

Graz Quality Management Model for Universities¹

Theory and Practice: Four Years of Experience with Accountability

Gerald Gaberscik,² Andreas Raggautz³

Abstract

Both previous experience in this field and the legal constraints placed on universities' work have made it clear that there is a need for a suitable quality management model for higher education institutions. The Graz Quality Management Model is one such way of using modern quality management expertise to meet the requirements of university life. Our experiences of implementing the system and also of its day-to-day functioning uncovered new aspects to this topic and led to the development of advanced tools for quality-related university management. Problems and challenges we encountered are also discussed, and there is a suggestion of which steps will best take the project forward. Our main goal here was to move from a "twentieth century" model of quality assurance towards state-of-the-art quality management which includes quality planning, quality control and quality improvement.

Tradition and the Legal Context

For centuries, people have sought to document the superior quality of their work and products. In the past, special local features and knowledge were used as quality labels (for example "Ferrum Noricum" in Roman Empire or then "Made in Germany"). Later, the skill of the manufacturer grew in importance and so guilds and tests regulated market access. In all these cases it was supposed that all products from a specific region or made by members of a certain guild would, per se, be high quality items. At the beginning of the twentieth century, new methods of production as pioneered by Frederick W. Taylor and Henry Ford changed this situation. Unskilled workers became able to produce complex products of acceptable quality in a short time and therefore at a low cost. However, there is no absolute scale for quality. Over time, consumers become attuned to the level of quality they are currently enjoying and begin to expect even more. The well-known economist Peter Drucker said of this: "*Quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for ... Customers pay only for what is of use to them and gives them value. Nothing else constitutes quality.*"⁴

Figure 1 shows the relation between fulfillment of demands versus expected costs. The minimum requirement is achieved if costs and fulfillment fits to the expectations. Only by reaching upper right quadrant a customer will be satisfied. To get exalted customers all requirements must be excelled largely. This is the base for long term customers loyalty.

¹ The QM-Model presented in this paper was developed, tested and implemented at TWO universities (University of Graz and Graz University of Technology) independently over years. Motivated by starting joint study programs (NAWI Graz) a consolidated model was expressed. The experience demonstrated the universally valid of the exposed basic principles independent of the specific profile of universities.

² Prof. Dr. Gerald GABERSCIK is the Head of the Quality Department at Graz University of Technology

³ Mag. Andreas RAGGAUTZ is the Head of the Department for Performance and Quality Management at University of Graz

⁴ Peter F. Drucker; *Innovation and Entrepreneurship: Practice and Principles*. New York: Harper Row, 1986, p.228.

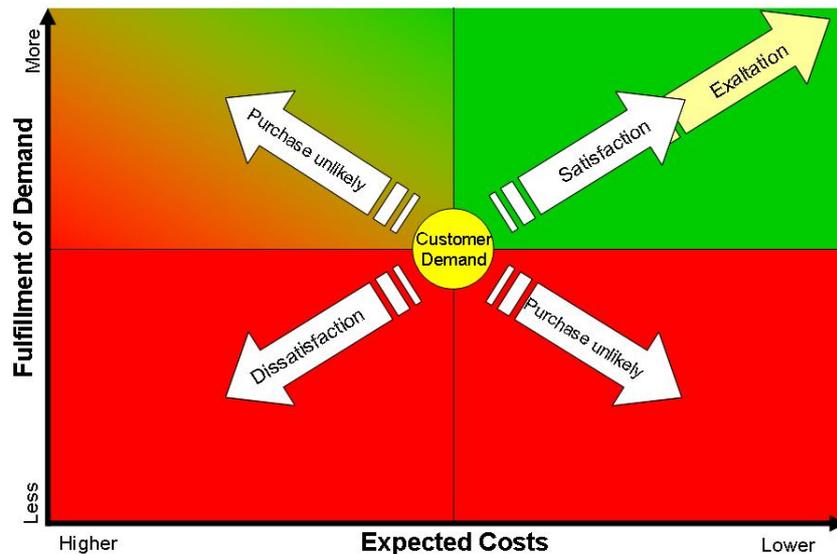


Fig. 1: Correlation of Customer Requirements to Cost

As soon it becomes evident that quality assurance is not sufficient, quality has to be planned, controlled and continuously improved. In other words: quality must be managed,⁵ especially in a worldwide market and era of globalisation. There was a growing awareness of the importance of quality in the economy in the late 1980s (and “quality assurance” accordingly became “quality management”).

