

METHODS OF IMPROVING THE PROCESS APPROACH IN ASSESSING THE EFFICIENCY OF UNIVERSITY QUALITY MANAGEMENT SYSTEMS

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Abstract: The article discusses the problems with the implementation of the process method of quality control in higher education, the necessity to develop process cards for assessment of processes and assessment of the maturity of the quality control processes.

Keywords: *quality, process method, process cards, maturity of processes*

ITHEA Keywords: *Please use keywords from http://idr.ithea.org/tiki-browse_categories.php.*

Introduction

One of the most important achievements of the contemporary doctrine for achieving a high quality educational product offered by higher education institutions is the implementation of the principles of the process approach in the versions of the ISO 9001 standard. This governs the use of the "process approach" principle in the development, implementation and improvement of the performance of the quality management system, with the aim of increasing consumer satisfaction with the educational product by meeting consumer requirements.

For the successful operation of the organization, its senior management must identify and manage multiple interconnected activities.

An activity that uses resources and is run in order to convert inputs into outputs can be viewed as a process. Very often, the output of a process is an immediate input to the next process.

The implementation of a system of processes in the organization, their identification and the definition of their interaction, as well as their management can be considered as a "process approach".

The advantage of the process approach lies in the fact that it provides continuity of management at the boundary of the individual processes within their common system framework, as well as in their combination and interaction.

Using this approach within the quality management system highlights the importance of:

- understanding the requirements and their compliance;
- The need to consider the process in terms of increasing the efficiency of the activity (adding value);
- Achieving the set criteria (results) in the functional characteristics of the processes;
- Continuous improvement of the processes based on objective measurements.

Nature of the Problem

On the basis of practical experience, the following problems in the implementation of the process can be identified:

1. Managerial misunderstanding of the necessity of mandatory implementation of the process approach as an ideology.

The difficulty lies mainly in the lack of leadership on the part of mid-level management to engage staff. Changes are needed above all in the minds of lecturers and assistants. They need to be ready and to be trying to use the new management methods, and this should by all means be encouraged by management. Management should refer to the process approach primarily as an ideology.

2. Unwillingness to make major changes to the organizational management structure.

Often, management is not ready for serious changes that will inevitably affect the organization's management system in a deliberate and non-perfunctory implementation of the process approach (as everyone wants to get a quick result on relatively small investments). When embarking on the implementation, it is often underappreciated how much effort needs to be put in, in order to achieve meaningful results. An in-depth analysis needs to be carried out on what changes can objectively be implemented and the relevant priorities need to be set. Otherwise, these changes will not actually be managed, which will lead to only perfunctory implementation.

3. Building a system of processes that is not adequate to the specifics of the educational activity.

The activity of each organization is in its essence the implementation of processes. Leaders and collaborators intuitively understand this but as a rule they have difficulty in defining processes adequately. Building the system of processes in the organization and its further development is determined by the requirements for the management tools that may be used by managers.

Sometimes the implementation of the process approach does not have the desired effect when the processes in organizations are not defined objectively and the process system is built only perfunctory and does not match the specifics of the activity. Processes are not tied to other processes. Interconnections are complex and difficult to manage. The designation of the owner of the individual processes is determined without taking account of these complex relationships and without giving the owner the appropriate rights and obligations.

4. Misunderstanding as to why detailed process governance is needed and how it can be properly implemented.

If processes in the organization are not properly defined and regulated, this means that the activities are carried out on the basis of accepted rules and norms, which have traditionally been accepted and adhered to by the lecturers and collaborators. They know how to carry out the processes and get the results expected from the management. When work is organized this way, the losses of different types

of resources (financial, material and human) are inevitable. There is no governance and analysis to modify existing processes in the organization.

Processes should be defined and documented with the aim of:

- analysis of the problems, the "bottlenecks", the losses in the implementation of the processes with subsequent development and enactment of the improvement activities;
- standardization of activities, ensuring repeatability of the processes and the possibilities for their management;
- dissemination of experience in other structural units in the organization (affiliates);
- comparing results with competitors and improving processes (benchmarking);
- defining the new processes when new activities emerge in the organization;
- Accumulation of knowledge and experience in carrying out the processes and passing them on to new associates (training, entry into work);
- conducting internal audits.

