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D 4.4.2

Exploratorium Integrated report

SEVENTH FRAMEWORK PROGRAMME

HoTEL Holistic Approach to Technology Enhanced Learning

Innovators – Opinions – Perspectives

WP4 | D 4.4.2

HoTEL WP4 –Exploratorium Integrated Report

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Overall introduction to the integrated report

This document assembles all the carried out activities by the 3 HOTEL Exploratorium Learning Labs: UNIR Higher Education, ELIG- Learning@Work, and EFQUEL- Informal Learning and Professional Networks, following the Methodological Framework designed (D4.4.1).

Every Exploratorium Lab has adapted this general developed guidelines and methodology to its specific market, needs, users, and any other specific environment feature, as long as it was useful to support innovators in an effective way for the faster and successful adoption of their innovation to the context, and providing therefore a significant feedback to the Innovation Support Model (ISM), and the general process itself.

Exploratoria in HOTEL, are controlled multi-stakeholder user centred settings, where the different innovations have been implemented, through the ISM application in the different contexts, in order to accelerate mainstreaming of innovation into learning, in an iterative way.

The present structured as follows:

- **UNIR Lab report**. With a clear explanation about the bottom-line and rationale (which complements deliverable D4.4.1), the selected cases, the phases along the selection.
- **ELIG Lab report**. Like with the previous Lab, and with a special stress on the live workshops with innovators, who provided explicit insights about the process.
- **EFQUEL Lab report**. Likewise, and with a special stress about the particular market on professional networks, and the difficulty to gather valid cases
- **Findings, lessons learnt, and input to ISM**. **A cross-lab section with reflections out of the support model, the process, the experience of the thee labs with end-users, the highly valuable contribution from the innovators and the experts, and the meaningful input to the Innovation Support Model (ISM)**
- **Annexes**. [1]Following the same order (UNIR's, ELIG's, and EFQUEL's), this section shows every single document used to elicit the previous reports, with specific questions, answers and contributions from end-users, experts, innovators and

[1] All Annexes are being included in a separate file (D4.4.2 Annexes) for the sake of clarity of the web publication of this report.

hosts. As aforementioned, every Lab leader was entitled to adapt the general forms and templates to the specific context and Lab casuistic, although they keep a general accordance to the HOTEL methodology, as supervised throughout the Project by the Exploratorium Labs Coordinator. Therefore, in some cases, some forms are merged or transformed into live, focus groups (and duly noted).

The process became a complex engagement between a valid project methodology and the real application to every Lab and, inside every Lab, to every selected case. Periodic Coordination Sessions between the Lab leaders were held, in order to assure the maintenance of a common vision and approach to the ISM. The permanent dialogue amongst end-users, experts, reviewers, project partners, Lab leaders, policy makers, decision makers, and, of course, the innovators, became the best way to refine and improve the ISM and the project vision. This Exploratorium Integrated Report shows all this work, to the very detail, and with a combined section for **Findings, lessons learnt, and input to the Innovation Support Model** throughout the process.

WP4 | D 4.4.2 UNIR

HoTEL WP4 –UNIR Lab 1, on Higher Education

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1. Objective, description and context

UNIR Learning Exploratorium Lab in Higher Education (HE Lab) is designed around the concept of Information and Communication Technologies innovations, applied for the enhancement of learning and teaching processes and practices in a Higher Education university environment. UNIR HE Lab provides a unique setting for the design, implementation and exploitation of innovations. The master line of UNIR is to encourage users to interact, collaborate, contribute with others, so that they develop competences and achieve valuable knowledge thanks to a fine-tuned methodology for learning and teaching. UNIR HE gives the chance to innovate with real users in a university setting, providing a real pilot safe environment

Furthermore, the innovations to be implemented will provide a significant improvement on one or many stakeholders with a special focus on ICT assets, supporting methodologies and strategies for better learning and teaching, and they work with real users who will evaluate the innovators in a real context.

The HE Lab is focused on the entire University community, involving students, researchers, academic team, and administrative staff. The innovations selected through HoTEL's Open Call for innovators to be piloted in this lab will provide a significant improvement on one or many of these stakeholders, with a special focus on Information and Communication Technology assets which support methodologies and strategies for better learning and teaching. UNIR Higher Education Exploratorium Lab will work with real users who will test the innovations in a real context, exploring how their effective adoption can be assured and supported in this context, through the "Innovation Support Model" application.

2. Methodological process

The lab worked according to the following logic:

1. **A discovery phase**: An innovation is discovered and described in a structure format so that different innovations can be compared with each other.
2. **An analysis phase**: The innovation will be analysed from a full multi-stakeholder view on different concepts, in order to arrive to be able to classify the initial state of this innovation following the ISM. Categories of analysis will be a) sectors/ context

of innovation, b) impact of innovation, c) stakeholders involved in innovation, d) process of development of innovation, e) serendipitous elements in innovation, f) unique nature of innovation, g) innovation elements in innovation, et cetera.

3. **A transfer and support phase**: This phase aims to see how an innovation can be either transferred to another context or how an innovation can be further developed within the same context. A number of discussions, 1-1 meetings with innovators, and live-handson sessions with end-users and experts were carried out to facilitate and apply that support.

In principle, the first approach considered 10 innovations to be selected by the Lab: 3, to be practically implemented; and 7, theoretically assessed, testing through them the ISM The objective of the practical implementation of three innovations within the Learning Exploratorium Labs on Learning in Higher Education was to develop these innovations in real learning scenarios, so as to test these innovations in practice and find a way to accelerate their innovation cycles. The results of this implementation and support process will serve as conclusions to refine the Innovation Support Model (ISM).

In addition, the objective of the theoretical assessment of seven innovations within the Learning Exploratorium Labs on Learning in Higher Education was to evaluate theoretically these innovations, so as to develop a series of recommendations for improvement and find a way to accelerate the innovation cycle of these innovations. This assessment and support process will feed the ISM, as well.

3. Theoretical approach

UNIR HE Lab was conceptually designed based on the pedagogical and technical review in WP1 and WP2, and their respective findings. In particular, and out of those outcomes, the Lab adopted the following bottom-line criteria:

- **Learning paradigm**. The Lab selected a) Behaviourism, since we take user behaviour and user interaction to support the educational methodology, so that we can feedback the user after further analysis; and b) Social constructivism, since the user becomes the key factor for his/her own learning, while making social interaction and team work in the classroom and outside
- **Learning theory**. The Lab selected a) Adaptation theories, since we provide personalised support to students and teachers to improve their performance; b)

Self-regulated, since the user takes over the final decision about his/her learning itinerary and the activities to do; and c) Social exchange, since we take trust, reputation and interaction, as a key element to foster social activity in informal contexts, which will lead to better learning and teaching

- **Learning practice.** The Lab selected a) Personal Learning Environment (PLE), since the Virtual Campus concentrates the major activity of this online university population; and b) Open Educational Resources (OER), since we make use of as much information and knowledge over the Internet, integrated into formal units of learning
- **Analytical framework**. The Lab selected Learner and teacher centred, since the users are the real motto of the university and the very basic academic, research, and support unit.
- **Areas of Learning**. Given that we combine formal and non-formal methodologies and sub-settings to support online learning in an open, and multi-input setting our Lab covers Formal-Higher Education, and Non-formal learning
- **Technical approach**. The Lab selected the following types of innovative technology where the innovators where implemented: Cloud computing, Collaboration environments, Learning Analytics, and Virtual worlds

4. Implementation framework

The selected implementation framework was the **School of Engineering at UNIR**. To be specific, the Master of Science in eLearning & Social Networks, with 60 master students; 5 lecturers; 3 management academic staff; 2 administrative staff

The School of Engineering at UNIR was founded in 2009. Over 1.000 students, 100 lecturers and 12 academic programmes support the School. The Bachelor of Science in Computer Science started in 2013; the BSc in Industrial Management Engineering will start in October 2014. The other academic offer is focused on graduate and postgraduate programmes, with majors in Security, Accessibility, Certification, Web engineering, Project management, and others. Furthermore, the Master of Science in eLearning & Social Networks is currently deploying the 8th edition, with students from across Spain and Latam. It is lectured in Spanish, with relevant information in English. It is focused on practical, applied Technology-enhanced Learning, with a major research (http://www.unir.net/master-online-e-

learning.aspx).

The selected innovations for implementation are embedded into this master degree, with a potential extension to other graduate programmes. The master degree carries out the integration of the various innovations along the learning path. Although other degrees were potentially targeted, they were not required, and then incorporated, to complement the evaluation and the innovation support model of the HOTEL project.

As part of the previous analysis for the implementation, **the Higher Education Exploratorium Lab identified a number of potential Strengths, Weaknesses, Opportunities, and Threats**, which are expressed in the following **SWOT table**:

Strength	Weaknesses
<u>Adapted overall context</u>: • Online university enabling the experimental evaluation of innovations • Room for a large-scale deployment of innovations • Expertise in TEL • Great interest in and emphasis on TEL research activities and related projects • Willingness to innovate and develop cutting-edge TEL tools • International dimension of UNIR Research • Diversity of educational activities <u>Stakeholders</u>: • Size of targeted stakeholders to enable accurate implementation/testing of the innovations • Diversity of involved stakeholders <u>Technical approach</u>:	• Lack of recognition due to many characteristics as young, online, regionally-based, private university • Lack of multilingual culture and notably of English speaking staff within the University

• Access to a web based learning environment that enables the students' data collection • Access to a large TEL related organisations network throughout Europe, Latin America and in other countries	
Opportunities	**Threats**
• ICT in Learning currently exponentially increasing market • Future of ICT that should be promising	• Depending on the HoTEL whole project deadlines • Potential disappointment of innovators expecting another type of support (more in depth, financial, implementation vs. theoretical assessment)

In addition, the following organisations contributed to the development of the Labs:

- UNIR Research (Research department of UNIR, http://research.unir.net)
- TELSOCK (Research group for eLearning & Social Networks at UNIR)
- TELspain (Spanish association for eLearning, http://www.telspain.es)
- SIIE 2014 (Internacional Congress for Educational Computer Science)

by providing expertise on eLearning, datasets required for the testing/implementation of the Labs (market study), a network of potentially interested members, and support for the dissemination of the results.

5. Stakeholders involved

The stakeholders identified for the UNIR HE Lab include four broad categories of participants to be involved in the running of the Learning Exploratorium Labs, according to the general description of stakeholders along the whole project:

1. "**TEL innovators**" of any background who will propose "innovations" (ideas, research results, teaching practices) that they wish to test through the HoTEL Labs, aiming at getting support exploitation. These will be gathered through the Open

Call for Innovators (under the MENON responsibility), by inviting the VISIR grassroots innovators (by MENON), by inviting the experts identified within HoTEL WP1 and WP2, and by inviting other innovators (by all partners). This category involves Researchers/inventors (e.g. a researcher from a TEL-FP7 project who has developed an augmented-reality learning tool and would like to test it within a university).

2. "**HOTEL Labs managers**" who will be taking active part in the Lab activities (UNIR staff and testers, eLIG stakeholders, EFQUEL members, etc.)
3. "**Innovation experts**" who shall bring approaches and expertise from outside TEL: they will be for example experts from Living Labs and other innovation communities.
4. "**TEL and innovation stakeholders**" who will observe, comment and validate the innovation cycle that will be under testing in the Labs. These will be invited by connecting with other Linkedin groups and by announcing the network in many channels (by all partners under the coordination of MENON).

