



Enhancing Quality Assurance Management and
Benchmarking Strategies in Indian Universities

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European Universities share a common general approach to QA and benchmarking but there are different management models under which these approaches are applied. Univeriste de Montpellier in France and KTH are to cases of institutions that, by sharing the same principles, have different approaches to implement QA mechanisms and to relate them to their benchmarking tools. While approaching benchmarking towards a ranking system inspires KTH, UM has a more QA oriented approach benchmarking against QA systems in Europe.

Below, the two cases are presented and explained in detail.

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ANNEX 1

The Swedish System for Higher Education and the KTH Strategy for Quality Assurance and Benchmarking

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Higher Education Institutions (HEIs) – some definitions

A HEI is an institution that delivers higher education, post-secondary education, or third level education. It is an optional final stage of formal learning that occurs after completion of secondary education. The traditional business model of an HEI is to deliver Degrees defined by and based on the completion of Programs of Courses. The kinds of degrees a specific HEI can provide are restricted by national or regional legislation. HEIs can receive financial support from national, regional, private and special funding sources. The financial conditions for a particular HEI are regulated nationally and regionally. HEIs are either State HEIs or Private HEIs. The ownerships and governance of private universities display a great variety. The traditional form for HEI education is a co-located campus-based education, integrated with individual homework for the students.

The classical HEI is a Comprehensive University providing education in all subjects. Single-faculty or Multiple-faculty HEIs provide education in specific subject areas such as medicine, engineering, agriculture or business. For all single-faculty HEIs in engineering, strong science and math elements are included. Some HEIs are Specialized Colleges in the sense that they are even more restricted as they only deliver and examine education to special groups (e.g. women) or education on some particular level of education such as bachelor and master's level. Specialized colleges can be independent or can be affiliated with a university that has more complete examination rights. HEI's can be single campus or multi-campus. There are some HEI's which has hundreds of colleges geographically spread out, but affiliated to the HEI's. In these cases HEI's are responsible for the design of the curriculum, examinations and degree, while the colleges provide the infrastructure and instructions.

Apart from delivering education that leads to basic degrees, HEIs can deliver 'continuing education'. The most common form is the update of competence for older professionals (professional learning). Such education can be demanded and funded by specific employers (commissioned education) or be acquired by single individuals. Continuing education can also take the form of skill development for categories of people that lack formal academic degrees (vocational education).

The Higher Education System in Sweden

The Higher Education System in Sweden has 30 000 faculty and researchers and offers in the order of 3000 unique programs with 400 000 undergraduate students and Sweden has 18 000 PhD students and produce 3000 PhD degrees/year.

In total, Sweden has 48 Higher Education Institutions (HEIs):
32 comprehensive Universities or single or multiple faculty HEI's with examination rights on all levels
16 HEIs with limited and/or specialized rights in various respects.
5 HEI's are often ranked < 100 (Karolinska Institute, KTH Royal Institute of Technology, Stockholm U. , Uppsala U. , Lund U.) on one of the main world ranking lists (ARWU, THS, QS), while another 5 are ranked in the range of 100..300 (Umeå U, Linköping U., Chalmers, Gothenburg U., Swedish University of Agricultural Sciences).

Sweden has a small set of governmental agencies that contribute to the monitoring of the quality of the Swedish HEIs:

Swedish Higher Education Authority (UKÄ)

The Swedish Council for Higher Education (UHR)

STINT (The Swedish Foundation for International Cooperation in Research and Higher Education) and SI (Swedish Institute) that have the purpose to promote internationalization of education

National funding agencies like VR (The Swedish Research Council), Formas, Forte and Vinnova.

It worth mentioning SUHF (The Association of Swedish Higher Education) in this context even though it's not a governmental agency, as they work to promote the Swedish HEI's. 37 out of the 48 Swedish HEI's are members.

The Swedish Council for Higher Education (UHR) is a Swedish government agency with many different tasks in the education sector. It has 300 employees who are located in Stockholm and Visby. UHR's tasks include:

The coordination of admissions to higher education.

The production of the Swedish Scholastic Aptitude Test.

The provision of support and information potential students in higher education.

The widening of participation and prevention of discrimination in higher education.

The evaluation of foreign higher education qualifications.

The brokerage of international exchanges.

The management and development IT systems.

The Swedish Higher Education Authority with the Swedish abbreviation UKÄ has the task and full mandate to evaluate and on the national level accredit all programs provided by Swedish HEIs. UKÄ has a 400 years long tradition in the Swedish governmental system. Historically it was headed by a University Chancellor. It should be noted that UKÄ does evaluate Programs rather than HEI's. A HEI is not as a whole accredited on the national level. HEIs are born, live and die based on top-level government decrees. UKÄ is also responsible for doing annual statistics for the Swedish HEIs and to evaluate the administrative efficiency of the HEIs. Currently the focus is on programs that lead to a professional degree such as teacher and dentist educations. Another focus is master level programs.