5. Errors in creating a system of indicators, the linking of processes and indicators.

The implementation of the process approach is often mistakenly interpreted to be only a detailed description and reorganization of processes. Even if a one-off improvement has been achieved initially, performance will start decreasing over time. Processes need to be continuously improved, increasing or retaining the achieved level of efficiency. It is impossible to do this without an adequate system of objectives and indicators for managing and evaluating the processes. Sometimes organizations define high-level processes, and later not quite correctly (without taking into account the specifics and various interconnections, without analyzing material and information flows, etc.), they detail them by creating the relevant organization charts and schedules. Then, indicators are defined for all the detailed processes, looking at each of them in turn and defining relevant indicators. In applying this approach, often, the system built is fragmented (i.e. it is missing a number of important indicators that are needed for management); part of their indicators contradict (achieving one of them excludes the achievement of another); indicators are not geared towards achieving the organization's strategic goals, its overall effectiveness.

6. Absence of the patience, desire and resources necessary for the real optimization of the processes.

Leaders may indeed want to fully and conscientiously implement the process approach to quality management and even adopt the relevant decisions, but that is not enough. It is necessary to provide the required resources and to set up a working group of qualified specialists who have experience in using methodologies for implementation of the process approach that have been tested in practice. Methods can also be obtained from consultancy organizations that provide relevant training and advice.

7. Difficulties in organizing process management.

A process approach can be considered to be implemented only when the organization also carries out process management. In some organizations, the implementation of the process approach ends at the description stage and subsequent process governance. Other organizations set up a system of indicators. However, only in very few organizations has management systematically approached the organization and management of processes.

For process management, it is not enough to write in the governance documents that the processes should be managed by the owners. It is necessary to create the relevant effective management mechanisms.

8. Difficulties in creating and maintaining a continuous process improvement system (PDCA cycle).

There are difficulties in implementing the PDCA cycle. The system of continuous improvement of the quality management system does not arise in the organization by itself. It is necessary to implement the relevant mechanisms that will motivate the staff. Organizations often create a situation where management does not want to and cannot deal with improvements other than those that would contribute to raising the most important deliverables or lowering costs, because of too much workload. In particular, top management is unwilling to deal with minor improvements. For that reason, the management of the organizations is not able to develop and implement a system of improvement that uses the time and intellectual resources of middle management and specialists. The implementation of the process approach in this case is incomplete.

9. Difficulties in evaluating the processes themselves.

HEIs experience serious difficulties in the objective assessment of the defined quality management processes.

As a good practice we should point out the definition of a System of Processes and Criteria that directly affect Quality Management according to the International Standard ISO 9001: 2015.

Identifying, understanding and managing inter-linked processes as a system contributes to the organization's efficiency and effectiveness in achieving its goals.

Within this system, processes are defined by the management as strategic ones that directly determine and influence the quality of the educational product offered, and the basic ones that govern specific activities for the implementation of the strategic ones.

For the evaluation of each of the basic processes a set of basic and additional criteria are defined. To these criteria, specific and measurable quantitative indicators are developed to allow benchmarking and comparability of the evaluation results.

On this basis, process cards are developed and adopted to assess the effectiveness of the process (Table 1)

Table 1. Example process card to evaluate process efficiency

| LEVEL AND TYPE OF PROCESS | PROCESS NAME | PROCESS CONTROLLER Rector |
|---|---|---|
| <i>Basic process</i> | <i>Educational process. Lifelong learning</i> | PROCESS MANAGER Deputy Rector of Education |
| | PROCESS GOVERNANCE DOCUMENTS | PROCESS EXECUTION Deans of Faculties, Head of Departments, Lecturers, Head of Front Office |
| | <i>Process Management, Regulations for the Structure and Activities of the HS, Educational Activities Code, Student Admissions Code, Academic Staff Code, Administrative Staff Code, Code for Organization of the PhD Students' Training Activity, etc.</i> | |
| PROCESS INPUTS | | PROCESS OUTPUTS |
| <ol style="list-style-type: none"> 1. Student admission. 2. Student contracts signed. 3. Curricula. 4. Syllabuses. 5. Planning the learning process. 6. Results of educational process control and the status of the students' academic progress. | | <ol style="list-style-type: none"> 1. Implementation of the curriculum. 2. Documentation of test results and ongoing control. 3. Monthly reports of lecturers on curriculum implementation. 4. Assessment of students' knowledge. |
| RELATED PROCESSES WITH DATA: | | POSSIBLE RISKS, DEFICIENCIES AND NON-CONFORMITY |
| Improving the organization of the learning process | | Decreased entry level requirement control (student admissions) |
| Manage interaction with customers and users | | Teaching on inappropriate syllabuses |
| Management of curricula and syllabuses | | Errors in planning the learning process |
| Control and assessment of results | | Shortage of qualified lecturers |