Furthermore, **UNIR HE is a multi-stakeholder setting, focused on students, academic team, and admin staff.** The innovators to be implemented will positively impact one or many stakeholders, with a special focus on ICT assets which support methodologies and strategies for better learning and teaching. UNIR HE worked with real users who tested and evaluated the innovations in their real context. Therefore, out of the four main categories aforementioned, UNIR is focused on the usual academic subgroups, so that the innovations implemented / tested in the Learning Exploratorium Lab on Higher Education target the following stakeholders and their respective functions:

- **Students:** Learners of undergraduate and graduate academic programmes
- **Teachers:** Lecturers of academic programmes
- **Academic coordinators:** Director of academic programme
- **Tutors:** Support academic staff for lecturers; liaison with students
- **Technical coordinators:** Support admin staff for administrative processes, who become a key factor for smooth operational purposes; liaison between academic coordinator (e.g. Master director) and lecturers
- **Researchers:** Combined role with teachers, usually, working on specific fields related or not to TEL (e.g. Communication)

This Lab offers a support instrument for TEL innovators in the context of Higher Education to interact with experts and various stakeholders, in order to receive a fresh and thorough feedback to the specific innovation. In doing so, the Higher Education ecosystem gets new actors outside the usual working loop, but still inside the academic community, which can be of some benefit to the setting itself. The selected innovations will be tested in the Lab environment using HoTEL's 'Innovation Support Model', through an either practical or theoretical assessment iterative process, to which a detail feedback for improvement will be provided at the end.A virtual platform for the Exploratorium on Higher Education was set up in Sakai, as a place where to exchange all the support questionnaires and other relevant documents for innovators, as well as the means for constant communication between the innovators and with the different University stakeholder's trough different fora.

6. Innovations selected

Initially, 39 innovations were forwarded to the UNIR Lab by the WP3 Call for Innovators. These were evaluated according to a series of criteria and their relevance and match with the Exploratorium Lab, as described in D4.4.1 WP4 Methodological Framework..

After further selection steps, such as the demand of further specific information, and several online sessions, the final set of 10 selected innovations within the process consisted of:

Field	Project name	Innovator's Surname	Country	Institution
Learning Analytics	A4Learning	de-la-Fuente-Valentín	Spain	Universidad Internacional de la Rioja
Engineering	DML	Morgan	Ireland	National University of Ireland Galway
Collaboration environments	GLUE!	Alario-Hoyos	Spain	Universidad Carlos 3
3D Immersion	TOY	Mattila	Finland	Finpeda
Collaboration environments	All-on-Top	Grisolía	Argentina	Active Members of Educl@l Network

		Giorgis	Guatemala	
Inmersion	Cloud University	Delabre	France	Université Lyon 3
Collaboration environments	iLIME	Corbi	Spain	CSIC, MINECO
Website	KnowEd	Comba	The United Kingdom	HALPH LTD
Learning Analytics	Lantern	Alavi	Switzerland	École polytechnique fédérale de Lausanne
3D Learning environments	Virtual Worlds	Gretton	The United Kingdom	University of Leicester

Practically Implemented

Theoretical Assessment

Undecided at the moment of selection

Along this process, and as a result of the negotiation of terms, success criteria, and expected results, there were a number of drop-out milestones, from the very beginning of the Exploratorium, till nearly the final phase, which derived in a narrow-down final list of members who completed the full path. In subsequent steps, the drop-outs were:

Field	Project name	Innovator's Surname	Comment
Engineering	DML	Morgan	This innovator was deeply involved in the process. However, he expected us to buy all the licenses of his product to run the test. There was no way to agree on different terms, so we decided to call off the process with this innovator
Collaboration environments	GLUE!	Alario-Hoyos	In spite of the high interest of this innovator in the process, he expected financial support to implement GLUE! in an academic degree with specific support for hiring the innovator. We had a number of discussions about ways to carry out this support, but the lack of budget was critical to finally quit

Collaboration environments	All-on-Top	Grisolía Giorgis	They were really active until the final phase of the process. We had half a dozen meetings, and also a workshop with students and experts (which is reflected in the annexes). They quit because of the modification of their contractual relation with the home institutions
Immersion	Cloud University	Delabre	The innovator wanted to integrate the system in the university, however we could not afford that, and he lost interest
Website	KnowEd	Comba	He quit right after the selection, with no clear reason or further communication
Learning Analytics	Lantern	Alavi	We discussed the potential implementation of Lantern, however the final technical requirements prevented us of providing a full support. Although we offered technical assistance for setting a virtual environment, the innovator rejected this possibility

At the end, the Exploratorium worked intensively with a strong core of 4 application cases (3 practical implementations and 1 theoretical assessment):

Field	Project name	Innovator's Surname	Comment
Learning Analytics	A4Learning	de-la-Fuente-Valentín	A clear, determined setting, fully in line with the university objectives. There was an active participation in the full process, with neat and useful reports for every step, which will be reflected in the final conclusions
3D Immersion	TOY	Mattila	A very fluent interaction with the innovator and his team, thanks to live, hands-on sessions in which the experts and the end-users work together. The various phases reflected the input from users into progress on the implementation
Collaboration environments	iLIME	Corbi	A promising development focused on analytics and bid data sets with user tracking information to support students and lecturers. The innovator was largely committed and provided interesting clues for improvement
3D Learning environments	Virtual Worlds	Gretton	Very in line with TOY, however lacking of a practical prototype to implement. The constructive interaction between the innovator, the experts and the potential end-users, provided a clear input to the innovator,

			the host and the process

As for the practical implementations we fulfilled the Exploratorium initial objective of 3 innovations, and it was in our bottom-line action plan to prioritize this type of support, not being able to implement and support in this thorough way more innovations due to the higher involvement of resources it supposed of the whole University Community. Concerning the theoretical implementations, we didn't comply with the original schedule, however all the innovators, no matter the moment in which they quitted the process, showed a constructive approach which provided useful insights about the project and the support methodology. These insights will be reflected in a later section with conclusions and lessons learnt.

7. Implementation Phases

The labs worked according to the following logic, discussed across the various Labs, and according to the general approach from the Hotel Project:

7.1 Discovery Phase

The aim of this phase was to discover innovations and describe them in a structured format so that different innovations can be compared with each other. 39 innovations were collected through the WP 3 call for innovators and described using a standardized template. Many of the applications were off-focused and quite demanding for direct funding. After a first round of selection and further requested information, from the 39 cases, 10 were selected (listed in the previous section). Individual launching online sessions were carried out with each innovator, to explain the Exploratorium programme and planned activities, and after a Declaration of Intention document was signed with each of them, they were then asked to fill in the self-assessment form (Form A). Self-assessments for all six of the innovations are available in the Annex section.

7.2 Analysis Phase

During this phase, the innovations were analysed from a full multi-stakeholder viewpoint. Categories of analysis will be a) sectors/ context of innovation, b) impact of innovation, c) stakeholders involved in innovation, d) process of development of innovation, e) serendipitous elements in innovation, f) unique nature of innovation, g) innovation elements in innovation, etc..

In practice, during the analysis phase 4 reviewers were recruited to analyse the cases. The reviewers were recruited for their experience in the work field, and in similar processes. The recruited reviewers were:

- Ing. José Luis Santos. University of Leuven, The Netherlands
- Dr. Jordán Pascual. University of Oviedo, Spain
- Dr. Carina González. University of La Laguna, Spain
- Dr. Ana Manzanal. Universidad Internacional de La Rioja (UNIR), Spain

Each case was reviewed by the four reviewers, until June 2014, who filled in a detailed review sheet for each case (Form B). Based on the feedback received from the reviewers, the UNIR team consolidated the reviews into a single set of conclusions and recommendations (Form C) which were then shared with the innovators as formal feedback on their case. These Form B and Form C contain the review sheets and the consolidated review sheet for each of the cases, which provide an initial classification of the innovation, and according recommendation, and can be found in the Annex section. At the end of this phase, 6 cases had dropped-out because of a variety of reasons, commented in the previous section. Along the process, all these 6 drop-outs left valuable inputs about the model, the project, and the process itself, which are reflected in the conclusions section. Therefore, we do not consider them as failures, but as part of the selection and negotiation process with the innovators.

7.3 Transfer and Support phase

This phase aims to see how an innovation could be either transferred to another context or how an innovation could be further developed within the same context.

In our case, 3 innovations were practically implemented, interacting with experts and end-users in order to provide insight to their developments. These 3 innovators actually applied the valuable input from the target groups, which was discussed in later online meetings with the same contributors, and new discussion groups. In addition, the innovator for theoretical assessment, followed the same process, presenting their innovation to different UNIR Higher Education Community members, which allowed for a refinement step of the innovation.

In total, we organized 2 practical/ theoretical sessions per innovator until October 2014, in an iterative process, so that the innovators could complement the initial assessment by the reviewers, and the later advice from the Lab team. Forms D and G reflects on these

findings, as the second self-assessment questionnaire completed by the innovator, to evaluate the evolution of their innovation after the HOTEL Projecct process, and their feedback to the general ISM methodology, and they can be found in the Annex section. At this stage, we decided to provide an overall assessment to the innovators, along with the live sessions that all held during this phase. In doing so, they had a first-hand input from the experts in the format of a focus group with an active discussion, right after every session. Forms E and F were therefore, integrated into the coaching process, and used as an input to produce the final Form G from every participant.

As part of the final transfer and mainstreaming phase of the support process, special importance was given to the specific dissemination of the HOTEL Innovations through UNIR channels, with reports published in the University media and networks, in order to enhance the outreach and knowledge of the Innovations in the Higher Education Community, and its possibilities of implementation and cooperation with interested end-users.

The final HOTEL workshop to be carried out during the XVI International Symposium on Computers in Education (SIIE 2014) in Logroño (Spain), two of the Higher Education Innovators will present their Innovation and it's evolution in the frame of HOTEL project to the international Technology Enhanced Learning Community. This final workshop is organised and supported outside the project lifetime, by the own means of UNIR, as host and organizer, and ELIG, as speaker.

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HoTEL WP4 – ELIG Lab 2, on Learning@Work

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8. ELIG Learning@Work Lab Implementation

8.1 Introduction

The ELIG Learning@Work Exploratorium Lab is organized a part of the HoTEL (Holistic Approach to Technology Enhanced Learning) that is a support action of the 7th Framework Programme and aims to design, develop and test an "Innovation Support Model" in the area of Technology Enhanced Learning (TEL), to enhance the speed and quality of innovation in TEL in Europe.

The ELIG Learning@Work Exploratorium Lab, as addressed in the Description of Work, is about implementation and exploration of HoTEL project findings with real users and context, where users - along with researchers and other stakeholders - look into new approaches, solutions, models, and services, to name a few of possible outcomes. In HoTEL, Exploratoria involve society, and the ecosystem described for each of them, taking into consideration the various roles and services provided. Every Exploratorium promotes innovation across stakeholders inside the environment, and across the Exploratoria, orchestrated by HoTEL, making the user the real unit of activity and communication node of this infrastructure. The collected requirements and design in this task were analysed and documented so that this process could be re-used in other contexts. Every Lab is using the same set of information retrieval forms as presented in the D4.4.1 Annex, with further modifications of this initial set being subject to the respective Lab methodology and as represented in the following. Furthermore, the Labs are controlled, simulated systems, as safe environments, with stakeholders to test the innovation, along the whole process from A to B. The aim of the Learning Exploratorium Labs is therefore to accelerate the innovation process, to provide a holistic approach, thanks to HoTEL Innovation Support Model (ISM), in an iterative strategy.

