Executive Agency, Education, Audiovisual and Culture

Lifelong Learning Programme

Project Title: Community Service Engineer

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Project information

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Executive Summary

An UNESCO report affirms **the role of engineering** as the driver of innovation and of social and economic development, but emphasises the need to transform engineering education, curricula and teaching methods to emphasise **relevance** and **a problem-solving approach** to various fields of engineering. Community Service Engineering could take up this role. That is why, in October 2013, six European partners united in the CSE consortium **to develop, pilot and offer** a postgraduate course in Community Service Engineering and examine the options **to translate this course into undergraduate engineering curricula.** Engineers have, so far, not been very active in **the social profit sector**. There is a clear need **for technology** within the sector given the significant number of project proposals submitted by social profit organisations at Cera Award. The sector itself is mostly lacking expertise and time to address these projects with own resources. With the course the consortium responds to the quest of various fields of engineering to **outline the societal role of the profession** in a curriculum where **theoretical background and learning by doing methods** go hand in hand.

The course fits the European Quality Framework for the European Higher Education area **(EQF)**. The course objectives and learning outcomes are built on the results of a needs analysis and a survey among relevant stakeholders, the partner's own experience and the expertise and critical eye of associate partners from the **field of engineering, the social profit and the profit sector**. The consortium members use **CDIO** as the **common framework** for their joint curricula.

The consortium offers an interdisciplinary programme. The bridge is made between engineering and social work. **Project work** is an important part of the training. We start from real needs of people and organisations. Technics remains important but so is the process that students go through. By targeted questions this process comes to the surface and students learn with and from one another about different contexts, the co-creation of technology, technical criteria, user criteria, viable business models, implications for other fields, etc.

The course is expected to appeal to engineers in various ways. It may **attract young people** who today have a public image of a solely technological engineering profile and **female students** may get interested in engineering jobs. It may appeal to young engineers that are looking for specialisation possibilities at the start of their career as well as on a group of elder engineers who want (or need) to reorient their job life at a certain point in time. They might want to fill the gap of the widely felt shortage on the labour market for **professionals in technical and healthcare/welfare sectors**.

The consortium awards participants with a **CSE certificate** (30 ECTS) or a **diploma supplement** in case the course is integrated into the regular engineering curricula. While elaborating the curriculum a lot of questions arise. These questions can be formulated into research questions. Community Service Engineering could evolve on term to a real specialty, **a full discipline**.

Main stakeholders of the project are: the partner institutions and their students, social profit organisations, vulnerable groups (elderly, youth at risk, people with disabilities, ethnic minorities, people in poverty), companies in assistive technologies, companies unconscious of social profit market potential for their products, other institutions interested in offering the course and partners of other European curriculum development projects or other projects.

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1. Project Objectives

The aims and objectives of the 3-year project are **to improve the quality and relevance of higher education** by bringing together engineering students, teachers, the social profit and the profit sector.

This cooperation will develop and build the potential of emerging demands from the social profit sector for better adapted technical solutions. Technology students will be challenged by curricula and learning-by-doing methods to cooperate with the social profit sector and other HEI partners. The teachers will support them to develop innovative technical and tailored solutions for the challenges the social sector is facing today.

In short the CSE project aims are:

1. In regard to current & future market labour needs:
- to bring better and innovative solutions for the social profit sector
- to link the social profit sector and industry
- to build a curriculum in a collaborative and multidisciplinary environment
- to promote geographical and labour market mobility as well as lifelong learning in Europe.
- to make the engineering education and job more attractive to young people in general and female students in particular
- to support research and innovation in the social sector
- to offer options for a career shift to older engineers
- to create new business opportunities for the social profit sector
- to support the creation of a more inclusive society

2. In regard to lifelong learning/network learning:
- to start a postgraduate joint “Community Service Engineer” degree (30 ECTS)
- to make sure the course will be sustainable after the project termination
- to facilitate network learning via the learning framework

3. In regard to the link between curricular education activities with business & employment needs
- to offer a good mixture or theoretical background and practice
- to offer options to translate the course content into the curricula as an option/minor for an undergraduate engineer

4. In regard to include transmission of transversal skills
- to use ECTS and DS (Diploma Supplement) conform to the European Commission’s descriptions
- to support physical and virtual mobility of students and staff
- to ensure the quality of the output using Tuning and TRIS-EFQM concepts
- to promote the improvement of non-specific domain competences in the areas of team learning, leadership skills, presentation, communication skills and project management
- to promote the acquirement of international-intercultural competences

5. In regard to better exploiting the potential of ICTs
- to use virtual mobility as an important aspect within the curriculum in case students do not choose to be physically mobile
- to work towards a multi campus, international, blended learning environment where the ICT platform plays a key role for the delivery of the curriculum

6. In regard to continuous professional development for the HEI staff

- to define the teacher's role in new learning environments and provide support

The programme is collaborative, networked, capitalizing on expertise of different European institutions, with involvement of stakeholders and non-university expert institutes in both the engineering, social and business area.

2. Project Approach

To successfully carry out all the tasks needed to meet the project objectives the workload is divided in 12 work packages (WP):

WP1 = Project management
WP2 = Learning framework
WP3 = Social sector needs
WP4 = Business 2-Way communication
WP5 = Projects back office
WP6 = International-intercultural competences
WP7 = Curriculum
WP8 = Teacher's role
WP9 = Pilot projects
WP10 = Quality assurance and quality plan
WP11 = Dissemination
WP12 = Exploitation

Six project partners collaborate to meet the objectives. They are:

P1 = Belgium – Thomas More Kempen vzw (TMK)
P2 = Belgium – KU Leuven (KU Leuven)
P3 = Portugal – Universidade do Porto (UP)
P4 = The Netherlands - De Haagse Hogeschool (HHS)
P5 = Sweden – Högskolan Väst (UW)
P6 = Belgium – Roger Van Overstraeten Society (RVO-Society)

All partners can make the link between engineering, social work and business.

All HEI-partners have well-functioning international offices and are eager to set up international mobility (virtual and/or physical) for students and maximise the international-intercultural learning outcomes.

All partners involved national stakeholders for detecting needs and as a linking-pin to the market.

By the end of the project partners are interested to be involved in the consortium that will organise the (postgraduate) curriculum for Community Service Engineers and have the potential to translate the curriculum for undergraduate students.

To optimally make use of their expertise they are appointed WP-leader of the work package they are best in:

P1 is project coordinator of WP1 and gets support from an external evaluator and intellectual property rights and financial management expert.
P2 is leader of WP2 and gets support from all partners.
P6 is leader of WP3 and gets support from all partners.
P4 is leader of WP4 and gets support from all partners.
P5 is leader of WP5 and gets support from all partners.
P1 is leader of WP6 and gets support from all partners.
P1&2 are leaders of WP7 and get support from all partners.
P3 is leader of WP8 and gets support from all partners.
P1 is leader of WP9 and gets support from all partners.
P1&2 are leaders WP10 and get support from the external evaluator.

P1 is leader of WP11 and gets support from all partners.
P1 is leader of WP12 and gets support from all partners.
The consortium can also count on several associated partners for support if needed and has advisory groups for feedback per country.

WP1 is responsible for the coordination, management and support of all work packages. 5 f2f partner meetings were planned at the start (month 1, month 8, month 17 and month 32 and month 36). Partners decided to organise 1 additional partner meeting in month 26. Online meetings are organised approximately every month.

WP10 imposes quality requirements and checks whether these requirements are met.
WP11 and 12 make sure all stakeholders are informed about the project outcomes, results are exploited and sustained for the future.

In total there are **8 work packages for implementation** that make sure the profile of the (European) "Community Service Engineer" is defined and can be trained.