Over the last few years, globalisation has also reached universities. We are now confronted with a great wave of internationalisation in university courses and research, such as has never been seen before. Nowadays, universities recruit on an international basis,⁶ not only seeking the best researchers but also the most talented students from all over the world. In the past it might have been sufficient for a university simply to promote its great tradition and then rely on being tightly controlled and lead by the appropriate governmental body. However, now one finds a new level of competition in the field of higher education. Universities have lost their position in a “providers’ market”, and now they have to survive in a “consumers’ market”. Because of this change in the “market” of study and research, quality issues are becoming ever more important for universities too. This is even more true now as universities (in Austria at least) become more autonomous and face less “steering” by government departments.⁷ In return for the money it invests, society demands that universities have a high quality research output and offer a high quality of education. Universities therefore regain their freedom only within the constraints of a rigid controlling system.⁸ To be successful in this environment, it is necessary to design and implement a quality management system which corresponds perfectly with universities’ needs and to any restrictions and constraints which exist, while also taking account of expertise gained from economic systems.⁹

⁵ Cf. Josef M. Juran, *Quality by Design*, 1992

⁶ Cf. *Higher Education Looking Forward: Themes on the Changing Relationship, between Higher Education and Society*, ISBN: 2-912049-68-7, European Science Foundation, September 2007.

⁷ Cf. *Standards and Guidelines for Quality Assurance in the European Higher Education Area*, Helsinki, 2005

⁸ Cf. *Universitätsgesetz 2002*; BGBl. I Nr. 120/2002 i.d.g.F.

⁹ Cf. Gerald Gaberscik, *Ein Qualitätsmanagementmodell für Forschung und Lehre – Stand der Umsetzung und weitere Ziele am Beispiel der TU Graz*, *Qualität in der Wissenschaft (QiW)*, 4/2007, p.104 – 109, Universitätsverlag Webler, Bielefeld 2008

The Quality Management Approach of the “Graz Model”

As mentioned above, a university’s autonomy is bound and rigidly controlled by governmental authorities according to the “European Standards and Guidelines”. Nevertheless, it is necessary to establish a structure whereby existing components can be molded into a usable quality management model. Therefore, the starting point for any further steps must be the university’s pre-existing strategic guidelines, mission, vision and development plan. These initial moves have to match the requirements of the governmental department responsible for higher education and should be formalised in a detailed performance agreement lasting three years. Internally within the university, these goals have to be translated into sub-goals at the department level. The key to this approach is a double feedback-loop system (Fig. 2).