The ELIG Learning@Work Exploratorium Lab attempts to accelerate the innovation process by providing a holistic approach and an iterative strategy. The Lab assess a number of practical and theoretical implementations.

The practical implementation of the innovations within the ELIG Learning@Work Exploratorium Lab develops innovations in real learning scenarios, so as to test these

innovations and find a way to accelerate the innovation cycle of these innovations. The theoretical assessment of the innovations within the ELIG Learning@Work Exploratorium Lab evaluates innovations, so as to develop a series of recommendations for improvement and find a way to accelerate the innovation cycle of these innovations. The ELIG Learning@Work Exploratorium Lab builds on the ideas, suggestions, experiences collected and presented within the initial screening and data collecting process of the HoTEL project and to provide a space to discuss, analyse, explore:

- How learning theories have contributed to new ways of using ICT for learning in practice, and with a particular focus on learning at work, or education provided by corporates.
- How to scout bottom-up innovative uses of ICT for learning and how to support grassroots innovators.
- How innovation support might be replicated, mainstreamed, transferred or sustained.

This report provides an overview about the method, activities and results from the ELIG Learning@Work Exploratorium Lab.

9. Methodological process

9.1 Overall approach

The ELIG Learning@Work Exploratorium Lab is designed around the concept of Information and Communication Technologies innovations, applied for the enhancement of learning and teaching processes and practices in environments that have been primarily designed to support learning at work or within a professional and adult learning context. The ultimate boundary of the ELIG Lab is however fluid as Higher Education is providing more and more offers targeted at adult or professionals, including learning at work; while on the opposite end more and more private actors do provide higher an post graduate education offers.

The ELIG Learning@Work Exploratorium Lab worked with real users who were assisted in applying a range of project findings in a real context, exploring how their effective adoption could be assured and supported in this context.

In line with the HoTEL project objective, the ELIG Learning@Work Exploratorium Lab attempted to explore how learning theories contribute to new ways of using ICT for learning in practice, and with a particular focus on learning at work, or education provided by corporates. Therefore the lab did not limit itself to any given learning paradigm, learning theory, or learning practice, but instead on the criteria 'innovativeness'.

The types of innovative technology to be implemented and/or tested within the Lab were case dependent. With regards to areas of learning a particular focus had been placed on learning at work; or within a professional and adult learning context.

9.2 Drawing from the overall ISM HoTEL model objectives

The HoTEL project is designing and testing an ISM, and that means a different thing than an "Innovation Model". We believe that Innovation, particularly in the field of TEL, may take very different forms than the classic paradigm that moves from research through prototypes to massive commercial exploitation.

In the field of TEL, innovation may frequently start in a classroom or in a community of practice, or may be the result of massive use of a technology not born for educational purpose.

This means that any "innovation support model" must fit into the variety of modes and contexts in which innovation may emerge, and have different, adaptable ways to support it.

The road to success for a TEL innovation depends, to a large extent, on the possibility to be understood and supported by some categories of stakeholders that are not always the same (e.g. industrial investors, school leaders, publishers, policy makers, teachers' networks, student associations, consultants, etc.).

Not all of them might ultimately influence every kind of TEL innovation with similar leverage, but it is important to consider the full spectrum of involved interests to select the most crucial representatives of stakeholders to discuss/support the innovation development.

Furthermore, what appears a big success in a certain context may not work at all in another context (e.g. country, socio-economic environment, organization, or sector). It is therefore fundamental to identify not only "what works" but also "where" and "under which

conditions", distinguishing between success factors that are relatively "unique", specific to the context, and others that can more easily be found or reproduced in other contexts.

Based on these considerations, a number of "structuring assumptions" can be taken as the basis of the HoTEL ISM:

1. Recognition of the diversity of innovation paths, along with innovation channels, start points, contexts, expected outcomes, success criteria and, in general, every single step and factor of the support model and the setting.

2. Recognition of an existent difficulty on measuring "success" within a TEL innovation setting. How is success defined? Do we use pedagogical, technological, socio-economic, business-economic, or other criteria to determine what can be considered as being a success?

3. Embedded flexibility and adaptability of the support model in order to match different stages of innovation development and different contexts and innovation paths. The support model must take the various key factors from every context, stakeholder, and user, to integrate them into the innovation, so that a unique experience is produced. This unique experience feeds every actor of the setting (i.e. Higher Education, Workplace Learning, and Informal Learning in Networks), included the model and the innovation themselves, making a full iterative cycle.

4. The core concept in the support model is that of a "multi-stakeholder ecosystem" (with different stakeholder representatives according to the nature of the innovation proposed) that analyses and eventually tests the proposed innovation from a multi-perspective approach, identifying all the strengths and the weaknesses from each relevant stakeholder's perspective. This test might be either:

   a) Practical, on the ground, with real users and in a real context-setting.

   b) Theoretical, with a deep-thinking test bench by experts and qualified users.

5. Context-sensitivity of the analysis and support action proposed, in order to distinguish transferable from non-transferable success factors, according to a well-defined set of criteria.

6. If implemented, the innovation must take from the support model all the required input for a fresh start, making a three-step implementation phase. With this

approach, the implementation makes use of all the lessons learnt and best practices from the theoretical phase with the Lab, but it will not be restricted by them when it comes to a market-context, which might take into account an additional set of success criteria and specific implementation conditions.

9.3 The Pearson Efficacy Framework as a starting analytical framework for the theoretical and practical assessments

The development of the detailed Lab methodology also included an initial screening how innovation is supported in a learning at work context; or within a professional and adult learning context. This initial screening allowed for the identification of an operational analytical framework, the Pearson Efficacy Framework that appeared to align well with the overall HoTEL project requirements of comprising constituencies, characteristics, processes, involved stakeholders and expected outcomes. Moreover the Pearson Efficacy Framework has been identified as a potential suitable and structured analytical tool so to set up an innovation-friendly environment to build on the ideas, suggestions, experiences collected and presented.

The ELIG Learning@Work Exploratorium Lab thus drew on the Pearson Efficacy Framework as an operational analytical framework and means to use it within the theoretical and practical assessments, and to evaluate its usefulness and limitations with regards to:

- Scouting bottom-up innovative uses of ICT for learning and how to support grassroots innovators.
- How innovation support might be replicated, mainstreamed, transferred or sustained.

The Pearson Efficacy Framework has been further explored within an initial joint ELIG Pearson workshop that had been organized as a part of the HoTEL project at the 2013 Online Educa Berlin conference. Given the vast experiences on its application within Pearson, and the positive outcomes of the workshop is was decided to use it as starting analytical framework for the theoretical and practical assessments of the ELIG Learning@Work Exploratorium Lab. For further information on the Pearson Efficacy Framework it is referred to http://efficacy.pearson.com.

9.4 Assessment and evaluation

In accordance with the overall HoTEL project methodology (see D4.4.1) the theoretic and practical assessment of the cases included a guided collaborative assessment exercise, providing – inter-alia – more detailed information on:

- Background & introduction
- Conception and progress to date
- Outcomes & value proposition
- Measures of achievements and success
- Impact

The guided collaborative assessment also drew on the Pearson Efficacy Framework.

The guided collaborative assessment exercise generally involved the case owner, the ELIG Learning@Work Exploratorium Lab team, experts from the ELIG network, and, and notably for the practical cases, local stakeholders.

10. Stakeholders involved

10.1 Stakeholder target group

The purposes of the ELIG Learning@Work Exploratorium Lab was to encourage users to interact, collaborate, and contribute with others, so that they could develop competences and achieve valuable knowledge. For this reason the following type of stakeholder groups had been involved in the lab.

1. **"TEL innovators"** of any background including within the ELIG Lab context the case owners. Within the 3 practical cases two distinct groups of TEL innovators had been addressed:

- Micro innovators, such as the ones reached via the practical Lab phase like Comenius, Simpiens, or Lab4Ed, whose innovation has been developed at a micro level and who wanted to test their innovation towards scalability and mainstreaming.

- Early stage innovators, such as the ones reached via the practical Lab phase and whose innovation was at an early stage of development and therefore should be tested exploring the options for further development. This group had been in particular involved in the practical case 3 Lab4Ed as part of an idea contest that had been carried out alongside the Lab4Ed piloting activities.

2. "**HoTEL Lab managers**" who were taking active part in the Lab activities.
3. "**Innovation experts**" from the ELIG membership, such as from Pearson Education, Line Education, Towards Maturity, PAU Education, etc., who brought approaches and expertise from outside TEL Labs and that had been involved in a number of ways, such as via the various workshops and seminars.
4. The wider international academic and professional community, as involved via the workshops and seminars run within the ELIG Learning@Work Exploratorium Lab.

10.2 Engagement with local stakeholders

The ELIG Learning@Work Exploratorium Lab activities, including assessment and evaluation of cases and approaches, have been supported through regular engagement with local stakeholders from the target group. The geographical proximity of the three practical cases, in the northern Portugal and greater Porto region, allowed for and facilitated engagement with the local target groups, through inter-alia regular weekly physical meet ups and virtual follow up actions during the month February to July 2014. The set of several stakeholders that had supported the HoTEL project in one way or another was composed by training centres (such as OpenSpace and Centro de Formação Avançada Comenius), technological departments (such as the Centro de Estudos das Tecnologias e Ciências da Comunicação - CETAC.MEDIA), by higher education institutions (such as Universidade do Porto, Universidade do Minho, Universidade de Aveiro, Universidade de Coimbra), by polytechnics (such as the Instituto Politécnico do Porto), by educational schools (such as Escola Superior de Educação do Porto), and also by research departments (such as Núcleo de Estudos e Inovação da Pedagogia do Instituto de Educação – NEIP-IE).

10.3 Involvement of experts

Industry experts from the ELIG Lab had been involved in the analysis, evaluation and support processes as detailed within this report at specific times. Notably the ELIG Learning@Work Exploratorium Lab team would like to express their appreciations to Kelwyn Looi (Pearson), Vaithegi Vasanthakumar (Pearson), Fadi Khalek (Pearson), Dr Adam Black (Pearson), Piers Lea (LINE Education), and Laura Overton (Towards Maturity), as well as the wider teams from ICWE, Pau Education, Stockholm University, and more generally all ELIG members that had been involved in the project at one point or another.

11. selected lab cases

During the month of October to December 2013 an initial focus had been on the selection of suitable TEL cases for the theoretical and practical assessments. TEL cases have been selected in accordance to the HoTEL wide project methodology (see D4.4.1) and are presented in the following.

Case	Area	Purpose
1. Comenius (PT)	Postgraduate education	To provide a local relevant course on e-learning tools and platforms, using a blended approach with option of having physical trainings taking simultaneously place in three different locations (Porto, Coimbra, and Lisbon).
2. Simpiens (PT)	MOOCs	To establish itself as the Portuguese best MOOC solution to acquire new and desirable skills for the job market.
3. Lab4Ed (PT) **3.1 +3 micro cases (as a part of idea contest)**	Education development	To build up capacity in students and young entrepreneurs on how to use analytical tools so to turn their ideas into products and services, and how those tools and services might be orchestrated.
4. Pearson Group (UK)	Analytical tool	To provide a rigorous and scalable quality assurance system that checks what necessary conditions are in place for an education programme to deliver the intended learning outcomes.
5. Laureate Online Education (NL) / University of Liverpool (UK)	Post degree education	To uses Critical Action Learning and Action Research learning methods to bring real-world challenges to the classroom, and to foster practical relevant doctor level research while simultaneously enabling learning, collaboration and practicing of the theoretic subjects within virtual distributed student cohorts.

