality assurance systems and external control

for conformity, which easily causes confusion and leads to stagnation. The need of methodological improvement has been recognized, but the consequential development measures have not yielded established results [17].

- Universities' quality considerations normally focus only on the education and do not cover the areas of research and social collaboration. However, all these three areas are very closely related to each other, and they should be considered as a whole.
- Many universities have not specific quality related education programs or research activity.
- Many universities do not have well established general managerial practices and culture, which does not support effective integration of quality into the management processes.
- How to behave in competitive situations, is not familiar to universities.
- Universities are societal institutions, and their operation and development depend on decisions of those in power in the society.
- Ontological and epistemological bases of teaching/learning/collaborating and quality are not linked with the quality realization and evaluation.
- The academic university rankings are mainly directed to emphasize the academic achievements and do not follow the traditional recognized quality concepts or principles, and the prevailing student evaluation and scoring is not aligned with the quality related evaluations.

The basic concepts of quality, quality management, quality improvement and quality assurance [11] are essential prerequisites for professional realizing and implementing quality practices in universities. The internationally standardized definitions of the concepts are beneficial also in the educational sector, but they should be understood in the university context. Benchmarking with the organizations outside the educational sector could provide new ideas for the development of universities but is not generally practiced.

The essence of the concept of *quality* according to its definition [11] is the perception of satisfaction of all stakeholders of the university. Especially both teachers and students should perceive the educational processes valuable. Hence the key challenge for quality in the university is to recognize and fulfill the needs and expectations of students and teachers, and other stakeholders involved with the university services. The general quality definition is valid for the university environments, but the challenge is to understand and describe its meaning in the composite situation of education, research and societal collaboration. The needs and expectations of the different stakeholders cannot be standardized, nor even easily identified.

Quality management implies coordinated activities to direct and control the organization and its processes with regard to quality. Hence realization of quality originates in the organization's management processes.

Quality improvement is to increase the ability to fulfill the needs and expectations of the stakeholders and hence is a key element of the professional quality management. It actually is based on human and organizational learning and innovation in the organization.

The purpose of quality assurance is to provide the stakeholders with factual information when an organization needs to demonstrate its ability to provide outputs that fulfill requirements and aim at enhancing stakeholder satisfaction. Also quality assurance is a part of quality management.

Universities as manageable systems for quality and excellence. High quality does not take place accidentally but needs a professional approach and coherent quality realization in the management and operational processes of the university and its units. Starting point for a systematic quality development is to identify the university entity and its units as organizational systems and recognize the organizational context including external and internal issues that are relevant to the purpose and strategic direction and that affect the ability to achieve the intended results of quality [12].

The framework model [4] of figure 1 can be used for the comprehensive quality management approach in universities covering all organizational functions and units.

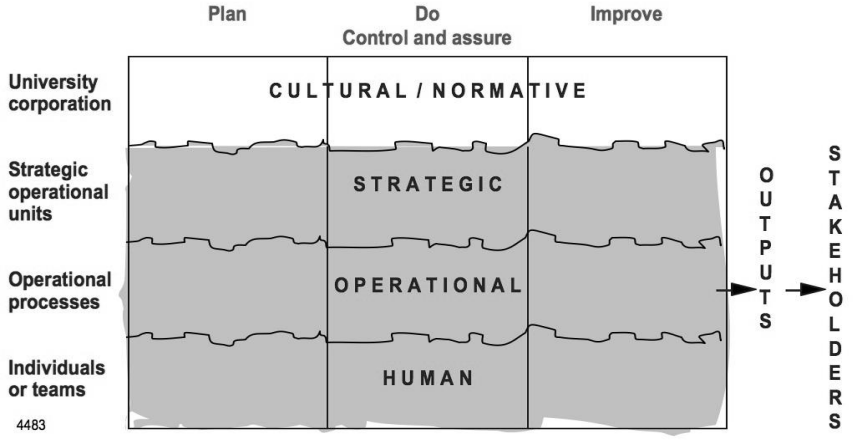

Figure 1. General management framework for the university corporation consisting of different kinds of competence, responsibility and practices, and learning needed at the different organizational levels of the university. Quality related planning, doing and improving are needed at all levels.

This model covers the following four organizational levels:

- The normative and cultural level (university corporation), where the general principles, the university-wide common insight, goals, shared tools, policies and practices concerning quality are created, including how these are to be applied in practice on the basis of the whole university's needs. Responsibility belongs to the top management. It cannot be delegated.
- The strategic level (strategic units of the university), where decisions are made by the management of the unit, and measures undertaken concerning the entire unit's activities and especially the future competitiveness of the unit. The unit's operational system is composed of the interrelated operational processes. Different units may have different needs but all units operate within one culture of the university.
- The operational level (operational processes), where decisions and measures concerning daily management are made and undertaken, and products (goods and services) are realized in real time for stakeholders' needs, just 'now and here'. Responsible person is the process owner.
- The human level (people and teams), where the personal contribution of each member of the organization's personnel (including managers) is provided in natural working environments. Responsibility is on the person him/herself.