Training in the sense of a built curriculum will be achieved gradually:

- **WP2** sets up basic course contents that can be consulted as open source material. WP2 defines how different stakeholders/actors will meet via the learning framework and learn.
- **WP3, 4, 5 & 6** focus on important aspects to be explored and agreed upon for the (international) cooperation between partners/project work. These work packages can be looked at as preparatory work for the realisation of curriculum.
- **WP8** clarifies the teacher's role and provides support, since in this international, multi-campus, blended learning environment the traditional role of the teacher will not be sufficient to support the students, to maximise innovation potential and to support the network.
- **WP7 and WP9** are (in cooperation with WP2) the work packages in which the curriculum is effectively built. WP9 focuses on the project work as an important part of the curriculum (15 ECTS). Partners test their collaboration in projects before the complete curriculum including subject matters (30 ECTS) is achieved in WP7. WP7 focuses on setting up a postgraduate curriculum. Other options for sustainability are a translation into undergraduate curricula and/or offering undergraduates to choose for (part of) the postgraduate curriculum as an elective or option for incoming students. In WP7 partners examine the country contexts and explore possibilities for sustainability of the curriculum on top of the postgraduate curriculum.

Objectives of the WP's and used methodology

WP1: project management

The main objective of WP1 is to achieve effective project communication, administration and reporting. First task in this WP was to set up **a project board**. All partners contribute to work packages and project reports and evaluations. First things on the agenda were to arrange the **agreement** with the European Commission and the **partnership agreements**, **IPR agreements** and to draw up a document with **internal administrative rules & guidelines**.

Next was to effectively organise the work in the WP's and to write a **project and activity plan** with key tasks and a schedule for the next 3 project years, a financial management plan and a detailed **project action planning**. A handy tool to execute and monitor this process turned out the be the online project management tool Smartsheet.

At the start of the project **internal rules** have been established on decision taking procedures, including voting rules for formal decision taking on important topics.

An experienced **external evaluator and financial expert** was appointed to support this process and to make sure to always have a 'critical friend at the window' for the benefit of its implementation. He observes the project with a lucid eye to make it more effective by highlighting strengths and weaknesses and suggesting recommendations, following the **PDCA-cycle**.

The external evaluator also assisted in reaching a first **agreement on intellectual property rights (IPR)**.

A **virtual workspace** was set up to organise efficient and effective communication between partners. In the course of the project this took shape in a combination of a shared Dropbox folder and monthly online partner meetings using Cisco Webex meeting center. After every monthly virtual meeting detailed **minutes with to do list and recordings** are made available to all partners.

All consortium members have engaged **associated partners** in their own countries that are involved in reflection/advice on the concept/objectives of the programme, the curriculum, quality assurance, link between research, innovation and the programme, stakeholder input… on a yearly basis.

Partners have met face-to-face three times up to date with meetings in months 1, 8, and 17. After every meeting detailed **minutes** are made available to all partners.

Writing and submitting **this midterm report** about the project for the EACEA and other stakeholders also is part of WP1.

WP2: Learning framework

A) Content definition

What is Community Service Engineering? What is the social profit sector? How do we frame the role of engineering in this sector?
For the content part partners started from the insights gained and topics defined in Belgium in the context of setting up the postgraduate course in Community Service Engineering.

Consortium partners checked the relevance, accuracy and completeness of these topics with faculty members of both the engineering and the social sciences discipline. In a partner meeting the list of topics and the survey outcomes have been discussed. This process resulted in **a list of basic topics** and **a revised structure of modules and order** to bring forward these topics. As a next step various experts have been recruited originating from different European countries.

Following the international nomenclature, the term **'Community Service Engineering'** has been coined to encompass **aspects of technology in the broad welfare sector**, i.e. technology for the empowerment and participation of vulnerable groups in society, to improve the quality of living and optimise social profit organisations. The term 'Humanitarian engineering' often is related to engineering in developing countries. 'Biomedical engineering' is used in relation to health care. The term 'Care technology' comes close to what this programme aims at, but the scope of 'Community Service Engineering' is broader also including eg. technology to fight poverty.

During the first months **'misunderstandings'** between the partners arose in regard to the use of the term **'social profit sector'**. That is why the consortium felt the need to define what is understood with 'social profit sector'.
Social profit sector is an umbrella term for organisations which have **the following two characteristics**

1. **The mission of the organisation is explicitly a social/societal mission** either because
   a) Their core business i.e. their outcome (their services or products) is 'social', meaning contribute to health, welfare and inclusion
   b) Their production process is 'social' because the organisation creates employment for people with a long distance to the labour market.
2. **The organisation attaches equal importance to social, environmental and environmental value (cq. is People-Planet-Profit driven).** There is no or limited profit distribution to individual shareholders. Often – but not necessarily - these organisations are –partially- public funded.

B) Learning infrastructure & functions
Which functions are needed for a joint curriculum? The partnership discussed about and identified that the following functions are needed:

- Knowledge space: In this part all teaching resources and learning materials in regard to **the course contents (subject matters)** for Community Service Engineering will be gathered and made available. These can consist of powerpoint presentations, streamed lectures, existing video material, articles, references to literature,…
- Research space: This space will have 2 parts. **One part** will consist of the **projects online database** which contains project ideas, projects picked up by students and templates which describe in brief the outcomes of each project with information on where more details can be found. Via tag functions students and other stakeholders can search through the database.
The other part will gather research questions. While elaborating the curriculum a lot of questions arise. These questions can be formulated into research questions. Community Service Engineering could evolve on term to a real specialty, a full discipline.
An enumeration of possible research questions:

- How can technology eliminate barriers and improve inclusion?

- What is the potential for inclusion of technology per target group of the social profit sector: the elderly, people in poverty, people with mental and/or physical disabilities, …
- What is the market potential of the developed technology?
- Is there existing technology that would be of added value within the social profit sector?
- How does an engineer design for and interact with vulnerable target groups?
- What methods of the User Centred Design approach are appropriate in interaction with persons with mental disabilities?
- ...

Partners will not delve into these research questions but intent to show the research potential for the domain.

- Learning space: Here students are guided in the process to undertake their projects and defend their final result. This space illustrates the CSE pedagogies and puts the students into action. Items are: a step by step document of tasks to perform for project work in the CSE context, WIL (Work Integrated Learning) reflection methods and formative feedback, description of methods to support User Centred Design and Participatory Design, worksheets, evaluation criteria for the project work,…

- Free expression space: Partners feel a space where stakeholders can start a forum and discuss with other parties interested in the domain without formal requirements is of added value.

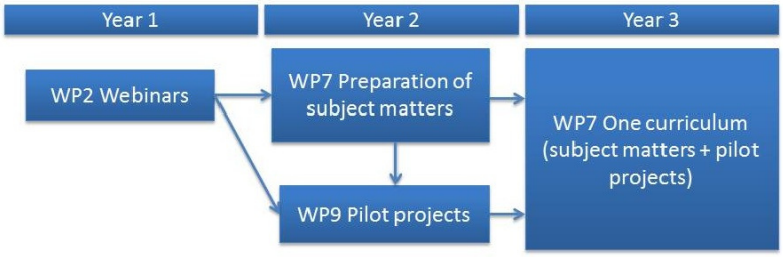
Given the functions needed, which platform will suit best? Consortium members have experiences with learning platforms such as Blackboard and Moodle. These platforms have the disadvantage that it is difficult to add and give access to users (teachers/students) who are not members of the partners' own institution. Feedback Fruits is a young startup at TU Delft. HHS had good experiences with their platform which promises to improve education by providing students and lecturers with the tools that will transform the way they interact and learn. Feedback Fruits has created a separate virtual university for the CSE consortium. The CSE consortium has agreed to build a base for the above mentioned functionalities on this platform.

Partners can contact KU Leuven for support on demand for topics related to the use of the learning platform. This support will be documented in an online logbook, so partners can learn from one another's questions and the answers given.

C) Basic webinars

At the start of the project, CSE partners in Belgium have organised a series of conferences with both national and international guest speakers. KU Leuven and Thomas More are piloting a joint postgraduate course in the current academic year. Webinars have been recorded at several events. Consortium partners have examined the material and selected **6 streamed lectures** to be presented **on the website** with the list of basic topics in mind. It was during the selection process that our Swedish partner pointed out that the webinars that are on the website now cannot be called webinars. She mentioned that they are actually streamed lectures and that a webinar is an 'interactive conference room'; a learning opportunity for the consortium.

