

Knowledge Alliance “IE3 – Industrial Engineering and Management of European Higher Education”

Madrid meeting; 16-17.06.2022

DAY1

Thursday 16.06.2022		
Timing	Activity	Partner responsible
09:30 – 09:40	Welcome and presentation of the agenda	UPM and POLIBA
09:40 – 09:50	WP6: Extension of the project duration and impacts	ValueDo
09:50 – 13:00 (with coffee break in the room)	WP4: Evaluation of the pilot courses A) Updates on the pilot courses conducted by Universities (format + 10 min presentation) B) Presentation of the feedback received on the evaluation questionnaires by the students and comments C) Presentation of the feedback on the evaluation questionnaires by the companies and comments D) General remarks on the courses by the University teachers and company partners E) Proposal for e-learning courses improvements F) Follow-up: any ideas for sustaining the use of the e-learning modules? Any ideas for creating more e-learning modules using the IE3 approach? Reminder of pending elements to end up the WP4	A) All Uni partners B) Lead: ValueDo C) Lead: ValueDo D) +E) + F) Must be carried out by all univ partners according to the template created by the UPM. UPM
13:00 – 14:30	<i>Lunch at the Staff cafeteria</i>	
14:40 – 15:40	WP5: Handbook for IE3 courses: brainstorming on the document design (INFOTECH) and possible contents (LIU)	InfoTech and LIU
15:40 – 16:10	WP9: Dissemination: overview of the activities conducted and planning of new activities	InfoTech
16:10 – 16:45	WP9: Final Dissemination Conference (expected in late Jan 203); possible format, draft agenda, possible contents, possible invited speakers	POLIBA

List of participants

- Politecnico di Bari (**POLIBA**) represented by Giorgio Mossa;
- Linköping University (**LIU**) represented by Janerik Lundquist;
- Universidad Politécnica de Madrid (**UPM**) represented by Joaquín Ordieres, Elicio Mendonca, Miguel Gutierrez, Diego Rorato Fogaca
- Poznań University of Technology (**PUT**) represented by Joanna Oleśków-Szlapka and Agnieszka Stachowiak;
- ValueDo (**VALUE**) represented by Alessandro Guadagni;
- INFOTECH (**INFO**) represented by Gianluigi De Pascale;
- Implema (**IMPLE**) represented by Jens Wallgreen, Robert Roslund;

- Arruti (**ARRU**) represented by Carlos J. Urueña;
- Alcomot (**ALCO**) represented by Hanna Gołaś;

WP4: Evaluation of the pilot courses

Alessandro (ValueDo) presents the overall results of the questionnaire filled in by HEI students and companies. The full presentation is [here](#). At the moment only two Universities (PoliBa and UPM) completed the pilot courses, reaching the target numbers agreed upon.

In the case of LiU the semester ended very early in Spring and the students couldn't be reached easily. However, LiU staff offered the students to take the e-learning modules and they expect some of them will complete them by 20.06.2022. Jans (Implema) says that the company is hiring new employees that could be included in the courses and that could pilot the course and he checks the possibility of having them take the modules.

In the case of PUT, the semester is still running. Joanna and Agnieszka (PUT) know that some students have already completed the pilot courses, but they have not filled in the evaluation questionnaire so far. Considering that the courses are still running, PUT commits to reaching the target of 15 students piloting the 3 modules by 10.07.2022. At this date UPM, PoliBa and Valuedo will check the numbers reached by PUT and will make a decision whether we can consider the task completed or we need to extend the deadline to September 2022.

At the end of the discussion, the partners agree that

- All the Universities will revise the course with the feedback collected by 30.09.2022.
- LiU will pilot the 4 courses (they are going to test also the course they prepared) with students between 01.10.2022 and 31.10.2022. This would represent the second round of evaluation after the revision of the courses to be conducted by the end of September.
- WP4 will be closed in November 2022 with the provision of the reports required by the project.

General remarks on the courses by the University teachers and company partners

All the Universities present the results they got from the students piloting the course. All the presentations are at the following links: [UPM](#), [PUT](#), [LiU](#), [Poliba](#). Also, Hanna (ALCO-MOT) shares a [presentation](#) with the feedback Alco-Mot has on the 4 courses they piloted

The partners discuss the suggested improvements they should make to the e-learning courses.

IMPORTANT: The list of suggested improvements is here below:

1. Asking the previous knowledge on the topic to explain to the learners what they are going to learn through the module with general questions "Do you know ..."