The Swedish Higher Education Authority (UKÄ) national QA system

The objectives of UKÄ's reviews are to assess the performance of the study programs and contribute to the HEI's' work with quality improvements in higher education and research. Higher Education Institutions (HEI's) and the Swedish Higher Education Authority (UKÄ) have a shared responsibility for quality assurance in higher education and research. Valuing this shared responsibility has been a core principle of UKÄ in its work with the Government assignment to develop a new system for quality assurance in higher education. It has been important to create a clear link between UKÄ's reviews and the quality assurance processes at the HEI's, while also considering how UKÄ's reviews can contribute to further improving this work. The new quality assurance system for higher education, which the Government tasked UKÄ to develop, consists of the following four components:

- institutional reviews of the HEI's quality assurance processes

- program evaluations
- appraisal of applications for degree-awarding powers
- thematic evaluations.

The reviews will be based on aspects developed in dialogue with representatives from HEI's, teachers, students, employers and the labor market. The aspects are grouped into four aspect areas, which have been defined based on what part of the HEI's activities they cover. The four aspect areas are:

governance and organisation
 environment, resources and area
 design, teaching/learning and outcomes
 follow-up, actions and feedback.

In addition to the four aspect areas, the reviews include three perspectives. These perspectives are:

student and doctoral student perspective. How does student influence work in practice? Are students given opportunities and incentives to participate in the HEI's' quality assurance processes and the development of courses and programs?

working life perspective. Are the courses and programs useful and how well do they prepare students for future careers?

gender equality perspective. Is equality between women and men taken into account and promoted in the processes at every level of the HEI's organizations?

Quality assurance in higher education presupposes that the quality assurance efforts are conducted by HEIs as well as by UKÄ. This means that the HEIs and UKÄ have a shared responsibility for quality assurance in higher education and research.

International principles for quality assurance and ENQA

To build legitimacy for Swedish higher education, UKÄ has emphasized the importance of following international principles for quality assurance in the new quality assurance system.

This includes, first and foremost, the principles on which Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) is based and that have been developed within the framework of the Bologna Process. ESG was first adopted in 2005 by the ministers for higher education in the countries taking part in the collaboration. In May 2015, a new and revised version was adopted. ESG primarily strives to contribute to a common understanding of quality assurance related to learning and teaching, to contribute to developing mutual respect and to streamline the recognition of degrees and programs across national borders.

It is also important that the quality assurance processes of both HEIs and UKÄ builds on ESG as it affects UKÄ's membership in the European Association for Quality Assurance in Higher Education (ENQA). ENQA is a member organization for national quality assurance agencies in the European area for higher education. To join ENQA, a quality assurance agency must meet ENQA's requirements. These requirements, in turn, are based on ESG's principles for external quality assurance of HEIs' operations and on the principles to which the quality assurance agencies are to adhere. Membership in ENQA is thus evidence that national quality assurance of higher education adheres to ESG. UKÄ intends to apply for full membership in ENQA. To meet ENQA's requirements, the reviews of the quality assurance agency are to include monitoring and enhancement of quality work. The

member quality assurance agencies in ENQA are subjected to an external review at least once every five years to ensure they adhere to ESG.

KTH Royal Institute of Technology – Basic Facts

Sweden's largest and oldest Technical University, founded in 1827. KTH is a single faculty HEI in Engineering. Basic facts for KTH:

Annual turnover	530 M Euro	Employees	5100
Turnover share of research funding 50%		75%	Turnover share of external funding 50%
Professors/Tenured faculty	600	Total of undergraduate students	13000
New master students/year	2500	(1300 international students)	
PhD students	1800	(strong domination of international students)	

KTH offers 18 full five year programs, divided into one three-year Bachelor program-component and one two-year Master program-component. This leads to a Master of Science in Engineering degree. KTH also offers 60 independent Master programs leading to Master of Science degree. All Master level programmes and courses at KTH are conducted in English.

KTH also provides 4 year PhD programs in a variety of sub-disciplines. KTH has established formal strategic partnerships with major Swedish companies and organizations: Skanska, Bombardier, Vattenfall, Scania, Ericsson, ABB, Stora Enso, SAAB Systems, Sandvik, Stockholm County Council and the City of Stockholm.