The basic webinars were step 1 in the gradual process for building one curriculum with the international consortium. The figure below shows the evolution year after year:



WP3: Social sector needs – PULL: (unconscious) need for technology

For this work package the way **RVO society** (P6) works for the **CERA award** has served as an exemplar.

Three steps are taken to link needs and students:

- First a questionnaire is distributed to a large number of organisations with the help of one or more umbrella organisations. Social profit organisations are invited to describe the technical problems they want to be solved.
- In a second step these problems are evaluated and categorised by a group of experts from universities according to the type and level of curriculum they best fit.
- In the third step these topics are presented to the appropriate students who can choose to tackle them as a bachelor or master of engineering.

RVO society has developed **a train the trainer** about the way they interact with and search for needs within the social profit sector in Belgium and translate the needs into project proposals. This train the trainer was presented to all partners during a virtual meeting.

Based on the insights provided by this train the trainer partners from the Netherlands, Portugal and Sweden **have evaluated** how to set up a structure to detect the needs of the social profit sector within their own country.

RVO Society created a template to write a local country scenario to pull the social profit sector. All HEI partners have subsequently written their own scenario on how to involve the local actors. This scenario was then later on executed to gather the needs from the social profit sector in each country.

In **a feedback session** all partners commented on the working method of RVO society and gave insights and suggestions for improvement based on their own findings.

One of the adaptations was the integration of the scenarios of WP3 and WP4 into one scenario since partners felt this was a more efficient approach.

Partners also learned from the structure of and the concrete ideas the Cera database already contained at the start of the LLP project. This gave a lot of inspiration to find their own project ideas to put in the consortium database. The Cera award database structure has also been a starting point to create the consortium's database (content elements, key terms, tags,…)

Based on 100 project ideas in their database, RVO Society has produced a report on social sectors' recurring needs for technology.

WP4: Business 2-way communication - PUSH: Existing technology & companies seeking to do business with social organisations and/or (unconscious) eye for market potential within the social sector of existing technology

This work package started from **Chesbrough's "Open innovation"** and partners experience.

The aim of WP4 is to provide for a **communication plan** to involve businesses and technology partners into the CSE curriculum and to **disseminate the results** of students projects to these companies.

At the projects' starting point HHS organised a survey among partners to examine their experience with 'open innovation' processes and the way they collaborate with businesses and organisations in their current educational approach.

The way HEI can be a linking pin was clearly presented at the first partner meeting of the CSE consortium in The Hague on May 14th, 2014 when Prof. Dr. Bert Mulder (The Hague UAS) shared his ideas on open innovation.
Furthermore HHS shared **show cases** for the CSE curriculum. The consortium also gained insights from visiting the Betafactory in Delft. The Betafactory is the knowledge and innovation hub of the Expertise Centre Technology, Innovation & Society (TIS) at The Hague UAS. The Betafactory bridges the gap between education, technology and business and promotes cooperation which focuses on innovation and entrepreneurship.

Based on the template for the communication plan HHS provided, each partner wrote its own scenario on how to involve local actors. Also partners drew up a list of businesses with potential to the social profit sector.

The communication plan/scenario has been a starting point to:

- Continuously learn and agree on how to communicate in 2 directions with the market
- Set up a yearly local meeting with associated partners and define future structured communication channels
- Contribute to cross-fertilisation between projects (comparable challenges, comparable target groups that can be learnt from) and between countries.
- write the inspirational document 'Higher Education Institutions as international hubs in Community Service Engineering Innovation Networks' which has been accepted as a full paper for the 'Engineering4Society' conference, which will take place in June 2015.

As already mentioned under WP4, there has been an integration of the scenarios of WP3 and WP4 into one scenario since partners felt this was a more efficient approach.

WP5: Projects back office - Engineering/technology students making the link (step by step) via projects

In the scenario's created in WP3 and WP4 HEI-partners have described how they will set up a structural partnership with partners in the field in order to detect problems/situations with a need for technology in the social profit domain. These will be translated into project proposals and **listed up on a yearly basis**.

During the curriculum engineering students consecutively select a project proposal, interact with and listen to the needs of the social profit organisation (or the vulnerable groups they

serve), translate them into technological questions and solutions, advise to implement the technology and evaluate market potential and possible channels to the market.

The **project database**, which is part of the projects back office, contains project ideas, projects picked up by students and templates which describe in brief the outcomes of each project with information on where more details can be found.

A **well organised back office** has a lot of **added value** for the project work. It allows **students** to search through available project ideas, identify students-colleagues that are working or have worked on comparable challenges or for comparable target groups, get inspired by previous project work,… It allows **partners/teachers** to organise online interaction between students across borders, to exchange challenges between institutions, to stimulate mobility starting from appealing challenges at partner institutions,…

First partners have agreed on **the template** to present project ideas/technological challenges to students. Next **a web application** has been developed by Högskolan Väst (UW) as a prototype. This solution has been presented to the consortium and after some iterations has been accepted. At present the application is capable of performing the intended tasks, although it is only reachable and executable on the development machines at UW. In order to reach the next stage of development, **external hosting** is required. Recently it has been decided that the IT department at Thomas More will host the application in order to make it available externally. Also maintenance and technical support will be done by this department.

Once external hosting is a fact CSE partners will put the current project ideas in the tool and start testing the application.

This work package defines the role and tasks for the back office and create procedures. Starting from the experience with the postgraduate course in Belgium. Knowhow has been shared and discussed with the partners. Partners have shared their experiences and approaches for project work. University West has contributed by sharing its expertise on Work Integrated Learning (WIL). Partners have been invited to the conference on 'Assessing and Assuring Quality in Work-Integrated Learning' to be held at University West in Trollhättan, Sweden May 18-20. Here we will work specifically on WIL in the context of CSE.

The **web application** will be integrated in the **research space** of the learning platform (WP2).

The **guidelines for students** while doing project work will be integrated in the **learning space** of the platform (WP2).

Collaboration between institutions and teachers and the related procedures to follow and documents to use will be kept in a **shared Dropbox folder**. (project detection, preparation, execution, follow up and assessment)

WP6: Development of international-intercultural competences

The publication "The Professional Value of ERASMUS Mobility" proves that mobile students acquire **extra competences** thanks to a mobility experience. Diverse studies demonstrate that employers value a mobility experience:

- QS Global Employer Survey Report 2011
- Staat een internationale ervaring goed op je cv?

During the kick off meeting in Leuven and the first partner meeting in The Netherlands, CSE partners have learned from ICOM, ISBI and IEREST as good practices. Next a document (train the trainer) was produced. This was presented during a virtual meeting and partners have been asked to give feedback and jointly think about how to organise virtual and physical mobility of students and staff within the CSE curriculum. A mindmap served as a starting point for this discussion.

During the CSE curriculum we focus on the acquirement of both domain specific intercultural competences as of generic intercultural competences?

Domain specific intercultural competences – international interdisciplinary learning:

- Being able to practice one's discipline in an international context
- Understand the cultural relatedness of one's discipline
- Knowledge of the profession and stakeholders in other countries
- Knowing international organisations relevant to one's discipline (a.o. standardisation authorities)

Generic intercultural competences:
These competences are also referred to as transversal skills.

- Cultural self-knowledge
- Cultural flexibility
- Cultural resilience
- Cultural receptivity
- Cultural knowledge
- Cultural relational competence
- Cultural communicative competence
- Cultural conflict management
- Multiperspectivity

Guidance, support and counselling are essential to maximise the potential learning outcomes of "an international experience". This opinion is supported by Dr. J De Wit in his publication "De wet van de stimulerende achterstand".

Based on the work of ISBI, ICOM and IEREST the CSE consortium has developed activities to in order to allow students to acquire intercultural competences during the curriculum.

