Strategy and Quality Maps in Higher Education

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The purpose of this study is to investigate the integration of strategic management and quality assurance in higher education. The study presents how the value chain can be described in the strategy and quality maps, which are, respectively graphical representations of the strategic plan and the quality assurance system. The quality map is a new concept that explicitly takes into account the environment, strategic planning and the quality cycle of the institution. The quality map helps the management of the higher education institution present an overview of the quality assurance system to external evaluators, members of the organization, students and other stakeholders.

Keywords: value chain, quality cycle, continuous improvement, strategic management, strategy map, quality assurance, quality map, higher education

Introduction

The autonomy of HEIs (higher education institutions) enhances their responsibility to select the tools for management and quality assurance (Maassen & Stensaker, 2003; Moses, 2007; Salmi, 2007). Even though each institution has its own management and quality assurance system, there is a need to develop a general framework to describe the strategic plan and the quality assurance system. The general framework can be tailored for each institution, taking into account the organization management and its internal processes.

HEIs are accountable for their performance to the ministries of education, quality assurance agencies and other stakeholders. The institutions are obliged to participate in regular external evaluations and audit their quality assurance systems. The relationship between institutional management and quality assurance needs more attention. Without adherence to the quality assurance system, it is impossible for any institution to know how well it is performing (Beckford, 2002). The institutional management and internal processes must be integrated into the quality assurance system.

The purpose of this study is to develop frameworks for the integration of strategic plans and quality assurance in higher education. The study describes how the concept of value chain introduced by Porter (1980) can be integrated with the concept of the quality cycle (Deming, 1986), the strategy maps introduced by Kaplan and Norton (2004) and the concept of the quality map. The quality map presented in this study can be used to describe the quality assurance system of an HEI. The quality map is the natural extension of the strategy map, because the purpose of the quality assurance system is to ensure that the strategic and other objectives can be achieved.

Strategy and quality maps are like road maps which take into account the environment, and describe the main land marks on the route from the present state to the desired future situation, but omit all of the minor details to specific considerations. The maps help the management of the organization to understand why the

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objectives of the organization have been set and how they can be achieved by taking corrective actions. The big picture helps the employees see the relationships of their jobs to the strategic objectives of the institution.

The institutions must constantly monitor and analyze their global, national and local environments and the institution's responses to the situation. It is important to take into account educational policy and regional needs in strategic planning and reconcile them with the organization's resources and internal processes. The role of the management process is to communicate and implement the strategic plan in the internal processes of the institution. Management takes feedback from customers into account, continuously develops the internal processes and aligns resources to achieve the objectives.

The study is organized as follows: The next section introduces the value chain and the quality cycle of higher education as building blocks for the strategy map. Then the concept of the strategy map to describe the strategic plan of an HEI is introduced, and the value chain and the quality cycle are integrated with the strategy map in a novel way. Then the quality map to describe the quality assurance system of an HEI is derived. The quality map integrates strategic management and the principle of continuous improvement. Finally, the results of the study are discussed in the concluding section.

Value Chain and Quality Cycle in Higher Education

The internal processes described by the value chain and continuous improvement described by the quality cycle are the building blocks of the strategy map. This section of the study shows that these two concepts can be combined in an innovative way. This study demonstrates the generic principles of management in higher education. Therefore, it is important not to dwell on the specific organizational units, but rather to describe the nature of activities and responsibilities.

The idea of the value chain, as presented by Porter (1980), is based on the process view of organizations. The value chain is the series of steps of added values by each stakeholder in the process. The value chain is also applicable to education, because it defines the roles, responsibilities and knowledge management of stakeholders (Aguirre, 1998; Roosendaal, Huibers, Geurts, & Van der Vet, 2003). Lee and YANG (2000) argued that R & D (research and development) represents knowledge acquisition, support services represent knowledge management, and education represents knowledge dissemination.

The development of the quality assurance systems and the adoption of information technology have increased the need for the development and description of internal processes (Jeston & Nelis, 2006; 2008). There are various techniques and notations for this, such as the Business Process Modelling Notation (Owen & Raj, 2003; Object Management Group, 2007). There may be more than 100 detailed processes at an HEI. The focus of this study is at the aggregate level of strategic management and quality assurance. Therefore, the detailed description of processes has been left out of the examination.

