Lifelong Learning Programme

WP2: Open Innovation Education Process
Deliverable D2.3: Revised Open Innovation Process Model

Author: Università di Udine

Project Partners:
1. Universidad de Salamanca
2. OpenDirective Ltd.
3. Raycom B.V
4. University of Bolton
5. Università di Udine.
6. University of Cyprus
7. Mindshock S. L.
8. University of Oxford – OSS Watch

Vals

540054-LLP-L-2013-1-ES-ERASMUS-EKA

Contents

1. Introduction 3
2. Revised Open Innovation Process Model 4
3. Resources Gains Problems Motivations 8
4. Possible Scenarios Definition 15
5. Recommendations based on the previous experience 17

1. Introduction

This deliverable consists in the description of the Open Innovation Process Model used in virtual placements, as revised after the pilot actions. The structure of the document is therefore similar to deliverable 2.1, and is organized in three main parts:

1. ***Revised Open Innovation Process Model:*** it is the VPS process flowchart, and it is structured in eight main phases. For each phase the activities/outputs for each of the four roles involved in the process (student, academic supervisor, mentor and system manager - SOC Admin) are described in details.
   The 8 phases are the following:
   1. *Process mapping*
   2. *Companies application*
   3. *Projects validation*
   4. *Students application*
   5. *Proposals development*
   6. *Proposals selection*
   7. *Carrying out of the work*
   8. *Final phase*

2. ***Resources-Gains-Problems-Motivations:*** it consists in a table that resumes the required resources, the potential gain, the potential problems and the motivations for each role involved and for each phase.

3. ***Possible scenarios definition (Students possible usages):*** it is a list of the three main possible applications of the virtual placement in the High Education institutions, accordingly to partners' requirements. The real implementation of the process can vary from every institute.

2. Revised Open Innovation Process Model

In this chapter, we will represent a revised version of the Open Innovation Process Model described in D2.1: it is a flowchart structured in 8 main phases. For each phase, the activities/outputs are described for each one of the 4 roles.
The box colour for each activity/output suggests where it takes place: inside the company/foundation, in the institute (HE institutions and universities), in the system (handled by the SOC platform), in online tools like GitHub and alike (for students work implementation). The flowchart highlights also the interactions and the feedback between the four roles.

ROLES:

- ❑ STUDENT: user who applies and whose proposal is uploaded and accepted into the program (Semester of Code)
- ❑ ACADEMIC SUPERVISOR: professor who supervises and gives recommendations to Students during the program
- ❑ MENTOR: member of an accepted Mentoring Company/Foundation who supervises and benefits from work done by Students during the program
- ❑ SYSTEM MANAGER (SOC ADMIN): one of the VALS partners that manages the program and represents the final authority

PHASES:

1. *Process mapping:* companies explore and identify problems that could be potentially solved by students and then translated in projects;
2. *Companies application:* companies register and access the system, then submit one or more projects;
3. *Projects validation:* system manager validates the projects;
4. *Students application:* students and supervisors register and access the system, selecting favourite projects;
5. *Proposals development:* students develop and enter the proposals, supervised and monitored by academic supervisor;
6. *Proposals selection:* mentors select proposals;
7. *Carrying out of the work:* students carry out the work, interfacing with supervisors and mentors;
8. *Final phase:* end of the virtual placement with final assignment.

LEGEND:

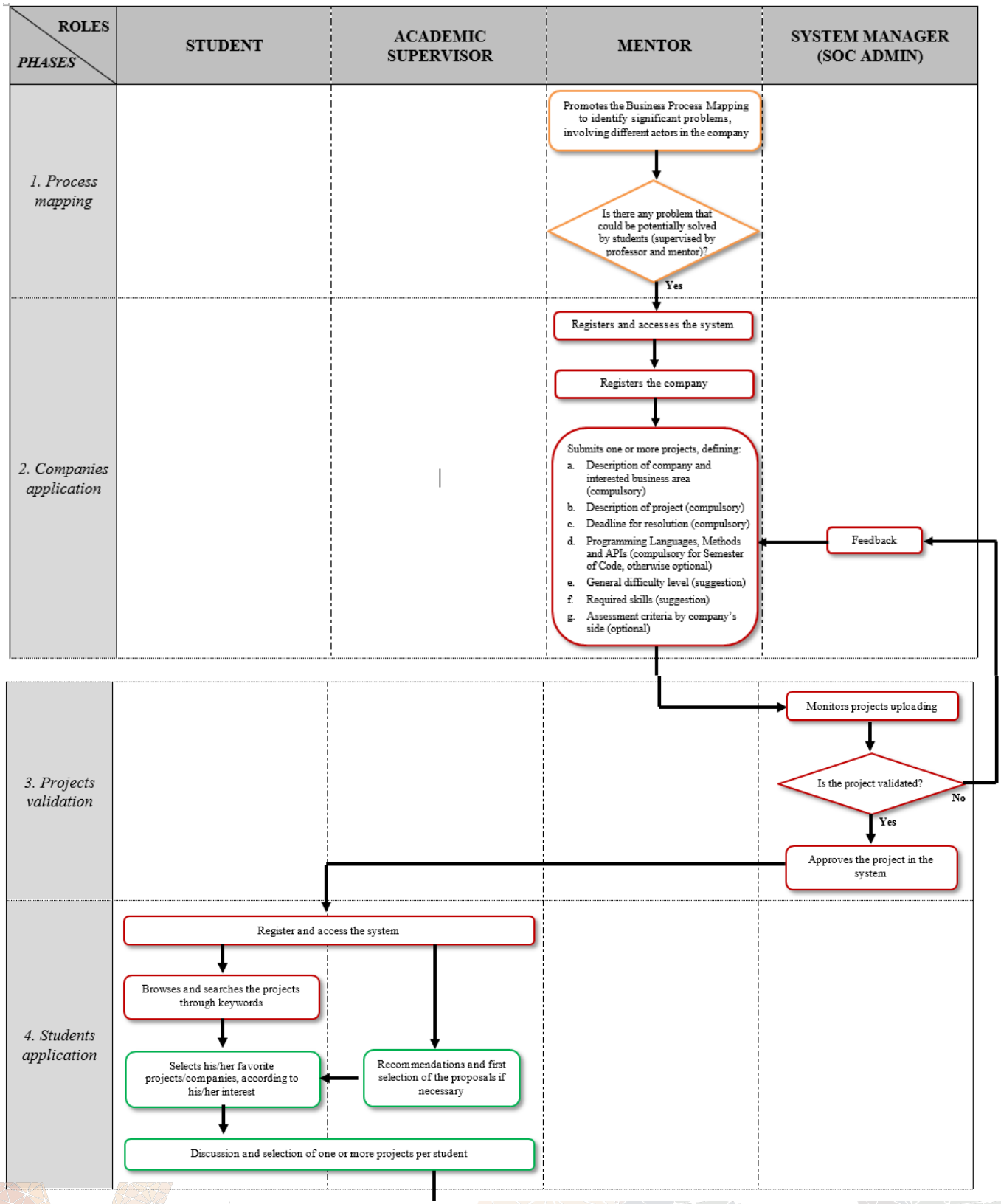
Assessment moments

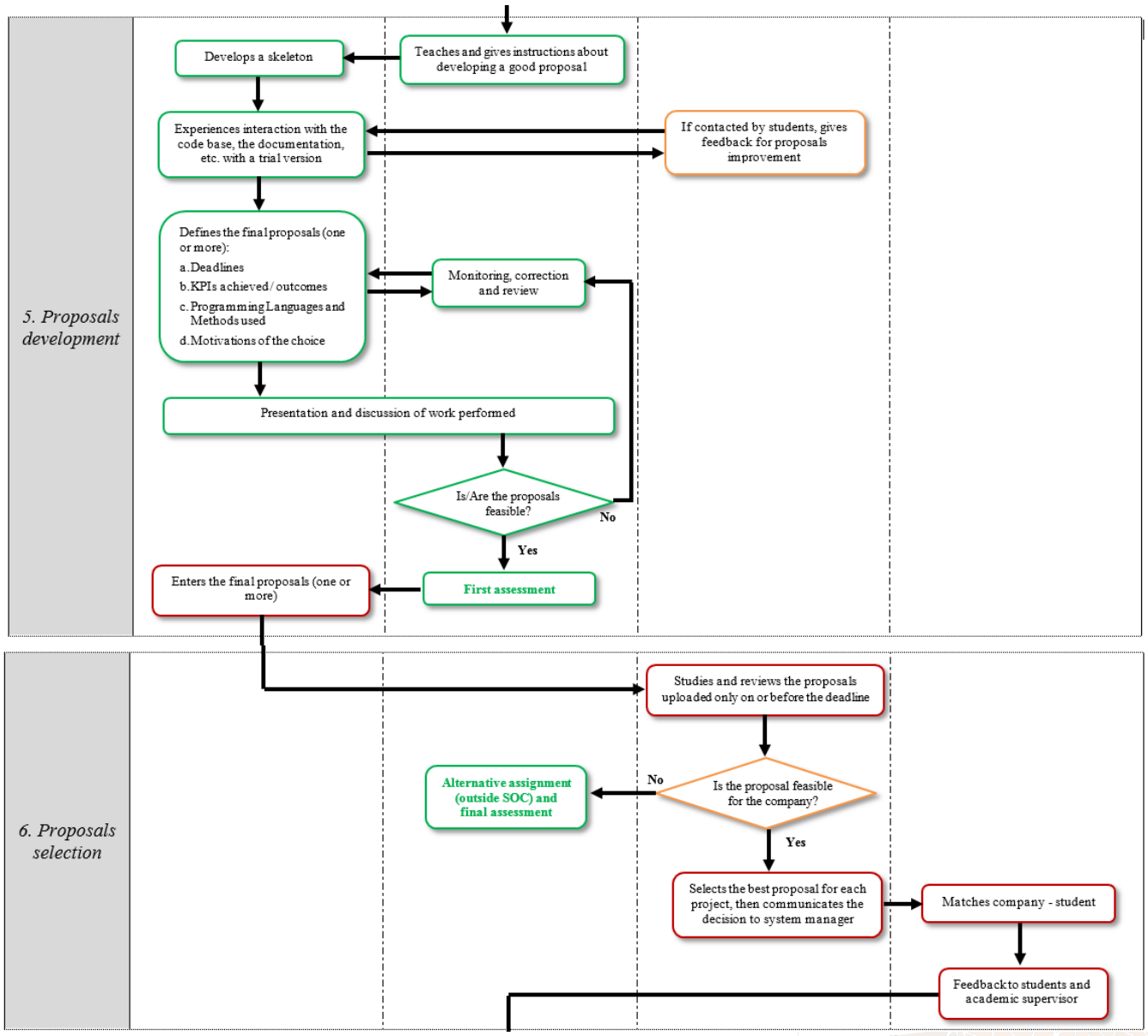
Inside the company / foundation

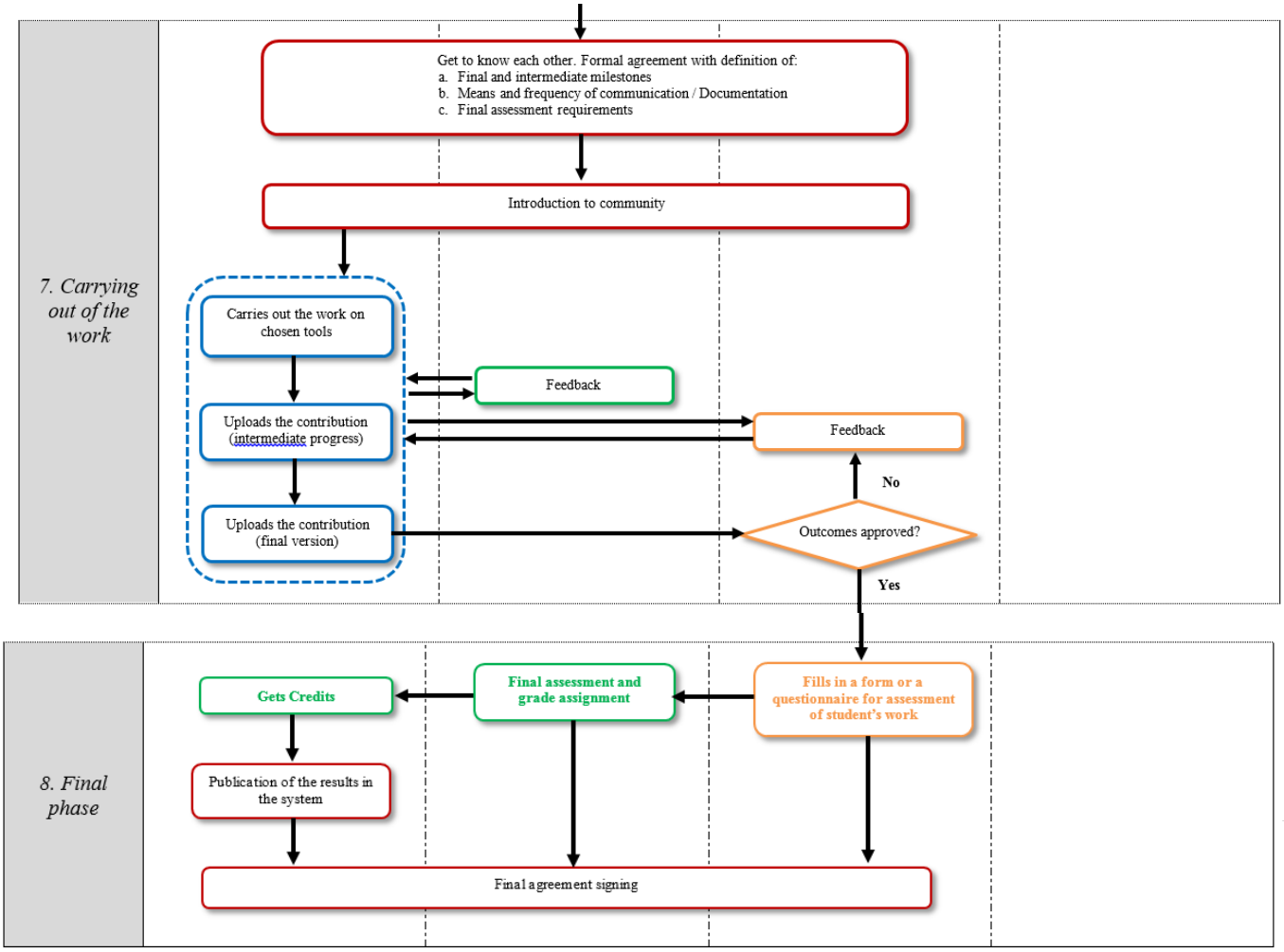
In the institute

In the system: handled by SOC platform

Outside the system, in online tools like GitHub and alike


ROLES
PHASES
STUDENT
ACADEMIC SUPERVISOR
MENTOR
SYSTEM MANAGER (SOC ADMIN)
1. Process mapping
2. Companies application
3. Projects validation
4. Students application
Promotes the Business Process Mapping to identify significant problems, involving different actors in the company
Is there any problem that could be potentially solved by students (supervised by professor and mentor)?
Yes
Registers and accesses the system
Registers the company
Submits one or more projects, defining:
a. Description of company and interested business area (compulsory)
b. Description of project (compulsory)
c. Deadline for resolution (compulsory)
d. Programming Languages, Methods and APIs (compulsory for Semester of Code, otherwise optional)