During WP5 partners have agreed on how international cooperation is integrated in the project work:

- There will be synchronous and a-synchronous interaction between students, based on assignments for project work via Feedback Fruits
- Partners will organise a joint webinar on the topic of 'cultural aspects'
- Partners have already been and will be teaching in each other's curricula
- Via the scenarios of WP3 and WP4 students find easy access to relevant stakeholders in the various countries
- Partners will stimulate mobility starting from appealing challenges at partner institutions (in this case Peer Assisted Learning techniques will allow CSE students to learn from one another and will allow to overcome language barriers)

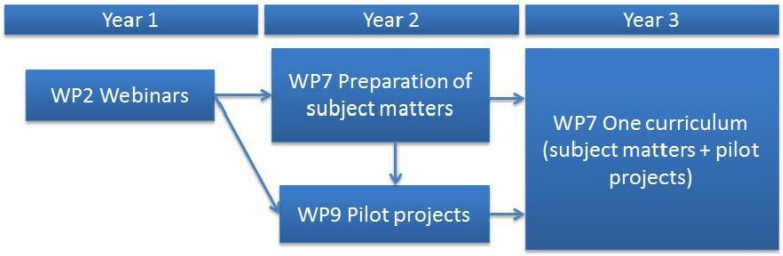
The plan was that during pilot projects (WP9) (2014-2015) students would be supported while mobile as agreed upon. Due to a delay for pilot projects in some partner countries this has not been possible up to now. The CSE consortium will test (ICOM) **the enhancement**

of international-intercultural competences as a learning outcome of (virtual) mobility with one year delay and will write the report consecutively.

As an alternative for year 2 partners have decided to design a joint learning activity (Webinar) on cultural aspects for the CSE students of the postgraduate course in Belgium.

WP7: Postgraduate curriculum & options for translation into undergraduate curricula

The setting up of the curriculum itself is **step 3** in the **gradual process** for building **one curriculum** with the international consortium. The building of the curriculum itself is **spread over 2 years**. The figure below shows the evolution year after year:



It is the aim of the consortium partners to establish **a sustainable cooperation**. A (postgraduate) curriculum could be an option for this sustainable relationship as partners.

As a first step P1&2 have developed a web based survey that could then be used in the different partner countries to probe the interest of the engineering community (young people, female engineers, 50+). Furthermore they have also organised three conferences in a row on the topics of ageing, living with a disability and poverty. The events were structured in three parts.

During the first part a keynote speaker gave his own view of the potential of technology for the social profit sector. Then, a representative of the social profit sector itself testified about the subsector, the target audience and the potential for technology. Finally, several cases spoke for themselves.

In the second part, we explored in round table discussions the experiences and visions of the public: What did positively surprise surprise them? What will they remember? What were there remarks? How do they look at 'technology in the social profit sector'? Do engineers have a role to play? What are the conditions for technology to truly mean an added value for the sector?

In the third part, we raised our glass to technology for social inclusion, empowerment, accessibility of public space, websites, media, support in heavy workload, the efficiency of social profit organisations ... and we expanded our own network.

Next this work package has explored the feasibility and requirements to set up a joint (postgraduate) course for the future in the second year of the proposal. Preparations have been made. The CSE profile and modules have been elaborated based on the Tuning methodology. For this WP7 the consortium is in fact one year ahead of schedule. The postgraduate course in Community Service Engineering KU Leuven in collaboration with Thomas More, has already started up during the current academic year (2014-2015). This

has already partly been a joint curriculum since partners from the Netherlands have been teaching on three occasions in this course and have given feedback on student's project work. Futhermore they will be a jury member when the first generation of students graduate on May 22, 2015.

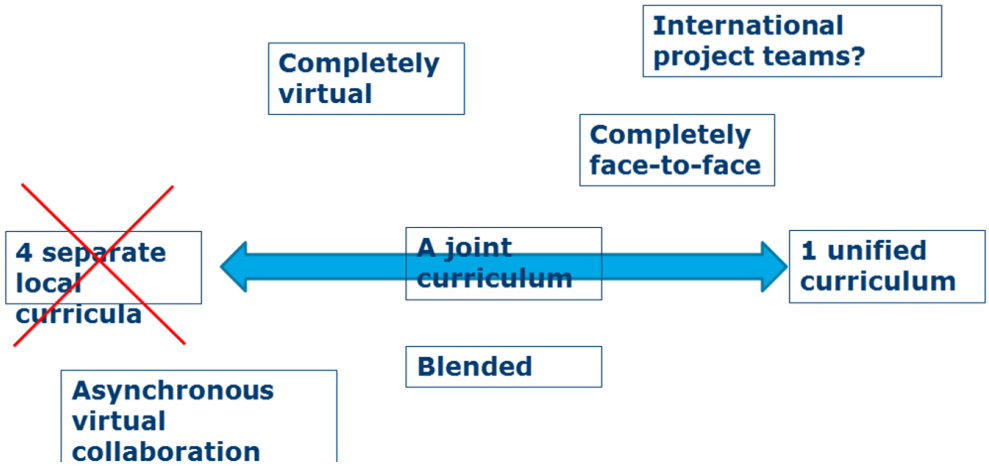
P1&2 have shared all practical preparations as input for the projects back office (WP5).

P1&2 have shared their promotional material, have asked for partners' feedback and invited them to make use of these resources as inspiration to promote their local curricula.

The ambition is to enhance the European dimension during the second run of the programme.

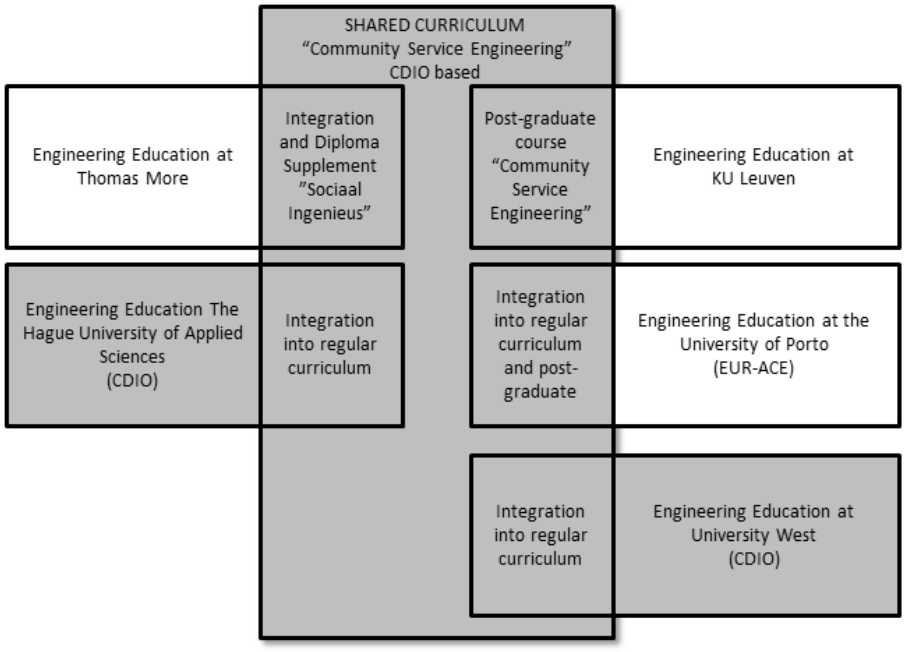
Therefor the consortium needs a clear view on what each partner understands as being a joint curriculum and how one wants to deliver it to students.

To come to a common understanding discussions have been held based on the image below.



It is clear four separate curricula will not do in the context of this European project. At the same time partners do not choose to organise one unified curriculum, since they all feel **a blended curriculum** is the way to move forward in this domain. Blended is the option of choice. The reason is clear. It would not be logical to put User Centred Design/Participatory Design, Interaction and meetings with vulnerable groups and stakeholders of the social profit sector, empathy exercises,... central on the one hand and at the same time expect from students to be able to digest and process this without face-to-face meetings with fellow students and teachers.

