VALS PROJECT
FINAL EXTERNAL EVALUATION REPORT

1. INTRODUCTION

The aim of the VALS project was to establish sustainable methods and processes for virtual placements, which would bring together higher education and companies to collaborate on resolving authentic business problems. The key intervention of the project focused on aligning and addressing the disparate needs of the stakeholders involved. These included:

1. Software companies engaged in open source and OSS foundations that needed to solicit contributions actively from new contributors, including students, in order to remain viable and compete with closed-source offerings.

2. Universities, who wanted to offer authentic teaching and assessment opportunities using current industry best practices, but were finding they had insufficient engagement with the software industry.

3. Students, who wanted to obtain relevant experience and to make contacts in the industry that they could use to help start their career after graduation, but had found the institution where they were studying could not provide this.

4. Employers seeking graduates with real-world programming experience and related soft skills such as communicating in distributed project teams and working with contemporary development tools and practices.

To address these needs the VALS project aimed to create the Semester of Code, bringing together Academic Supervisors from Higher Education (HE), mentors who were problem owners at enterprises and foundations, and students. Preparation for the Semester of Code, and integration of outcomes into the academic process, meant that each iteration was planned to take place over a full academic year.

The objectives of the project were to:

1. Create an OSS Education Process methodology and guidelines, articulating the collaboration, and providing guidance on student engagement with authentic business projects.

2. Generate awareness in industry and education of the opportunities presented by collaboration with student software developers.

3. Establish an online system to manage virtual placements for student developers to work on real-world business problems, with appropriate mentoring.

4. Run a pilot programme to demonstrate the effectiveness of this approach, open to non-partners.

5. Evaluate the results of the pilot programme.

6. Establish long-term alliances between universities and companies in Open Source development.

7. Initiate mainstreaming of the project approach.

These objectives were to be addressed over several phases:

Phase 1 (M1 – M5): Articulation of the pedagogic model for the Semester of Code, with buy-in from both academic and commercial partners. A project intranet and website, Quality Assurance Plan, Mainstreaming Plan and Project Handbook were to be prepared.

Phase 2 (M6–M9): Preparation for academic partners to deliver courses incorporating the model. Dissemination and evangelism beyond the consortium.

Phase 3 (M10 – M20): Pilot and evaluate the Semester of Code programme with commercial associate partners providing coding project opportunities, and academic partners supporting students participating in the programme. Continued evangelism, and monitoring of the participation of non-partners. A

plan for the continuation of the Semester of Code and its associated resources and systems was to be produced, in collaboration with the associate partners.

Phase 4 (M20 – M24): Consolidation and mainstreaming. Evaluation report published. Practice in HE partners adapted to incorporate the model without project support.

The work packages involved were as follows:

WP1 Management

WP2 Open Innovation Process

WP3 Virtual Placement System

WP4 Business Academic Partnerships

WP5 Pilot Programme

WP6 Quality Assurance

WP7 Dissemination

WP8 Mainstreaming

2. THE PROCESS OF EVALUATION

The external evaluation framework in the VALS project was designed to support the project activities, and provide opportunities for improvement both of project processes and the products created. This has been done throughout the course of the project is done by observing and interpreting the different actions carried out by the consortium and providing feedback at appropriate moments within the project cycle, in particular as the process evolved and results started to be available. The overall objective has been to support the consortium both in the achievement of the specific project objectives and in its compliance with the funding requirements. This involved attention both to the management perspective - the extent to which the administration, communication, collaboration and other aspects (such as, for example, compliance with deadlines) were efficient and effective – and to the development perspective – the extent to which the different activities were successful in achieving the objectives, with especial emphasis

on the impact they achieved and the use of the outcomes. The validation of the processes and products developed and their valorization (dissemination and exploitation) have also been considered.