Quality policy for KTH

Quality through continuous improvement; KTH is to be a prominent Swedish and international technical university and maintain the highest quality in all its activities. KTH operates in a changing university policy landscape. The trend is towards reduced government micro-management and increased autonomy for universities. At the same time, global competition is intensifying. Students, employers and the research community are placing ever-increasing demands on quality. The education and research system has to respond to increasingly complex social challenges with respect to the environment, health and quality of life. To meet this combination of high ambitions, greater freedom and growing demands, KTH needs a strong internal quality structure. In this, KTH will build on previous knowledge and experience, but will also have a high renewal rate based on new research and good business intelligence. The quality policy aims to provide guidance in quality work. Along with the other KTH policies (related to the areas of ethics, sustainable development, human resources, security, and financial investments regarding donations), the quality policy is updated annually.

All activities at KTH are to be characterized by quality. Responsibility for quality is to be carried by the individual student, teacher and employee in their daily actions. Common values in terms of social responsibility, respect for the individual and the natural environment as well as a culture of quality are driving forces. Systematic quality work carried out at KTH is to be characterized by proactivity, participation, engagement and visibility. All groups at the university, including undergraduate and postgraduate students, have a collegiate responsibility for and are assumed to participate in quality work, which is to be integrated into daily activities at all levels. The Faculty Council has overall responsibility for issues relating to the quality of education, research and

community interaction. The quality process at KTH is to be based on the principle of continuous improvement. This means that quality work will be ongoing and close to daily activities, and that the positions will always move forward. Quality development will be monitored regularly. Monitoring will aim to increase quality but also to identify and correct shortcomings, and to provide input to the incentive structure. In addition, internal monitoring will provide KTH with readiness for external reviews of different kinds. KTH quality work is to be based on four areas: 1. Education, 2. Research, 3. Supply of skills, 4. Collaboration.

KTH is to provide high quality education. KTH is to educate engineers, architects and researchers who can lead technical development in society and operate in a global labor market. KTH programs will be planned and implemented with the aim of undergraduate and postgraduate students achieving the learning outcomes that apply to each professional degree or general degree. This is the starting point in the design and quality development of educational programs and courses. KTH programs will give good results from several perspectives. Those who graduate from KTH will possess knowledge and understanding in their specific areas, as well as personal and professional abilities in accordance with learning outcomes, which include critical thinking, independence, problem solving and communication. Thus, graduates will have all the tools necessary to meet the demands of a changing labor market. KTH will also meet the quantitative performance requirements of awarding degrees to a sufficient number of engineers, architects and doctors. In addition, programmes are to meet undergraduate and postgraduate students' expectations and needs for their future establishment in the labor market.

KTH is to conduct high quality research. As a technical university, KTH will contribute to scientific development and social development, both in the technical field and in other fields. This requires continuous interaction between engineering science, other scientific disciplines, working life and society. Total research activities at KTH will achieve a well-considered balance between basic and applied research. KTH will conduct internationally oriented, competitive research with a focus on moving the global research front forward. In addition, KTH will conduct research that will be of societal relevance and/or bring about commercial benefits to Sweden. KTH research also has an important internal role in safeguarding the scientific basis of education programs. Research is to be integrated into teaching, for example through researchers teaching and teaching staff conducting research.

Staff are a key resource in the ambition of KTH to be a prominent Swedish and international university, both in terms of research and education. Skills supply, comprising recruitment as well as professional development, is a process that underpins this in all its aspects. KTH is to attract leading researchers and teachers and provide an environment that allows them to develop and contribute to the highest possible quality of research and teaching. The KTH faculty is to be characterized by competence, curiosity and diversity. The faculty will work towards and be jointly responsible for nurturing and developing a culture that is characterized by support, encouragement, responsiveness, tolerance and enterprise.

Collaboration with external stakeholders in industry and other sectors of society is a prerequisite for KTH to maintain the highest quality in internal activities, and for KTH to carry out its role in society. Through such collaboration, KTH will engage in a dialogue and share knowledge and generate interest in its research and educational activities in a

broad social context. KTH will collaborate with industry and other sectors of society to contribute jointly to innovation, growth and the development of knowledge. Collaboration with the surrounding community is essential in the process of developing the structure of educational programs and to guarantee undergraduate and postgraduate students' engagement.

The Three Primary World Ranking Systems and the KTH world ranking

The world ranking becomes more and more important for student recruitment, faculty recruitment and research funding. The three main ranking systems and the criteria used are summarized below:

ARWU – Shanghai			
	Distinguished Alumni (not in engineering)		10%
	Award winners (not in engineering)	15%	
	Highly cited researchers	25%	
	Papers recorded in science indexes	25%	
	Papers in top journals	25%	
	Funding status (only in engineering)	25%	
THE			
	Teaching based on peer review	30%	
	Research based on peer review	30%	
	Citations	30%	
	International outlook	7.5%	
	Industry income	2.5%	
QS			
	Academic reputation based on peer review	40%	
	Employer reputation based on peer review	10%	
	Faculty/Student ratio	20%	
	Citations per faculty	20%	
	International faculty ratio	5%	International
student ratio	5%		

The KTH World Ranking in the three systems:

	2011	2012	2013	2014	2015	2016	2017	2018
ARWU 201-300	201-300	201-300	201-300	201-300	201-300	201-300	201-300	201-300
THS	193	187	140	117	126	155	159	173
QS	180	142	118	---	110	92	97	98

The KTH world ranking – tentative analysis

The ARWU ranking is focused on the extreme top performance in research and also biased towards the classical academic disciplines of science, social sciences and humanities. A single faculty HEI like KTH with a professional reputation profile has difficulties in competing here. KTH is stable on the 201-300 level.