Figure 1 depicts the value chain in combination with the quality cycle in higher education. This value chain is a broad description of the sequential processes including R & D, support services and education. R & D serves the support services and provides outlines for education at the aggregate level of process descriptions. Institutional research is a broad category of work done at HEIs to provide guidance for support services, internal processes and evaluation. R & D also takes responsibility for the quality assurance system and process descriptions.
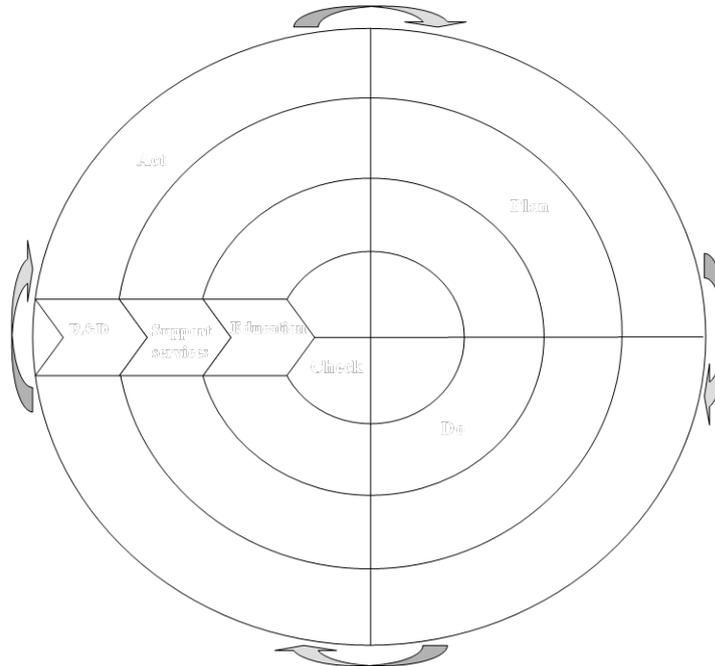
Figure 1. Value chain and quality cycle in higher education.

The quality cycle, also known as the Deming cycle, is an iterative four-step problem-solving process for the continuous improvement of the processes (Deming, 1986; Tague, 2004). The quality cycle includes the sequential phases of "plan", "do", "check" and "act". Iteration is the basic principle of improving the processes. Repeating the cycle in all the processes of the institution can bring the institution close to perfect operation and output.

The support services take the responsibility of defining the learning objectives of curricula in the plan phase. Education in the "do" phase implements the plans and follows the detailed process descriptions. Feedback is obtained in the check phase, where also the process descriptions are evaluated. Based on the feedback, evaluation and the foundations of the institutional research and the processes are improved in the act phase (Kettunen, 2010).

Table 1 depicts the quality cycle in higher education. The quality cycle is about planning what, how and who is to be educated. Systematic feedback is collected about education using observation, indicators and surveys. If the results are unsatisfactory and the objectives have not been achieved, systematic reflection on what approach and deployment led to these results may suggest useful improvement measures (Woodhouse, 2003).

Table 1

Quality Cycle in Higher Education

Plan	Do	Check	Act
• Action plans • Curriculum planning • Course implementation plans • Workload plans of teachers • Personal study plans of students • Follow the process descriptions	• Implement the plans • Recruitment of staff and students • Pedagogical management • Guidance and teaching • Follow the process descriptions	• Feedback from students, graduates and employers • Feedback from the Ministry of Education • Feedback from the quality assurance agency • Evaluation of curriculum and competence • Evaluation of the processes	• Institutional research and development • Improvements in education and processes

In the "plan" phase, support services define the objectives necessary to deliver the results according to the process descriptions. The operational objectives are defined in the faculty in accordance with the strategic objectives. The "plan" phase includes action plans, curriculum plans, course implementation plans, the workload plans of teachers and the personal study plans of students following the process descriptions. Some of these plans take different forms at other institutions.

The purpose of the "do" phase is to implement the plans of education. This phase includes the recruitment of staff and students, pedagogical management, guidance and teaching. Teaching is aligned in curriculum to ensure a clear continuity of instruction throughout the degree program looking at what is taught at earlier and later grade levels and in other disciplines. Quality assurance is the most efficient when it is translated into action close to teaching and learning following the process descriptions.

The purposes of the "check" phase are to report the learning outcomes and evaluate education and processes. This phase includes feedback from students, graduates and other stakeholders and the evaluation of activities. Feedback is obtained also from advisory boards, employers who are supervising students during internships, the Ministry of Education and the quality assurance agency. It is important for the institution to evaluate the curriculum, the competence achieved and the achievement of the objectives set for the faculties and finally, the processes.

The purpose of the "act" phase is to make necessary improvements to education based on institutional research and development. This phase includes the improvement of the processes if recommended in the evaluation. If assessments show that students are not learning as expected, mid-course corrective measures should be taken, such as extra instruction, tutoring, mentoring and more effective teaching methods. The improvements in this phase are taken as input in the next phases of the quality cycle.

Strategy Map of Higher Education

The strategy map introduced by Kaplan and Norton (2001; 2004) can be developed to describe and communicate the strategic plan of an HEI. The strategy map translates the strategic plan into tangible objectives and balances them into four perspectives: customer, finance, internal processes and organizational learning. The strategy map also describes the essential linkages among the strategic objectives placed in the perspectives of the map. The structure properly described by the quality map is a safeguard for the strategic plan to have all the necessary elements in balance with each other.