All partners have agreed to implement CDIO as the basis of the curriculum for Community Service Engineering. While CDIO is the common framework, the implementation of CDIO and Community Service Engineering by the different partners will result in engineering education that is adapted to the local context. Community Service Engineering will be an element of the Engineering Education at the universities of all partners involved. Resources are shared and collaboration between students and staff is organised at different levels. The actual implementation will differ for each partner. CDIO will be the common language to develop Community Service Engineering by all partners but the results will be adapted to the local situation, as shown in the figure below.



Both at HHS and at Thomas More, the "Community Service Engineering" curriculum is translated into a diploma supplement. At Thomas More this format is called "Sociaal Ingenieus" (translated: socially ingenious, social engineer).

In order to acquire this diploma supplement students
- take one additional course "Sociaal Ingenieus" of 3 credits.
- choose at least one additional course with the label "Sociaal Ingenieus" from the standard curriculum. These courses consist mainly of work integrated learning courses within the social profit sector.
- present a bachelor thesis with a focus on engineering for the social profit sector.

In regard to the shared resources and collaboration partners have agreed to reorganise the curriculum into three main topics:
- User centred design
- Technology and the social profit sector
- Organisations in the social profit sector

The topics as they were present in the pioneers year of the CSE postgraduate course at KU Leuven are thus slightly reorganised.

WP8: Teacher's role:

There will be a **new and challenging role for teachers** in this international learning environment, that will function as a lifelong/network learning environment. Traditional teaching competences might not produce the desired learning outcomes. That's why this work package goes into the role of the teacher and support for the teacher to be ready for this role.

During partner meeting 1 in The Hague (May 2014) P3 (UP) conducted a workshop on the new role of the teacher. The outcomes have been written down in a report.

The report has the following structure:

- How to organise and manage a joint degree programme
- Pedagogical, technological and organisational issues for teachers in blended learning
- Teachers in a blended learning environment with international dimension

This report has been enriched with several inspiring documents of projects that researched the 'new role of the teacher'.

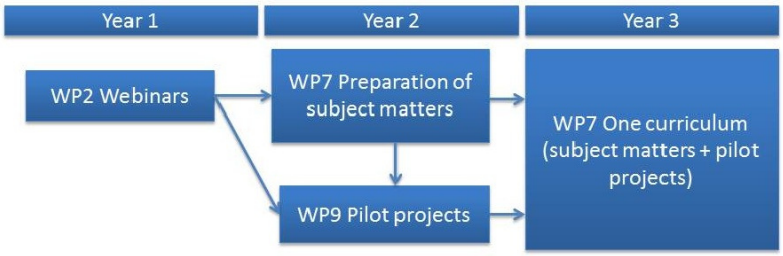
Next, partners have commented on this report and it has been a discussion topic during several virtual meetings.

Partners can contact UP for support on demand for topics related to this work package. This support will be documented in an online logbook, so partners can learn from one another's questions and the answers given.

P1&2 have also learnt from the pioneers' year of the postgraduate course in Belgium and have given input for this work package from the experiences gained.

WP9: Pilot projects

The pilot projects are step 2 in the gradual process for building one curriculum with the international consortium. The figure below shows the evolution year after year:



This work package focusses on **students' project work.**

WP9 brings together what has been developed in WP2, 3, 4, 5, 6 & 8.

Pilot projects account for 15 ECTS credits in the postgraduate curriculum. Half of the curriculum is project work.

In the proposal it was planned that Thomas More Kempen (P1) would coordinate the pilot set-up and collect feedback. This has actually been the case.

During the first run of the postgraduate course **in Belgium**, 5 students are pioneering the curriculum. Each student is working individually on a project for the social profit sector.

P1 shared his approach with the consortium. This entails:

- The template to present project proposals
- The contact with project promoters (social profit organisations, businesses and research groups at HEI) pitching their idea during the kick-off for the curriculum.

Depending on promoters availability the pitching was done face-to-face, online or via a recorded video message
- The document with an overview of tasks and assignments to guide students during the process for the project
- The structure of the e-portfolio students build on a Weebly website
- The couching of students during the process
- The definition of the role of the promoter and the role of the mentor
- Peer learning among students for their project work
- The final evaluation of students via pass/fail for their final result

In **the Netherlands** 5 pilot projects are currently being carried out.

Several project proposals in the CSE context have been announced to students in **Portugal**. The project work is done in the second semester. These projects have therefor only just started.

The **Swedish partner** in engineering partnered up with colleagues in the social work department and the pedagogical department in order to promote the uptake of technological challenges from the social sector by the next academic year. It is part of the pedagogical approach in Sweden that students define their own project. Pilot projects are therefor currently not being undertaken. Arrangements have been made with teachers of courses in project work that the CSE profile and related challenges can be promoted at the start of these courses. To trigger students some examples of project ideas will be formulated.

Partners promote that project ideas can be taken up by students from the various institutions. Students are not limited to ideas brought up by their own institution. In order to allow staff and student mobility on the basis of project work, partners have worked out or updated inter-institutional agreements amongst one another.

WP10: Quality assurance and quality plan

Aims of this work package are to ensure that the project runs on time and that all tasks and deliverables are completed as promised, to make evaluation tools and decide on strategies for both national and transnational evaluation, to evaluate the project both internally and externally. All this allows the consortium to state how the project is doing against objectives, whether it is having an impact and working efficiently for the partners and other stakeholders to learn from.

The consortium has recruited an **external expert** to take forward the **external evaluation** in subcontracting. **Internal evaluation** is coordinated by P2 with the partners and will be mainly concentrated on product evaluation. **Both product and process evaluation** will be tackled by the external evaluator. Product evaluation has to focus on effectiveness, i.e. the curriculum, quality of the course and learning methods, application of the EQF and the credit award system. Process evaluation addresses the project's efficiency, its success and challenges in meeting its intended deadlines and outcomes.

Rather than undertaking a summative evaluation, which is felt to give a more limited and static picture of the project, the partnership decided to opt for a formative approach, and to **involve the evaluator early in the project** to enable him to develop appropriate evaluation measures and to collect the required information as the project goes along. In addition, the partnership is looking for the external evaluation to focus also on the financial management

and intellectual property right issues. This external evaluation should help assess the project's effectiveness, efficiency, impact and sustainability.
The **key deliverables** of the external evaluation are:

- a definition of a project evaluation framework and tools
- implementation of the evaluation
- mid-term report to the project partners with initial finding and recommendations
- final evaluation report including key conclusions and recommendations

P2 with the contribution of all WP leaders and the external evaluator wrote, executes and monitors a **quality management plan**. All partners got instructed on the Plan-Do-Check-Act quality cycle at the kick off meeting.

To follow-up the work packages the consortium has **monthly online meetings**. Also the associate partners and other stakeholders are involved in the evaluation.

In regard to product evaluation the following results will be available after the curriculum pioneers' year:

- Students have been asked to evaluate each face-to-face contact moment and all guest speakers
- In the end students will be invited to evaluate the overall curriculum with a questionnaire based on the EFQUEL guidelines.

WP11: Dissemination

There are 6 different levels concerning the dissemination objectives of this project:
1. **Gaining attention** of target groups: public opinion, academic institutions, engineering higher education institutes in the European area, policy makers and other stakeholders, social profit organisations, businesses, engineering organisations, etc.
2. **Information**: showing to the general public the high relevance of social profit organisations and the job possibilities for "Community Service Engineers".
3. **Awareness creation**: making best practices and project compendia available to Engineering schools and universities, as well as to their umbrella organisations (cf. list below)
4. **Action**: we want to stimulate uptake of similar initiatives all over Europe
5. **Support**: interested groups will be provided with the practical experiences gained within this project
6. **Engagement:** we want to ensure consultation and involvement of end users in the project life, meaning engineering students, vulnerable groups, social profit organisations, businesses, teachers,…

To plan and monitor the process this work package started with inviting partners to think about and plan their local dissemination actions, to invite local stakeholders to be (partly) present at the partner meetings, to communicate about their actions via the CSE social media channels and to regularly report on the dissemination activities via an online form.

At the start the consortium jointly decided on the URL for the website. Amongst various options www.cse-education.eu has been withheld. Partners can provide their local information via derivatives such as e.g. www.cse-education.be. A logo for CSE has been designed.