The KTH ranking showed a positive and similar development in the THE and QS systems up to 2014. The last few years the positive development in QS continued stabilizing slightly below 100. Unfortunately the THE development turned and KTH is now back at 173. THE changed their methodology in 2015 and obviously to the disadvantage of KTH. Negative factors for KTH are the handling of citations and the teaching reputation.

The KTH ranking in Engineering, in Europe and in specific areas

The KTH ranking in engineering and technology worldwide is

THE: 2013=34, 2014=30, 2015=42, 2016=36, 2017=36, 2018=38

QS: 2011=, 2012=57, 2013=49, 2014=, 2015=, 2016=, 2017=38, 2018=41

ARWU: 2011=76-100, 2012=76-100, 2013=51-75, 2014=76-100,
2015=76-100, 2016=101-150.

The KTH ranking in Europe is:

THE: 2012=56, 2013=43, 2014=52, 2015=74, 2016=72

QS: 2012=57, 2013=49, 2014=44, 2017=33, 2018=33.

The KTH ranking in engineering in Europe is: 9 (QS 2017), 12 (QS 2018).

The KTH rankings in some specific areas are:

Electrical Engineering

QS: 2011=51-100, 2012=40, 2013=24, 2014=31, 2015=16, 2016=17, 2017=26,
2018=28

Architecture and Built Environment

QS: 2015=21, 2016=24, 2017=23, 2018=24

Mechanical engineering

QS: 2011=51-100, 2012=28, 2013=21, 2014=22, 2015=25, 2016=25, 2017=39,
2018=32

The KTH Annual Bibliometric Monitoring (ABM)

The ABM is introduced in relation to the KTH aim to increase the number of citations with 25 percent.

The ABM is available at different levels, for KTH in total, KTH Schools, Departments and for individual researchers. The report is the same at all levels. Only publications registered in DiVA that researchers have published when working at KTH have been included. Only KTH-affiliated publications are taken into account.

The ABM can be used to understand the way each School and Department contribute to this aim. The aim for each School will be included in the Annual operational agreements and a follow-up will be made in the School dialogs. ABM has a small influence in the disbursement of research funds to the schools and from schools to departments.

Benchmarking exercise comparing KTH with other technical universities

KTH has also been involved in a benchmarking exercise comparing KTH with other technical universities. The following universities were looked at: Aalto, Caltech, Chalmers, Delft, DTU, École Polytechnique, Eindhoven, EPFL, ETH, Georgia Tech, Imperial College, KAIST, Karlsruhe, MIT, NTNU, RWTH Aachen, Tokyo Institute of Technology, Tsinghua, TUM and Warwick. The indicators used were the following: • Institutional income • Academic staff • Institutional income per Academic staff • Research income • Research income per Academic staff • Papers per Academic staff • Doctoral degrees per Academic staff • Research staff • Normalized citation impact • Student • Academic staff per Student • Academic staff international per Academic staff • Student international per Student.

The KTH RAEs (Research Assessment Exercises)

In 2012, KTH conducted a second comprehensive Research Assessment Exercise (RAE2012). The first RAE was conducted in 2008. The exercises are of major strategic importance to KTH, as their main purpose is to identify strengths and weaknesses and

thus promote quality development and inform future strategy. The next RAE is planned for 2018.

The responsibilities of a technical university are many and complex. Such a university should contribute to knowledge and education as well as to society by fostering excellent basic and applied research in a host of fields – and by building relationships between these approaches and fields. A technical research university has a particular responsibility to transfer its research findings to, and interact with, industry and society when executing its strategy. This cannot be taken for granted and, at every strategic decision point, the route that leads to the highest possible level of quality must be chosen.

For this reason, in 2008 KTH performed an extensive international review of its entire research base. The 2008 Research Assessment Exercise showed overall that KTH was considered to be at the forefront of technology development and academic leadership in over half of its research bases. In addition to this, the industrial interactions and innovative performance of its researchers were viewed as excellent.

The expert panels invited to KTH in 2008 also highlighted some weaknesses such as a lack of vitality in some ageing research groups and the size of some groups were considered too small to be able to achieve sufficient international visibility. RAE2008 also pointed toward some development issues regarding the overall structure at KTH, such as creating more incentives for excellent basic research and enhancing the available support for experimental infrastructure.