Figure 2 depicts the quality cycle in the strategy map of an HEI. The strategic objectives located in the perspectives can be defined in the strategy process. The novelty of this study is the notion that the quality circle can be described in a strategy map. Strategic management and quality assurance have been developed independently from each other, because they overlap each other and are commonly applied at the same organizations. Therefore, the integration of these two management approaches is essential.

The strategic objectives may take different forms in other HEIs and planning periods. The organizational learning perspective, among others, may include capabilities of R & D and international activities and teaching skills. All of these may have corresponding objectives in the internal processes. The financing perspective typically includes the funding from the central government, external funding and cost-efficiency. The customer perspective may include students' and employers' satisfaction and the regional development.
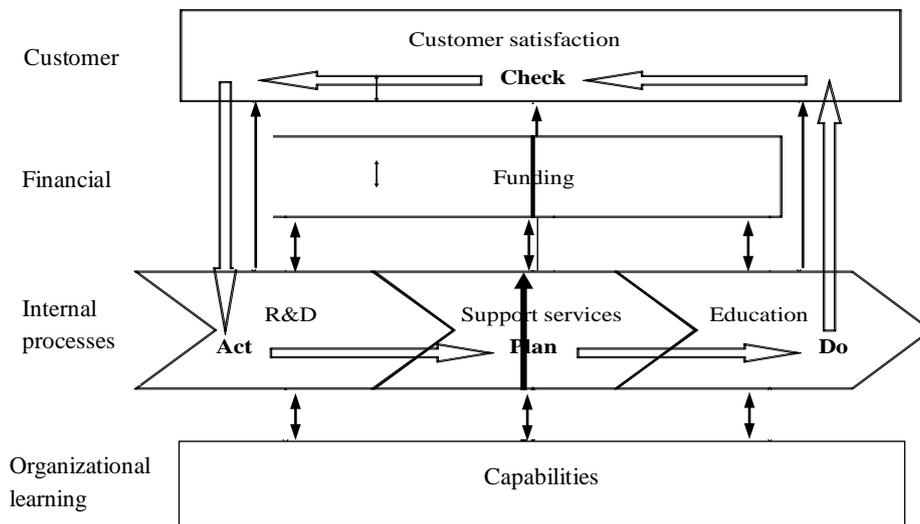
Figure 2. Quality cycle in the strategy map of a higher education institution.

The learning objectives are established in the support services of faculties. It is essential for the teachers to plan education, because they have power to subvert, constrain or ignore the plans. The implementation will not be effective if plans come from elsewhere. The feedback comes from students, employers and other stakeholders, which are located in the customer perspective. Based on the evaluation, the processes are developed if deemed necessary.

Quality Map of Higher Education

The quality map is a graphical representation of the main characteristics of the quality assurance system of an HEI. The quality map helps the management of the institution describe and communicate quality assurance to the employees, quality assurance agencies and other stakeholders to show how the objectives can be achieved. The quality map helps external auditors and other stakeholders to position the institution in its environment and obtain the big picture of the institution's quality assurance system.

The global environment is characterized by rapid change, intense information flows and increasing competition. The competition of American, Australian and Asian HEIs has forced European countries to plan their common education policy (Hammond, Harmon, Webster, & Rayburn, 2004). The European education policy is outlined in the Bologna process. The European ministers responsible for higher education meet every second year and agree on joint objectives for the development of the European higher education area. The European higher education policy is intended to enhance the competitiveness of the Europe by increasing the mobility of students, staff and labor force and emphasizing quality assurance (Berlin Communiqué, 2003).

The national education policy has caused some difficulties for HEIs. The challenges of the national education policy among others include mergers and other structural changes, because the aim of the public sector is to improve its effectiveness. The institutions in many countries are required to teach greater numbers of students without proportional increases in resources. The internal processes and structures of HEIs are under pressure to adapt to the many other changes in the environment. The quality assurance has obtained an increasingly prominent role in many countries. The institutions should pay more attention to the quality of teaching and other activities (Umashankar & Dutta, 2007).

Regional development is an activity to increase the external effectiveness of HEIs. The institutions must outreach and engage with the organizations in the region, contribute to the development of knowledge-intensive jobs and provide opportunities for lifelong learning. The regional dimension is gaining in importance as the universities of applied sciences increase their activities. In addition, the traditional science-oriented universities emphasize on their third mission and shift activities from isolated scientific research to applied research to achieve external impact on the society (Laredo, 2007).