6. Aristotle University of Thessaloniki (GR)	Information sharing platform	To allow future learners to benefit from earlier achievements and build upon them, instead of starting from scratch, and to enable free learners outside the formal education to upgrade their skills, and to make those skills visible for potential employers.
7. Apollo Group (USA)	Training platform	To be a relevant platform that allows users to assess their skills, discover career paths, and acquire new skills.
8. FLOQQ (ES)	MOOCs	To make an impact by providing a bridge between education and job reality, and to generate employment by providing useful life-long learning.
9. edX (US)	MOOCs	To offer interactive online classes and MOOCs from MITx, HarvardX, BerkeleyX, UTx and many other universities.
10. Iversity (DE)	MOOCs	To be a "university of the future", where students don't necessarily need to be enrolled in the university course offer, enabling them to study wherever in the world they may life.

The ELIG Learning@Work Exploratorium Lab consisted of 3 practical and 7 theoretical assessments, plus an additional set of grassroots innovators that were experimenting new forms of learning in their own context. This additional set of grassroots innovators had been recruited from a Learnovation idea contest that was carried out by Lab4Ed (*see case study #3 below*). The selection of innovators was made in accordance to the D4.4.1 methodology, and thus included inter-alia practical criteria such as the geographic location (the 3 selected practical cases were from the wider Porto area so to facilitate the physical support), the type of organisations (an awareness during the selection was raised in order to avoid repetition of analysis of the same type of institutions, thereby to have the chance to provide support to different innovations and understand ISM applicability to each one), the type of educational products or services implemented by those organisations (the same ISM applicability from the process to choose the educational institutions), the current network of the organisations (as an important aspect to accelerate the process and the innovative support, consequently: where a partnership was already established or stakeholders were commonly known, it would ease the communication and even the support through all process, mostly in the negotiation of involvement), among In order to turn this approach into realm, the innovations were initially classified in accordance to the D4.4.1 methodology, including aspects such as: the kind of innovation (product, service or process), the nature of innovation (incremental, radical or disruptive), the development stage (conceptualization, development, pilot, implementation, etc.), the access level (local,

regional, national, European, global), the impact area (process, service, and organisation), and the target-group (students, teachers, free learners, learning institutions, etc.).

12. Implementation phases

The implementation phases of the ELIG Learning@Work Exploratorium Lab have been carried out in accordance to the methodology detailed in D4.4.1, and generally speaking started with a negotiation of involvement, then follow-ups by virtual or physical means and, in the end of the process, an implementation session was individually held. Further to this the ELIG Learning@Work Exploratorium Lab organised a set of physical events, not limited to any of the reviewed cases. These events aimed to disseminate Lab practices and raise the awareness regarding the existence of a new framework to support innovations and TEL; to listen to professionals and experts about this particular thematic and obtain potential suggestions to improve the process and the constantly developed framework; to gather stakeholders together, which could directly benefit not only the HoTEL project but also to the Lab cases themselves; and to create and wide a working network between ELIG, Lab innovators and external stakeholders.

The ELIG Learning@Work Exploratorium Lab phases, timeline and key activities might thus be summarized as:

1. An initial selection of TEL cases and supportive workshops to engage with the wider international academic and professional community.

Timing: October to December 2013

2. Theoretic assessment of seven cases

Timing: December 2013 to July 2014

3. Practical assessment of three cases

Timing: December 2014 to July 2014

4. Engagement with local stakeholders

Timing: January to July 2014

Further to this the ELIG Learning@Work Exploratorium Lab activities include the following physical activities:

Workshop at the 2013 ELIG Annual General Meeting, and as a joint activity together with colleagues from Line Education and Towards Maturity, Stockholm, Sweden.

Timing: September 2013

Workshop at the Online Educa Berlin conference, and as a joint activity together with colleagues from Pearson UK, Berlin, Germany.

Timing: December 2013

Stakeholder engagement sessions (approximately 10 on a total) in the wider Porto area, targeted at forthcoming educators and young entrepreneurs at local institutes of Higher Education (Universities and Polytechnics), Porto, Portugal.

Timing: March 2014

Regular Consultation and support meetings with the three practical cases Comenius, Simpiens, Lab4Ed.

Timing: March to July 2014

Local multiplication seminar, and as a joint activity together with colleagues from Pearson UK, Porto, Portugal.

Timing: April 2014

Regular consultation and support meetings with participants from the Lab4Ed Learnovation Idea contest.

Timing: April to July 2014

Evaluation seminars with the three practical cases Comenius, Simpiens, Lab4Ed, and as a joint activity together with colleagues from Pearson UK, Porto, Portugal.

Timing: July 2014

13. Implementation Matrix View

Case study	#1	#2	#3	#4	#5	#6	#7
Company	Comenius	Simpiens	Lab4Ed	Pearson Group	Laureate Online Education	AUTH	Apollo Group
Product	e-learning conception	Simpiens Online	Learnovation Lab*	Pearson Efficacy Framework	DBA	openSE	Balloon
What is it?	Postgraduate course	MOOCs	Ideas' contest	Analytical tool	Post degree	Information sharing platform	Training and employment
Kind of Innovation	Service	Service	Service	Product	Service	Service	Service
Nature of the Innovation	Radical	Radical	Incremental	Radical	Incremental	Incremental	Radical
Target Group Dimension	Multiple actors	Wide range of actors	Multiple actors	Wide range of actors	Multiple actors	Multiple actors	Multiple actors
Target Group	Training managers; Teachers and trainers; Recent graduates or young graduates, unemployed; Other graduates (older) unemployed, seeking a professional alternative or enrichment	Learners (or people that want to develop new skills); Trainers (or people that want to teach and share their knowledge about one specific topic)	Forthcoming adult, vocational and lifelong learning teachers, and educators as entrepreneurs	Own workforce	Senior business professionals in relevant employment	Higher education students, teachers and teaching assistants, software developers	Technology companies searching for job candidates; Candidates searching for a job related to technology; Users interested in online courses about technology
Lifecycle Stage Development	Scale	Pilot	Scale	Mainstream	Mainstream	Mainstream	Mainstream
Territorial Level	Regional	National	Regional	International	International	European	International

#8	#9	#10		Comp#1	Comp#2	Comp#3	Case study
FLOQQ	MIT	Iversity		*Learnovation Lab Seed 1	*Learnovation Lab Seed 2	*Learnovation Lab Seed 3	**Company**
FLOQQ	edX	Iversity		Palavras bem ditas, benditas palavras	Tecnologias como meio potenciador da aprendizagem de línguas	Manuais interativos	**Product**
MOOCs	MOOCs	MOOCs		Digital platform	Digital platform	Interactive books	**What is it?**
Service	Service	Service		Service	Service	Product	**Kind of Innovation**
Radical	Radical	Radical		Incremental	Incremental	Incremental	**Nature of the Innovation**
Multiple actors	Individual actors	Individual actors		Individual actors	Individual actors	Individual actors	**Target Group Dimension**
Professionals who have been working in a specific field and see FLOQQ as an opportunity to earn extra money with it; Anyone who needs to know a specific skill for work; Passionate people who love to learn new skills	Everyone with access to a computer with a current browser, an internet connection, and a desire to learn	Free learners and people that want to develop new skills		Students from preschools and elementary school, teachers and teaching assistants	Students from primary school, teachers, vocational trainers	Students from elementary school, teachers, trainers, publishers	**Target Group**
Mainstream	Mainstream	Mainstream		Pilot	Scale	Pilot	**Lifecycle Stage Development**
International	International	European		Local	Local	Local	**Territorial Level**

Stakeholder Engagement	Innovation support meetings; Multiplication seminar; Evaluation seminar; Innovation support meetings; Workshop at Comenius Open Day (Porto); Dissemination and multiplication initiatives and publications	Innovation support meetings; Multiplication seminar; Evaluation seminar; Innovation support meetings; Dissemination and multiplication initiatives and publications	Innovation support meetings; Multiplication seminar; Evaluation seminar; Learnovation Lab closure event; Innovation suport meetings; Regular consultation with Learnovation Lab participants; Presentations and awareness raising activities in universities; Dissemination and multiplication initiatives and publications	Innovation support meetings; Multiplication seminar; Evaluation seminar; Innovation support meetings; ELIG Annual Meeting (Stockholm); Online Educa Berlin; ELIG Annual Conference (London); ECER 2014 Publication (Porto); SIIE 2014 Publication (Logroño); Learnovation Lab closure event; Dissemination and multiplication initiatives and publications	Innovation support meetings; Multiplication seminar; Dissemination and multiplication initiatives and publications	Innovation support meetings; Project development meetings; Dissemination and multiplication initiatives and publications	Innovation support meetings; Dissemination and multiplication initiatives and publications; ELIG Annual Conference (London)
Key People involved	Rui Pena (CEO Comenius), Paulo André Guedes (Comenius CV developer), Monica Ovaia (Comenius trainer), Rita Fontes (Comenius digital marketer), Sofia Caetano (Comenius project manager), Kelwyn Looi (Pearson)	Pedro Bandeira (Simpiens CEO and co-founder), Michel Santos (Simpiens manager and co-founder), Kelwyn Looi (Pearson)	André Malho (Lab4Ed project manager), Ana Faria (SCIO co-founder), João Sousa (SCIO project manager), Kelwyn Looi (Pearson), Francisca Ribeiro, Maria Baptista and Vitor Passos (Learnovation Lab finalist)	Fadi A. Khalek (Pearson VP Higher Education & Applied Learning), Kelwyn Looi and Sandy Smith (Pearson Office of the Chief Education Advisor), Jacob Kestner (Pearson Affordable Learning Fund), Abbas Hasan (VP Strategy & Business Development)	Dr. Pascale Hardy (University of Liverpool / Laureate Director, DBA programme & Research Chair)	Prof. Ioannis Stamelos (Project responsible for the AUTH openSE environment)	Carl Lygo (CEO BPP Holding - Apollo Group UK), Stephen Rae (VP Growth Initiatives, Apollo Group)
Company	Comenius	Simpiens	Lab4Ed	Pearson Group	Laureate Online Education	AUTH	Apollo Group
Case study	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**

Innovation support meetings; Dissemination and multiplication initiatives and publications; ELIG Annual Meeting (Stockholm) and Conference (London)	Innovation support meetings; Dissemination and multiplication initiatives and publications; ELIG Annual Meeting (Stockholm)	Innovation support meetings; Dissemination and multiplication initiatives and publications; Open Education Challenge (Berlin)		Individual suport meetings; Regular consultation; Learnovation Lab closure event; Dissemination and multiplication initiatives and publications	Individual suport meetings; Regular consultation; Learnovation Lab closure event; Dissemination and multiplication initiatives and publications	Individual suport meetings; Regular consultation; Learnovation Lab closure event; Dissemination and multiplication initiatives and publications	**Stakeholder Engagement**
Alvaro Sanmartin Cid (FLOQQ CEO)	Johannes Heinlein (VP Strategic Partnerships edX), Howard Lurie (former board member edX, VP eLearning Strategy CS4Ed)	Hannes Klöpper (co-founder and managing director Iversity)		Francisca Ribeiro (Learnovation Lab finalist), André Malho (Lab4Ed project manager), Ana Faria (SCIO co-founder), João Sousa (SCIO project manager), Kelwyn Looi (Pearson)	Vitor Passos (Learnovation Lab finalist), André Malho (Lab4Ed project manager), Ana Faria (SCIO co-founder), João Sousa (SCIO project manager), Kelwyn Looi (Pearson)	Maria Baptista (Learnovation Lab finalist), André Malho (Lab4Ed project manager), Ana Faria (SCIO co-founder), João Sousa (SCIO project manager), Kelwyn Looi (Pearson)	**Key People involved**
FLOQQ	edX	Iversity		Learnovation Lab 1	Learnovation Lab 2	Learnovation Lab 3	**Company**
#8	**#9**	**#10**		**Comp#1**	**Comp#2**	**Comp#3**	**Case study**
Vaithegi Vasanthakumar (Pearson), Fadi Khalek (Pearson), Dr Adam Black (Pearson), Piers Lea (LINE Education), Laura Overton (Towards Maturity), Diana Laurillard (Institute of Education UK), Andy Lane (Open University), as well as the wider teams from ICWE, Pau Education, Stockholm University							**External Experts Involved**

14. General findings from ELIG workshops

In the following a summary and overview of the main findings from workshops organised by the ELIG Learning@Work Lab will be provided.