CSE partners in Belgium have organised a series of conferences with both national and international guest speakers. Streamed lectures have been recorded on this occasion.

For further dissemination actions partners feel it is important to focus on both internal and external stakeholders. Communicating to internal stakeholders is needed to create support for the domain in one's own institution, to attract students, … Communicating to external stakeholders is important to find interesting project ideas, to valorise project results, to find potential employers for the CSE profile,….

At two occasions members of the consortium have written and submitted a joint paper to publish about the curriculum under construction.

At present we have learnt about initiatives in the same domain in Europe and we have been in touch with the staff responsible for the development of these programmes to learn about their approach and to explore collaboration potential.

- Finland – TAMK – Master's degree programme in Wellbeing Technology
- The Netherlands – EU Master in Care & Technology
- Belgium - VIVES – Bachelor in de zorgtechnologie
- France - Université de Limoges - Master Auton'Hom-e

Other important actions in this Work Package are:

- set up a contact database of target groups, stakeholders, individual contacts, organisations, networks,…
- write and distribute press releases with every event or newsworthy development,
- write and design project poster and flyer to use as presentation material for possible applicants for the course and for introduction of the project to stakeholders,
- distribute a poster and flyer to partners and stakeholders,
- organise a final project conference.

Partners' staff members are involved in several networks related to either e-learning, distance education, continuing education, engineering education (CDIO network), work integrated learning etc. and can rely on these networks to promote and disseminate project results.

Highlights of dissemination in the first project half

Dissemination activities so far include: info sessions, meetings, presentations, published articles, e-mail campaigns, distribution of information, twitter account, LinkedIn group, Facebook group, participation in conferences, contact database.

Important dissemination activities have been:

- The organisation of a series of conferences in Belgium (April – September 2014)
- A seminar day in The Hague with key note speaker on health & technology development in collaboration with HEIs, presentations from social profit sector, education (national & international), technology/business. Poster presentations. Workshop Design Thinking on 'how to reach open innovation with HEIs collaborating with the social profit sector and industry. (May 14th, 2014)
- Article in Weliswaar - publication for the social profit sector
- Article in Ilya – Publication of the engineering association (IENET)
- Article in De Gezinsbond (277.229 CIM)
- Cera-Award and CSE; winners of the sustainable partnerships award 2014
- Festive start of the CSE curriculum at the Cera-Award Ceremony – September 27th, 2014

WP12: Exploitation

The main aims of this work package are to ensure that the results are sustained beyond the life of the project and used beyond the project itself, to ensure transfer of results to relevant local, regional, national and European decision-makers, to make sure target groups understand how the results meet their needs and to convince end users to adopt them.

Although exploitation is an activity that is mostly planned more towards the end of a project a lot of '**grassroots' work** to make exploitation possible should already be done in the course of the project.

Currently this has not yet been discussed in the consortium, but it will be a major issue during the second half of the project.

3. Project Outcomes & Results

What follows is a list of deliverables connected to the different work packages. The deliverables indicated in bold are finished. The other deliverables are ongoing or to be started and will be delivered in the next project half

WP1.	Coordination – Management - Support	
	Lead by TMK	*delivery month*
1.1	**Administrative rules and guidelines**	**2**
1.2	**Partner agreements**	**3**
1.3	**Progress report**	**18**
1.4	Final report/internal	36
1.5	Final report/external	36
WP2.	Learning Framework	
	Lead by KUL	*delivery month*
2.1	**Learning platform with 5 webinars**	**12**
2.2	Support on demand	12-36
WP3.	Social Sector Needs (PULL)	
	Lead by RVO	*delivery month*
3.1	**Train the trainer for polling and engaging the social profit sector**	**2**
3.2	**Local scenarios**	**8**
3.3	**Database**	**8**
3.4	**Report on social sectors' recurring needs for technology**	**12**
WP4.	Business 2-way Communication (PUSH)	
	Lead by HHS	*delivery month*
4.1	**Scenarios of the different country meetings**	**6**
4.2	**List of businesses with market potential to the social profit sector**	**12**
WP5.	Projects Back Office	
	Lead by UW	*delivery month*
5.1	Well-structured database	12
5.2	**Procedures for project detection, preparation, execution, follow up**	**12**
5.3	Integration with the learning framework	12
WP6.	Development of Intercultural Competences	
	Lead by TMK	*delivery month*
6.1	**Procedures for mobility and support of students**	**12**
6.2	Report on learning outcomes in regard to intercult. competences	24
WP7.	Postgraduate Curriculum	
	Lead by TMK	*delivery month*
7.1	**Description of the postgraduate curriculum**	**20**
7.2	Report on options to translate into undergraduate curricula	23
7.3	Feedback report on the first test year	36
WP8.	Teacher's Role	
	Lead by UP	*delivery month*
8.1	**Report on outcomes workshop role description & needed support**	**9**
8.2	Support on demand	12-36
8.3	Final report: role description & needed support for teachers	36
WP9.	Pilot Projects	
	Lead by TMK	*delivery month*
9.1	**Pilot set-up description**	**13**
9.2	Compendium of project results from pilots	22
9.3	Pilot evaluation and feedback	24
WP10.	Quality Assurance	
	Lead by KUL	*delivery month*
10.1	**Quality management plan**	**3**

10.2	Quality management report	36
WP11.	Dissemination	
	Lead by TMK	*delivery month*
11.1	**Project website**	**4**
11.2	Dissemination report	36
WP12.	Exploitation	
	Lead by TMK	*delivery month*
12.1	Business and exploitation strategy report	36

* All deliverables to produce in English only.
Deliverables in **bold** have been completed at the time of this report.

4. Partnerships

The project partners
The CSE consortium is a very strong partnership. It is built on the expertise of each of the institutions and the people working in it.

P1 = Belgium – Thomas More Kempen vzw (TMK)

P1, Thomas More university college, plays an important strategic and international role in Flanders, the northern part of Belgium. More than 13.000 students study at seven campuses. It offers more than 30 professionally orientated study programmes.

Role in the project:

WP1	Coordination – Management - Support	P1 (TMK) has built up knowledge and experience in project guidance, day to day operational management, partner communication and reporting.
WP2	Learning framework	TMK brings in experience with VirCampus
WP6	Development of international-intercultural competences	TMK leads this WP. Basic input will be the results of the ISBI-project and the ICOM test for measuring international-intercultural competences. TMK is also associate partner in the IEREST project.
WP7	Postgraduate curriculum and options for translation into undergraduate curricula	TMK leads this WP together with KU Leuven.
WP9	Pilot projects	TMK leads this WP
WP11	Dissemination	TMK leads this WP
WP12	Exploitation	TMK leads this WP

P2 = Belgium – KU Leuven (KU Leuven)

The Katholieke Universiteit Leuven (KU Leuven) is the Flemish offshoot of the oldest university in the Lower Countries which was originally founded in 1425. In the academic year 2012-2013 students 41,255 students were attending classes at the 16 faculties of the KU Leuven, about 6,720 of whom were foreign students. Many courses are offered in English. Most courses, however, are taught in Dutch. The KU Leuven is a member of the Coimbra Group (a network of leading European universities) as well as of the LERU Group (League of European Research Universities).

Role in the project:

WP2	Learning framework	KU Leuven has taken the lead in setting up the learning space (multi-campus, blended learning…)
WP7	Postgraduate curriculum and options for translation into undergraduate curricula	KU Leuven leads this WP together with TMK. Together they are pioneering the postgraduate course in CSE (2014-2015) KU Leuven shares its expertise in setting up and organising students' projects in engineering education, in interdisciplinary research, development, exploitation and communication on the bridge between engineering and social sciences.
WP10	Quality assurance & quality plan	KU Leuven leads WP10 (implementation & quality control), and assists in assuring the quality assurance of research methods, communication within and between WPs, documentation - particularly clarity and accessibility of public documents, appropriate use of resources and internal

		monitoring and evaluation of each WP.