2. Make a video to explain what we expect from the students in the module, focusing on learning outcomes.
3. Improve the “doing dimension” by asking the learners to solve some exercises
 - a. Using more complex case studies to reflect business conditions
 - b. Using more interaction options
 - c. Making the practical assignments more practical
 - d. When possible/suitable: Using simulation or gamification in practical exercises
 - e. When possible/suitable: More automation in students assessment
 - f. Avoiding exercises that require the intervention of the trainers (proposed solution: presenting the solution to the exercise in a video so that the learners can check it and see if they did it right)
4. Including subtitles to the videos (proposed solution: uploading the video on YouTube and creating/revising subtitles and then uploading them on Moodle)
5. Recorded instructions for exercise
6. Declaring the duration of the modules and the individual resources
7. If possible (check copyright!): Including a list of relevant documents to download (books, articles, etc.)
8. Improving the quizzes, trying to avoid quizzes just aimed at memorizing sentences

Workplan:

- All the partners to revise the e-learning courses following the specific remarks they got from the pilot learners on their specific modules and the list of the suggested improvements (1 to 8) by **30.09.2022**.

Follow-up: any ideas for sustaining the use of the e-learning modules? Any ideas for creating more e-learning modules using the IE3 approach?

PUT would need to figure out whether to include them in the training offered as elective courses or embed them in the courses they already have. For PoliBa there is a problem linked to the legal aspects as these are small modules and can not be considered full courses.

They will share the materials prepared by other colleagues, and they are considering including them as part of POLIBA official courses. In the case of UPM, the module is part of one course already offered. They are also thinking about delivering the courses on the UPM website for free to invite other people to use them. Thanks to the project, LiU learned methodologies they can use in other activities. The Handbook (to be prepared in WP5) could help achieve other people outside the consortium.

Workplan:

- All the partners to prepare a report on the WP4 activities by 31.10.2022 (but the sooner the better). The content of the report is in the last slide of the template presentation shared for today's presentation.

WP5: Handbook for IE3 courses: brainstorming on the document design (INFOTECH) and possible contents (LIU)

Gianluigi presents the plan for the development of the Handbook. The full presentation is [here](#)

Janerik (LIU), as WP Leader, reminds the partners that the intention should be to define a handbook that takes into account the future needs of skills and that gets the support of companies to answer to the future needs of skills. The Handbook could be a tool for explaining how and why IE&M is something different from other fields, unique and important in the next world of work.

Agnieszka (PUT) says that the BoK should be the starting point for the Handbook as it shows the profile of the I4.0 worker.

Giorgio (PoliBa) agrees with the goal that Janerik presented. However, if this is the objective, the structure of the Handbook is not well aligned with the structure that was presented in Gianluigi's presentation.

Jens (Implema) suggests using the Handbook as a step-by-step guide to explain how to create a new course in IE&M.

Giorgio (PoliBa) asks Janerik to write down some key points on the Handbook to allow the partners to comment on formalized content. Janerik (LIU) will prepare this bullet-point document that the partnership will revise.

WP9: Dissemination: an overview of the activities conducted and planning of new activities

Gianluigi (InfoTech) gives a presentation [here](#). The partners agree to upload the introduction videos prepared for WP4 courses on YouTube.

Referring to National conferences, Gianluigi (InfoTech) reminds the commitment of the Universities of taking part in a Dissemination Event for presenting the IE3 project. The Universities are free to define the format, the structure and the target groups they want to reach.

WP9: Final Dissemination Conference (expected in late Jan 2023); possible format, draft agenda, possible contents, possible invitation, speakers

Giorgio (PoliBa) gives a presentation [here](#). The conference should take place in late January – the first week of February in Bari. The conference will be organized as a blended event. The proposed dates are Thursdays or Fridays.

Program:

- Morning session: invited EU representatives, Academics, AIM members, companies

- Afternoon session: workshops on the IE3 results (gap analysis, BoK, e-learning experience, new European Master in IE&M)

Suggestions emerged during the discussion:

- The number of workshops to be held in parallel depends on the number of participants
- We would organize open discussion sessions/round tables with one expert and a moderator.
- We should think about what people would like to hear instead of just what we can tell them

DAY2

Friday 17.06.2022

Timing	Activity	Partner responsible
09:30 – 09:40	Presentation of the agenda	POLIBA
09:40 – 10:40	WP5: Presentation of the proposal for a renewed MSc programme in IE&M and discussion (15 min for each University partner)	University partners
11:00 – 12:30 (with coffee break in the room)	WP5: Proposal of a renewed MSc programme in IE&M: open discussion	LIU
12:30 – 12:45	WP5: Presentation of the action plan for the finalization of the MSc programme (R5.1) and discussion	LIU
12:45 – 13:00	WP8: Evaluation: Planning the evaluation of the R5.1 IE3 Master's Programme based on the BoK guidelines	UPM
13:00 – 13:10	Recap of the project work-plan (task and deadlines) and closure of the meeting	UPM and POLIBA
13:10	Lunch at Staff cafeteria	

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WP5: Presentation of the proposal of a renewed MSc programme in IE&M and discussion

Janerik introduces the morning session dedicated to develop a renewed MSc programme. He reminds the key points of the workplan LiU prepared for reaching the objective.