14.1 The 2013 ELIG Annual General Meeting workshop

This workshop had been organized as the ELIG Learning@Work Lab launching session within the ELIG Annual General Meeting in support of the overall quest of the HoTEL project on how to support innovation in TEL.

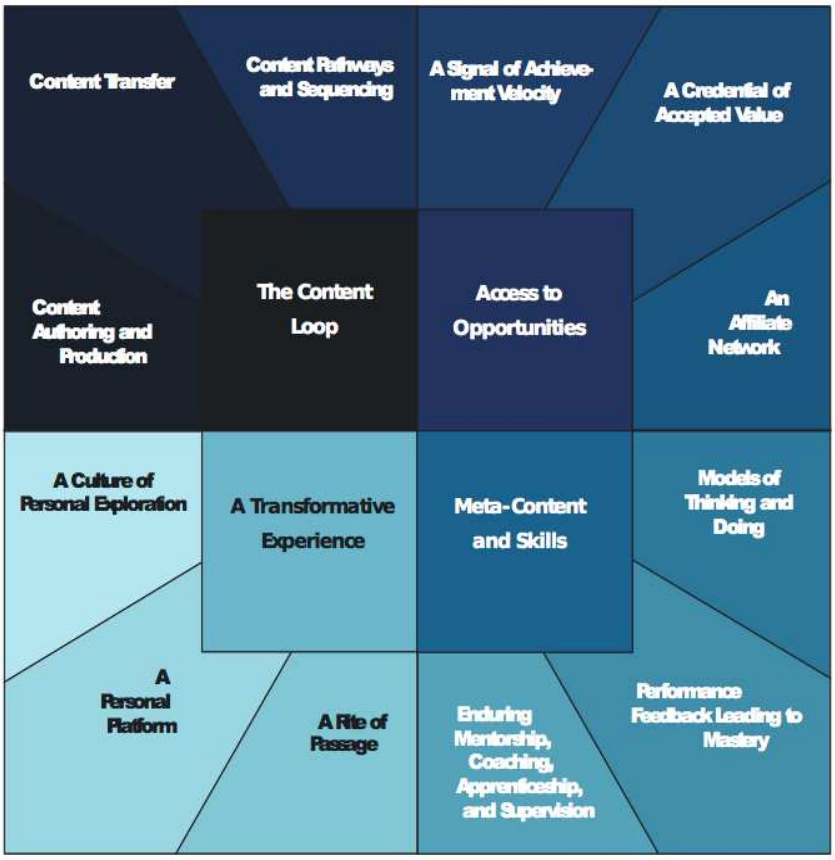
The dedicated ELIG Learning@Work Lab launching session involved more than 20 international stakeholders so to reflect on and discuss the ELIG Learning@Work Lab focus, approach and wider context. A number of sessions of the ELIG Annual General Meeting have been also designed to tangle aspects of innovation in TEL and how to support it – thereby allowing the ELIG Learning@Work Lab launching session to draw on the outcomes of such earlier sessions. With this, the focus of the HoTEL project and the audience present in the ELIG Annual General Meeting did well align.

Already earlier through in the ELIG Annual General Meeting, and around discussions on the currently much discussed MOOCs, it had been highlighted by industry representatives that a holistic view on education and TEL shall be adopted and to take into account the apparent upcoming trend on the unbundling of education and institutional detachment towards a multi-sided and multi-stakeholder ecosystem with potential large impacts in the current value propositions and value networks.

This debate had then been taken into the dedicated ELIG Learning@Work Lab launching session and cumulated in the subsequent initial starting questions:

- What does it mean for education to become an ‘unbundled’, ‘multi- sided’ and ‘multi-stakeholder’?
- How do we successfully innovate within a profound changing education ecosystem?
- How is successful innovation defined? Do we use pedagogical, technological, socio-economic, business-economic, or other criteria?
- What are transferable success factors?

To facilitate and guide discussion the launching session then drew on the below 'Unbundling Education Framework' provided by Staton (2012)[2] so to look at the different education component parts and to reflect on how those relate to innovation in TEL, or on how to supporting TEL innovation.



In the following the points are summarized that had been raised in the morning session on 'Views on the Future of Learning' and in the subsequent ELIG Learning@Work Lab launching session and that were seen as areas with innovation potential. A general notion in this regard was that a holistic approach should be adopted for any type of education offer, but with clearly identified areas in which to innovate. This was seen to also avoid using technology only for the sake of technology, but doing things still in a way that would not require the technology to be in place.

In this context also a discussion took place on the way we ensure that creativity and entrepreneurship, which were seen to be key for innovation, do meet market demand and are based on existing good practice and knowledge? Points raised were:

- Understand that time is the most crucial commodity.

[2] Source: http://edumorphology.com/2012/06/unbundling-education-an-updated-framework/

- High-level commitment & guiding principles are required for safeguarding success, and to support decentralization.
- Centralizing and decentralizing as a constant loop. Unsure of 'what is better'. This is to say that there appears to be a bouncing for and back on preferences and developments.
- Innovation support models such as the Index Factors Matrix from Pearson are seen as a (research) field that still holds high potential so to understand and predict success. This is well in line with the HoTEL objective and assumptions.
- Decisions are often made out of a "point of fear" – Howard Lurie (MITx/EdX) provided some insights from his observation from the US MOOC landscape. His advice in this regards was to have a clear understanding on what do one want to achieve.
- Be serious about quality control and in case of funded research make "reporting back" a mandatory part. As pointed out by Pears Lea (Line Communication) at current it appears it is often only build in, but not used. A question in this regard was also what is measured, outcome only? And who is measuring – needs objectivity as stressed by Andre Richier (European Commission) who did provide some examples on how difficult it could be to keep quality up.
- Demand in EU on Creativity and Entrepreneurship, not limited to innovation but certainly desirable to support and foster innovation.
- Cultural issue: We need to accept failure and learn from it. It seem to be deeply rooted in a European context that one wants to have "risk free" and "highly innovative" at the same time. This would not work and so failure should be accepted – including failure in funded projects.

Potential areas with innovation potential were seen to be:

- Platforms.
- Accreditation.
- Validation / Assessment (online and offline).
- Transformation of data into meaning (supporting pedagogies & learner guidance).
- Content.
- Human interaction, social learning, and collaboration.
- Personalization, profiles, and portfolios (e.g. 'My data GPS').

- Process innovation.
- Business Model Innovation.

As a wrap-up ELIG members were asked on what are the three things that ELIG, and the members, should and/or could do so to support innovation. The response to this was:

- Build on existing research.
- Build on existing practice.
- Based on the first two build up sensible partnerships.

14.2 The Online Educa Berlin workshop

This interactive Learnshop aimed to critically reflect on how to innovate in a profoundly changing education ecosystem. What are the opportunities for innovation within emerging lifelong and life-wide multi-stakeholder and multi-sided ecosystems?

The HoTEL (Holistic Approach to Technology Enhanced Learning) project originates from the observation that most of the TEL research so far has concentrated mainly on the development of ad hoc technologies for learning, failing to capture both the potential adoption of emerging technologies not originally designed for learning in education and training environments and the innovative use that is made of technologies in non-formal and informal ways of learning and the extent to which this could be transferred / adapted to formal learning environments.

This is believed by the Consortium to provide a misleading and fragmented picture of the extent to which new forms of using technologies (already mainstreamed and/or successfully piloted and/or emerging) support learning. Innovative practices in the use of technologies for learning (especially in non-formal and informal learning environments) are often not sufficiently considered by research whereas bottom-up innovation is playing an increasingly important role in the field of TEL, which might lead to new theories for learning. On the other hand, there is a need to verify the impact of existing learning theories on TEL practices to determine whether this has led / is leading to innovation. Furthermore, the lack of a holistic approach in TEL as described above puts at risk the effectiveness and mainstreaming of new ways of using ICT for learning purposes: too often the timespan between the identification of technologies that have a potential for learning, the theoretical analysis of pedagogical implications, the piloting of such technologies and their adoption (first at small scale and then

mainstreamed) is so long that the technology itself becomes out-dated compared to the changing environment and learning needs.

Pearson's Efficacy Framework would be tested as a [e.g. stand-alone] means to support the different stakeholders to innovate in TEL / education allowing for hands-on experience of using the efficacy framework with test cases of technological innovations in order to examine:

i. Whether new innovations necessarily support learning enhancement

ii. The impact of existing learning theories on TEL practices to determine whether this has led / is leading to innovation

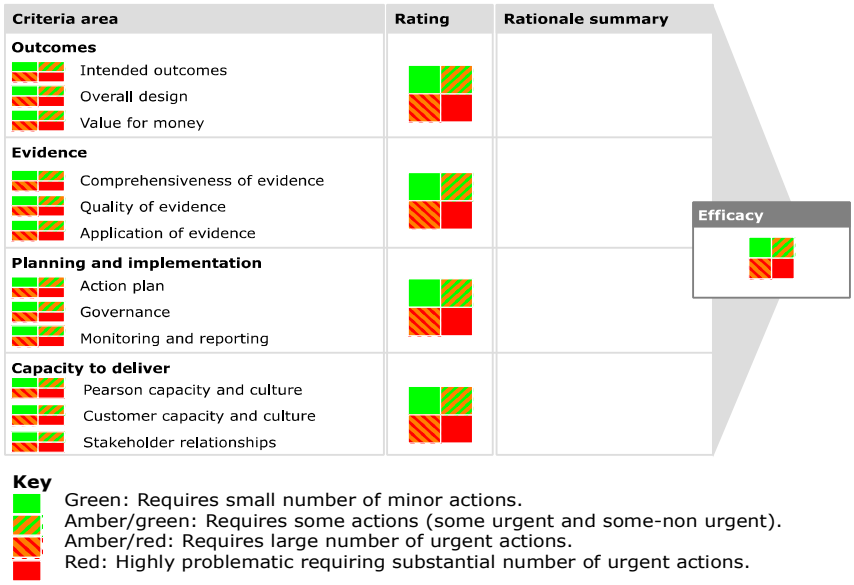
Existing knowledge through the Alive in the Swamp study can be leveraged to provide (*http://www.nesta.org.uk/library/documents/Alive_in_the_Swamp.pdf*). Though the study had a K-12 focus, it might still be well suited to provide some general guidance and transversal (high-level) criteria / aspects that would apply to any type of education, and particularly in regards to digital innovations. In line with the recent public commitment to efficacy (*http://efficacy.pearson.com/*) the learnshop is seen to be an appropriate showcase for the application of the efficacy framework to a wide variety of interested parties. Inside and outside Pearson "efficacy" has different meanings. At Pearson we have agreed on a definition of efficacy where efficacy is defined as:

"A measurable impact on improving someone's life through learning."

