(Marie Curie Actions)

Project no. 255182

Project acronym: **DYRECT**

Project full name: Dynamic Roadmapping with application for EduCation and Training

**Type of Instrument: Marie Curie Intra-European Fellowship (EIF)**

**Detailed report on WORK PROGRESS AND ACHIEVEMENTS DURING YEAR 2**

Period Number : 2

Period covered: from 1/1/2012 to 31/12/2012

Start date of project: 1/1/2011

Duration: 24 M

Project coordinator name: Lampros Stergioulas

Project coordinator organisation name: Brunel University

Organisation name of lead contractor for this deliverable: Brunel University

Summary

Overall, the DYRECT Marie Curie Fellow achieved good progress on all of her research activities. The MC Fellow’s research towards a PhD has progressed well over the two years of the project, with the development, improvement/ finalisation and pilot-based validation of the Conceptual Framework for Dynamic Roadmapping, and the completion of the relevant Action Research programme with stakeholder clusters (involving a number of consultative stakeholder workshops and meetings). Particularly she has led with great success the Schools Roadmapping Cluster, which has now excellent prospects of sustainable development, community building/growing, and collaborative dynamic Roadmapping. The achievements of this Cluster, culminating in a living example of a Dynamic Roadmap, are an excellent demonstration of the DYRECT achievements. The MC Fellow’s PhD programme, which she has pursued at Brunel, is also on good course for completion, and now in its final stages.

During the two years of the project,, the MC Fellow has achieved all three main objectives of her research, and has completed/finalised all the DYRECT deliverables and research objectives:

1. introduce and **investigate the concept of Dynamic Roadmapping as continuous knowledge creation process**;
2. to provide a **framework for developing an alerting system that will identify record, classify important trends and weak signals**, at a global scale and analyse their significance for Roadmapping (**TEL Observatory** – the main new contribution of Year 2 research); and
3. provide a meta-model for Roadmapping to serve as a framework for the needed semantic interoperability between diverse roadmaps of different communities (**Conceptual Framework of Dynamic Meta-Roadmapping**).

In Year 1, the MC Fellow was academically initiated to the nature and particularities, the objectives and the challenges of PhD-level research. She attended a one-year-long PhD Advanced Class programme in Research Methods, together with all her PhD candidate colleagues at Brunel. She also participated in the activities of Brunel’s Graduate School and attended many Research Development and Professional Development sessions, lectures and seminars, addressed to individual researchers.

During the two years of the project, the MC Fellow focused on and delivered successfully the following:

* Development and completion of the outstanding Year 2 research objective (b)
* Integration of all the outputs of her work
* Completion of all outstanding aspects of the work of the DYRECT project
* Significant progress on her research towards her PhD award; and
* Preparation of at least three high-quality publications to appear in major academic journals, to disseminate the research done effectively to the wider research community and at the highest level.
* Organised and led the programme committee of the European Forum for Learning Futures and Innovation (to take place in the Committee of Regions in Brussels, on 18-19 March 2013)
* Played a leading role in the co-organisation of the joint event of the European Forum for Learning Futures and Innovation liaising with other co-organising projects (TEL-Map, VISIR, and Open Discovery Space) and shaping the Programme of this joint event (see also attached Programme of the event).
* Led the activities of the Schools Roadmapping Cluster, and the follow-up activities within the Open Discovery Space’s large Network of Schools.
* Piloted the Dynamic Roadmapping methodology and the DYRECT Observatory function in the context of primary and secondary education as well as in Higher Education. In particular, she has led the Schools Roadmapping Cluster and has been a major contributor to the Higher Education Cluster. These Roadmapping clusters attracted/included a large number of participants across Europe, and run large-scale EU-wide pilots going through the complete Roadmapping process (see Deliverables (D4 and D5), with workshops taking place in various locations in Europe and organised by the researcher during Year 2.
* Initiated a process inspired from Roadmapping, to provide a map/cartography and integrate the fragmented TEL area, towards a federated effort to streamline and develop joint activities amongst the big players and projects in European TEL.
* Presented and disseminated the developed Roadmapping framework in the context of numerous venues, conferences, workshops, institutions and projects (such as GALA, iTEC, VISIR, etc.) and organised and held a number of related workshops (such as in OnlineEducaBerlin 2012).

Thus DYRECT has delivered significant contribution/input, value and impact on the wider EU TEL area, via (a) supporting the TEL community with a new framework and methodology of Dynamic Roadmapping, and more generally supporting various types of Technology Roadmapping, and (b) increasing awareness and supporting the community around Tel via federated, conjoint streamlining and cartography efforts, inspired from the concept of Roadmapping.