e. General difficulty level (suggestion)
f. Required skills (suggestion)
g. Assessment criteria by company's side (optional)
Feedback
Monitors projects uploading
Is the project validated?
No
Yes
Approves the project in the system
Register and access the system
Browses and searches the projects through keywords
Selects his/her favorite projects/companies, according to his/her interest
Recommendations and first selection of the proposals if necessary
Discussion and selection of one or more projects per student


5. Proposals development
Develops a skeleton
Teaches and gives instructions about developing a good proposal
Experiences interaction with the code base, the documentation, etc. with a trial version
If contacted by students, gives feedback for proposals improvement
Defines the final proposals (one or more):
a. Deadlines
b. KPIs achieved / outcomes
c. Programming Languages and Methods used
d. Motivations of the choice
Monitoring, correction and review
Presentation and discussion of work performed
Is/Are the proposals feasible?
No
Yes
Enters the final proposals (one or more)
First assessment
6. Proposals selection
Studies and reviews the proposals uploaded only on or before the deadline
Alternative assignment (outside SOC) and final assessment
No
Is the proposal feasible for the company?
Yes
Selects the best proposal for each project, then communicates the decision to system manager
Matches company - student
Feedback to students and academic supervisor



The main changes applied to the Open Innovation Process Model flowchart deal with:

- The cancellation of the deadline for the proposals uploading by the students, for a better fitting between academic and VALS timelines. This has been a critical point during the pilot actions.
- The signature of a final agreement by student, supervisor and mentor, in order to validate the project and to declare its conclusion.

