



## QA and Enhancement Marketplace for HEIs – An Erasmus+ project

Kontio, J., Heikkinen, K., Georgsson, F., Bennedsen, J., Clark, R., Matthíasdóttir, Á., ... Karhu, M. (2015). QA and Enhancement Marketplace for HEIs – An Erasmus+ project. Paper presented at 11th International CDIO Conference, Chengdu, China.

### Queen's University Belfast - Research Portal:

[Link to publication record in Queen's University Belfast Research Portal](#)

#### Publisher rights

Copyright 2015 The authors

Licensed under the Creative Commons Attribution -NonCommercial-NoDerivs License (<https://creativecommons.org/licenses/by-nc-nd/3.0/>), which permits distribution and reproduction for non-commercial purposes, provided the author and source are cited.

#### General rights

Copyright for the publications made accessible via the Queen's University Belfast Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

#### Take down policy

The Research Portal is Queen's institutional repository that provides access to Queen's research output. Every effort has been made to ensure that content in the Research Portal does not infringe any person's rights, or applicable UK laws. If you discover content in the Research Portal that you believe breaches copyright or violates any law, please contact [openaccess@qub.ac.uk](mailto:openaccess@qub.ac.uk).

# **QA AND ENHANCEMENT MARKETPLACE FOR HEIs – AN ERASMUS+ PROJECT**

**Juha Kontio**

Turku University of Applied Sciences, Faculty of Business, ICT and Chemical Engineering

**Krista Heikkinen**

Turku University of Applied Sciences, RDI services

**Fredrik Georgsson**

Umeå University, Umeå Institute of Technology

**Jens Bennedsen**

Aarhus University, School of Engineering

**Robin Clark**

Aston University, School of Engineering and Applied Science

**Ásrún Matthíasdóttir**

Reykjavik University, School of Science and Engineering

**Paul Hermon**

Queens University Belfast, School of Mechanical and Aerospace Engineering

**Siegfried Rouvrais**

Institut Mines Telecom Bretagne, Department of Computer Engineering

**Markku Karhu**

Metropolia University of Applied Sciences, Unit of Media and ICT

## **ABSTRACT**

Improving European education and training system quality has been set as a key target in Europe's strategy to become a smart, sustainable and inclusive economy by 2020 (European Commission, 2010). These objectives are more specifically defined in the so called Modernisation Agenda (European Commission, 2011). More specifically it sets a goal to improve the quality and relevance of higher education. In this process external evaluation and

self-assessment are seen in a key role! In the CDIO approach the 12 CDIO standards provide a framework for continuous improvement. Each institution/institutional department are encouraged to regularly do the self-evaluation using the CDIO Standards. Eight European universities identified a need for further enhancement of the self-evaluations and creation of processes with peers to reduce the inertia of heavy accreditations/evaluations in HEIs. In September 2014 these universities started an Erasmus+ project (QAEMarketPlace4HEI) aiming at

1. Developing a collaborative, comprehensive and accessible evaluation process model, methods and tools for HEIs to complement the accreditation systems.
2. Promoting, increasing and exploiting further the European collaboration in the evaluation processes and the exchange of best practices.
3. Disseminating the model, best practices and widen the cooperation to new HEIs in Europe through the partner networks.

## **KEYWORDS**

Quality Assurance, Quality Enhancement, Self-evaluation, Cross-sparring, Erasmus+, Standards: 12

## **INTRODUCTION**

Higher education quality is a key target in the Europe 2020 strategy. Competition and globalization require that a HEI's quality should be made understandable by the use of evaluation systems that are internationally trusted. The need for the transnational co-operation in quality assurance and quality enhancement in higher education is also becoming increasingly important for reasons such as increased physical and virtual mobility, the growth of new degrees and the increase in new educational institutes. The higher education landscape has become increasingly competitive in recent years and the quality of institutional offerings has become increasingly important. The importance of national and international comparability of educational quality is stressed in public sector too (CTI, 2015; Ministry of Education and Culture Finland, 2011; Ministry of Education Finland, 2004; Northern Ireland Assembly, 2012).