Strategic planning is a necessity in higher education, because HEIs educate the most talented people who are best to secure the future of the next generation. Each institution must know its strategic position in its environment before it makes any strategic choices (Tsiakkiros & Pashiardis, 2002). HEIs have planned joint strategies with other institutions and partners in the region. The regional strategic plans facilitate work sharing and collaboration among institutions in order to increase the external impact of the institutions (Kettunen, 2004a; 2004b; 2006). In many countries, the education policy has shifted to the phase where the ministries recommend strategic alliances and mergers for HEIs in a region. It is assumed that the scale-efficiency of larger organizational units improves the quality of research and education. Cost-efficiency and increased international competition are the publicly articulated reasons for the structural changes of HEIs.

The purpose of the quality assurance system is to ensure that the objectives of the institution can be met. Fitness for purpose sees quality as fulfilling a customer's requirements, needs or desires (Harvey & Green, 1993). Therefore, it is important to use an environment-oriented approach in quality assurance to analyze the place of the institution in relation to its competitors and partners (Welch & Dey, 2002). The integration of strategic management with quality assurance is essential to ensure that the quality assurance systems are linked to education policy, regional development and customer needs.

Figure 3 depicts the quality map of an HEI. The essential elements are an environmental analysis, shown at the top of Figure 3. The environmental analysis is carried out in the strategy process and the changing environment is taken into account in the institution's annual action plans. Strategic planning produces strategic themes and objectives. Management also determines the operational objectives and targets for the internal processes of the organization. The quality assurance system ensures that they can be achieved.
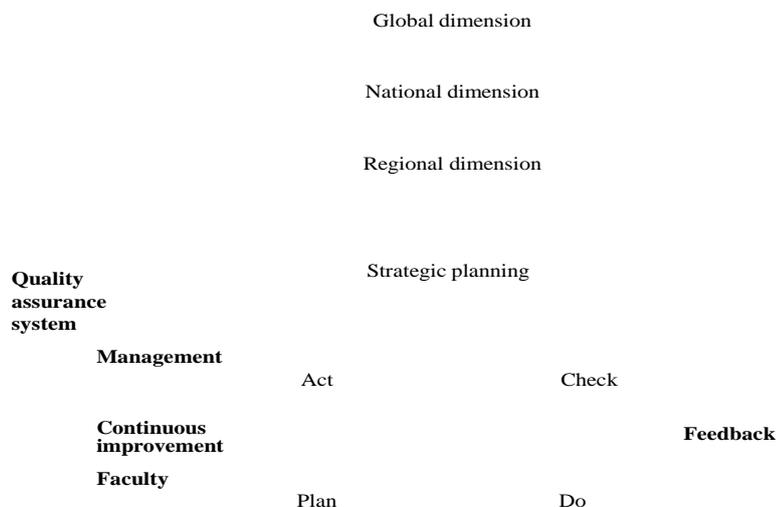

Figure 3. Quality map of a higher education institution.

The management and faculty apply the principle of continuous improvement. Based on the evaluation of education and the strategic plan, the management of the institution assumes the responsibility for developing internal processes and updating the process descriptions. The support services of the faculty define the learning objectives and develop curricula necessary to deliver education. The faculty implements the plans and collects the feedback from students and other stakeholders.

Conclusion

Strategic management and quality assurance have been developed independently of each other. Both of these management approaches are widely used in HEIs and factored into the institution's management decisions and actions. Strategic management has a forward-looking stance, but the purpose of the quality assurance system is to ensure that the strategic and operational objectives of the institution can be achieved.

The general conceptual frameworks were developed in this study for the integration of strategic management and quality assurance at an HEI. First, the graphical representation was developed to show how the value chain of the internal processes can be combined with the quality cycle. Then, the quality cycle was integrated with a strategy map. The quality map was then developed to describe the quality assurance system of the institution.

The strategy map is a graphical representation of the strategic plan describing the perspectives of the Balanced Scorecard, strategic objectives and the linkages among them. It can be concluded that the quality cycle is directly linked with the internal processes and customer perspectives, because management develops processes and the faculty plans and implements education and collects feedback, but indirectly aligned with the financial and organizational learning perspectives of the Balanced Scorecard. The strategy map presented in this study can be modified for other HEIs and planning periods.

The quality map depicts the overall structure of an HEI's quality assurance system. It is evident that the value of external evaluations and quality audits can be improved with a well-defined and common framework. The quality map in this study was designed to meet the needs of higher education institutions, but it can be modified to meet the needs of other organizations.

The major challenge of quality assurance in higher education is to bring it close to teaching. Quality is most efficient when it is situated at the operational level and if the teachers are committed to high quality. It is important that the faculty defines learning objectives, develops curricula and, if necessary, makes immediate changes to education. The management of the institution should take the responsibility of the whole quality assurance system of the institution, including the process descriptions and other guidelines that should be taken into account at the grass-root level.

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