The DYRECT project has also achieved significant sustainability by:

* Facilitating and supporting the development of a new roadmapping infrastructure which supports that proposed Dynamic Roadmapping framework, in the form platform and tools, currenlty being developed at the Learning Frontiers EU portal.
* Developing sustainable, living communities to engage in their own continuous Roadmapping, in the form of Roadmapping clusters (such as the Schools Cluster and the Higher Education Cluster).
* Actively supporting, through the developed methodologies and tools, the Open Discovery Space roadmap, which aspires to engage the majority of European Schools and which will be based on the developed Dynamic Roadmapping approach.
* Initiating the first steps of a process towards a federated action plan, a pan-European strategic intelligence service, and a community support framework.

Furthermore, in Year 2, the MC Fellow was academically active and participated in the various activities of Brunel’s Graduate School and attended many Research Development and Professional Development sessions, lectures and seminars, suitable for individual researchers.

In particular:

1. The MC researcher attended the compulsory Research Methods course (1 year full-time, or 2 years part-time) which is offered to all Brunel researchers. She also received from the University formal training on Research Ethics and the practicalities of compliance (e.g. how to seek ethical approval for research) as well as courses on academic writing and presentation/communication skills for academic researchers. Furthermore, she was able to attend crash courses in major subjects offered by DISC and by the Brunel Graduate School, as well as other subjects of general interest (European languages, art and philosophy courses, etc.).
2. With the support of DYRECT project grant, the MC Fellow has received formal training in (a) Roadmapping and (b) strategic Project Management. In particular, she attended and completed Cambridge University’s Roadmapping course (by R Phaal), and also and also registered, attended and successfully passed the PRINCE2 professional course, an intensive 2-day professional course in Project Management, which will included offered hands-on training and theoretical backing on the management, running and delivery of large-scale implementation Projects. The researcher is now holder of the PRINCE2 formal qualifications in Project Management.
3. The researcher was offered formal Mentorship by her supervisor and other suitable members of academic staff in DISC (Prof. Z Wang, Prof. P. Louvieris, Prof. A. Payne), including annual appraisals, career development sessions, as well as external activities like attendance of Summer Schools (she attended one Summer School in Year 1).
4. Via Brunel’s Graduate School, she researcher received l training on aspects to do with Research , as well as courses on academic writing and presentation/communication skills for academic researchers. Furthermore, she was able to attend courses in major subjects offered by DISC and by the Brunel Graduate School.
5. She also had the opportunity to take part in personal development courses and seminars and study other subjects of general interest (European languages, art and philosophy courses, etc.).
6. She has been involved in the writing of academic papers with at least 3 papers currently in preparation, to be submitted in A-Grade research journals.

There have been no significant problems or delays in delivering the promised research programme and all tasks and outcomes/results of the work were delivered on time, without any impact / delay on the originally planned schedule.

The project resources were used in the appropriate and pre-planned way, without any deviations from the planned Researcher-months in Annex 1.

In summary, DYRECT has succeeded in producing the expected outcomes and delivering all its six deliverables (D1-6) in appropriate form and quality, and overall achieved the DYRECT vision to a satisfactory degree – and met all the project’s objectives in an efficient way. All three critical project objectives (as outlined in Annex 1) were achieved. Furthermore, DYRECT has delivered additional value in many areas of its initially proposed Research programme, and the completion of her PhD is imminent (with its final submission now planned for May 2013).

Deliverables completed in Year 2

The following Deliverables have been delivered, as planned, in Year 2:

***D1: Early version of conceptual framework for Meta-Roadmapping:*** This report will provide the methodology and the tools for developing the meta-framework for Dynamic Roadmapping. The platform and tools for discourse will be also specified and made available. (M10)

***D2: First version of the Conzilla-based Meta-Roadmapping framework:*** A pilot implementation of the Roadmapping framework which will connect the roadmap findings of PROLEARN, ICOPER, ROLE, STELLAR projects, which are concerned with Professional learning (M16, with minor delay)

***D3: Conceptual framework of TEL Observatory V1:*** This report will provide the methodology and the conceptual framework for building the TEL observatory. It will also include a detailed plan for its online implementation using the Conceptual Browser technologies and social software tools. (M20)