| | | |
|--|---|-----------------------|
| Evaluating the level of expertise of the trained staff and the possibilities for their career development. | Lack of motivation among students | |
| Managing discrepancies | Lowering of criteria during current and final control | |
| CRITERIA FOR MEASURING PROCESS EFFECTIVENESS: | TARGET VALUE | REALIZED VALUE |
| Number of new Bachelor degree courses introduced | .... | .... |
| Number of new Master degree courses introduced | .... | .... |
| Attitude of permanent academic staff to non-permanent academic staff in the university | .... | .... |
| Number of improvements / changes introduced in curricula (development and adaptation of curricula and syllabusees) | .... | .... |
| Number of newly introduced learning activities / services. (lifelong learning, certification courses, others) | .... | .... |

The process cards define:

1. The level and type of the process, its name, the documents governing the process (external and internal governance framework).

The individuals involved in process management: Process Controller, Process Manager (Process Owner) and Process Execution.

One of the biggest problems that arise is the appointment of a process manager (owner) and the definition of their rights and obligations. Often, the basic processes are related to or intertwined with other basic processes (e.g. teaching, research and publishing) involving different structural and core units with different managers. Who can be appointed process owner in this case? The one who conveys the end product to the consumer or the one who carries out the essential part of the activity. It all depends on the specific situation. The ideal owner:

- receives the assignment from the management and bears the responsibility for the product quality (outcome) of the process to the next level;
- oversees (/ can direct) resources and process information, and manages them;
- is responsible for the organization of the activity (technology, algorithm);
- organizes a system for gathering information on the progress of the process;
- conducts monitoring (control and analysis) on the progress of the process;
- is responsible for increasing the efficiency of the process.

In practice, finding a person who has all the above-mentioned powers (and resources) is rather complicated, whilst it must also be consistent with the established tradition of the organization.

2. Process inputs - basic data and results from the preceding process.
3. Outputs of the process - basic data and results of the managed process that are suitable for processing in subsequent processes.
4. Other processes related to the specific process - other processes that interact with the defined process or are intertwined with it, and that cannot be isolated or carved-out from it.
5. Possible risk factors influencing the process - defined risks to process quality based on in-depth analysis of the impact of input data, impact of management on the process, the presence or absence of resources, the impact of related processes.
6. Criteria for measuring the efficiency of the process - target values are determined on the basis of an analysis of the availability of the relevant resources, a satisfactory level of the input data, an adequate organizational structure and governance framework.
 - (A) target value - a specific and measurable value allowing for comparability and repeatability and subject to statistical processing and analysis
 - (B) actual measured value which is accounted for on the basis of:
 - analyzes of statistical information from conducted evaluations of different activities;
 - self-assessment (including process maturity assessment) by the process manager and the heads of the individual units involved in managing the process;
 - Results of internal and external supervisory audits;
 - analyzes of the effectiveness of corrective actions taken as a result of registered inconsistencies or recommendations for improvement of the activity in the respective area;
 - analyzes of the effectiveness of implemented preventive actions on the recommendation of the process controller or on the initiative of those involved in the management of the process.

The analysis and evaluation of the effectiveness of the main processes is carried out with periodicity defined in the Quality Management System (Quality Manual or System Procedures) during the Annual Management Reviews in accordance with the requirements of ISO 9001: 2015.

The assessment of the main processes must be carried out by assessing their degree of maturity on annual basis. The evaluation criteria are presented in Table 2.

Table. 2 Assessment scale

| Level of maturity | Level of implementation | Instructions |
|-------------------|------------------------------------|--|
| 1. | No documented approach | There is no systematic approach; no results, bad or unpredictable results. |
| 2. | Reaction approach | Reactive / problem-centric or corrective approach; minimum data on the improvement results. |
| 3. | Stable, documented system approach | Process-oriented system approach, system-level improvements in the early stages, availability of performance data, availability of improvement trends. |
| 4. | Marked continuous improvement | Implemented improvement process; good results and obvious improvement trends. |
| 5. | Best Performance | Documented and optimal results from the comparison with the best |

To achieve system certification, the processes evaluated by standard elements need to achieve a maturity level 3.

In order to prove an effective quality management system it is necessary that the processes evaluated are stable at level 4 and 5.