Throughout the project the external evaluator has been continuously monitoring the activity of the project and providing guidance and orientation through ad hoc informal recommendations and feedback according to the emerging needs of the consortium, especially to the coordinating partner. The work has covered the full range of activity across the different work packages. At the end of the project the evaluation activity intensified through a data collection process involving the use of questionnaires, augmented by interviews with selected partners.

The scope of external evaluation has furthermore been amplified in the final stages of the project, during the extension period granted by the European Commission. During this phase, the evaluator has provided ongoing input and analysis, as well as facilitating the debate, in the process of exploration of the different reasons for the outcomes of the project. This has been a complex process, both from the point of view of the analysis undertaken which has gone beyond the usual scope of a project of this nature, and form the point of view of the involvement of the evaluator which also necessarily been more extensive than usual due to the circumstances.

The objective of the evaluation was to derive a panoramic view of the current situation of the project, both with a view to evaluating the work done and identifying its strengths and weaknesses, and in order to develop a series of recommendations for the future that might help to ensure the ultimate success of the VALS approach to virtual placements. This report sets out the findings of the data collection process, and the process of continuous monitoring of the project throughout the year and provides a series of recommendations with respect to the future work of the project.

The principal aim of this document can therefore be understood as an overview of the outcomes of the project and a reflection on the future course to take. It contains sections relating to the final outcomes of the project, the management of the project, the implementation work, and the validation work done in the pilots, as well as the work done on valorisation. Lastly there is a conclusions section.

3. THE FINAL OUTCOMES OF THE VALS PROJECT

Evaluating the outcomes of the VALS project poses certain challenges. Principally because there is a disconnect between the success of the project in terms of its execution and the success of the project in terms of its stated objectives. From the management perspective, the VALS project was very successful. The different work packages were executed on time and according to the descriptions in the original proposal, albeit with some minor but appropriate deviations that were the product of circumstances and demonstrate a good capacity to adapt to emerging situations, such as the decision to develop a virtual placement system for the project rather than use Google's Melange (this proved to be a highly appropriate decision since Google has recently discontinued work on this software). The consortium have done everything that they said they would do in the proposal. They have developed an open education innovation model, working well to overcome differences between educational systems, and created a virtual placement system and developed the business/academic links that are central to the European Commission Knowledge Alliance model. These links between industry companies and academic institutions, can be seen in the number of companies involved, which posted a large number of projects into the virtual placement system and the involvement of academic institutions that wished to participate in the Semester of Code pilot (including even some from outside the consortium). The pilots have been carried out appropriately and work on validation and valorisation was duly carried out. From this perspective the project is a success.

However, as the first pilot progressed it became apparent that the response from students was not that which was expected. Though, as mentioned above, a considerable number of projects were posted in the virtual placement system, the number of students signing up to do these projects was quite limited. Though numbers varied from institution to institution the response rate was low overall. This was surprising since initial responses from students and institutions to the idea of VALS had been fairly positive and extensive dissemination had been carried out. The consortium responded appropriately to this setback, identifying potential issues that could be causing this low response rate. These varied from country to country, and included inappropriate timing for the projects in relation to coursework, and lack of time to prepare. These aspects were appropriately

addressed by introducing more flexibility in the second pilot but other aspects, such as limited commitment and hence communication by teachers in Italy due to the lack of economic remuneration, and concerns about communicating in English, concerns about the difficulty of the projects, or about distance work proved much more intractable. In the second pilot, the response rate improved a little, but remained much lower than expected, although those who did participate were positive about the experience. The VALS Approach is clearly potentially useful, but there appear to be some systemic obstacles to successful implementation. The consortium requested an extension to explore in more depth the reasons for this situation and as a result produced the extra deliverable: "*Lessons learned from the VALS Project*". This constitutes a useful response to the situation and provides useful outputs and reflections on the virtual placements approach and points to ways forward. In this sense, although the project has not achieved the numerical objectives affected in terms of the number of placements done it has produced useful insights about the process that will be useful for others who may be contemplating similar actions and for the consortium itself with proposes to continue with the work adapting to the realities that has encountered.