***D4: Final version of the Conceptual framework for Meta-Roadmapping:*** This report will present the final conceptual frameworks of the Roadmap model and the TEL observatory. It will also describe the lessons learned and the plans for its sustainability. It will also outline a business plan for the development of a expert team in BRUNEL to undertake the follow up research and development. (M24)

***D5: Final version of the Conzilla-based Meta-Roadmapping framework:*** An updated version of the pilot implementation of the Roadmapping framework which will connect the roadmap findings of PROLEARN, ICOPER, ROLE, STELLAR projects, which are concerned with Professional learning (M24)

***D6: Dissemination and communication plan:*** Preparing a dissemination plan, which will comprise the publication of academic papers and related presentations in conferences, organization of experts‟ panels and consultation meetings, PhD colloquia. (M4) Deliverable

All the tasks and deliverables have been completed on time and to a high standard.

|  |
| --- |
|  |

# **Research Activities, Collaborations and Events Participation (Community events and meetings, stakeholder consultations, conferences and workshops)**

# Programme chair member in 5 international conferences

During this reporting period (Year 2), the applicant has been invited and served as a programme chair member at the following international conferences:

1. Member of the Program Committee for the 2011 conference. The 10th International Conference on Web-based Learning (ICWL 2011), 8-10 December 2011, Hong Kong <http://www.cs.cityu.edu.hk/~icwl2011/>
2. Member of the Program Committee for the ITS 2012 conference. 11th International Conference on Intelligent Tutoring Systems, 14-18 June 2012, “co-adaptation in Learning”, Crete, <http://its2012.teicrete.gr/>
3. Member of the Program Committee for the ICWL 2012 conference. The 11th International Conference on Web-based Learning, 2-4 September 2012, Sinaia, Romania, <http://www.hkws.org/conference/icwl2012/>
4. Member of the Program Committee for the ICWL 2013 conference. 12th International Conference on Web-based Learning (ICWL 2013) to be held on 6-9 October 2013 in Kaohsiung, Taiwan. <http://icwl2013.tajen.edu.tw/>

## 1 Modeling your research within the TEL domain workshop during the JTEL Summer School of 2011

Date: May 30th to Friday June 3rd, 2011 in Chania, Crete, Greece

<http://www.prolearn-academy.org/Events/summer-school-2011>

**Workshop organizers:** Vana Kamtsiou, Ambjörn Naeve

**Main purpose**: To enable the PhD-students to situate their own research within the TEL community and ground their research on a sound methodological basis. This is serving as an example of a Roadmapping cluster related to TEL research Roadmapping activities.

**Challenge:** PhD students in TEL are often financed by various projects and are expected to perform their research while working within these projects. In such a situation it is often difficult to integrate the research aspects with the project-related work that finances it.

**Overall goal:** Toget PhD students of TEL involved in describing what is happening in their own community with a focus on the projects they are working in. More specifically, help the students to:

* obtain an overview of the TEL domain and describe how their own research is situated within this domain.
* understand the complexity and multi-disciplinary nature of TEL research.
* create positive synergies with other students and TEL projects focused around common interests and activities.

Two-fold purpose of these activities: a) to explain how the PhD students can base their own research on existing research methodologies and b) to explain how their research fits within the TEL research community.

Hence we modelled with the students to create an overview that reveals the interrelationships between different PhD research topics (who is building on what) and how this relates to specific TEL research and development projects. The students had an opportunity to collaboratively build and share the current state of the art in TEL, describe where the innovations points are occurring, and reflect on how their own PhD work fits within this landscape. From a more strategic perspective, being part of such a modelling group will allow the students to position themselves within the TEL community and demonstrate why their research is innovative and where their expertise lies, while at the same time raising their visibility within the TEL-Community as well as in the eyes of the European Commission.

On the last day of the summer school, a session was scheduled based on the produced models that aimed at drawing some conclusions on which topics, technologies and disciplines that are receiving increasing attention in TEL.

**Methodology:** The activities were organized as a series of methodology-based modelling course aimed at modelling the relationships between the students’ research topics and the structure and activities of the projects that they are involved in. The methodological framework used in these activities will be based on Practice Research, which has evolved as a fruitful research paradigm for research in information systems as well as in other profession-oriented disciplines.

Activities before the summer school: We collected information on the topics of research, the communities that the students are working with, and projects they are involved in. Moreover, we organized one modelling course (via one scheduled FlashMeeting with the students one week before the summer school). During this meeting, we set the grounds for the Summer school modelling sessions, discussed the methodology and tools that we will use and get the students feedback. As a methodological basis, the papers in the reference list were made available to the students in the TEL-Map Confolio (http://telmap.confolio.org).