Some most recent QA related projects in Europe have for example developed tools for self-assessment for vocational education providers (Cedefop (European Centre for the Development of Vocational Training), 2011). Since 2006, the QUESTE Quality System for Scientific & Technical Universities has been implemented in some European Universities (Rouvrais, Le Locat, & Flament, 2013). The recently finished QUESTE-SI project (January 2013) for Sustainable Industry has shown the heavy load of self-evaluation for external labelling (QUESTE, 2013). It showed the requirement of exhaustive compilation of proof elements and as such rather tight audits with poor constructive feedbacks in the process. Under the LLP, the recent SPEAQ project sets up interactive workshops to facilitate discussion between teachers, quality managers and students, collect data on stakeholder views of quality assurance and enhancement. The outcomes from this project will seed ideas on how to approach QA within the institution providing evidence of how bringing together stakeholders in the quality process can lead to a wider and more meaningful interpretation of quality assurance. TUNING project started in 2000 and focused on finding points of reference and convergence between universities on educational structures with emphasis on the content of studies. It provided the comparability of curricula in terms of structures, programmes and actual teaching. However, none of the earlier projects have focused on practical level QA work with continuous development loop supported by a clear process of self-evaluation, cross-sparring and collaborative workshops. SPEAQ was too formal, TUNING focused only on syllabus, EUR-

ACE is quite heavy and the loop takes six years and so on (ENAE (European Network for Accreditation of Engineering Education), 2012). Although there are plenty of methods for both self- and cross-evaluation, there is a lack of models for a comprehensive approach, taking account the needs to increase international collaboration and improve international comparability in HEIs. There have been many European projects (e.g. EUA-projects) on QA, but they do not cover still existing problems with accreditation such as required resources, complexity, delays between the evaluation rounds, poor feedback, poor quality loop and distance from continuous education development.

The project consortium has identified a need for more flexible evaluation models and processes with peers to reduce the inertia of heavy accreditations/evaluations in HEIs. There is a need for more practical level quality assurance model that sustain continuous reform between accreditation rounds. Contemporary processes are too laborious and increasingly demanding, binary evaluation lacks feedback on how to improve, more and more reporting is demanded. The Quality Assurance and Enhancement Marketplace for Higher Education Institutes (QAEMarketPlace4HEI) -project proposes a flexible and constructive/collaborative methods, processes and tools for program evaluation, as a complement for weighty/ponderous accreditations.

This project is based on two preceding Nordplus Higher Education projects: Quality Assurance in High Education 1 (Oct. 2009 to Oct. 2011) and Quality Assurance in High Education 2 (Aug. 2011 to Sept. 2012). The first project aimed at developing new tools for supporting the process of quality assurance with CDIO self-evaluation (Kontio et al., 2011) and the second focused on disseminating the tools within the old partners and to two new Baltic universities and tested cross-sparring as part of QA process (Kontio et al., 2012). The projects promoted quality assurance issues in partnering HEIs and identified necessary development areas in each partner HEIs.

The QAEMarketPlace4HEI -project exploits these joined experiences and development ideas that came up during the past projects. The past projects focused mostly on developing the QA processes and education within the participants while this new project aims at creating a more general model to be exploited in new HEIs and also brought into broader European context. The internal and external evaluation processes are brought together and improved with in-depth research and a virtual platform. Also the role of the collaboration is even bigger in this new model with the cross-sparring and collaborative workshops. The project develops a model that supports program level quality assurance and development of the education quality with some new tools to enhance the collaboration. The innovativeness of QAEMarketPlace4HEI – project lies in the collaborative model of quality assurance that can complement accreditations and existing QA systems.

This paper introduces the Quality Assurance and Enhancement Marketplace for Higher Education Institutes project and provides valuable information on the activities on promoting CDIO based continuous improvement in European level.

## **PROJECT**

The Quality Assurance and Enhancement Marketplace for Higher Education Institutes (QAEMarketPlace4HEI) –project started in September 2014 and will continue until August 2016. The project is funded by Erasmus+ -program (European Commission, 2015).

The project consortium consists of the following higher education institutions (abbreviation):

- Reykjavik University (RU), Iceland
- Turku University of Applied Sciences (TUAS), Finland
- Aarhus University (AU), Denmark
- Helsinki Metropolia University of Applied Sciences (Metropolia), Finland
- Umeå University (Umu), Sweden
- Telecom Bretagne (TB), Institut Mines-Telecom, France
- Aston University (ASTON), United Kingdom
- Queens University Belfast (QUB), United Kingdom.