Following the recommendations of these expert panels, between 2009 and 2011 KTH has focused on the consolidation of research efforts in key areas of strength such as materials sciences, energy, transport, information and communication technologies, and life science technology. The internal research resource allocation system was modified to take into account the degree of external financing and citations in addition to the previous production of licentiate and doctoral degrees. In addition, another part of the faculty resources was focused more clearly on prioritized areas of strategic importance to KTH.

In addition, KTH has introduced a 'tenure track' system for recruitment of faculty. The main focus of new faculty recruitment is now on young researchers who can proceed towards higher academic positions through a clear career track, supported by stable basic funding. These changes were made to improve international visibility and to strengthen the KTH brand in these areas, thus paving the way for true international leadership. Following in the footsteps of the 2008 exercise, RAE2012 has once again performed an extensive international review of the entire KTH research base as it stands today. Through this exercise it will become clear to what extent KTH strengths are growing towards our common vision and how previously identified weaknesses have improved. The basic structure of RAE2012 is similar to that of 2008, except for a few modifications aimed at strengthening a holistic view of the KTH research base.

First of all, RAE2012 focuses on the quality of the research output, the social and economic impact of the research and engagement with society, as well as the quality of the research environment. All members of the faculty were involved in the compilation of self-evaluation 'packages' that described the strengths and achievements of their research. The impact from their research and their engagement with society were also articulated, as well as the sustainability and vitality of their research environments.

As a part of the preparation for RAE2012, KTH collected all research publications between 2004 and 2011 into a large searchable database, entitled DiVA, which was used as the basis for conducting a comprehensive bibliometric analysis of the 47 research units assessed. Also, CVs were collected for all research active staff. 101 international experts visited KTH to review the university's research performance. These experts visited all 47 research units over four days, meeting senior faculty, upcoming faculty and research students. After these visits the experts submitted reports, providing a written evaluation of each research unit.

The final report presents a summary of the lessons learned in the RAE of 2008, it goes on to review the quantitative data collected in the evaluation packages, and provides summaries of the assessment reports from the expert panels. The bibliometric analysis was also reported. Findings at the KTH level were also put forward. Information gathered during this process was used to steer the development of the KTH strategic plan for 2013-2016.

KTH EAE (Education Assessment Exercise)

The core idea behind the EAE was that the assessment would contribute to making education at KTH even better. The assessment was carried out in 2011. By creating platforms for discussion at operational level, important issues would be brought to light and problems would come to constructive solutions. It was therefore vital that as many educational coordinators, teachers, students, and stakeholders as possible be involved. This would also give positive ancillary benefits in the form of improved communication and increased knowledge of one another's work. The EAE was therefore designed as a comprehensive project and included all degree programs at KTH.

As the main focus was on development needs, newly established programs and programs under revision could also benefit from the project. Another thought behind the EAE was that KTH would operate one step ahead of the national review cycle. By conducting its own evaluation a year ahead of the Swedish National Agency for Higher Education, KTH would be prepared for the coming external evaluation. It was therefore decided, for example, that the EAE project would include a quality assessment of student degree projects, which are a focus of the national review.

While the Swedish National Agency for Higher Education only evaluates educational outcomes, EAE adopted a holistic approach and also focused on the prerequisites of education delivery, such as student characteristics and teacher competence, and on educational processes, such as teaching and assessment methods. As an international university, KTH chose to conduct the project in English in order to be able to invite external reviewers from leading foreign educational institutions.

A three-stage model consisting of self-evaluation, external review and follow-up is the international standard method of assessment within higher education. This model was chosen for the EAE.

The evaluation involved all degree programs at kth leading to a Master of Science in Engineering, Master of Architecture, Bachelor of Science in Engineering, Bachelor of Science and Master of Science; a total of 90 programs. Each program, or groups of several programs, was represented by a group conducting a self-evaluation of prerequisites,

processes and educational outcomes. Each self-evaluation group consisted of 5-12 people, including students and stakeholders. The self-evaluation was conducted according to a specific manual with a set of questions. The groups concentrated on analysis rather than description, so that the program's strengths, weaknesses, opportunities and threats became clear. During the self-evaluation period, the self-evaluation groups were offered process support from kth educationalists by way of seminars, reference material, open days and feedback on the draft report. The groups also gained access to a statistical database that could be used in the analysis. Despite self-evaluation being demanding, many groups commented in their reports that they found the process to be useful. Many appreciated the opportunity to think strategically about the degree programs and then receive external feedback. Some of the self-evaluation questions, however, were considered difficult, not least those concerning intended learning outcomes and how to ensure that students reach the objectives.