Quality is a specialized competence that should be taken into account at all levels of the university corporation, including normative, strategic, operational and human viewpoints. Quality management measures at all these levels should be aligned. Professional and exemplary quality approach is to ensure the attractive and effective

collaboration with other organizations and sustained success of the university in its activities [14].

Innovative organizational solutions of the universities. It is useful for the development of the universities for the future needs to introduce new disruptive operational practices that are not typical in the traditional university culture. Here the Aalto University [3] in Espoo, the neighboring city of Helsinki, is taken as an example.

In addition to the traditional educational means in the different Aalto University's schools, the university has three 'Factories' that are flexible new university units serving as joint platforms that combine the expertise of the university schools: Design Factory, Health Factory and Media Factory. These factories are designed to facilitate new forms of collaboration in an environment where academic teams, researchers and students work together with companies and communities. The themes of teaching and learning are important parts of the factory activities; the new knowledge produced by the research is smoothly transferred to teaching. For instance, the Design Factory [1] has made a lot of cooperation with companies, and hence they have practical multidisciplinary projects, research and education in product development, marketing, international business, innovations and IPR (intellectual property rights). The results have been very successful, and the Design Factory concept has been expanded to many other universities everywhere in the world.

The City of Espoo has co-initiated with the Aalto University the privately run Urban Mill [23], a public-private co-working and co-creation platform for urban innovations on the Aalto University campus. Urban Mill's success is demonstrated by its 50000 users and 100 prototypes since 2013. It is a powerful example of an open innovation platform that uses a thematic approach, agile orchestration and co-creation methods to advance urban change.

Aalto university also supports students' activities for creating their entrepreneurship skills. Important example is Aaltoes [2] (Aalto Entrepreneurship Society), which is the largest and most active student-run entrepreneurship community in Europe. Particularly interesting area, where Aaltoes is active, is the Startup activity including the concepts of Startup Sauna [21] and Startup Life. The success of the Startup Sauna's activities include the annual Slush [20] event in Helsinki that for instance in 2016 gathered together 17500 attendees, 2300 startups, 1100 investors and 600 journalists from all over the world.

University as a composite of learning organizations for quality integration. A university is a composite of different strategic units that represent learning organizational systems. Systemic development of quality in those units means organizational learning that leads to the quality activities embedded into units' managerial and operational processes (figure 1). We call this quality integration.

A comprehensive model [19] for developing organizational quality integration towards performance excellence is described in the diagram of figure 2. Organizations' overall performance depends on how well organization's people understand the governing principles (or guiding ideas) relevant to the particular organization, what kind of managerial tools and methodology they have to respond to the needs and expectations of the stakeholders, and what kind of infrastructure they have for getting the whole organization and all of its people to strive for the objectives towards the excellence goals.

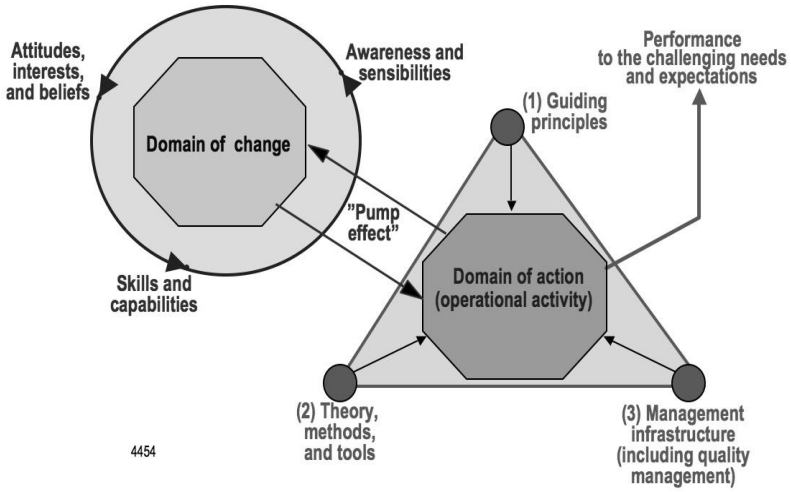

Figure 2. Foundations of the learning organization for quality integration [19]

In order to get better performance, the organization should establish a process to change and improve the existing guiding ideas, tools and methodologies, and the business management infrastructure (the 'Pump effect' in the figure 2). That particularly means to find new awareness, to change attitudes and beliefs, and to create new skills and competences within the organization.

Awareness, attitudes, skills and competences develop in the organizations through organizational learning. Incremental learning is related to certain particular skills representing different disciplines that are needed for the operational improvements. Radical discontinuous change in the development is a strategic transformation process. Genuine transformation often requires a crisis. In the strategic crisis there is a need for a large-scale breakthrough change in organization's structure and processes. Transformation means a change of form, shape or appearance. Basically it is a mental conversion because factually crises are in human minds. Transformations are initiated and managed from the strategic management level of the organization. Organizational transformations do not happen spontaneously or at random but by decisive actions and include consistent learning and innovations, too. Diffusion of the awareness, knowledge and skills of specialized disciplines within the organization requires personal mastery, mental models, shared vision, team learning and systems thinking that are important in creating new integration in the organization.