All partnering Universities are heavily networked both locally and internationally, which is utilized in the dissemination process (e.g. CDIO network, SEFI, INEER, French Institut Mines Telecom, French Conference des Grandes Ecoles, CARPE).

Reykjavik University operates as a coordinating partner during the project. RU has taken part in a number of European projects as well as Nordic projects and is distinguished in QA and educational development.

Turku University of Applied Sciences, Metropolia and Aarhus University have acquired pivotal expert knowledge in the preceding quality assurance related projects QA in HEI 1 & 2. Metropolia has plenty of experience on the networks of engineering education and QA environments, such as EUR-ACE. The Finnish partners have been in close cooperation since 2007 in the CDIO framework and since 2009 in various quality assurance projects.

Telecom Bretagne has a long-term experience from quality assurance and accreditation (French CTI, full ENAEE member, and recent HCERES). TB's expertise on the development and refinement of evaluation models is exploited. Queen University has a long-term experience on educational development. This know-how is exploited in developing and conducting the self-evaluation process. Aston University and Umeå University are both distinguished HEIs in QA and educational development.

The consortium members in this project are committed to developing the quality of education in their strategies, but also to reflect on evaluations models and processes so as to propose more continuous, objective, and constructive evaluation procedures for EU HEIs. TUAS has had a quality policy since 2007, which is based on the recommendations of the ENQA and The Finnish Higher Education Evaluation Council (FINHEEC, 2015). The Aarhus University has had a quality policy for several years: the ENQA standards are used as a starting point of QA, and are characterized by codetermination, openness and transparency. The project is also in line with the Vision and Objective Programme 2020 of Umeå University, where The Strategic Planning Committee has adopted a policy that encourages external peer-review and audits of their study programmes. This project is also important for a young University such as RU that is constantly developing its programmes and enhancing the quality processes. RU quality assurance system aims at strengthening and improving studies and teaching and its final objective is to fulfil the University's strategy of teaching innovation, diversity in teaching methods, and interdisciplinary studies, so that RU becomes the first choice for anyone wishing to study at a university in Iceland. Telecom Bretagne expects the project to be beneficial for preparing national and international accreditations. TB's regular evaluation by the Commission des Titres d'Ingénieur (CTI, 2015), will permit to intimately test and validate the proposed models of processes of self-evaluations and cross-sparring. The project also helps to sustain the local QA system, but some external feedbacks are necessary. The project is also timely for Aston University as it has its next Quality Assurance Agency Audit in April 2015.

## **OBJECTIVES**

The objectives of the project are derived from the current challenges of higher education in Europe and the limits of actual accreditation procedures. The project aims at

1. Developing a new collaborative, comprehensive and accessible evaluation process model, methods and tool (Market Place), for HEIs to complement the accreditation QA systems.
2. Establishing a Quality Assurance and Enhancement Market Place to promote collaboration between HEIs and to disseminate QA methods and experiences.
3. Establishing the evaluation models in the participating HEIs to refine them and then produce guidelines for EU universities.
4. Arranging workshops to support HEIs in their continuous evaluation process.
5. Arranging theme workshops about the most common development themes utilizing the information collected in the Market Place
6. Promoting, increasing and exploiting further the European collaboration in the evaluation processes.
7. Disseminating the model, best practices and widen the cooperation to new HEIs in Europe through the partner networks and the Market Place.

The project implementation is based on the circular model of quality assurance. The project activity plan is divided to eight phases, which further contain tasks that contribute to the main object of the project.

The project promotes and strengthens the European cooperation in quality assurance while designing and piloting new kind of continuous, accessible, cooperation based model and tools (the Market Place) supporting so called cross-sparring between institutions. Cross-sparring is to be understood as a process to make feedback more collaborative, concrete and objective, thanks to critical, but discreet brainstorming sessions, where strategies can be discussed, repeatedly contributing to the quality assurance with a critical external view. As in sport, a sparring partner helps to keep eyes on the objectives, learn from experience and stimulate reflectivity. This approach is beneficial both for the institution evaluated, which will get a more objective view on its strengths and potential improvements, and for the sparring partner which may identify best practices that can be useful for his own institution. A virtual platform, the Market Place serves as a tool for finding the best possible sparring partners as well as a forum for networking, sharing experiences, and information and best practices.