A panel of experts from different fields of technology, teaching and learning, and evaluation, was appointed to perform the external assessment. Students and stakeholders were also included in the group. Educational coordinators at kth had made nominations to the assessment panel, which was to consist of a total of 50 members divided into 8 sub-panels, broadly matching the kth school division. Reviewers from Sweden, other Nordic countries, several European countries and, in one case the USA, were involved. English was used as the common language. The starting point in the assessment was, primarily, learning outcomes: the nationally established ones as well as those applicable to each kth program. The self-evaluation reports, along with samples of student degree project reports, served as the main basis for the reviewers' work. In August 2011, the assessment panel visited kth in order to meet with kth management, teachers, program coordinators and students. The logistics of the visit were complex and dependent on a significant commitment at all levels, from student unions and teacher teams to the Management Group and the central project team. Many constructive discussions were held. Before the group departed, the reviewers provided verbal feedback regarding their impressions of the various education programs at kth. Later, they also provided written comments.

KTH AAE (Administration Assessment Exercise)

In 2014, KTH initiated an evaluation of its administration. The project was named Administrative Assessment Exercise (AAE) and was conducted in three stages: self-evaluation, external peer review and follow-up. In all, 15 administrative processes were evaluated within the project.

The overall purpose of the AAE was to contribute to improving the KTH administration. The project was designed to build on the quality work that has been conducted within the administration in the last few years and to evaluate these efforts. This work has been directed towards improving administrative procedures and work processes, and the approach has been one of administrative operational development through experience exchange between administrators from different parts of KTH. Each year, several such strategic projects have been undertaken. Therefore, in a sense, the AAE formed a scaled-up continuation of this work.

The AAE was also expected to have a number of positive side effects. Amongst these was the administrative staff's increased knowledge about evaluations and quality work,

including a greater understanding of the processes that teachers and researchers continuously undergo in, for instance, RAE and EAE. Through the AAE, administrative work would also become more visible throughout the organization. This development, in turn, would facilitate better communication between administration, faculty, students, and other stakeholders.

KTH Strategy for raising quality through internationalization

KTH is always looking for new talents that will thrive in our research and education environments and ultimately shape the future of the university. The strong international reputation of KTH has made it an attractive university for international students. During 2015 KTH welcomed around a thousand exchange students to the over 1,000 courses given in English. Just as many international Master's students arrive at KTH each year to study over 60 Master's programs taught in English. Some of these programs are given jointly with other prominent technical institutions, resulting in a double or joint degree. KTH is a key player in EIT, the European Institute of Innovation and Technology, and also offers joint Master's programs financed by Erasmus+ and through the Nordic Five Tech alliance.

The number of fee paying Master's students has increased exponentially since the dip in 2011 when Sweden introduced tuition fees for students from outside the EU/EEA, largely thanks to KTH's strong international presence and reputation for excellence. At doctoral level, about half of the around 2,000 PhD students come from outside Sweden. The faculty and staff at KTH are also an international group, representing all corners of the globe. The large proportion of international students and staff makes our campuses truly international and dynamic environments where different ideas and perspectives meet. In an increasingly global world, qualities such as an international mind-set and cultural awareness are important in the labor market. To meet this ever-increasing demand, KTH offers a multitude of opportunities for students to study abroad during their time at the university. KTH currently has 220 prominent exchange universities in 44 countries. The number of students studying abroad as part of their educational experience has increased dramatically in recent years, with almost 700 students doing an exchange term or year in 2016. A third of students graduating from KTH have studied abroad during their time at KTH. In addition to exchange studies, KTH also offers the opportunity for students to complete their degree project abroad, often in a developing country or at a company or university in Europe. Students also participate in intensive courses and programs with partner universities worldwide. KTH faculty and staff participate in mobility schemes, meeting colleagues all over the world to share practices and knowledge or collaborate in research projects.

KTH is a driving force in many capacity building projects around the world with universities and industry, sharing practices and obtaining new perspectives. KTH has supported other technical universities in the development of their quality processes. This has not only contributed to KTH's international reputation but also expanded our network. International capacity building projects are often carried out in collaboration with local businesses and communities, presenting the opportunity for KTH to make significant contributions to society.

Research in the 21st century is in itself international, with researchers collaborating with colleagues all over the world. Through strategic alliances and partnerships, KTH is able to

optimize its collaborations with selected partners. KTH is a part of numerous prestigious academic networks, including Cluster, TIME and Caesar. These networks are a forum for collaboration and a platform to join forces in global matters concerning higher education and research.

In recent years, KTH has begun to enter into strategic partnerships with a number of leading universities in different regions. These partnerships span several sectors and can cover traditional student exchanges, research collaboration, joint PhD programs, joint Master's programs and staff exchanges.

Focusing on the future, KTH hopes to strengthen its quality and impact in research, education and cooperation through our international partnerships. A continued strong presence around the world is one of the most vital tools in making KTH a world-leading technical institution.