4. MANAGEMENT WORK

PROJECT MANAGEMENT (WP1)

In general, the management of the project was of good quality, and helped to ensure a high degree of engagement and commitment from partners. In the final evaluation interviews conducted at the end of the project, the partners expressed a high degree of satisfaction with the management, both in terms of the processes and the different tools that were used. These were viewed as appropriate for the purpose, they were lightweight but effective providing the right amount of functionality to support collaboration in the project and the execution of project tasks. The partners also expressed positive views with regard to the coordinating team which they saw as generally accessible and responsive to the emerging needs of the project and partners at different times, particularly when there were staff changes at different partners (this was an issue that occurred quite frequently during the project with the majority of partners undergoing

changes and in some cases this took place more than once). The Moodle system used for project communications worked well and was well organized. Resource sharing also functioned well; and the forums permitted useful discussions among partners on project activities, and management of financial and other activities, etc.

COMMUNICATION AND COLLABORATION (WP1)

The atmosphere within the project was generally highly positive throughout. The partners worked well together and when requests were made they were usually responded to quickly and efficiently, with a good degree of communication of needs. Though there were, as in any transnational project of this kind, some cultural differences, both across countries and sectors, the partners were aware of the potential for difficulties and exhibited a good degree of understanding so that minor difficulties did not escalate into conflicts at any point. Collaboration ran smoothly, and though discussions in F2F project meetings and online forums were sometimes passionate this was never allowed to affect relations between the partners and any issues were easily resolved. This was especially notable since most partners had some turnover of personnel during the project, and this can often complicate relations within a consortium due to the need to construct new relationships with new staff entering the project. This was not however the case.

Communication in all directions, after some initial issues, was also very good; between coordinators and partners, between partners, and outside the consortium to the different target groups involved. The consortium was successful in attracting a series of universities external to the consortium and the success reaching companies has already been mentioned. Perhaps the only area in which communication was at one point improvable was with regard to students in Italy during the first pilot, where this was cited by some respondents as a reason why they hadn't participated. This may partly be due to the resistance of some staff to the project since they were not being remunerated for it.

F2F project meetings were constructive and collectively and efficiently addressed challenges and pending issues. They were generally effective, with a friendly and productive atmosphere. However, at some times the discussions could have been more carefully managed to optimise use of time. This was also true of online meetings. One aspect the partners did draw attention to throughout was the need for more

interaction. Though the different spaces functioned appropriately partners felt that there could have been more contact and particularly that more F2F meetings would have been useful since they felt that direct interaction of this kind greatly facilitated the work.

WP1 PROJECT MANAGEMENT
DELIVERABLES
D1.1 VALS Collaborative platform. This deliverable was completed as planned. **D1.2 VALS Handbook.** This deliverable was completed as planned. **D1.3 Interim report.** This deliverable was completed according to plan. **D1.4 Final report.** This deliverable is in preparation.
COMMENTS The deliverables involved in this WP have already been completed. The work package was completed on time and reported on in the Progress Report.

QUALITY ASSURANCE (WP6)

The quality assurance work package progressed according to plan. The different internal quality processes were implemented at each meeting and the external evaluation process, covered in this document also progressed appropriately and according to plan.

WP6 QUALITY ASSURANCE
DELIVERABLES
D6.1 Quality Assurance Plan. This deliverable was completed according to plan. **D6.2 Interim Quality Assurance report.** This deliverable was completed according to plan. **D6.3 Final Quality Assurance report.** This deliverable is due in M24.

COMMENTS

The first two deliverables involved in this WP were successfully completed. The last is in preparation.

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5. DEVELOPMENT WORK

As previously commented, the development work in the project progressed according to schedule. Partners were happy with the work. The three work packages involved are covered separately below.