Possible applications at the level of maturity.

The Standard does not specify a methodology for conducting and shaping the organization's overall assessment. Self-assessment or assessment can be used in a flexible manner, depending on its objectives. The main direction in which assessment is oriented is an adequate review and analysis in order to achieve a consensus in setting priorities for improvement and action plans.

The approach used for performance maturity assessment is used to achieve a steady development and improvement of the quality management system. Compliance with relatively simple principles may lead to the formation of clear objectives for system development and criteria for assessing their accomplishment.

The deconstruction of the system into basic processes in terms of the quality management system and / or the processes that make up the main objective of the organization, allows to uniquely identify the processes that are lagging or overtaking the common development. Risk analysis for the process that are lagging behind or overtaking the common development may set priorities for the development of

elements of the quality management system as well as their importance for achieving the goals and strategic development of the organization.

The stability of a system implies an equal level of maturity of the processes that build it. In the case of related sequential processes with different maturity levels, it is reasonable to assume that the level of implementation of the integrating process cannot exceed the maturity level of the process with lowest maturity. Adhering to the principle of harmonious development of the system implies new opportunities for discovering areas for improvement. It is logical to seek to achieve a balanced model of the quality management system, i.e. if possible, all constituent processes are at one level or overtaking / lagging at no more than one level. Otherwise, it is difficult to predict the future behavior and development of the system as a whole. The observations of the author are that significant differences in the level of maturity in successive processes most often poses significant problems among the teams involved in their realization. This is largely due to the different and constantly changing value system, different and characteristic of each of the maturity levels.

The results of the self-assessment of process maturity can be presented in the form of radar diagrams (Figure 1).

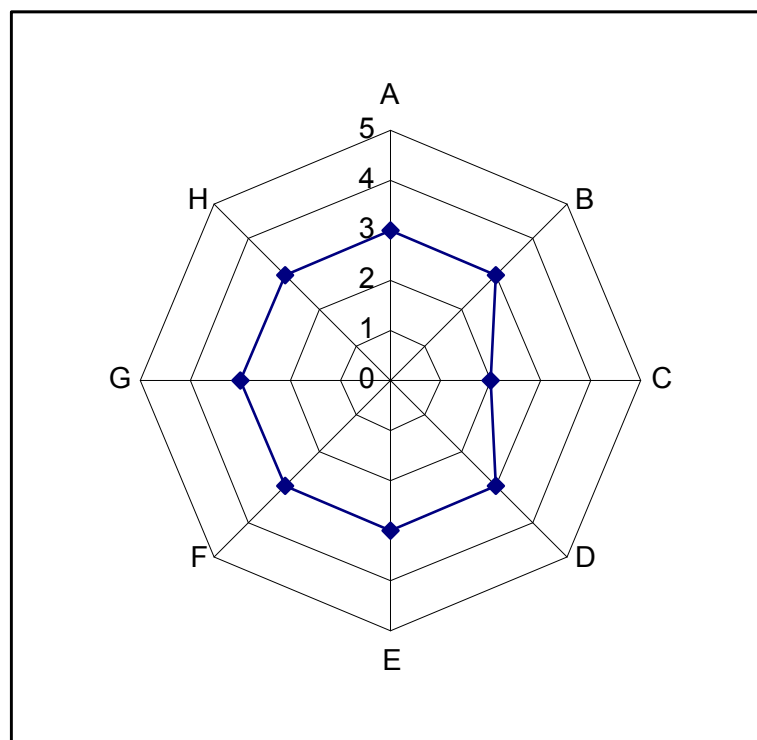


Fig.1 Level of maturity for the implementation of basic principles of BDS EN ISO 9001: 2015

Conclusion

The University Council, based on a Result Analysis, assesses the maturity of each of the strategic processes and defines new target values to be pursued in the next period to achieve the requirement of continuous improvement. Process maps can be improved by adding new criteria, adding new related processes, new governance documents, and more.

The proposed improvement of the process approach is expressed in:

- Creation of an evaluation and improvement toolbox;
- Creation of a system of criteria for evaluation of the results by process;
- Creation of methodologies for evaluation of the results by process;
- Definition of key indicators by activity and process;
- Linking the development strategy to the key indicators;
- Planning and providing the necessary resources for the implementation of the strategy.

Self-assessment is a comprehensive and systematic review of the organization's activities and results are benchmarked against the requirements of the quality management system or model of excellence.

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