P3 = Portugal – Universidade do Porto (UP)

The University of Porto (UP) with its 14 faculties and a management school is the largest higher institution in Portugal. With more than 28.000 students, a teaching staff of approximately 2.000 and over 1.200 of other staff, UP is a popular HE Institution in Portugal. The GATIUP office has for mission to give support for all users in the use ICT in the teaching/learning process, acting for faculty support and promotion of good practices related to e-learning, distance learning and continuing education.

Role in the project:

WP2	Learning framework	UP has a vast experience in learning spaces (multi-campus, blended learning…) and brings it in this WP
WP8	Teachers' role	UP takes the lead in this WP. Thanks to its experience with learning platforms, UP has a clear view on roles for teachers to take.

P4 = The Netherlands - De Haagse Hogeschool (HHS)

The Hague University of Applied Sciences is situated in the 'Randstad region' of the Netherlands, and focuses its education and research activities on **urban and metropolitan themes**. This focus is reflected in the **diversity of its student population**.

The HHS **profile** contains the following elements:
-Fulltime Bachelor Programmes of high quality
-Partner for innovation in professional practice
-A strong international orientation.

HHS has chosen to intensify its **research priorities on three themes**:
1. Technology and Health: Vital communities and quality of life
2. Entrepreneurship and innovation against the background of globalisation
3. Good governance for a safer world (as city of Peace and Justice)

Role in the project:

WP4	Business 2-way communication	HHS has a vast experience in open innovation and making the link to the market and brings it in in this WP. HHS takes the lead in this WP.
WP7	Postgraduate curriculum & options for translation into undergraduate curricula	HHS has an important role on how to translate the curriculum into undergraduate curricula, meaning a combination of (adapted) courses for undergraduates and projects and/or offering (part of) the postgraduate course as an elective to undergraduate students.

P5 = Sweden – Högskolan Väst (UW)

University West (UW) in Trollhättan (Sweden) consists of four different departments, departments of Economics and IT, Social and Behavioural Studies, Engineering Science and the department of Nursing, Health and Culture. The identity of the university is founded on a clear focus on education, work integrated learning and research of high international quality close to the working field and applicable.

Role in the project:

WP5	Projects back office	UW has a vast experience in Work Integrated Learning and brings it in in this WP. University West takes the lead in this WP.
WP4	Business 2-way communication	UW and PTW (Research Team Production Technology West) in particular create methods and procedures that make research results quickly reach the industries where they are of benefit. Insights of PTW will be brought in for linking projects' results and the market.
WP8	Teachers' role	Thanks to their experience with Work Integrated Learning, UW has a clear view on the teachers' role for project work. They bring in these insights in WP8.
WP9	Pilot projects	University West will collaborate with TMK in this Work package to make sure that what was set up in the back office is brought correctly into practice. Based upon experience in the pilot projects (WP9), the projects back office will be updated.

P6 = Belgium – Roger Van Overstraeten Society (RVO-Society)

Society Roger Van Overstraeten (RVO-Society) strives for a more compelling science communication and a more appealing science education, for young people in particular and the unlearned public in general. That way science literacy will increase and everyone will be able to relish the full potential of scientific progress and use technology for a better world.

Society Roger Van Overstraeten saw the light in the year 2000 and was named after the founder of Imec, Roger Van Overstraeten. Imec is a world-leading research centre in nano-electronics and, as is RVO-Society, headquartered in Leuven, Belgium. RVO-Society is a non for profit organisation of 9 FTE's and has partnerships with IMEC, the Flemish government and several companies.

Role in the project:

WP3	Social sector needs	RVO-Society has designed the model to link practical work, defined by the social sector, in a qualitative and sustainable model to CSE, building on the experience in the CERA Award project.
WP11-12	Dissemination and exploitation	Important task in setting up and supporting dissemination and exploitation in Belgium

Associated partners

All consortium members have involved **associated partners** (umbrella organisations, enterprises, chambers of commerce, local regional bodies, …) as a **link to the market**. These associated partners open up their communication channels. Via these channels students can look for existing technology and translate it for use within the social profit sector (answer to the formulated needs). Compendia of project results will be presented in the final project stage through the communications channels of the associated partners. Newly developed technology (via the projects) is offered in this way to the market. Partners are flexible to allow other stakeholders to become involved. The initial network has already enlarged compared to the proposal stage.

Nr	Name of organisation	Type of institution	City	Country
1	De Vereniging voor Social Profit Ondernemingen - Verso vzw (Association for social profit enterprises)	Inter-sectoral employers' organisation for the social profit sector in Flanders	Brussels	Belgium
2	SEFI –European Society for Engineering Educations	non-profit organisation	Brussels	Belgium
3	CAW Federatie	non-profit umbrella organisation for the social sector	Berchem	Belgium
4	CERA	Co-operative group	Leuven	Belgium
5	SPK vzw	Regional development organisation	Turnhout	Belgium
6	VOKA Kempen	Chamber of commerce	Geel	Belgium
7	VOKA Leuven	Chamber of commerce	Leuven	Belgium
8	VOKA Health Community	Platform for innovation in the broad healthcare sector	Brussels	Belgium
9	VAPH	Flemish Agency for Disabled Persons	Brussels	Belgium
10	IENET	Community of all engineers in Belgium	Antwerp	Belgium
11	Leuven.Inc	Organisation building a bridge between knowledge centers, high-tech entrepreneurs, enterprises and their socio-economic partners	Leuven	Belgium
12	Sociale Innovatiefabriek	a networking organisation that promotes, guides and supports social and societal innovative concepts	Brussels	Belgium
13	Ordem dos Engenheiros – Northern Chapter of the Association	Engineering Professional Body	Lisboa	Portugal
14	APPACDM	Private Social profit organisation	Porto	Portugal
15	EPDAH	Social profit organisation	Braga	Portugal
16	GAS – Grupo de acção social	Social profit organisation	Porto	Portugal
17	Fundação Manuel António da Mota	Social profit organisation	Porto	Portugal
18	UPTEC	Science and Technology Park of University of Porto	Porto	Portugal
19	Catholic University in Porto - Centre of studies in Human Development	Higher Education Institution – Partner in Education	Porto	Portugal
20	Portuguese Society of Engineering Education	Society for Engineering Education	Coimbra	Portugal
21	GGD Zuid-Holland West	Social profit organisation	Zoetermeer	Netherlands
22	Municipalities of the Hague and Delft	Local government	Delft & The Hague	Netherlands
23	Florence	Social profit organisation	Rijswijk	Netherlands
24	Pieter van Foreest	Social profit organisation	Delft	Netherlands
25	Teknikföretagen	Employers' organisation, and a force for innovation	Stockholm	Sweden
26	NU-sjukvärden	Social profit organisation	Trollhättan	Sweden

Larger worldwide network

In the course of the project strong bonds have been established with the following organisations:

The Fetzer organisation in the US, whose FAC (Advisory Council) on Engineering has a clear focus on Engineering for Society issues.

Olin College of Engineering, an engineering college near Boston in the US that **acknowledges the increasingly human-centred nature** of the engineering practice and presents itself as a new kind of engineering college that believes that engineering is a creative enterprise that begins and ends with people and their desire for a better world.

5. Plans for the Future

At the last partner meeting in Porto (February 8-11th) the partners and the external evaluator took some time to explore the strengths and opportunities for the project. Furthermore the external evaluator formulated some conclusions. We will start from these conclusions to formulate the consortium's plans for the future.

Now that the presence of the project in the field is a fact, the project should take advantage of this position to increase its impact. Therefore the outcomes and products of the project are important, have to be a joint product of the whole partnership and have to be able to reach and influence all stakeholders, both within the academic and industrial world, but also in the social sector.

Special attention has to be dedicated now to creating a joint curriculum through an effective online learning environment, and to demonstrate its added value to the market. The postgraduate curriculum and its possible translation into an undergraduate programme should take into account the specific national situations, but also try to strive for a common content base and platform.