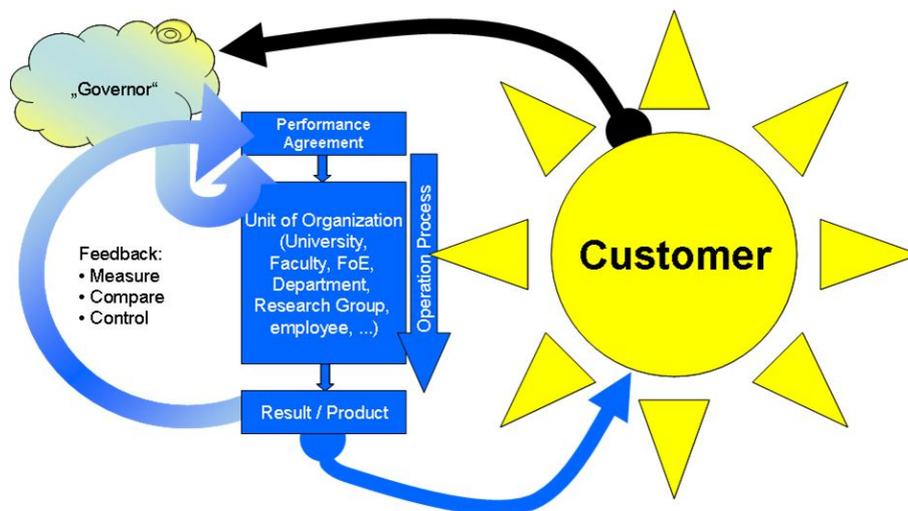


Fig. 2: Graz Quality Management Model

At every level internally, from the individual employee up to senior management, a performance level agreement should be fixed periodically with the accordant “govenor”. This agreement forms the base of day-to-day work and the agreement’s outcome is termed a “product” or “result”. Then, an inner feedback loop allows this outcome to be measured against the objectives set out in the agreement from time to time. It is thus possible to control and optimise the process by which the university itself generates a “product” (Fig.2, right side). The demands of the customers - those who require the “products” or “results” - are also an important aspect to consider here (Fig.2, left side). This outside feedback loop to the customer may either be far-reaching, or very direct. The former is true for society generally, as the university is linked via politics and law to its governmental department “govenor”. The latter is the case with examples such as research projects carried out on a contract basis. In that case, the customer and “govenor” overlap. This external loop assures the relevance of university products to the customers’ needs.

Another aspect specific to universities is that customers are involved in the organisation’s everyday work. It is pointless for the university to offer students classes if the students themselves do not participate actively in the learning process. Similarly, research in universities often involves intensive cooperation between university staff and external partners. This aspect therefore also has to be taken into account in the model.

Putting the Model into Practice

A quality management model defines the theoretical background for a process, establishes functioning quality management tools and demonstrates what changes are needed and what actions are necessary. Several elements are required in order to put the model into practice.

First, the QM-model itself, along with plans for its development and for future actions need to be discussed fully by all boards and committees to obtain a broad acceptance of the model. At the same time, important processes should be selected and carefully recorded so that the model itself can continue to improve while it is in progress. The process of defining a performance agreement runs both top down and also bottom up (Fig. 3).

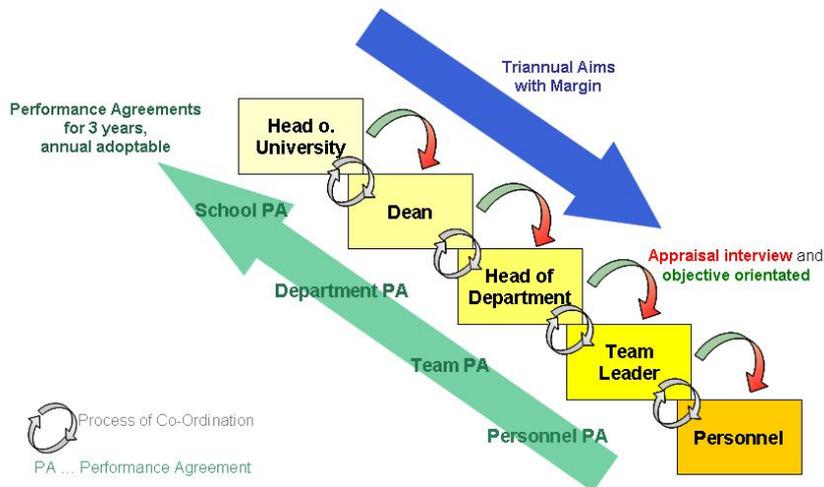


Fig. 3: Defining Performance Agreements

In our model, “Downstream” (blue arrow) sub-goals were issued so that the overall university goals could be achieved as stated in the mission, vision, and strategic guidelines and in the university’s development plan, and were also harmonised with the performance agreements which were established with the relevant government department. Meanwhile the “upstream” plan (green arrow) dealt with the needs and wishes for the direction of future development, such as plans for a new set of strategic guidelines and a development plan. This bi-directional approach guarantees an amicable and positive evolution of the institution as a whole.

Temporary and permanent quality circles were established both in order to solve particular challenges which had been identified and also to ensure that the process itself would continue to improve. Feedback loops such as course feedback from students, alumni and curriculum evaluations were implemented to guarantee quality development in lecturing, teaching and in study programmes generally. In doing so, the feedback obtained from society, the economy, and from alumni and graduates also had to be taken into account. In the field of research and scholarship, an evaluation system was created to assure self reflexion and improvement in combination with external feedback from international peers.

In order to carry out a short-term Quality Assessment, discussions were held and a basic index of figures and facts on teaching and research were developed. This is also a way in which it is possible to be guided by quality goals when managing a university. To limit the workload for staff, these facts and figures were based on management ratios taken from our annual “intellectual capital report” or from the electronic university administration tool “campus online”. Additionally, a system of reports was established. Within this system, relevant “grass-roots” information from the university was gathered by researchers within the departments and from deans. This information was then passed on to the top management of the university; senior management in turn periodically reports to the university board and to the relevant government department. Overall, quality system audits are planned to document how the Graz Quality Management Model is functioning in all areas of the university, including in administration and university management. The tools listed above and displayed in figure 4 are based on a long response time and this fits perfectly with the situation in a university, where “production time” also generally lasts several years.