Annex 2

Quality Assurance at the University of Montpellier - EQUAMBI project

History of quality assurance at the University of Montpellier

- 2010 Creation of a department dedicated to quality assurance
- 2011 Application of the quality assurance to the activities « Registration for diplomas » and « public markets »
- 2013 Certification ISO 9001 V2008 for the activities « registration for diplomas » and « public markets ».
- Application of the quality assurance to training activities : bachelor's degree in Political Sciences and master degree on Health Engineering.
- 2015 Melting of the Universities Montpellier 1 and Montpellier 2 : the Quality Department is kept in the new University of Montpellier within the Steering Direction.
- 2016 Certification of 2 bachelor degree on Political Sciences and 1 master degree on Health Engineering.
- Preparation for the transition to ISO 9001 V2015
- 2017 Certification ISO 9001 V2015 of the 4 activities already certifies and of the laboratory of research in odontology
- Spreading of the application perimeter of quality assurance : research platform, bachelor degree in Economics.
- 2018 Certification of the Continuing Education Department.
- Spreading of the application perimeter of quality assurance : registration and graduation for doctorate students, training course in Safety Environment Quality.

CURRENTLY CERTIFIED :

Registrations for diplomas

Public Markets

Political Sciences bachelor degree

Health Engineering master degree

A part of the activities of a research lab

quality process initiated :

A research platform

Economics bachelor degree

willing to initiate the quality approach :

The Doctoral Studies Department (DRED) for its registration and graduation activities

A training course in Safety Environment Quality (ESEQ).

Methodology for the quality assurance deployment

The President of the University of Montpellier chose to deploy the quality assurance on very limited perimeters until the ISO 9001 certification. The idea is then, with the concrete results, to convince the community and broaden gradually the perimeter.

The quality policy is established by the President of the University. It settles the aims and actions to be carried in the framework of the quality monitoring in order to reach the strategy objectives established in the contract between the university and the Ministry of Higher Education.

The President entrusted the Quality Department with this mission.

In the meanwhile, within the university, some other structures launched quality assurance procedures, and some of them lead to ISO 9001 certification or other certifications.

The Quality Department

Organisation

The Quality Department of the University of Montpellier is integrated in its' Steering Direction. This department is in charge of supervising the quality management of different processes.

Each process is under the responsibility of a pilot and a process manager.

The Quality Department help the pilots and process managers in the deployment of the quality assurance. This help is given through :

Individual meetings

Training courses

Providing templates and structuring tools created by the department enabling the users to meet the requirements of the standard.

The Quality Department helps in the deployment of quality assurance in all processes with the same methodology and with the same tools.

the resources

The Quality Department is composed of 3 full-time employees :

A head of department

A project manager

An assistant

Since the beginning of the process, an external advisor helps the department and brings his expertise. An intern from the Safety Environment Quality degree also periodically helps the team.

The conditions for the quality assurance deployment

the obstacles to a good deployment

The lack of implication of the different actors

The time necessary to the initial deployment of the process

The number of tools to be used and information to give several times

the favorable conditions to a good deployment

The strong line management support

A quality approach which objectives are linked to the university's strategy and which actions meet the real demands.

A strong involvement from all the actors

The follow-up proposed by the Quality Department

The results of the improving actions

the benefits from the quality approach

For the students

Improvement of the studying conditions

Easier and clearer administrative procedures

Promotion of the degree through the renown label

For the university

Enhancement of the image and attractiveness of the university

Strengthening of the trust and satisfaction of the actors involved

For the staff

Improvement of the working conditions through the formalization of the documents used for securing the processes and for the sustainability and facilitation knowledge transfer

Enhancement of the staff involvement who take part in the identification and settlement of improving actions.