We need to be able to identify the specific impact for a learner. Efficacy has direct and obvious applications for those who are designing and delivering products, services and solutions to learners. The Efficacy Framework was developed by Sir Michael Barber (Pearson Chief Education Advisor) and his team. It draws on best practices about delivery from Pearson, and the public and private sectors.

The Efficacy Framework has two purposes: to understand whether we are delivering efficacy, and to identify a path to improve efficacy. This is outlined below, with the four key questions asked as part of the framework and a set of ratings for identification.

Efficacy Framework: Likelihood of impact



Participants had to fill in a pre-determined template for the learnshop to enable the workshop facilitators to deliver a bespoke and tailored session to ensure that mutual benefit for all parties is achieved. Cases brought to the workshop to be evaluated by the Efficacy Framework were then demonstrated in a template to be given to normal participants.

Rationale for the questions of the Pearson Efficacy Framework *are as follows:*

1. To make transformative system improvements we need to know, with precision and clarity, what the learning goals are.
2. Digital technologies that do not align with what is to be learned will likely not translate into learning enhancement.

Outcomes

- How clearly are the learning outcomes of the innovation defined?
- Are the learning outcomes explicit and defined for learner and the organisation?
- What is the quality of case model design?
- Does the technology incorporate latest design principles for user experience?

- Does the product accelerate learning?
- Does this innovation have the ability to scale system–wide?
- How expensive is the product or design change itself?
- Is the product of sufficient value, demonstrated by learning outcomes, to justify change?
- Are there hidden costs such as infrastructure upgrades?
- Are there overall cost savings realised by the innovation?

Evidence

- What is the quality of the assessment platform? Is it adaptive and does it include an optimal amount of detail?
- Is it clear how the outcomes will be measured?
- Is the technology integrated and seamless?
- How does the learner use the assessment system to monitor and motivate his or her own learning?
- How refined is the pedagogical underpinning?
- Is 24/7 access and learning enabled?
- Does the pedagogy reflect the latest global research, including the emphasis on constructivism and real–world examples?

Planning

- Is there a mechanism to ensure the pedagogy is updated?
- Is the assessment system integrated into the pedagogy and learning curriculum?
- Is the technology adaptable and highly connective?
- How does the innovation implement in the whole system?
- Is there a plan for scale based on world–leading change knowledge?

Capacity

- Is (Are) the clarity of case outcome(s) shared by all stakeholders?
- What is the quality of the user experience? Is it engaging, efficient and intuitive?
- Is capacity building a central component of the strategy?

- What support is provided to ensure the technology functions (for all parts including software, hardware, maintenance, electricity and connectivity?)
- What is the nature of the implementation support provided?
- How long is the implementation support or servicing in place for?
- Is the support based on a culture of learning, risk-taking and learning from mistakes?
- Does the innovation include user training and professional development? Are user development goals explicit?

In order to evaluate the results of the workshop feedback had been collected after the workshop via participant feedback form templates.

The learnshop in Berlin provided the team with the opportunity to investigate the application of the Efficacy framework as a tool to support technology enhanced innovation - which involved an introduction to efficacy, what it is and what it represents as well as a case study around testing its application.

Lessons learnt:

- More time needed to digest the content and what it means even from a conceptual perspective.
- Shift the framework from being an academic and high level piece to being practically applicable for external parties.
- Application of the efficacy framework needs more specificity to be moulded to the bespoke case of an external - a deeper dive needed with them to work through what that means.
- Example case study would have been helpful to contextualise.
- Individuals could see the benefit of the framework to help structure their thoughts, but perhaps needed additional aspects that more directly applied to the use of technology - such as that featured in the Alive in the Swamp publication.

Generally the sessions work best when there is a target audience in mind and the session is customised to them, perhaps future sessions could be deeper dive dialogues to problem solve, with less presentation and more facilitated discussion with a group from the same background.

14.3 The local multiplication seminar in Porto

On the 8 April 2014 Pearson / ELIG, with support from local partners, have been running a workshop on "Innovation in Education: Tools and methods for success".

The workshop was co-organized by colleagues from SCIO and Lab4Ed, and hosted by the Escola Superior de Educação (Porto, PT). The workshop attracted more than thirty educational actors from several action fields: higher education teachers (from both public and private universities), universities' professionals, vocational education and training teachers, MOOC's and e-learning trainers, educational innovators, and university students. The workshop had as keynote speakers Dr Andreas Meiszner, representing ELIG – European Learning Industry Group, and Kelwyn Looi, on behalf of Pearson.

The main purpose of the workshop was to evaluate how analytical tools, such as the Pearson Efficacy Framework, could enhance already established innovation support models, structures and processes. The workshop continued on from a 2013 workshop at the Online Educa Berlin conference and introduced the Efficacy Framework and explore its applicability as a tool to support technology-enhanced learning innovations. The Pearson Efficacy Framework appeared to be of potential use as an analytical tool as it can be used / applied to:

1. **Support the variety of modes and contexts** in which innovation may emerge.

2. **Be successfully understood** (or has the potential to be understood) and supported by different categories of stakeholders (e.g. institutional investors, school leaders, publishers, policy makers, teachers' networks, student associations, consultants).

3. **Identify what works, where and under what conditions**, distinguishing between success factors that are relatively "unique", specific to the context, and others that can more easily be found or reproduced in other contexts.

This first session of the workshop provided a more conceptualized presentation of innovative support tools and methods, with some constructive critical inputs that was provided from teachers and educational experts. The second session of the workshop in contrary allowed for a more practical exercise and was targeted at university students and young entrepreneurs. This second session provided an insight regarding the use of the innovative framework to their school works, and some comparisons with other methodologies.

Workshop Session One focused on 'Concepts and Models' such as the applicability, usefulness and integration of analytical tools like the Pearson Efficacy Framework, and how those could enhance already established innovation support models, structures and processes. The session provided an introduction into Pearson's Efficacy Framework to subsequently open the floor to a discussion on its

applicability within the Portuguese higher and adult education context. The topics explored in the session covered the following:

- Introduction to Efficacy at Pearson.
- Exercise: Using the Efficacy Framework and the Outcomes and Evidence criteria, examine the innovation potential for these 3 fields of innovation: MOOCs, Learning Analytics, and Educational Games.
    - From the product POV: if you were designing a product in these three areas of innovation, examine the Efficacy Framework as a tool to support the development of such an innovation.
    - Innovation potential assessed through examining a hypothetical product for each; a MOOC helping students to learn English, a product that enabled significantly improved learning analytics of an English language learning course, and an Educational Game designed to teach English.
- Open discussion on the applicability of the efficacy framework as:
    - A tool to support higher education institutions to innovate.
    - An applicable tool in the Portuguese education environment.
- Introduction to the Alive in the Swamp document as a resource to support transversal ideas and more specific questions to the development of digital innovations.

Workshop Session Two focused on 'Tools and Techniques' and provided an introduction to the methods that are for example used within Pearson, and particularly with regards to its Efficacy Framework. Session two allowed the audience, which was composed by university students and young entrepreneurs, to apply this framework to their on-going and future projects, developed in some university subjects that link ICT with education. Within Pearson the framework is currently being used as a tool to embed their notion of "Efficacy" so to allow for a measurable impact on improving someone's life through learning, but also to allow for measuring business processes, and it is covering the company's global product and service portfolio. The second session allowed participants to develop an understanding of the principles governing the framework, so that they could see its application to their own projects and ideas. The topics explored in the second session covered the following:

- Introduction to Efficacy at Pearson.
- Case Study exercise to examine and use the Efficacy Framework.
- Discussion around the use of the Efficacy Framework in scholarly projects, such as 'ClassDojo'.

General lessons learnt from the two workshop sessions with regards to innovation support are:

1. Practical examples, particular those that have a local relevance and using cases that are familiar to participants, appear to be a valuable vehicle so to allow for the autonomous self-directed application of analytical tools such as the Pearson Efficacy Framework.
2. Consideration of language as a barrier should not be neglected and a translation of any type of information might be considered.
3. Keeping complexity moderate by breaking down complex topics in well-defined and clearly understandable chunks does further support participation opportunities as well as autonomous self-directed application.
4. Draw and consider existing constructs, prevent the attempt to re-invent the wheel. Some individuals drew some comparisons in between the Pearson Efficacy Framework and other constructs, such as the action research cycle.

Wider learning for the team regarding the Efficacy Framework included:

1. **Consider the translation of the Efficacy Framework** to make it accessible to non-English speakers into more languages, and for those that are colour-blind.

2. Consider possible limitations with regards to process support. Participants feared that **the framework does not take into account "process"** within the criteria (for example e-learning is very much a process) and that the framework is more applicable to products.

3. **The issue of measuring the non-tangible outcomes** was raised, particularly outcomes of confidence, motivation and role-modelling, given some innovations are often focussed on purely course or product-level outcomes. How could those be measured, directly or indirectly?

4. **What is considered as being a "good" outcome is relative** and will vary by context and – is there a way to establish a minimum standard for innovations?

5. **If it is used as a framework by comparison** for innovations within the technology-enhanced learning environment, then how do we ensure a consistent comparison across a diverse possible range of innovations? Feedback was that it should be contextualised and applied in scenarios where people who apply it are involved with interventions.

6. **How can we harness the Alive in the Swamp document?** Initial thoughts are that it could be used as a way to embed efficacy at the Idea stage for digital innovations, after which the Efficacy Framework is used for product development and implementation.

Feedback provided from the participants do include the following aspects:

How you did experience the workshop discussions?

In general, participants share the opinion that the workshop did allow them to build up capacity, but that the format might still be improved. Participants perceived the workshop discussions as relevant, pertinent, suitable, knowledge generator, useful, and interesting in the way that it brought together visions of educational actors from several different action fields. An aspect to be improved for future workshops was that it would be easier to understand the context and applicability of the subject if it was given alongside more illustrative practical and local relevant examples from a successful case, either local or national.

How did you rate the usefulness of the Efficacy Framework as a tool to support technology-enhanced learning innovations?

Participants found that the Pearson Efficacy Framework can be indeed a suitable analytical tool, and that it can act as foundation for project building in different areas. One participant said that most of the Efficacy Framework questions should be part of a good teacher reasoning. However, even though it would add a value, some pointed out that teachers and the educational system, in general, show too much resistance when similar tools are presented and an implementation is tried.

Take-away from the session?

Two key take away experiences that were put forward by participants was an increased understanding about the usefulness and applicability of an assessment tools with regard to efficacy and, secondly, how difficult it can be to innovate in education against the traditional mentality teachers have regarding change.

What improvements could be made to the session so to better support educators through such a workshop?

As a common response participants mentioned that they would like to see more illustrative practical and local relevant examples. While all participants had close ties to the education sector, in the one form or the other, it was felt that their different action fields bring along different meanings for the presented concepts, and thus illustrative practical and local relevant examples would help to establish a common language framework.