Quality evaluation in the universities. Performance evaluation is a traditionally central issue of the established quality management. Many different evaluating practices have been developed for formal educational systems and learning results that have been used at different educational levels nationally and internationally [5]. These approaches typically focus on distinct performance aspects and are not consistently compatible and may be confusing from the holistic quality perspective. Quality related evaluations can apply to quality, quality management, quality improvement and quality assurance, which differ from each other in terms of purpose and methodology. The evaluations should cover universities' all activity areas, including education, research and social collaboration. Evaluation of the effectiveness and efficiency of the organizational systems and processes is fundamentally different from the evaluation of the learning results of students and teachers that relate to human performance. For quality management purposes evaluations should primarily be made by the organization itself (i.e. self-assessment).

All evaluations should base on sound epistemological and metrological foundations [5]. Metrology is the science of measurement and its application, and the vocabulary of metrology covers the generally accepted terms and definitions for the whole topic and for all areas of activity. Measurement means obtaining experimentally one or more values that can reasonably be attributed to a quantity of the object of the measurement. One should make clear in a practical way the meanings and roles of the concepts like fact, data, information, and knowledge, and how they are related to the measurement activity. There are many different purposes for the performance evaluations, including:

- Research for getting new knowledge of the organizational performance.
- Acquisition of information for planning the university operations.
- Controlling operations and processes.
- Measurements for problem solving and performance improvement.
- Measurements for quality assurance.

The most important purposes of the evaluations relate to performance improvement and quality assurance.

Recognized evaluation practices from quality point of view include [13]:

- Monitoring, measurement, and diagnostic analysis and evaluation
- Internal audit
- Management review
- Self-assessment

These practices are not, however, well-established in practice in the educational sector.

Reference guidance for the development of quality management. One can find significant general ideas for quality integration from the rich professional quality literature, teachings of the recognized gurus of quality profession, and through benchmarking the practices of world class organizations. In addition, international standards are important references for quality management, too. However these information sources are not well known among the educational organizations. In addition, these references give a very fragmented understanding of the quality practices, and hence their consistent application can be difficult without reasonable theoretical and holistic professional quality know-how.

International ISO 9000 standards are the most well-known and widely used general business independent quality management standards. They have been the major references for the development of quality management approaches in all kinds of organizations globally during more than three decades. ISO 9000 standards also define the universal quality management principles that are the fundamental truths or propositions that serve as the foundation for a system of belief or behavior, or for a chain of reasoning for the standardized approach of quality management. ISO 9000 basic standards series consist of three standards, ISO 9000 [11], ISO 9001 [12] and ISO 9004 [14], considering terminology, requirements and guidance for quality management. These standards are well applicable in a creative way also in educational organizations including universities.

The education specific standard ISO 21001 [13, s. 7] (now at the draft stage) will challenge all educational organizations, because it requires the adoption of the general basic quality concepts and quality management structures and practices. The standard will enable educational organizations to demonstrate their ability to provide consistent education and hence to increase the credibility of the organization and enhance

satisfaction of the stakeholders of the educational organizations. This standard focuses only on the area of education but does not consider the two other sectors of the university activities.

The American Baldrige Excellence Framework (Education) [16] is a leadership and performance management framework for the education sector that empowers the educational organization to accomplish its mission, improve results, and become more competitive. This framework model is particularly useful for self-assessments of the overall performance of the educational organizations. The framework includes:

- The education criteria for performance excellence covering critical aspects of achieving excellence throughout the organization.
- The core values and concepts (beliefs and behaviors found in high-performing organizations).
- Guidelines for responding to the education criteria and evaluating and scoring processes and results.

Conclusions. Quality is a general recognized professional discipline with more that 100 years successful evolution. Quality is imperative in all educational institutions, and also universities should for their benefits follow quality principles and practices that are applied globally in all kinds of organizations of our societies. This applies to all activity sectors of the universities including the composite activities of education, research and societal collaboration. The universities also should act as advanced quality role models and scientifically and educationally contribute to the development and disseminating quality philosophy and methodologies widely in the society. This however requires strive for excellence in universities' own development of quality integration.

Societies are changing, hence also universities must change. A major challenge for universities is the orientation to the needs of the new era of the 4th Industrial Revolution [18] or Industry 4.0 [9], which have roots in the digitalization and are currently strongly discussed in international fora. This development consists of many very different areas of special expertise, including citizenship, governance, education, healthcare, security, buildings, infrastructure, transportation, mobility, energy, and technology. The Smart City [10] projects all over the world are manifestations of this development, and many universities already participate in those projects with the multidisciplinary contributions in education, research and social collaboration.

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