OPEN EDUCATION INNOVATION PROCESS (WP2)

The first work of the development phase took place in WP2. This involved the definition of the VALS Open Education Innovation Process model. The process was carried out on schedule taking into consideration all stakeholders and respecting their needs and processes, as well as the individual timelines (especially of academic institutions) as far as possible.

The work done in this work package represented the baseline for the whole project and was approved by all the partners (all modifications were done by consensus). It is of good quality.

WP2 OPEN EDUCATION INNOVATION PROCESS

DELIVERABLES

D2.1 Open Innovation Process Model. This deliverable was completed according to plan.

D2.2 Report on Course and Supervisor Alignment. This deliverable was completed according to plan.

D2.3 Revised Open Innovation Process Model. This deliverable was completed according to plan.

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COMMENTS

The deliverables were all completed according to plan.

VIRTUAL PLACEMENT SYSTEM (WP3)

The development of the Virtual Placement System suffered some initial setbacks. The original intention was to use the existing Melange software to manage project submissions and connecting students with mentors. It had been assumed to be uncomplicated since the software was used each year by Google Summer of Code on which the Semester of Code programme was modelled to a large degree. However, it transpired that the software was very unstable and no-one outside Google had really tried using it before. As a result, the team had problems getting it to work, and even direct contact with the Google developers didn't lead to a solution. In the end the team had to create a new system based on Drupal to manage the process. This caused a small delay in the launch of the Virtual Placement System, since some of the features appeared a few days later than expected. The decision was later proved to be a good one since Google discontinued work on Melange.

The VPS platform is attractive and easy to navigate. It offers industry companies (mentors), academics and students a simple way to register and then use the platforms under their individual roles; companies post projects, academics review projects to propose to students and students post proposals to be evaluated by industry mentors. Overall it enables collaboration and provides the main bridge for establishing Virtual Placements.

WP3 VIRTUAL PLACEMENT SYSTEM

DELIVERABLES

D3.1 The VALS Virtual Placement System for Pilots. Though the process was a little delayed by technical problems the system was completed on schedule and the deliverable produced according to plan.

D3.2 The Revised VALS Virtual Placement System. This deliverable was completed according to plan.

COMMENTS

The deliverables were all completed according to plan.

BUSINESS ACADEMIC PARTNERSHIPS (WP4)

The focus of this work package was the engagement of industry. The work was very successful and the partners involved proved very skilled at activating their networks of contacts. There was a very positive response to the calls for participation and the industry contact work carried out by the VALS consortium industry partners. Over 60 organisations signed up to the programme. Furthermore, a large number of projects, over 230, were posted on the VPS platform. Another factor of success is the alignment of most university partners, who contacted and physically presented the VALS project and the Semester of Code pilot, which led to the participation of academic institutions that are not partners of the VALS consortium. The remaining work in this work package supported the industrial-academic relationships during the pilot programme, and fine-tuned the modus operandi for D4.2 and D4.3.

WP4 BUSINESS ACADEMIC PARTNERSHIPS

DELIVERABLES

D4.1 Report on industrial engagement with the Semester of Code. This report was produced in M12, as planned.

D4.2 Guidance on developing industrial engagement with the Semester of Code. The deliverable was completed according to plan.

D4.3 Report on open innovation activities. The deliverable was completed according to plan.

COMMENTS

The deliverables in this work package were all completed on schedule according to the plan set out in the proposal.

6. VALIDATION WORK

The validation phase of the project was represented by the pilot programme. This was the point where the approach would be tested in real contexts. This work was carried out in WP5, and proved to be the most challenging part of the project.

PILOT PROGRAMME (WP5)

Despite extensive success with regard to the commitment of academic and business participants, as has been commented previously the uptake on the part of students was low. A range of reasons were identified for this, through interviews with the students and the other stakeholders in the project. These are described in detail in the deliverables relating to this WP, and the extra deliverable "Lessons learned in the VALS project".

