Report of partner exploitation

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Table of Content

1 Introduction

This report is prepared to describe how the results of the RADICAL project has been exploited by different partners involved in this project. Reports of exploitation are divided into three individual parts, where each area will prepare their unique reports to cover the deliverables of this project. This Partner exploitation report will focus on exploitation activities which have occurred within the university partners involved this project and is divided into four different areas of assessment which are:

1. Exploitation of best practices
2. Curriculum development
3. Education and training modules development and execution and
4. Industry-University co-operation.

As a result, Turku University of Applied Sciences (TUAS) is now offering *ENGINE* (in Finnish *InTO*) model learning environment to TUAS students and companies. It has been accepted well by different parties of our society.

The exploitation components of the strategy will focus on the sustainability, transferability, continuation and further development of the project outcomes.

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2 Best practise utilisation

In the beginning of the RADICAL project, partner universities ESTA Belfort, Hannover University of Applied Sciences and Aschaffenburg University of Applied Sciences were benchmarked. During benchmarking visits, information regarding dual study model content, execution and developing was shared between partners by studying each other's study models and to be able to collect the best practices from universities. The Partnering universities have had long experience in learning at workplaces.

By doing the benchmark to other universities, TUAS collected several good practices and methods which were used in other partner universities. The best practices were collected by TUAS and were used as the basis for the *ENGINE* model development, like how the selection of students to *ENGINE* studies is conducted. In addition to the partner university approaches, where TUAS was able to further develop student selection in co-operation with companies, like open route to the Applied Engineering studies.

After selection of students, study contracts needs to defined. Benchmarking gave a good understanding of how contracting structure is formed and what different kinds of contracting is done with which party during the execution of *ENGINE* model studies. Agreements between university and company and student and company are needed.

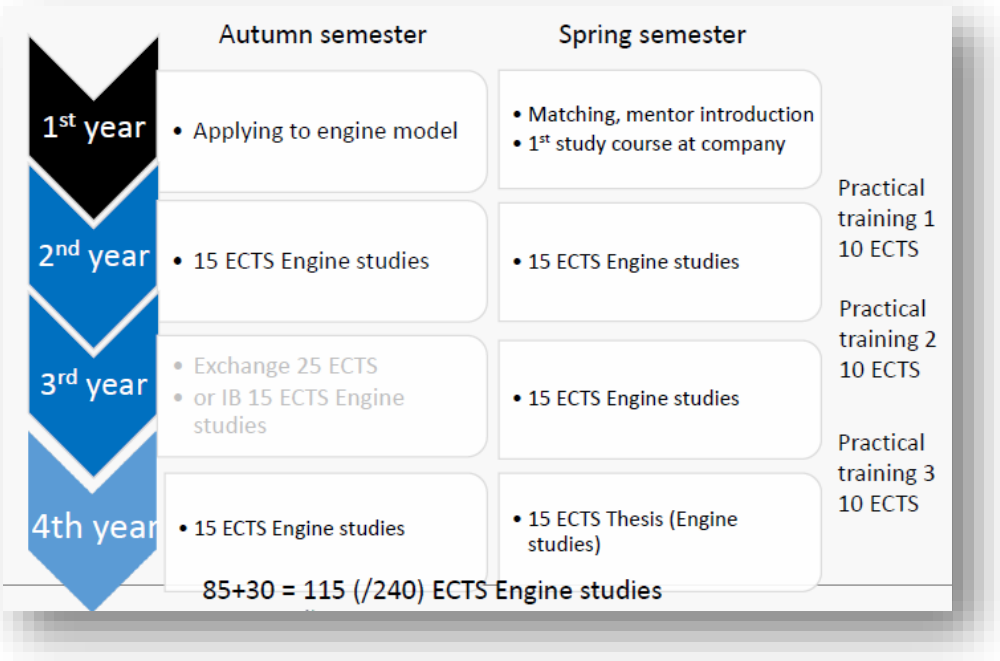
One of the key factors contributing to the success of *ENGINE* model was identified during the best practice utilisation to be how students work or studies should be designed for *ENGINE* model learning. There were several ways presented during the visits and TUAS was able to create own practical approach: *ENGINE* model students will spend 2 days at university and 3 days at company during their studies.

Some attention was dedicated to the mentoring model system during the benchmarking. For the sustainability of the *ENGINE* model studies, mentoring model process need to further developed to ensure a successful continuation and transferability of the *ENGINE* model.