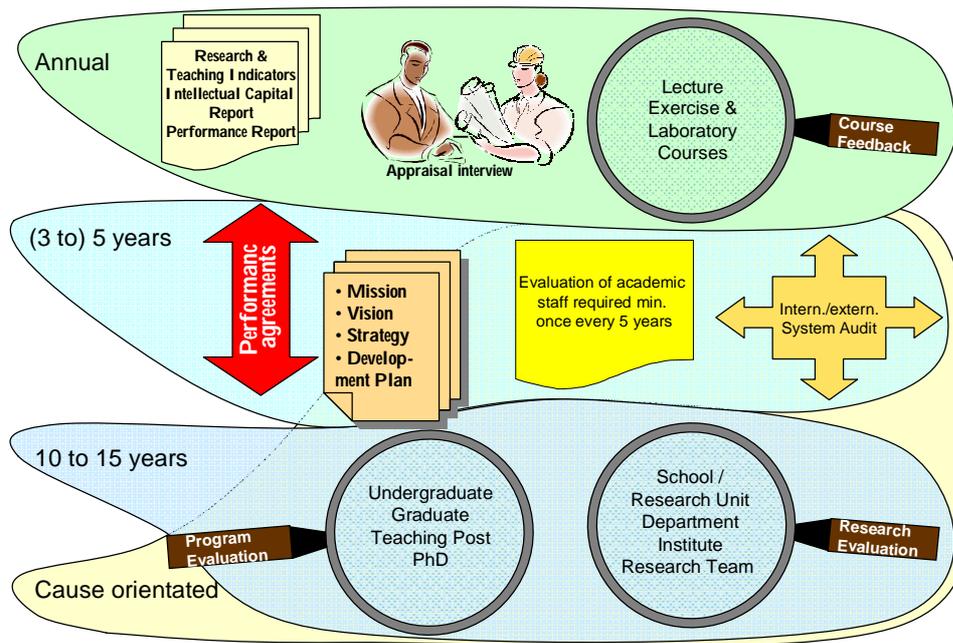


Fig. 4: Tool Box of Graz Quality Management Model

Barriers and Problems Encountered During Implementation

As in all large organisations, there is a certain “inertia against change” which has to be overcome when implementing any new project or process (and this is indeed a phenomenon which continues to pose challenges). “Brownfields” such as the residual state employment structure of the university sometimes impeded progress. The most important task was not to implement a new system of administration but rather to enforce quality commitments in all university departments.¹⁰ In an organisation like a university which is made up of people who are experts in their fields, the freedom to teach, research and speak as one wishes is a core value and it was therefore important to explain that each manager was responsible for quality management in his/her own sphere of influence. It was not easy to establish checks and balances – including aspects such as essential monitoring and autonomy – and indeed difficulties were encountered not only at the planning stage but also when putting the project into practice.¹¹ Most academic staff in general, and professors in particular, do not see themselves as managers or employers with responsibilities for achieving aims or leading staff. So in such cases, it can be a huge challenge to convince staff that they are indeed responsible for setting goals and optimising the performance of their staff/team. When it comes to senior researchers in particular, the field of personnel management can at times seem like a real “mission impossible”. Statements like “I can’t tell a professor what s/he should do in his/her research” are common, also at the level of the dean. Such suggestions demonstrate how quality management is misunderstood by some and therefore also show that there is a great need for clarification. The process of establishing personnel management at department level and even lower still continues. Similarly, for senior management it was important to find a balance which meant that a quick and rough overview was obtained, but which also allowed for a long response time.

¹⁰ Cp: Manfred Erhardt, Volker Meyer-Guckel, Mathias Winde (Hrsg.), Leitlinien für die deregulierte Hochschule, Stifterverband für die Deutsche Wissenschaft, 2008

¹¹ Cp: Bruno S. Frey, Margit Osterloh, Evaluations: Hidden Costs, Questionable Benefits, and Superior Alternatives, University of Zurich, Oct. 2006

Overcoming Resistance to Quality Management

Universities are organisations which each have their own, unique constitution. They cannot, therefore be served adequately by any of the pre-existing models of Quality Management for industries, business or services, for example the ISO 9000 series or EFQM. Rather, the concept of such models must be adopted and adapted for each university, taking into consideration the institution's historical, organisational and sociological situation and background.