Between the first and second pilot the consortium reacted appropriately to the adverse circumstances and adapted the pilots to address a series of issues. The first of these involved the timing. The original timeline proposed for the Semester of Code pilot did not meet the calendar of all academic institutions and this substantially complicated organisation. A number of students interviewed pointed out that this aspect had been an obstacle to their participation. In the second pilot this issue was resolved to the best degree possible by planning the pilot phases in such a way that academic institutions have at least some period in each phase that fits their calendar.

Another issue was that despite the fact that many could see the value of a proposal of this kind, the fact that it constituted a substantial innovation in practice clearly affected the degree of acceptance. It was hard to fit the placements into the study courses, because they were new and untried. Furthermore, current study courses in universities are already under pressure to fit too much into too short a time. This aspect was addressed during the project with additional dissemination and the organisation of activities to enrol students to the Semester of Code pilot, but as has been mentioned these issues are in fact systemic, and to a large extent beyond the reach of a project of this kind. A key issue is that in the current climate in universities, students are generally unlikely to participate extensively in activities that are not for credit. To solve this for the future the consortium is exploring the idea of linking the work done by a student on a project with an equivalent number of ECTS, which will count towards his/her degree.

The consortium did much to address the issues making useful changes to the approach in the second pilot. However, the central challenge the project faced in this work package, which was very intractable, was the attitude of students regarding the value of the projects which could be characterised in many cases as negative. A range of reasons were given, such as the difficulty of participating in English, the difficulty of the projects themselves or the difficulty of distance work. It is perhaps germane to indicate that those that did participate saw none of these issues as important, but attitudes are the hardest thing to change, and though the consortium made efforts to address the issue through revised promotion strategies and by looking for ways to integrate the pilots into their studies, as part of module assignments or as projects for which students receive ECTS the problem was not easily solveable. It is perhaps understandable that in a climate of uncertainty with regard to employment, students may be cautious about new activities that may use up their time without clear benefit to them. Though the VALS project provided important ways of improving their employability, the prevalent attitude was that what mattered was studies and marks and that employability could be addressed later. The consortium aims to work further to address this perception though it is recognizably systemic. This perception originates in the universities themselves.

The extra deliverable, "*Lessons learned in the VALS project*", mentioned elsewhere in this document, provides more extensive discussion of the outcomes and the different

reasons for the low uptake on the part of students. This deliverable constitutes one of the most important outputs of the project, since it provides important reflections on the approach and on the university context, particularly in relation to business. The lessons learned are relevant for all the stakeholders involved, since they raise important issues relating to university curricula, the scope and remit of university learning, the expectations of university students about their university education, the societal function of universities and the notion of the Knowledge Alliance. It is a useful document for policy makers and university administrators alike.

The consortium adapted to the situation by organising two cycles (two timelines) for delivering projects (one in October, and another in January) instead of only one cycle (in October) as described in the proposal. As a consequence, some deliverables were very slightly delayed. The consortium however recovered the time and any other deviations were due to legitimate changes in timetables in order to adapt the pilots more appropriately to the emerging needs of the project.

WP5 PILOT PROGRAMME
DELIVERABLES
D5.1 Report on virtual placements organised for VALS pilots. This deliverable was slightly delayed, but in the end delivered as described. **D5.2 Evaluation plan.** This deliverable was slightly delayed, but in the end delivered as described. **D5.3 Report on virtual placements pilots and evaluation of their results.** This deliverable was delivered as planned.
COMMENTS
The deliverables involved in this WP were completed as planned.

7. VALORISATION WORK

The project to a large extent depended on valorization, as its success was predicated on large numbers of organizations and individuals getting involved. The consortium addressed the challenge well, achieving appropriate reach, and except for the issues in relation to student uptake mentioned above was largely successful in promoting adoption of the approach, as is evidenced by the number of organisations of different kinds taking part in the pilots.

DISSEMINATION (WP7)

A good range of dissemination and communication actions was carried out, and a successful reach was achieved. A considerable number of organizations participated in the Semester of Code, and a key aspect was the fluid communication with academic institutions and with industry companies, partly through the work of WP4. The work done so far in this area was very valuable and it intensified appropriately in the second half of the project is good, but it will need to intensify further in the second year.