3. Resources Gains Problems Motivations

This section reports about four key aspects given by the approach to the VALS project in each of the 8 phases of the open innovation process described before, and for each of the four roles (students, academic supervisors, mentors and system managers). These are the resources required, the gains for each role, the possible problems and the motivations.

Resources

	STUDENTS	ACADEMIC SUPERVISOR	MENTOR	SYSTEM MANAGER (SoC ADMIN)
1.			CEO, Board of Directors; Identification of potential projects and mentors.	
2.			Access to system (Form); CEO, Board of Directors; Software License.	Form; Monitoring VALS Community new members.
3.				Constant access to the system; Experience in OSS issues.
4.	Access to system (Form)	Access to system (Form); Promotion; Opportunity to allocate academic course credits / thesis; Recommendations.		
5.	Documentation; Material from academic course/s; Access to system (Form to enter proposal/s).	Experience / Expertise in programming language; Course hours / Availability for students; Assessment.	Providing feedback when required.	

6.			Access to system (Form); CEO, Board of Directors; Rating.	Access to system (Form to match student - company)
7.	Virtual apprenticeship; Different ICT tools.		External participation to core business; Focus on people, not only on project; Clear guidance.	
8.	Get credits; Access to system for results publication.	Access to system.	Access to system; Form / questionnaire for final assessment.	

Roles gain

	STUDENTS	**ACADEMIC SUPERVISOR**	**MENTOR**	**SYSTEM MANAGER (SoC ADMIN)**
1.			Business Process Review; Improve corporate image towards stakeholders.	
2.			Company's projects (abstract definition) converted in real and potentially feasible projects; Feedback from an OSS expert that interface both business and academic world.	Number of VALS Community members increases; Knowing different business realities.
3.			Company's projects and their formulation being examined by a third person.	Well-framed proposals are more likely to turn into well-developed projects.

4.	Dealing with real business / software development issues; Opportunity to put in practise the academic studies.	Reputation in academic world; Consolidation of university – company collaboration.		
5.	Practical experience; Course or thesis credits; Feedback from mentor/s.	Teaching experience; Interface with external resources (outside academic boundaries); new material for academic activities.	First contact with students work.	
6.	Being assessed also if the project isn't accepted; One of the most important phase of the project (planning) has been done, if it is accepted.		Knows students way of working.	
7.	Support from the company that will effectively use the outcomes of the project.		Monitoring the development of the project to be aligned with the handshake conditions.	
8.	Getting credits and final vote; Bringing to end a whole project; contact with a real company; experience.	Obtaining a practical outcome for the company and, if accepted, a new employee already qualified.	Assignment of credits and final vote.	Coming to an end of a series, that will be an example (for pros and cons) for future projects.

Problems

	STUDENTS	ACADEMIC SUPERVISOR	MENTOR	SYSTEM MANAGER (SoC ADMIN)
1.			No sensibility / attraction to seek outside the company's boundaries; Opposition to changes from CEO or other internal resources (organizational obstacles).	
2.			Privacy and data export (legal obstacles); Proposal definition (to be really feasible); Feedback not reached.	Communication with companies.
3.			"To be examined".	Definition of criteria to select / request modifies; Impartiality.
4.	Lack of self-motivation to participate; Not find interesting / linked to academic curriculum projects; Benefits of working on OSS could seem too abstract.	Not find students (need to select the best / most motived students); project proposals are not fit for the academic activities.		

5.	Lack of commitment and then potential bad proposals; Not work out a feasible solution; Timing; Suggestions not accepted; Don't want to share reached outcomes for preventing copies (if other students work on the same / similar projects).	First assessment criteria definition.	Expects only "final" and immediately feasible solutions, not intermediate ones.	
6.		Final assessment and alternative assignments criteria definition if the company rejects the project.	Criteria to establish if a solution is really feasible or not; No feasible projects; Timing.	
7.	Don't work at a sufficient rate; Losing interest; Problems with tools; Project failure; lack of contact with mentor.	Disagree with the mentor.	First assessment criteria definition; Need to chase the students that seem to disappear.	Disagree with the supervisor; Students chosen turn out not to be as good as they appeared; Project failure / Code incomplete.
8.	Not be likely to stick around in the project after the final phase.	Final assessment criteria definition.	Final assessment criteria definition; If the outcomes are not approved, the problem is in the initial specs, rather than in the students developed work.	Privacy (licence to publish the results).