Also the dissemination and exploitation should be intensified to guarantee full and sustainable impact of the project on the intended levels, by increasing the networking with relevant professional organisations and business players in the envisaged sector.

With these recommendations in mind the consortium will further carry out the work as originally planned with some amendments where needed in order to achieve the long term targets as formulated in the project proposal:

1. Building networks to foster CSE and innovation in the social profit sector through student projects
Through the development of new links, and strengthening of existing collaborative links, between academic, social profit and business partners within the consortium it is expected that the project deliverables will result in the integration of similar curricula for engineers in EU academic institutions. Therefore, rather than an end in itself, it is expected that CSE will provide a platform for future collaboration into the needs and challenges associated with developing innovation skills in third level education which, in an efficient manner, will be enhanced by the relative complementary strengths of the collaborating partners.

2. Disseminating CSE outputs
With the proposed development of the CSE website, it is envisaged that the site will be maintained for minimally 2 years following the end of the project. This will assist in raising awareness of the CSE project and this project in particular amongst those that search the internet for keywords such as innovation, EU, social profit sector, vulnerable groups and activities of daily living, as well as providing a record of the project details for other educational institutions and bodies involved in third level education who aim to establish similar educational modules.

3. Contribution to emerging "innovation union" across Europe
Successful further development of undergraduate modules for CSE and the postgraduate course for CSE concerned with innovation will allow us to develop a critical mass with respect to expertise in innovation and research, boost our competitiveness, enable European companies to lead in the development of new technologies, to grow and assume

global leadership in new growth markets, improve the quality and efficiency of public services and so contribute to creating large numbers of new quality jobs.

4. Contribution to the "attractiveness" of the engineering profession
CSE will support a positive image to the technological and engineering profession. Labour markets in European countries are in need for engineers. It has been proven that by emphasizing the social added value of technology the younger generation and female students in particular are attracted towards the profession. The educational models that are developed will build on the experience of the example of Olin College in the US that attracted 40% of female students for engineering studies. Partners will seek communication channels to the "younger generation" – secondary schools; an option is to engage these younger students in the (virtual) assessment procedure for the outcome of the projects.

5. Exploitation of CSE IP
Where potential IP arises from CSE projects, this project will be in a good position to expedite the use of its results commercially. The technology developed will be protected by patent and available to research institutions primarily under licensing agreements. All findings will be disseminated as literature and presented at conferences and workshops by all participants in terms that do not conflict with the protection of the results referred above. In line with this goal, one of the aims of WP5 is to define how to build in the future upon projects end results and how previous projects and documentation can be used to enhance efficiency and effectiveness (comparable challenges, comparable target groups that can be learnt from) for the development of technology also for regular businesses.

6. CSE: Informing national and EU policy
It is also planned that the results of the project will feed into each of the collaborating institutions' local evidence base and contribution to the development of local, national, and extra-national policy with respect to teaching of innovation, both generally and specifically in relation to technology development for social profit organisations and target groups. As part of the dissemination plan, similar plans will be worked through and developed with other transnational partners, to make use of the experts' outputs within local and regional economic strategy and planning. The presentations will be aimed at an audience from local policy makers, regional authorities and representatives from national government.

6. Contribution to EU policies

The project and the CSE consortium contributes to the following key EU policies, objectives and priorities.

Objectives of the Lifelong Learning Programme

LLP-Obj-a: to contribute to the development of quality lifelong learning and to promote high performance, innovation and a European dimension in systems and practices in the field.

This project constructs bridges between worlds that often stay apart. Both engineers and society at large will benefit from joining the innovative potential of engineers to a better understanding of the social profit sector. CSE will be an eye-opener showing the potential of lifelong learning opportunities in those highly interdisciplinary areas. It constitutes also a best practice example for multi-campus blended learning based on the European Qualifications Framework for Lifelong Learning.

LLP-Obj-h: To support the development of innovative ICT-based content, services, pedagogies and practice for lifelong learning

CSE will develop an international (postgraduate) curriculum. A blended and multi-campus approach will make optimal use of state of the art ICT tools to support both on-line and off-line activities/courses and interact with the community. E-learning platforms will be used allowing for a flexible delivery (in time and space) of learning resources and (virtual) support for face-to-face teaching, guidance for the practice part adapted to the needs of the learners in the different countries.

Specific Objectives of the Erasmus Action

ERA-SpObj-a: To support the achievement of a European Area of Higher Education

As CSE is aiming at creating a joined curriculum, it is compliant to the EAHE goals for greater compatibility and comparability of higher education systems. Real and virtual mobility for teachers and trainers will be promoted. The project aims to describe the various components in a way that will be reproducible, hence facilitating the transfer of this education initiative across Europe. CSE by being based on EFQM and the European Qualifications Framework, will adhere to high quality standards.

ERA-SpObj-b: To reinforce the contribution of higher education and advanced vocational education to the process of innovation

We propose the design and delivery of a novel educational platform which offers practical, interdisciplinary and effective learning opportunities to engineering students and students with a social and economic background across Europe. Via the practice part students will interact with social profit organisations (starting from their needs) and make the link with industry. This interaction is explicitly meant to contribute to innovation in accordance to market needs.

Operational Objectives of the Action

ERA-OpObj-2: To improve the quality and to increase the volume of multilateral co-operation between higher education institutions in Europe

High quality results will result from the use of EFQM as the framework for quality management when developing the joined postgraduate degree between 5 European universities. The multilateral dimension is clear as CSE joins expertise, best practices and opportunities for real and virtual mobility of students and teachers. The project is both multi-

lateral and multi-disciplinary and will enforce these dimensions at a European level with a high dissemination potential to other EU-countries

ERA-OpObj-4: To improve the quality and to increase the volume of co-operation between higher education institutions and enterprises

Associated partners (enterprises, chambers of commerce and local regional bodies, …) are involved as a link to the market per participating country. These partners will open up their communication channels. Via these channels students can look for existing technology and translate it for use within the social profit sector (answer to the formulated needs). Via compendia of project results newly developed technology will be communicated and offered to the market.

Priorities

Priority 1: Improving the quality and relevance of higher education, including through cooperation between HEIs and the labour market

Via projects students discover new labour market opportunities in highly interdisciplinary areas with social innovation potential. CSE shows a positive image of the engineering profession, stimulates inclusive engineered solutions for the social profit sector and attracts more female students. Knowledge of the social profit sector, combined with field practice and insights in the state of the art technology, will motivate engineers to tailor solutions that answer real market needs.

LLP Horizontal policies

SpecNeed: Making provision for learners with special needs, and in particular by helping to promote their integration into mainstream education and training

The project addresses this priority in two ways. The curriculum will have a course on the integration of learners with special needs into mainstream education. Good, creative, and inclusive engineering can provide tools that are needed for their optimal integration. During the course, engineers will learn about the problems and good practices in this area.
Also, when choosing/developing tools for distance education particular attention will be paid to students with special needs.

Discr: Promoting equality between men and women and contributing to combating all forms of discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation

It has been proven that by emphasizing the social added value of technology the younger generation and female students in particular are attracted towards the engineering profession. For mobility activities (physical and virtual) there will be special attention for the acquirement of international-intercultural competences based on the outcomes of the ISBI-project (Integral Student Support in Internationalisation) thus combatting discrimination.

Complementarity with other policies

ET2020: Education and Training 2020 Work Programme

CSE will answer to the strategic framework for European cooperation in education and training (ET 2020) by 1) implementing the EQF, 2) making engineers more sensitive for social cohesion and inclusion and 3) promoting creativity and innovation through the creation of a joined (postgraduate) curriculum of high quality and efficiency. It will contribute

to the modernisation of the education by implementing state of the art pedagogical methods, multi-campus blended learning; virtual/real mobility.

RTD-FP: Research and development, Research Framework Programme

There is a lot of potential for “community service engineers” within the areas of research and development such as 1) Socio-economic sciences and Humanities 2) Elderly 3) e-Inclusion 4) Assistive Technology & Independent Living etc. Engineers with the right background can contribute to these research areas with a better understanding and holistic view on the problems and research areas.