In comparison to "classical" universities, it is a little easier to discuss and implement a quality management system in universities which focus on technological subject areas. Nevertheless, even this requires a great deal of communication and information to integrate quality management as part of daily life in the university. This communication and dissemination of information is not only the duty of the (vice)rector, it is also the responsibility of deans, professors and other people in leading functions. At times, unconventional paths must be forged in order to properly reach researchers and teaching staff.

The key to overcoming personnel barriers is trying to overcome the 'vanity' of academics and researchers. To this end, it is essential to highlight the positive aspects of quality management – and also emphasise the fact that resource allocation can be dependent on achieving any aims which were agreed.

Quality management depends, among other things, on valid facts about the performance of staff. Apart from the challenges of exact data definitions, another aspect has to be noted: namely the fear of the "transparent professor". This phrase refers to the idea that professors hesitate to report on their performance in research and teaching to the university on the grounds of their "freedom of academic research". The employee organisation also supports this attitude in order to "protect" workers.

Another difficulty arises when the turnover and day-to-day production do not meet the strategic quality goals which were set. On the one hand, this can be blamed on the goals themselves (they are often too ambitious) but on the other hand can be attributed to a lack of awareness of the rigid measures needed in order to achieve goals.

The main key to overcoming all these struggles is: maintain regular communication and take action as soon as difficulties arise.

Achievements so far, Present Status and Next Steps

Our main success thus far is that "quality" has actually been established as part of the university steering system and is not only represented by isolated quality management tools within teaching. This means that the topic of "quality" has gained currency within the university and management bodies and for the staff. The bodies and individuals in charge of decision-making are conscious of the importance of quality, and that is one duty of leaders within the university. They know that their job cannot be fulfilled simply by signing agreements, implementing new curricula or appointing staff, but they are also responsible for results and must give feedback to subunits or personnel.

A further positive aspect is the increased trust shown by decisions made by management (both central and at department level) and the correct implementation of measures agreed.

In some cases, the views and expectations of the customers (e.g. students, employers, funding bodies etc.) are taken account of and become part of the decision-making process. An essential part of these procedures is the participation of international peers at several levels.

From the moment the model is drafted, some elements are put into use, for example units or even whole elements are tested, and the remaining elements are further prepared.

The next steps in the project will be the finalisation of the model, discussions with the University governing bodies (Rectorate, Senate, Board) and within the universities and then, ultimately, the final implementation of the project as a formalised system as set out in the statutes of the university.

Lessons Learned: Detours and Dead Ends

No matter how perfect your plan is, reality will bring you back to earth! This is the main lesson we learned while devising the Graz Quality Management Model. Flexibility and adaptability are of the utmost importance if one wants to develop a quality model, so starting with the explicit aim of creating the “best system” will only lead to frustration. While discussing, testing, implementing, and evaluating the system (or parts of it) many new ideas occur, and equally, other plans which seemed promising eventually lead nowhere. So rather than resolutely sticking to the first draft, it is far more productive to follow new paths as they occur.

In addition to the time it takes to develop and implement a quality model, we also need to take account of the time it takes to actually use the model. For example, just taking the main goals and indicators as negotiated with the ministry, and passing them to personnel level and getting internal agreements signed takes about 8 to 10 months. Moreover, this period does not even include time to actually set the goals in a “bottom up” fashion. So we are aware that aims which work on a short cycle basis are of no use here. Our conclusion is that for efficient quality management, the focus must be on long-term changes, and not (only) on short-term effects.

An important “detour” in our journey occurred due to the fact that, although many quality management tools have been developed for higher education institutions, most of these are suited only for very specialised tasks, and when taken together, the overall effect of using too many different tools is that the institution and those acting for it simply become overburdened.¹²

Until now, there has been no set of indicators which has been accepted by all fields of research to focus on and guarantee high quality. To improve this situation, our interim solution is based on using an iterative approach to develop indicators strictly focused on quality. This is not ideal and can, however, at times seem irritatingly repetitive, and should be further developed and improved in the future. In terms of long-term scheduling it is a fact that research output (i.e. publications) simply cannot be planned in advance, and moreover, in reality also the level of income from various third-party funds cannot be predicted.