## **EXPECTED RESULTS**

Firstly, as a result of this project there is a tested quality assurance model with a virtual platform to support the process. The model, process and the Market Place will be tested during the project in the partner institutions thus giving some immediate benefits to partners, such as evaluation reports and exchange of the best practices during the cross-sparring process. The project also aims to ensure that the development issues identified during the cross-sparring are acknowledged and promotes the start of changes through follow-up workshops. After the project the participated degree programmes have the experience and tools to start a new evaluation/QA cycle on their own.

Resulting from the project, each participating HEI have degree programmes that have gone through the whole process. In addition to the concrete results the knowledge, experiences and expertise gained from this project can be utilized in planning and conducting of evaluation processes in other degree programmes of each HEI.

Second, one of the goals of this project is to increase the awareness of quality assurance, not only in regional and national level, but also in European and global level. These groups are reached through the active cooperation networks of the partnering HEIs both in the national and international level (e.g. CDIO network, SEFI, IACEE, ENQA, French Institut Mines Telecom, French Conference des Grandes Ecoles (CGE) and CARPE). Various international meeting, conferences, seminars and personal contacts to the networks of the HEIs provide the partners with natural opportunities for disseminating the project results to other HEIs.

## **IMPACT**

The project derives from the experiences and actual needs distinguished in the participating institutions to develop the quality assurance process. The beneficiaries of the project are equipped with an innovative toolkit of quality assurance in higher education that can be directly exploited and applied to the every-day life of the HEIs in practical, concrete level. The project also strengthens the collaboration within the partner network.

The degree programs, which are selected for initial piloting the self-evaluation and cross-sparring processes, are able to exploit the project results directly during the project in their quality assurance and development processes. Further, already during the project the QAEMP -process and its first outcomes are introduced to other degree programmes of the partnering HEIs in institutional level. The goal is to attract new degree programmes from other disciplines and international collaboration networks to pilot the process and tools to enhance and ensure the transferability of the process to other fields of education. New participants will thus get their evaluation process started as well.

The developed model answers to the need for more flexible models and processes with peers. Contemporary processes are too laborious and more and more demanding, binary evaluation lacks feedback on how to improve, more and more reporting is demanded. The impact of this project to provide an evaluation process that is faster, lighter and more collaborative.

European cooperation is a vital part of the project and necessary to achieve the main goals of the project, which are promoting, increasing and exploiting further the European collaboration in the evaluation processes; adopting and disseminating best educational practices and improving comparability of education; and developing a collaborative, comprehensive and accessible evaluation process model, methods and tools for HEIs. The project and the developed model build and enhance confidence and understanding between the European HEIs by the means of collaboration and sharing of information on the best practices.

Further this project proposal aims at strengthening the open conversation on educational development and pedagogical innovations in Europe. During the project, special attention is paid on promoting processes on continuing educational development in the networks of educational organizations.

## **SUSTAINABILITY**

The continuum of the project impacts, results, products and outcomes is enabled by ensuring the exploitation of the project results by involving new degree programmes, stakeholders, interest groups and potential partners to the project activities and networks. The main target of the project sustainability activities is to engage new members to the project network and quality assurance community already during the actual project implementation, which enables

effective dissemination of the project results to these widened networks. Further, this enables the sustainability of the project activities even after the project is finished. The strategy is to first grow the non-engineering disciplinary implementations within the partner institutions thus providing a basis from which these disciplines can exploit the outcomes of this project by disseminating this practice within their own national and European networks in a sustainable manner.

The project website provides the potential stakeholders and interest groups with an opportunity to express their interest in the project activities. Based on this, the potential members are contacted and invited to join the network. After the project, the new network of quality assurance that is established during the project implementation, will maintain the QA process activities and networking. The built model and methodology of constant quality assurance process, including e.g. self-evaluation and cross-sparring processes and workshop meetings, are conducted after the project according to the circular QA process model. The created project website and the Market Place with documents, reports, newsletters, blogs and linkages to the forums of social media is the main forum of collaboration in the future. In addition, regular face-to-face meetings will be maintained via networks of each partner HEI. The consortium aims at finding a well-recognized quality assurance related organization(s) to collaborate in the marketing, developing and later hosting Market Place. The market place idea will be discussed with key European quality assurance groups (like European Consortium for Accreditation (ECA), European Association for Quality Assurance in Higher Education (ENQA), The International Network for Quality Assurance Agencies in Higher Education (INQAAHE), U-Multirank, European Network for Engineering Accreditation (ENAE)).