1. Each university partner, in collaboration with the industry partners, design a renewed MSc programme in IE&M for tomorrow based on what has been developed so far in the project and related to local experiences and identified needs in the national industry.
2. The programme must be a blended learning programme with both traditional learning and teaching activities and newly developed e-learning modules.
3. The first academic year is an undivided period without possible specializations
4. The third semester (second year) can be a continuation of the format from the first year or be split into two or more content directions.
5. The Master's thesis is equal to 30 ECTS and must be scheduled for the fourth semester.
6. Illustrate your programme proposal with a course diagram
7. For each course module you must indicate: Full name, number of ECTS (normally 4-6 per module), and a short presentation of the content of the module (not a complete module presentation at this stage).
8. If you want to divide the third semester into specialisation branches explain why.
9. Sort out the entry requirements for your proposed programme
10. Specify which course modules are brand new, revised existing and existing modules respectively
11. Deadline 7 June. Send your proposals to Janerik Lundquist at LiU.
12. The proposals will be presented during the June coordination meeting.
13. A special working seminar to finalise the new programme is proposed to be arranged in October 2022.

All the Universities present the proposals they prepared. The full proposals are at the following links: [PoliBA](#), UPM, [PUT](#), [LiU](#). The Universities proposed 4 different approaches.

Janerik (LiU) suggests, for simplicity, to structure the MSc in course modules of 6 ECTS.

Giorgio (PoliBa) says it is crucial to create a program that is not too specialized in just one area (e.g. operations management).

Janerik (LiU) suggests removing any local constraints to design the course freely. Just after, we could think about how to make our proposal realistic according to the limits we know we have.

Joaquin proposes to define common content blocks/areas that could be easily adapted to each local environment. This activity is also linked to the Handbook. The starting step should be the BoK, and the second step is the work we are doing for creating the MSc in IE&M. He also agrees that creating a too detailed framework would limit the usability of our future work.

Agnieszka (PUT) proposes another way of thinking: we could start with designing the course aim and then the learners' expected learning outcomes that we think should be reached. Using such a bottom-up approach, we will also be able to define, in a later stage, the possible "learning blocks/area" to be addressed with a specific training course (to be adapted to each national context).

Joaquin agrees with the proposal; he suggests that the Handbook could also explain how to assess if the future programs fit with the needs of the learners.

Janerik agrees with the overall proposal. He also reminds the partners that we should focus on the future skills needs already explored through the detailed training need analysis performed in WP2, and include the industry partners in the program design, to avoid creating a program that only fits with the academic perspective. With this project, we have the chance to set the mark for the future by designing what we think is the best for Europe.

Also, the company representatives agree with this picture: for Carlos (Arruti) it is important to create a common program, valuable at the EU level, with common learning outcomes to be adapted to the courses and needs existing in each country. Also, for Jans (Implema) the focus on learning outcomes is important, and this is testified by the fact that, when recruiting, the companies are not interested in the courses HEI students took but in what the students can do. He also reminds the importance of soft skills, such as teamwork, problem-solving, etc. that should be trained at University.

At the end of the discussion, the partners agree that:

- The handbook should present the collective aim for a European MSc program in IE&M. The partners should focus on the skills that industry will need 8 years from now.
- **The partnership should decide collectively the aim and, just after having agreed on it, define the Intended Learning Outcomes (ILOs) and the blocks of knowledge to be included in the course, without referring to any specific name or title of the courses that should lead to achieving the skills needed.**
- Just for the clarity, the Handbook should contain some possible examples of courses that could contribute to reaching the proposed ILOs.
- When designing the knowledge cluster we should refer to the clusters already defined in the WP1 and BoK.

Workplan:

- **First step:** LiU and Bosch to define the programme aim. Valuedo to organize the meeting. Deadline: LiU will inform Valuedo about the deadline for preparing the course aim.
- **Second step:** ValueDo to open a Miro Board to allow each partner to propose the knowledge blocks/clusters and provide an explanation for the choice made. The first partner to include information is PUT, as responsible for WP1; all the partners will contribute after PUT. Deadline: This task will start in August and will be concluded by 16.09.2022.
- **Third step:** The partners will analyze the proposed knowledge blocks/clusters and select the most relevant ones during a virtual project meeting. Valuedo to prepare the doodle for the meeting.
- **Fourth step:** all the partners, organized in a team of 2 members each (1 University + 1 company: the partners are invited to include [here](#) the two members that will work on this task.), will go through the selected knowledge blocks/clusters and will propose the ILOs. Deadline: 07.10.2022

- **Fifth step:** during the Stockholm meeting the partners will revise collective the ILOs and validate them. Proposals for the meeting in Stockholm at IMPLEMA venue: 13-14.10.2022 or 25-26.10.2022 or 26-27.10.2022 or 27-28.10.2022. Valuedo will prepare a doodle.