3 Curricula development

Already before the RADICAL project, TUAS' curriculum has been developed continuously to meet the current demands of our society. Latest developments have been implementation of Innopeda® pedagogical learning approach and modular study programs to all aspects of curricula.

RADICAL project curricula, shown in the picture below, reflect the needs and principles of *ENGINE* study model. First years studies will be performed mainly at University since, in these basic studies, student gathers knowledge base, which can be utilized in the further studies and at work life-based learning. During the first autumn semester, students will apply to the *ENGINE* study model. During spring on the first year, first courses will start in the company with a basic course of operation management and logistics. Second-year and on later phase of studies, students will have 30 ECTS studies in *ENGINE* study model and they are all the time having studied at university and gaining work-life experience at companies. Curricula will be also further developed when more experience is gathered from *ENGINE* model studies.



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4 Education modules development and execution

Previously students have done their studies at HEI and by conducting work-life related projects in co-operation with the companies. In the *ENGINE* model, students will spend much more time in companies studying their topics.

Studies has been divided to separate locations: academic basis at university and in the companies where students will learn and experience topic in question in practice. Compared to the traditional study model, semesters of studies will remain equal, but differences are in weekly schedules. In *ENGINE* model students will be first half of the week at university and the rest of the week at company performing their topic and studies. Summer period are for practical training of studies.

Study agreement is about commitment into 4 years study of engineering studies and workplace studies with credit points. Parallel to that company will prepare a work plan which will be mutually agreed and signed by all parties. This agreement is reviewed each semester and student, university and company will agree what studies are performed in each semester. This agreement is prepared by the student and agreed by other parties involved.

Evaluation of studies is still given by teachers after discussions with company mentors. Evaluation criteria and methods are set beginning of each course and they may be according to the agreement exam, written reports, learning diary, etc.

During the project, the partner HEIs have expressed their interest in developing their dual study models in accordance with the *ENGINE* model. This is due to them having examined their models and finding targets for development.

5 Industry and University co-operation

While there has already been regular co-operation between companies and TUAS, the *ENGINE* model will increase and extend this co-operation to the next level.

Contracts

Companies involved in *ENGINE* model of education of engineers will have to make a co-operation agreement with the university. Also, partner universities in this project have this same kind of practice used in their engineer studies. The contracting structure has been decided and contracts contain details related to responsibilities, mentoring, content and schedules of studies. Co-operation agreement between university and company has a target to provide 4 years learning environment to students. That is the time required for full engineer degree.

Mentoring and meetings

By launching this new *ENGINE* study model TUAS will arrange meetings with students, company mentors and representatives. These meetings will be held every semester (twice/year) and it is a great opportunity for networking, sharing knowledge, experience and ideas. Target of these meeting is to provide peer group support to students, company mentors and share of experiences during the meeting. The first meeting is held autumn 2019 when the first students will enrol to this study program. Depending on the previous experience and the skills of mentors, TUAS must consider how to provide training to the mentors participating to *ENGINE* model. Companies which are taking part in *ENGINE* must assign a dedicated person to perform as a mentor for students.

Students study/work in a company

TUAS study program is designed by using study modules which fit well to *ENGINE* model. Therefore, company and university can divide study period and working period well balanced on a weekly basis. Students should study at university at the beginning of the week and at the workplace at the end of the week. In partner universities, there were many ways of scheduling these workplace studies and this sequence seems has been recognised to suit well to TUAS' study schedules.

How to take part to *ENGINE* model

TUAS has established several ways to communicate the *ENGINE* model education to companies which has possibilities to apply to this model of training. TUAS has communicated the results and progress of this project via seminars, events, company contacting and visits, different level meetings, web pages, brochures, newsletters and social media.

6 Conclusion

Workplace related studying has existed in different forms in Central-Europe for a long time. In Finland, having work-based learning in higher education is new and the RADICAL project was successful in developing, piloting and launching *ENGINE* model-based learning despite of differences in curricula, Universities and legislation.

Turku University of Applied Science is committed in the sustainability, transferability, continuation and further development of the RADICAL project outcomes by committing to execute the *ENGINE* model-based studies. The first intake of the *ENGINE* model students was performed in autumn 2019 and their studies will continue the next four years. TUAS is planning to continue to have one annual intake of Industrial Management and Engineering students and also to is exploring the possibility to extend ENGINE model to other studies areas, like ICT.

With the help of RADICAL project, Turku University of Applied Science is able to offer a very comprehensive and new way of engineering education.