After the project implementation, the collaborative networks and cooperation consortiums of the partnering HEIs are important channels to reach the target groups and disseminate the model further. Each partnering HEI is a member in various collaborating networks, which gather regularly to the network meetings to exchange ideas and experiences, review new models on educational development and assess the initiative's progress. The annual international conferences, seminars, workshops and other meetings, which are based on active working methods with sessions, workshops and seminar presentations, provide excellent forums for reaching the project target groups and disseminating the project results. Moreover, the project results are further refined and developed through these educational networks, which have active role both in national and international educational development. Thus the results of the project benefit not only the consortium members, but also the HEIs throughout Europe, even globally.

## **ACKNOWLEDGEMENT**

Part of this work has been supported by the Quality Assurance and Enhancement Marketplace for Higher Education Institutes (QAEMarketPlace4HEI) -project under the EU contract Grant Agreement Number 2014-1-IS01-KA203-000172 of the Erasmus+ KA2 Cooperation and Innovation for Good Practices Programme.

## **REFERENCES**

Cedefop (European Centre for the Development of Vocational Training). (2011). Glossary: quality in education and training. Luxembourg.

CTI. (2015). Commission des Titres d'Ingénieur Retrieved 20.1.2015, from <http://www.cti-commission.fr/spip.php?page=sommaire-en>



ENAAE (European Network for Accreditation of Engineering Education). (2012). EUR-ACE label Retrieved 20.1.2015

European Commission. (2010). EUROPE 2020 - A strategy for smart, sustainable and inclusive growth. Brussels.

European Commission. (2011). Modernisation of Higher Education in Europe: Funding and the Social Dimension. Brussels.

European Commission. (2015). Erasmus+ program - EU programme for education, training, youth and sport Retrieved 20.1.2015, from [http://ec.europa.eu/programmes/erasmus-plus/index\\_en.htm](http://ec.europa.eu/programmes/erasmus-plus/index_en.htm)

FINHEEC. (2015). Finnish Higher Education Evaluation Council Retrieved 20.1.2015, from <http://www.kka.fi/?l=en&s=1>

Kontio, J., Roslöf, J., Edström, K., Thyberg Naumann, S., Munkebo Hussman, P., Karhu, M., & Schrey-Niemenmaa, K. (2011). *Quality Assurance with CDIO Self-evaluation – First Results of a Nordic Project*. Paper presented at the 7th International CDIO Conference, Copenhagen, Denmark.

Kontio, J., Roslöf, J., Edström, K., Thyberg Naumann, S., Munkebo Hussman, P., Karhu, M., & Schrey-Niemenmaa, K. (2012). Improving Quality Assurance with CDIO Self-Evaluation: Experiences From a Nordic Project. *International Journal of Quality Assurance in Engineering and Technology Education*, 2(2), 54 - 65.

Ministry of Education and Culture Finland. (2011) Education and Research 2011-2016; Development plan. *Publications of the Ministry of Education and Culture*.

Ministry of Education Finland. (2004). *Education and Research 2003-2008; Development plan* (Vol. 2004:8).

Northern Ireland Assembly. (2012). Science, Technology, Engineering and Mathematics (STEM). In C. Perry (Ed.), *Research and Information Service Briefing Paper*.

QUESTE. (2013). The QUESTE-SI Project Retrieved 20.1.2015, from <http://plone.queste.eu/>

Rouvrais, S., Le Locat, C., & Flament, S. (2013). *Return on Experience from Sustainability Audits in European Engineering Educational Institutions*. . Paper presented at the 41th intl. SEFI & ENAAE Conferences: "Engineering Education Fast Forward", KU Leuven, Belgium.