Upcoming Challenges

We see some challenges in the future, although most of these will be outside of the control of universities. In the field of comparison of the performance of lectures and academics in different fields of research, there is a known lack of qualitative indicators. Moreover, the evidence given by peers is not necessarily reliable and valid when making comparisons between different fields. Here we need much more discussion on an international level.

An other threat is posed by the changing legal regulations concerning quality management. In Austria, for example, the autonomy of the universities in establishing quality management is under pressure, and there are plans to set up an accreditation board for quality management.

Internal challenges include the question of how best to select quality tools and feedback loops (Fig. 5) in order to create a quality model which functions more or less independently of those in charge of implementing the model, and – most importantly – the issue of enriching the procedures connected to staff appointments with a more qualitative focus. Therefore the shown QM-cycle is in development, containing some central elements like analyses, aims, planing, monitoring and feedback. The two loops within the cycle indicate the the need of iteration in the phases of planning and realization.

12 Cp: HEFCE, The costs and benefits of external review of quality assurance in higher education, 2005; and Bruno S. Frey, Margit Osterloh, Evaluations: Hidden Costs, Questionable Benefits, and Superior Alternatives, University of Zurich, Oct. 2006

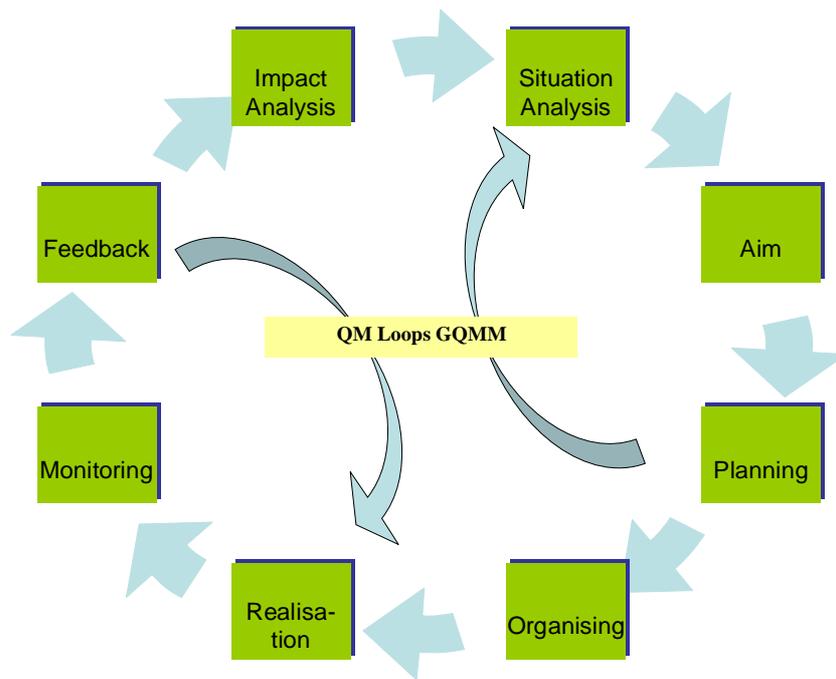


Fig. 5: Graz Model Quality – Circle

Summary

The changes in circumstances and conditions under which universities now function make it imperative that we find new approaches in university management. Excellent quality is required by all customers for all products (what ever the definition of these terms is) – and teaching and learning, as well as academic research and technology are no exceptions to this rule. In the implementation phase, success relied on two aspects: the effective definition of a principle quality management model as a base and the streamlining of all the quality management tools already used in the university. A long and broad discussion process was needed, and then has to continue long after implementation in order to fulfil the specific demands of all stakeholders in- and outside the university. This is also the major difference, but not the only one, by using proven industrial quality tools in a company with a command structure or in an expert organisation like an university. The main key to overcoming all difficulties is to maintain constant communication and take action as soon as difficulties arise. The main features of the Graz Quality Management Model we have presented are its double feedback loop on all levels from the individual employee up to senior management as well as its “bottom up” and “top down” approach to performance agreements. These aspects guarantee that it will achieve a high level of acceptance in an organisation such as a university which is made up of people who are experts in their fields. To continue improving the quality management system and to stabilize the shift from quality assurance to state-of-the-art quality management - with quality planning, quality control and quality improvement - will now be the challenge of years to come.