AXES STRATÉGIQUES Contrat pluriannuel 2015/2020	PROCESSUS	OBJECTIFS QUALITÉ	ACTIONS MENÉES
UNE RECHERCHE D'EXCELLENCE RÉPONDANT AUX DEFIS SCIENTIFIQUES DE DEMAIN	Mener la recherche (Structure de recherche / odontologie / laboratoire de bioingénierie et nanosciences, activité recherche publique)	Maîtriser et piloter les activités dans une structure de recherche	Etat des lieux initial du processus et/ou audit interne annuel - Création et/ou révision de la documentation processus (logigrammes, fiches identité processus, procédures...) - Mise en place et amélioration de dispositifs d'écoute, de surveillance et de mesure - Revue de processus
		Soutenir une structure de recherche dans les réponses aux appels d'offre nationaux et internationaux en facilitant la rédaction des réponses	Structuration et pilotage des activités d'une structure de recherche : respect de la réglementation, suivi d'indicateurs, traçabilité (résultats et métrologie), gestion de la documentation...
		Améliorer la visibilité et la réputation d'une structure de recherche à l'international grâce à l'obtention de label et/ou certification	Mise en place des actions nécessaires pour répondre aux exigences des normes de certification, intégrer les critères des classements internationaux et mettre en œuvre les actions pour un meilleur positionnement
UNE OFFRE DE FORMATION ATTRACTIVE ET INNOVANTE CONÇUE POUR TOUS LES ÉTUDIANTS	Inscriptions aux diplômes	Faciliter l'accès à l'information sur l'ensemble des prestations proposées par l'établissement	Déploiement de dispositifs de communication : présence de chargés d'information sur les pôles inscription, site internet de l'Université
		Réaliser les inscriptions dans de bonnes conditions afin de contribuer à la bonne image de l'établissement et à l'attractivité des formations	Rédaction de procédures en vue de sécuriser et simplifier les démarches administratives, mise en place d'une signalétique, présence de chargés d'information sur les pôles inscription avec adaptation de leur formation en fonction des besoins et des attentes
		Être à l'écoute et mesurer la satisfaction	Mise en place d'un dispositif d'écoute, de mesure et de surveillance : enquête satisfaction, procédure réclamation, suivi des actions curatives, revue de processus, audit interne
	Dispenser et organiser la formation (master ingénierie santé et licence science politique)	Proposer des formations répondant aux attentes des étudiants en termes d'insertion professionnelle et/ou de poursuite d'étude	Adaptation des cursus aux évolutions professionnelles du secteur Mise en place des conditions nécessaires pour l'acquisition, par les étudiants, des prérequis indispensables à la poursuite des études
		Améliorer la réussite des étudiants	Mise à disposition des étudiants des moyens d'acquies les prérequis indispensables au bon suivi de la formation
Développer les pratiques de pédagogies innovantes		Sensibiliser les enseignants aux méthodes de pédagogies innovantes	
Être à l'écoute des étudiants et augmenter leur satisfaction	Mise en place d'un dispositif d'écoute de mesure et de surveillance : évaluation des formations et consolidation des résultats, déploiement de la procédure réclamation, revue de processus, audit interne, suggestions d'amélioration, participation des étudiants aux conseils de perfectionnement		
UN PILOTAGE PERFORMANT ET PROSPECTIF AU SERVICE D'UNE NOUVELLE CULTURE D'ÉTABLISSEMENT	Tout processus en démarche qualité	Maîtriser et piloter nos processus	Etat des lieux initial des processus et/ou audit interne annuel - Création et/ou révision de la documentation processus (logigrammes, fiches identité processus, procédures...) - Mise en place et amélioration de dispositif d'écoute, de surveillance et de mesure - Revue de processus
		Améliorer les processus	Mise en place d'actions d'amélioration
		Évaluer l'efficacité de notre système d'amélioration	Mesure de l'efficacité des actions d'amélioration
		Étendre la démarche qualité	Intégration de nouveaux processus au périmètre de déploiement de la démarche qualité
		Être à l'écoute et mesurer la satisfaction de la communauté universitaire	Mise en place d'un dispositif d'écoute de mesure et de surveillance sur l'ensemble des processus : déploiement de la procédure réclamation, revue de processus, audit interne, suggestions d'amélioration.
	Gérer le système de management de la qualité	Diffuser la culture qualité	Formation des pilotes de processus, augmentation du nombre d'auditeurs internes, sensibilisation du personnel à la démarche par des formations courtes - Communication sur la démarche qualité (ENT, journal interne, agenda étudiant, séminaire stratégique...) - Élargissement du périmètre de déploiement de la démarche qualité (intégration de nouveaux pôles inscriptions et de nouvelles formations) - Accompagnement des structures souhaitant déployer une démarche qualité
Inscriptions	Amplifier l'implication dans le développement durable	Diminution de la consommation de papier : augmentation du nombre d'inscriptions en ligne, création d'un dossier d'inscription papier non daté, incitation à commander les flyers en fonction des besoins, numérisation de l'enquête satisfaction	
	Formations	Adapter les cursus aux étudiants à statut spécifique	Aménagement et/ou accompagnement dans les études et/ou pour les examens (tutorat, tiers temps pour les examens...)
	Marchés publics	Amplifier l'implication dans le développement durable	Augmentation du nombre de marchés incluant une clause de développement durable
UNE UNIVERSITÉ OUVERTE SUR LE MONDE ET ENGAGÉE DANS LE DÉVELOPPEMENT DE PARTENARIATS INNOVANTS	Tout processus en démarche qualité	Renforcer notre attractivité grâce à la certification de nos processus	Déploiement progressif de la démarche qualité sur de nouveaux périmètres, communication sur la démarche qualité auprès de nos partenaires potentiels