## BIOGRAPHICAL INFORMATION

**Juha Kontio**, is a Doctor of Sciences in Economics and Business Administration. He received the M.Sc. degree in Computer Science from the University of Jyväskylä in 1991 and the D.Sc. degree in Information Systems from Turku School of Economics in 2004. At the moment he is Dean at the Faculty of Business, ICT and Chemical Engineering in Turku University of Applied Sciences. Previously he worked as Principal Lecturer and Degree Program Manager in Business Information Systems. His research interest is in higher education related topics. He has presented and published almost 90 papers. He is the co-leader of the European CDIO region.

**Krista Heikkinen** holds a Master of Social Sciences degree in Sociology and has worked as a project coordinator and a project manager in Turku University of Applied Sciences and in the Research Unit of the Sociology of Education at University of Turku. She is currently working as a project advisor in Turku University of Applied Sciences.

**Fredrik Georgsson**, is a Doctor of Technology. He received his M.Sc. degree in Engineering in Computing Science from Umeå University in 1996 and a Doctoral degree in Image Analysis in 2001 also from Umeå. At the moment he is a senior lecturer in Computer Science, Programme Director for the five-year engineering programme in software engineering and assistance Faculty subjects coordinator at the Faculty of Science and Technology at Umeå University. He has presented and published over 45 papers. He is one of the co-leaders of the European CDIO region.

**Jens Bennedsen**, Dr. Philos, Senior Associate Professor in engineering didactics. He received the M.Sc. degree in Computer Science from the Aarhus University in 1988 and the Dr. Philos degree in Computer Science from Oslo University in 2007. His research area includes educational methods, technology and curriculum development methodology, and he has published more than 40 articles at leading education conferences and journals. He is the co-leader of the European CDIO region.

**Robin Clark** holds a PhD from University College London and is currently a Reader and Associate Dean for Learning and Teaching in the School of Engineering and Applied Science at Aston University. Robin joined Aston following a 14 year career in industry. He became a National Teaching Fellow in 2007 and leads research in the field of Engineering Education. Robin is on the Board of Directors of SEFI, the editorial board of EJEE and is a member of the UK, European and International working groups focused on Engineering Education Research. Robin is a Chartered Engineer and Fellow of the IMechE.

**Ásrún Matthíasdóttir**, Assistant professor in School of Science and Engineering at Reykjavik University (RU). She is an expert of pedagogy and quality of education with background in computer science and school counselling. She has long experience of working in interdisciplinary and international environment by taking part in a number of European and Nordic project and coordinated two of them. She has a long experience of teaching and research and experience in evaluating educational work, consulting schools and teachers in ICT use. Her research interests have been in new teaching methods, quality of education and well-being of teachers and students.

**Paul Hermon** holds an MEng degree in mechanical engineering and worked for 17 years as a design consultant across a broad range of industry sectors including electronics

manufacturing, bespoke machinery for automated assembly and new product development. Since taking up an academic post in 2005 he has been Programme Director for the Product Design Engineering degrees at Queen's University Belfast. In 2006 he gained a Postgraduate Certificate in Higher Education Teaching. He is currently Co-Chair of the UK & Ireland region of the CDIO Initiative.

**Siegfried Rouvrais**, Dr. Siegfried Rouvrais is Research Associate Professor in Software Engineering at Telecom Bretagne and CNRS. He received the M.Sc. degree and a PhD. in Computer Science from the University of Rennes, France. Author of several international publications in Engineering Education, he organized the international CDIO 2012 Fall meeting and was elected to the board of CDIO international council member in 2013. His current scholarly interests are in methods and processes for Higher Education changes.

**Markku Karhu** is a Dean of Degree Programmes in Media and ICT at Helsinki Metropolia University of Applied Sciences, Finland. His research interest focuses generally on engineering education and professionally on accessibility and usability in education. He has contributed to 30 European R&D projects and currently he is involved in issues on accessible and inclusive virtual education. He has a working period 20 years as a research scientist at Technical Research Centre of Finland.

### **Corresponding author**

Dr. Juha Kontio  
Turku University of Applied Sciences  
Joukahaisenkatu 3 C  
20520 Turku, FINLAND  
+358 50 385 4122  
[juha.kontio@turkuamk.fi](mailto:juha.kontio@turkuamk.fi)



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License](https://creativecommons.org/licenses/by-nc-nd/3.0/).