WP4 | D 4.4.2_EFQUEL

HoTEL WP4 –EFQUEL Lab 3, on Informal Learning and Professional Networks

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15. Objective, description and context

The Lab on 'informal learning and professional networks' will be built around EFQUEL, an existing professional network within the TEL community. This Lab will explore and test how the adoption of an informal TEL innovation in a professional network can be enhanced and in what way a network of professionals will evolve and learn, both on an individual level as on a network level, using TEL methods. Potential accelerators for adopting the innovations will be piloted during the process and evaluated. More specifically the innovations will be implemented using the 'Innovation Support Model' developed within the scope of the HoTEL project.

16. Methodological process

The lab worked according to the following logic:

4. **A discovery phase:** An innovation is discovered and described in a structure format so that different innovations can be compared with each other.
5. **An analysis phase**: The innovation will be analysed from a full multistakeholder view. Categories of analysis will be a) sectors/ context of innovation, b) impact of innovation, c) stakeholders involved in innovation, d) process of development of innovation, e(serendipitous elements in innovation, f) unique nature of innovation, g) innovation elements in innovation, etc.
6. **A transfer and support phase**: This phase aims to see how an innovation can be either transferred to another context or how an innovation can be further developed within the same context. A number of matching excercises need to be done, e.g. maping stakeholders from the originating context to the new context, isolating critical success factors for the innovation and transferring them to the new context, etc.

EFQUEL, as a network of organisations and individuals will function as a real life test environment for the implementation of ten TEL innovations to encourage informal learning within a professional network. The innovations will be targeting different existing subgroups of the network (stakeholder communities), involving actors around selected themes, with specific roles or with different interests, thus reaching an optimal level of stakeholders. Following the analysis of the results of HoTEL's open call for ICT innovators and an internal brainstorming phase consisting of internal community consultations, EFQUEL will select and test 3 emerging innovative TEL methods within its own network. 7 other informal learning innovations will be tested on a conceptual level during workshops and other

knowledge exchange opportunities involving different actors from within and outside the network.

17. Stakeholders involved

Within EFQUEL, there are different stakeholder communities and target groups that are invited to participate in one or more experiments. These target groups can be considered as "professional networks" of their own because of the specific theme they work on or their common interest under the umbrella of the overall EFQUEL network.

- **EFQUEL members represented by EFQUEL core management group.** For this group we intend to test a learning innovation which generates stronger membership involvement, generate ideas, solutions, or facilitate decision making within the overall TEL professional network, which will be benefiting the entire quality in TEL stakeholders.
- **Network of Quality Professionals:** The network is designed as a growing community of EFQUEL-related professionals who can contribute to EFQUEL activities. The network dedicates itself to becoming a body to establish the principles of professionalism and professional standards in the field of quality for Technology Enhanced Learning. For this group we aim to select a learning innovation that facilitates the development of a common understanding of these principles.
- **Reviewers pool:** reviewers are involved in UNIQUe (Technology Enhanced Learning Quality Label for Universities and HE Institutions - http://unique.efquel.org/) and ECBCheck (Quality review & certification for e-Learning Programmes - http://ecbcheck.efquel.org/) reviews and form as such a pool of key experts in the field of quality in TEL. Some of them are less experienced than others and could benefit from peer learning activities. Hence we aim to focus on a learning innovation that facilitates the exchange of reviewers' expertise and knowledge about quality in TEL, which could be taken to a broader community in a second stage, willing to learn about quality models and certificates.

The Lab offers an opportunity for several projects/companies developing informal TEL innovations contributing towards the transformation of a professional network into an effective community of practice. The implementation of the selected innovations will be tested in the Lab environment using HoTEL's 'Innovation Support Model'.

On the other hand the Lab set-up and results will give all those involved in professional networks the opportunity to gain a good insight in the enhancement and acceleration of the implementation of TEL innovations in this specific network context. During the Lab experiment we therefore aim to reach not only EFQUEL members but also fellow networks/ professional bodies and institutions in the field of TEL to get their critical view and recommendations on the activities and outcomes of the Lab.

18. Innovations selected

Initially, 19 innovations were forwarded to the EFQUEL Lab by the WP3 Call for Innovators. These were evaluated according to their relevance to the topic, according to the following grid:

Name of Innovator	Relevant to Informal Learning?	Relevant to Professional Networks	Innovation Summary
Associazione FORUMLIVE	Y	Y	Social community for teachers (against a fee)
Calkin Suero Montero	Y	M	SCIKIDS learning robotics
Cinzia Chelo	Y	N	single teacher producing e-books
Danuta Starikova	N	N	math for disabled kids
Duma Cornel Lucian	Y	M	creation from stratch of 'curation restart online education project'
Etelberto Costa	M	Y	training of training of teachers
Frederic Kastner	Y	N	3600 professional produced videos
Gina Souto	N	N	digital competences in language curricula
Janaka Jayalath	N	N	project to support many rural masses to obtain National Vocational Qualifications(NVQ) and started Computer Application Assistant (CAA)
Katerina Zourou	N	N	student response systems
Kostas Karpouzis	Y	N	game for conflict management
Margarida Romero	N	N	MOOC vs MMORPGS
Marta Hunya	Y	Y	Hungarian Self Assessment system for schools
Natalia Aguilar	Y	N	ebook project for disadvantaged groups

Natalie de Leeuw Duarte	Y	N	game for management education
Nina Ranieri 2	Y	M	learning in the family
Nina Ranieri	N	N	language learning project
Theo Bondolfi	**Y**	**Y**	**Netizens**
Bold, green = High Potential Candidates			
Bold, yellow = Medium Potential Candidates			

In all 6 innovations were judged to be appropriate for implementation as theoretical lab cases, however none of the innovators chose to engage with the first step in the process, making it impossible to continue. For this reason a number of new innovations were chosen from within the EFQUEL network, from the set of EFQUEL stakeholders, namely:

Open Review Journal System

Case Organisation: The INNOQUAL Editorial Board (an informal network of 20 experts from around the globe, working on producing the journal)

Case Stage: Ongoing

Case Innovation: INNOQUAL operates an 'open review' system. The essence of the case involves (1) improving procedures for open review from a methodological standpoint, (2) identifying and implementing appropriate technology tools to support the open review, (3) promoting and involving people in open review processes.

Open Learning Recognition Clearinghouse

Case Organisation: University of Leicester

Case Stage: Conceptual

Case Innovation: The VMPASS Clearinghouse intends to use crowdsourcing tools to simplify formal recognition of informal/non-formal learning coming form open learning. The innovation covers the usage scenarios and technological design for this clearinghouse.

Case 3: MOOC on Quality in e-Learning

Case Organisation: EFQUEL

Case Stage: In Development

Case Innovation: The MOOC is being developed and provided by a loose coalition of organisations, operating in an informal network, towards set objectives.

Review Community & Tool

Case Organisation: GIZ

Case Stage: Mature

Case Innovation: The ECBCheck Community hosts what we believe to be the only fully online course review tool and community in the world. The innovation covers the wider deployment and use of the tool.

Best-Practice Community

Case Organisation: EFQUEL

Case Stage: Piloting

Case Innovation: The best practice community will be an example of an object-mediated informal network, using the criteria from our certifications as the basis for the discussion.

SEVAQ+

Case Organisation: University of Nancy

Case Stage: Scale-Up

Case Innovation: The case involves a tool to create and deploy student-evaluation questionnaires. The tool has been fully evaluated, piloted and launched to market, however it has suffered significantly due to lack of marketing strategy.

19. Implementation Phases

The labs worked according to the following logic:

19.1 Discovery Phase

The aim of this phase was to discover innovations and describe them in a structured format so that different innovations can be compared with each other. 19 innovations were collected through the WP 3 call for innovators and described using a standardized template. Unfortunately, most of the cases forwarded were either of very low quality, or not applicable at all to the topic of the lab, leaving the lab leaders no real choice in selection of cases. From the 19 cases, only 6 were deemed to have any suitability whatsoever for the purposes of the lab. These innovators were sent a welcome pack in

December 2013. Subsequent reminder were sent to the innovators in January and February 2014, with an overall 0% response rate.

Due to this, a different strategy for recruitment of innovators was adopted, whereby EFQUEL recruited innovators from within its network, working on projects known to the organization. This led to the collection of 6 cases in all, which were then asked to fill in the self-assessment form (Form A). Self-assessments for all six of the innovations are available in Annex 1.

19.2 Analysis Phase

During this phase, the innovation was analysed from a full multi-stakeholder viewpoint. Categories of analysis will be a) sectors/ context of innovation, b) impact of innovation, c) stakeholders involved in innovation, d) process of development of innovation, e) serendipitous elements in innovation, f) unique nature of innovation, g) innovation elements in innovation, etc..

In practice, during the analysis phase 5 reviewers were recruited to analyse the cases. The reviewers were recruited for their experience in professional networks, informal learning, quality auditing or combination of these factor. The recruited reviewers were:

- Dr. Sandra Feliciano
- Dr. Ulf Ehlers
- Alastair Creelman
- Ingeborg Bo
- Dr. Jan Pawlowski

Each case was reviewed by three of these reviewers, during the period between June and August 2014, who filled in a detailed review sheet for each case (Form B). Based on the feedback received from the reviewers, a member of staff from the EFQUEL secretariat consolidated the reviews into a single set of conclusions and recommendations (Form C) which were then sent to the innovators as formal feedback on their case. Annexe 2 contains the review sheets and the consolidated review sheet for each of the cases.

19.3 Transfer and Support phase

This phase aims to see how an innovation could be either transferred to another context or how an innovation could be further developed within the same context. In our case, innovators overwhelmingly chose to act on further development. In each case, during August and September, innovators improved their Research & Development Strategies, Marketing Plans and/or Pricing Models in line with recommendations from the reviewers. The results of these modifications were then reported back to the review panels who had done the original review.

The project plan initially foresaw that this would be followed by a second review on the part of the reviewers, however, the suggestions from reviewers were in all cases straightforward and incremental

in nature, with no case requiring an overhaul of strategy. It was therefore felt by both the innovators and the reviewers that a second round of review to confirm correct understanding of the reviews would be superfluous. For this reason, the Form D for reporting the changes was the last phase of the process embarked upon. Not all innovators chose to continue with this stage of the review, with 3 cases not graduating from the stage. The collected Form Ds are included as Annexe 3.

Findings, lessons learnt, and input to ISM

This section provides the result of hundreds of questionnaires, implementation reports, workshops, hands-on sessions, live presentations, and interviews derived from the HoTEL iterative assessment methodology. End-users, experts, reviewers, policy makers, decision makers, Lab leaders, and finally, innovators, contributed with many questions, answers and opinions. All of them provided a relevant feedback about the process, the methodology, the various phases, and the numerous forms. Furthermore, they provided a specific, significant input to the ISM and the Project HOTEL which is presented in this section, and which compiles findings and lessons. Following, we show these reflections in the form of a list of observations.

Observation [1]. The self-assessment process helped innovators better plan service provision

Our feedback from the innovators indicates that one of the most useful part of the Innovation Support Model was the self-assessment step.

Making the researcher to self-reflect on the innovation through a key guided questionnaire served them therefore to identify or refine those pieces of the research that will help to achieve a quality work: value propositions, key messages, added value, strengths, weakness, etc.

Also, most of the innovators admitted to being excessively product focused, with insufficient time having been spent on service-related elements such as pricing strategies, marketing plans, the setting of key performance indicators, stakeholder analysis and so on, with preference having been given to Research & Development activities in most cases. Thus, most of the innovators found that the self-assessment form served as a business-plan template, allowing them to reflect on the elements required for service provision, to set them out, and to improve their own plans and strategies in response to the criteria laid out in the form.