Motivations

	STUDENTS	ACADEMIC SUPERVISOR	MENTOR	SYSTEM MANAGER (SoC ADMIN)
1.			Competition (global); Innovation (Open); Chance to identify and qualify potential future employees.	
2.			External people have different experiences and learning processes; Reputation.	Feedback solutions or suggestions show commitment OSS culture dissemination.
3.				Key role between companies and universities, not only an "observer".
4.	Potential future employment linked to academic learning; Vote (pass the course well); Individual choice.	Chance to get real OSS problems into academic programmes; Role of coordination and intermediary between university and companies; new ideas for academic activities.		
5.	First assessment → need to engage from the beginning; Can improve the reached solution with real players' suggestions.	Coordination of work performed by students → better results; Direct connections with OSS foundations / companies.	Can participate and express his point of view also in the first phases of students proposal development.	
6.	Accepting also sub-optimal (but good) proposals allows obtaining new code development / different approaches to the company projects without internal effort.		Explores the proposal before they got implemented.	Key role in match-making.

7.	Project failure is a learning experience in itself.		Qualification of a potential future employee; Carry out the whole projects with benefits for the company.	
8.	Getting final assessment; Showing the reached results within VALS Community.		Getting projects results and implementing them in the company / foundation.	

4. Possible Scenarios Definition

The possible scenarios for the application of VALS project did not change from the ones reported in deliverable 2.1. The description and the observations of the students possible usages reported in this section are filtered with the observations collected in the pilot action.
The possible scenarios are 3, and are described below.

1. The project replaces a course assignment or represents the practical part of an exam evaluation (projects are selected according to the area of the proposed issue)

Academic Supervisor: Single professor of the course.
Positive aspects: There is a well-defined working procedure for the Open Innovation in the university and the project serves in student evaluation replacing assignments or representing the exam's practical part.
Negative aspects: Smaller projects need to be selected and theoretic teaching need to be decreased since there is not enough time to dedicate to the project's execution.
Observations based on the pilot actions:

- This first scenario is the most applied one;
- There are some constraints in time, but at the same time the student is motivated from the exam evaluation;
- Supervisors can be more than one.

2. One exam in the curriculum is the project itself: new course (the same exam could be in different faculties, it depends on the business area involved)

Academic Supervisor: Single professor of the course.
Positive aspects: There is a well-defined working procedure for the Open Innovation in the university.
Negative aspects: there are many administrative procedures needed to start a new course.
Observations based on the pilot actions:

- It requires also a high level of coordination with the university organization;
- Constraints for the students are given by the academic deadlines: if the project last more than one semester, students cannot complete it properly.

3. The project is a thesis issue (first/master/PhD degree) or covers the internship credits

Academic Supervisor: One professor chosen among the faculties that are interested in this kind of thesis
Positive aspects: It's a student's choice. The student could potentially last the project within the company (as employee).

Negative aspects: A single student can't complete the whole project by himself, it is necessary involving more than one student, so every student has to develop a single feature, creating potential lack of coordination. Regarding the internships, students participation depends on their mandatory character.

Observations based on the pilot actions:

- The student is potentially more involved and could choose the topic according with his interests

5. Recommendations based on the previous experience

Different recommendations coming out from the consortium experience are reported below, also with reference to specific Open Innovation Process Model phases.

In general, a key element, which is very important for projects development and finalization, is to take care of the communication aspects. Too often, lacks in the communication processes and insufficient information exchange has created problems in the pilot actions experiences. A strong recommendation is to do about this aspect.

In the phase 1, *Process mapping*, the recommendations are addressed to companies and mentors. This phase could be very useful for the enterprise itself. It could represent a real improvement also beyond the virtual placements.

In the *Companies application* phase, we remark the importance of the communication aspects between companies and system managers, in order to guarantee companies commitment.

In the *Students application* phase, we recommend to underline the deadlines. Moreover, a first project selection by the professor/supervisor is not mandatory but strongly recommended. This will help both the student who will work on the project and the professor who will help and supervise on him.

Finally, in the last phase, remember to sign the final agreement, in order to well close the project from a formal point of view and to make it known by the platform users, and especially to the system managers.