WP7 DISSEMINATION
DELIVERABLES
D7.1 VALS Project Logo and output themes. This deliverable was produced as planned. **D7.2 IT Dissemination tools.** This deliverable was produced as planned. **D7.3 Dissemination Plan.** This deliverable was produced as planned. **D7.4 Dissemination report.** This deliverable is currently in preparation.
COMMENTS The deliverables involved in this WP were successfully completed.

MAINSTREAMING (WP8)

The work on mainstreaming was largely scheduled for the second year of the project, but underwent some delay, since the low uptake meant that it was hard to work on this aspect since the results were not positive enough to engage in this kind of activity.

However once the second pilot was under way, attention was given to the ways in which the VALS approach could be taken forward. Though this left little room for manoeuvre the extension granted by the Commission allowed and important period in which this aspect could be focused on, and the consortium was able to make good use of the network of contacts developed over the first year of the project. The two main universities involved have a strong commitment to further developing and supporting the approach and there has been interest shown in this by the universities that had come in to the project from outside. These universities (USAL and Cyprus) aim to continue to implement the approach, focusing on integrating it further into the study courses in order to ensure greater commitment on the part of the students. This will be done under the aegis of an Association which has been set up and is currently in the process of inscription in the Spanish Ministry concerned. The Association has been created in order to provide a formal structure to guarantee the future sustainability of the VALS approach. Despite the unexpected outcomes the consortium has identified valuable insights and developed a useful approach to virtual placements, and this is what will be exploited as the group moves into the post-funding period. In this sense the mainstreaming work done can be said to be appropriate and coherent with the outcomes of the project.

WP8 MAINSTREAMING
DELIVERABLES
D8.1 Semester of Code guide for universities. At the time of writing this deliverable was still in preparation.   **D8.2 Semester of Code guide for businesses.** At the time of writing this deliverable was still in preparation.   **D8.3 VALS book proposal.** At the time of writing this deliverable was still in preparation.   **D8.4 Mainstreaming plan.** At the time of writing this deliverable was still in preparation.
COMMENTS
The deliverables involved in this WP at the time of writing were still in preparation.

8. CONCLUSIONS

The VALS project has provided valuable insights in relation to the concept of the virtual placement and the ways in which relationships between universities and the world of the work place can play out. The "*Lessons learned in the VALS project*" is a valuable output which will be relevant for a wide range of stakeholders, from academics and university administrators to educational policy makers at national and supranational level, as well as to employers. The results of the project point to an important disconnect between the oft declared objective of efficacy in preparing students for the work place and the ways in which this objective is addressed, which actually function to militate against realistic preparation for the world of work. These are useful insights revealed initially by the low student response rate. It would be valuable to undertake further research to explore this important issue.

However, despite these issues, the virtual placements approach developed in VALS has excellent potential and this is reflected in the positive responses by different stakeholder groups and the experience of those students that did complete projects. The conclusion drawn from the reflection and research undertaken by the consortium into the reasons for the low response rate is that to increase participation and achieve success VALS needs to be more completely integrated into curricular activity at the universities involved. Though achieving this will take more time than is possible within the scope of a project of this kind, two of the universities in the consortium have already initiated this process and others are preparing to do so. Other partners have also expressed interest in carrying the work forward, so that despite a rocky start the VALS Approach has a positive future ahead. The approach addresses the fact that many students in higher education complete their degrees with no experience working in the industry that they have studied for. This affects employability and employers want graduates to have real-world experience. While some degrees include a work placement as one year of the course, these are limited by the students' location and ability to travel, as well as the physical space available to the employer. As an initiative to promote virtual work placements, allowing students studying a degree to work on real-world problems and get experience of working in industry, VALS represents a novel solution that is likely to be of value in the HE sector in the future.