Observation [2]. The process of review and assessment was too paper-based

Feedback from all parties indicated that the use of forms as the main mode of communication between innovators and reviewers significantly limited the scope of the entire process. Despite the level of detail and comprehensiveness provided for in the forms, they were generally found to:

- be too long and bureaucratic to lend themselves to easy use
- require the collection and analysis of too much data, if they are to be useful

- not be ideally suited to describe the vision of the cases in question, in particular where services were designed to be offered as part of an organisation's mission, rather than profit-rearing activities

In particular, innovators and reviewers felt that a mechanism by which innovators could present their innovations in person, based on the self-assessment form, discuss these innovations in detail with the reviewers, over a period of, e.g. an hour, and then receive written feedback, would be far more useful that the form-only based process enacted by the reviewers in this laboratory.

The implementation and theoretical live sessions carried out between innovators and real users, and the direct usability and recommendations questionnaires derived from this sessions, proved to be really useful for innovators.

Observation [3]. Reviews tended towards incrementalism

On the whole, innovators found the feedback given in the reviews to be useful, and in all cases they provided guidance as to how to strengthen and/or improve the innovations under study. However, in most cases innovators found that the 'expert' nature of the reviews did not come out sufficiently, with one innovator likening the type of feedback received to that which any member of his own project team might have provided. In particular, criticisms included that:

- many recommendations stated the obvious: in several cases reviewers 'identified' weaknesses which had already been pointed out in the SWOT analysis, or pointed out deficiencies which were extremely obvious, e.g. recommending that an innovation implement a pricing strategy, when the self-assessment form states that a pricing strategy still has not been developed
- most other recommendations were incremental in nature: recommendations generally suggested small improvements to existing plans. They did not suggest that innovators change strategies, explore new directions or make other major changes to their plans and strategies. While this could be due to the fact that all the innovators presented excellent plans, it is considered to be more likely that this was due to insufficiently clear instructions being given to the reviewers, and a choice by the latter to favour such an incremental approach.

Observation [4]. The reviews did not transfer best practice or expertise, or offer real opportunities for learning

The main criticism received from the innovators was that the reviews did not provide any additional or unique insight into the target groups: one of the main selling points of the HOTEL Innovation Model was that it would provide a TEL-specific support model, with experts who could assist TEL development in

particular. In fact, the advice and consultation received was generic. Innovators felt that they would have been better served with recommendations which:

- helped them refine and improve their product descriptions, key messages and product targeting
- were illustrated with case studies from other players in the field, so as to provide positive or negative examples on how to do (or not do) things
- provided concrete suggestions on what kind of marketing activities, pricing strategies or service models to develop
- made direct reference to their stated targets

In many cases, some of this information was provided in the commentary which arose in the review sheets, but then was not transferred into actionable items in the form recommendations which would take the form suggested above.

Observation [5]. The reviews were not equally suited to projects in any stage of development

The Innovation Support Model claimed to be suitable for any kind of project – from those in conception to mature services. While innovations in all the intermediate stages of development did indeed find use from the models:

- Innovations still in conceptual phase (in terms of service provision not in terms of research and development), found the process to be less useful, as a service concept had not yet been developed, and in this case they were seeking a process by which to arrive at a service concept, rather than a process by which to improve an already existing service-concept
- Innovations in a mature phase of development also found the process to be less useful. In this case the reason was because they had already dealt with problems which may be described as 'low hanging fruit'. They were instead looking for new areas to explore, evaluation of long-term strategies, etc. rather than incremental improvements on their current activities.

In line with the methodology and objectives of the HoTEL exploratory labs (see D4.4.1) the following general lessons could be obtained from the cases:

Observation [6]. Vast varying definition of what is success

One of the major difficulties towards innovation development within an educational setting was to properly define "success" (particularly while using the HoTEL lab protocols). This criteria has proved to be dependent on the inserted context, the objectives, and the target-group addressed, among other

direct and indirect variables, as also the Learnovation Vision[3] report stated, by suggesting "to remember diversity and differentiation of learning needs and styles: the knowledge, competences; attitudes and values required in contemporary work places are diverse and differentiated".

Observation [7]. Difficulty on understanding and assessing impact

Similarly to the definition of "success", the same challenge has arisen while assessing the potential impact of an innovation. The set of dimensions that can be considerable to analyse the innovative impact to the target-group, whether individually or in general, and/or to the working and learning environment, for instance, makes it difficult to strictly assess the real impact. This issue was also highlighted by the participants at both the implementation sessions and physical events, particularly at the local multiplication seminar.

Observation [8]. Comparison between theoretical and practical cases

Some differences were found while comparing the outcomes of the theoretical and practical case approaches. In what regards the theoretical evaluation, the initial description of the seven cases, and the information collecting process via inquiry with case owner or via lab, specifically about the innovation (its objectives, background, defined strategies, success indicators, impact on the user, the organisation, and the learning processes) was essential to determine the type of support needed. This theoretical approach was useful to further apply the good practices at the practical assessments. Particularly regarding some cases (case studies #7 to #10), in some moments of the process no further information could be obtain, and thus the cases couldn't be ultimately completed with regards to the evaluation approach detailed in the D4.4.1 methodology.

Observation [9]. Observed efficacy of the physical support complemented with virtual follow-ups

It could be observed that the physical support on face-to-face meetings, appeared to allow for a good understanding of the problematic and the recommendations developed through the process (see D4.4.1). The virtual support and follow-ups process thus appeared work out well. Nevertheless, the online support that made use of asynchronous communication lead to delays in the time and efficacy of the given suggestions to accelerate the innovative cycle.

[3] Source: http://learnovation.files.wordpress.com/2010/10/learnovation-vision-paper-1-school-education.pdf

Observation [10]. The HoTEL Lab methodology as a barrier

As could be seen across all of the cases, and as further detailed in section '6.5. Lessons from the process', the HoTEL Lab methodology turned out to be an obstacle. Notably with regards to two inter-related points: (1) perceived benefits and gains and the (2) collection of information focus of the support process. This is to say that it could be observed that the process with the number of forms to be filled and documents to be read (see D4.4.1) had been a barrier and thus the process as stipulated in D4.4.1 might be carefully evaluated again so to assure benefits and gains of the support provided do not conflict with the research objectives of the project.

Observation [11]. Basic practical hands on support and guidance in analytics as an enabler

As detailed further in section '6.5. Lessons from the process', basic practical hands on support and guidance in analytics as provided within the practical cases, including via tools such the Pearson analytical framework, appeared to work as an enabler, or at least to allow participants to perceive those as potentially beneficial and leading to gains.

Observation [12]. Recognition of the diversity of innovation paths

Firstly, the support provided ultimately had to be adapted to each of the respective cases as a result of – inter-alia – different starting or emerging sets of variables that all influenced the support process, or the actual work towards the improvement of the product or service. This also included differences in the objectives of every organisation engaged in the HoTEL project, on the structure of the organisation's team, on their current social and economic situation, on the market demands, on the likelihood to successfully implement the innovation, among others, the support provided towards efficacy showed that there are essential requirements that must be fulfilled. Additionally, the ELIG support team had to respect the established time-frame in the initial planning stage of the innovative cycle. Even if deadlines aren't, milestones should be previously defined.

Observation [13]. Context-sensitivity of the analysis and support action proposed

A further lesson learnt by ELIG Lab team through the process was that similar is different than equal, i.e., even though two innovations can share a common barrier to success, for instance, the approach to overtake this barrier must be dependent of each case and its variables. The development takes serious consideration about direct variables and key factors from every context, stakeholder and user (which

will differ from place to place) in order to integrate them and their points of view into the innovation, and raise the possibility to successfully achieve the intended outcomes

Observation [14]. Establishment of priorities

The provided support covers different areas, independently of the current stage of the innovative cycle. Although all areas are important to the successful development of the product or service, some interventions need to take place sooner than others. Hence, it's important to analyse and define priorities. In order to facilitate this process, a design mindset must be implemented inside the innovator's team towards overcoming external barriers. The design process start with the formulation of questions and problems based on a deep understanding of human need, both practical and aesthetic, thus the relevance of this mindset to the early stage of the innovation's development emerge.

Observation [15]. Involvement of the stakeholders

Innovation is more than research and development. A well-structured involvement of the stakeholders through the innovative process, whether supporting the conceptualization, development or implementation of the innovation within the educational market, is thereby essential to the achievement of the intended outcomes. The first interaction between the innovator and the stakeholders is very important and certainly influences all process, thus the interaction and communication is important in order to address the stakeholders' specific requirements and to understand what motivates them. Breakdown in communication between actors is a frequent cause of problems and can lead to a lack of support for the process, or unwillingness to face up to the opposition. Furthermore, during the negotiation of involvement, a commitment should be given to provide consistency. In order to respond to the changing external involvement, this involvement needs to be reactive. As any project can be improved through a process of critical analysis, "stakeholders are vital sources of information and should always be encouraged to participate in a process, even where they are fundamentally opposed to it" (NICHES, 2008)[4].

A wide set of advantages were possible to be observed during the HoTEL support project. Additionally, a large number of those were common to all reviewed cases. For instance, the integration of the wide range of skills, experience and knowledge of stakeholders may help the innovators to run the project more successfully. To ensure the legitimacy of the planning, development and implementation process, and to improve the steering capacity for measure preparation, implementation and, mostly, the quality

[4] Source: http://www.niches-transport.org/fileadmin/New_folder/Deliverables/NICHES_6_3a_Final_Activity_Report_Final.pdf

of the results, are also potential benefit actions derived from a healthy interaction between both intervenient actors. The stakeholders can also help to streamline policy and program development processes and improve the quality of decision-making. Although this involvement includes a range of potential advantages, it certainly encloses risks, limits and challenges. For example, time constraints was one of the issues founded along the HoTEL support process. Additionally, to gather a wide range of stakeholders in the decision-making processes can be counter-productive: "there is a danger of creating a battleground rather than a discussion platform" (NICHES, 2008).

Observation [16]. HoTEL protocols

The ELIG Learning@Work Exploratorium Lab counted on a number of protocols that were used as both informative and assessment tools. The initial forms were essential to describe and understand the innovation through a wide range of dimensions such as the objectives, background, indicators of success, and defined development, marketing, and pricing strategies, among others, since possibility to be understood and supported by different categories of stakeholders is one of the keys for the successful adoption of an innovation. However the number of different forms needed to be fulfilled by both the innovator(s) and the reviewer(s) was proved to be exaggerated to the envisioned objectives, mainly due to the similarly of questions to be answered and its relevance to the process, and particularly to the innovative development.

Observation [17]. HoTEL analytical tools

In contrast to the protocols, the applicability of the analytical tools present through all process to analyse, reflect, and strength recommendations on each case, was consensual among all actors. In order to describe the strengths, weaknesses, opportunities and threats related to the implementation of the innovator's strategy to achieve the established objectives, the SWOT analysis was used. To deeper dive in the analysis of specific topics related to the innovation – particularly the intended outcomes, evidence collected, planning and implementation, and capacity to deliver – the Pearson Efficacy Framework was used additionally. This analytical tool proved to be extremely useful to the given support as it allowed to prioritise the intervention focus while observing the dimensions with more needs. It has also provided particular recommendations to specific topics covered. Furthermore, Pearson's framework helped some of the innovators to better structure their teams, by identifying gaps and empowering roles and positions of members.