Activities during the summer school:

A. Setting the scene:

Two introductory presentations during the 1st day of the summer school:

* Practice Research as a framework for situating your research within the TEL community:
* The DYRECT approach for constructing the Aspect Space Map based on collaborative modeling and disagreement management. Opportunities for PhD students for collaboration.
* Follow-up with a series of modelling workshops during the week: 2 hours modelling sessions run for the duration of summer school (during afternoon sessions).
* Conclusion session and building a follow-up team of Community Modelling and Mapping Managers for different parts of the TEL domain.

**Activities after the summer school:** These activities were continued at EC-TEL via a dedicated parallel modeling track during the duration of the conference. In addition, a new session during the JTEL 2012 summer school in Portugal are organized using the same methodology as a follow up modelling sessions with old and new students. <http://www.prolearn-academy.org/Events/summer-school-2012>

## **2 TEL-Think-Tank within EC-TEL 2011**

**EC-TEL 2011** <http://ec-tel.eu/>

**Date:** 21-09-2011

**Workshop title:** Technology-Enhanced Learning (TEL) from the trenches: a think-tank of current challenges and next steps for useful Research, Development, and Adoption of TEL outcomes.

**Organizers, Programme Committee (alphabetical order):**

ATOS Origin (Projects Stellar, Gala). Daniel Burgos, Lydia Montandon

Brunel University (Project DYRECT/TELMap) Vana Kamtsiou

CNR (Projects Stellar, Gala). Rosy Bottino, Michaella Ott

KTH Royal Institute of Technology (Project TELMap). Ambjorn Naeve

London Knowledge Lab. Rosemary Luckin, Joshua Underwood

Open University NL (Projects Stellar, Gala). Wim Westera, Rob Nadolski, Fred de Vries

Open University UK (Projects Stellar, TELMap). Fridolin Wild, Peter Scott

Research Council Research Fellow AU, AIED Society. Judy Kay

Scienter (Project Stellar). Stefania Aceto, Claudio Dondi

Technology-Enhanced Learning Research Programme UK. Richard Noss

University of Genoa (Project Gala). Alessandro De Gloria, Francesco Bellotti, Riccardo Berta

University of Leeds (Project ImREAL). Vania Dimitrova

Zentrum fur Soziale Innovation (Projects Stellar, TELMap). Christian Voigt

**Theme**

Discussion of current and future research perspectives, key challenges, drawbacks, and hopes for Technology-Enhanced Learning (TEL), based on the experience of an actual think-tank on TEL, formed by members of the three EU funded Networks in Technology- Enhanced Learning (i.e. NoE Stellar, NoE Gala, and CSA TELMap), and the UKfs Teaching and Learning Research Programme at United Kingdom (UK TLRP TEL).

**Concept, domain, and objectives**

Our main objective was to help define a shared agenda for progressing towards a mature, well-established and sustainable TEL discipline featuring improved coherence, shared bodies of knowledge, and shared methodologies and instruments, and anchoring with industry, education, business, and other stakeholders. In addition, this workshop aimed to develop understandings in the broader non-academic community of the role, purpose and progress of the field of TEL.

This was achieved by engaging existing TEL projects (i.e. Stellar, Gala, TELMap, and TLRP TEL), actual networks and groups for research and networking, in a unified think-tank about TEL. Every project provided a comprehensive view from its main topic, namely: TEL from Stellar, TEL and eGames from GALA, TEL and Roadmapping from TELMap, and TEL and Teaching and Learning from the UK TLRP.

A well-structured agenda is proposed that will optimally exploit the knowledge and experiences of expert participants. The agenda covers five main topics, directed at establishing the TEL Think-tank as a sustainable transversal action:

1) Data collection: what are the main channels, requirements, methodologies, and tools, for collecting relevant information about TEL research, technologies, TEL-industry, Education providers, and market needs?

2) TEL body of knowledge: How can we establish a shared body of TEL knowledge, methodologies and instruments?

3) TEL Community development: How can we establish a sustainable TEL (research) community and sustainable anchoring with industry, education and other stakeholders?

4) Research challenges: What are the main TEL challenges for the upcoming years and how can these be identified, assessed, and faced in a harmonized way?

5) Policy measures: What structural measures are required at the national and European level for supporting the maturation of the TEL discipline (organisation, funding, special actions, events, etc.)?

Furthermore, additional objectives were:

- To carry out a transversal activity aimed at enhancing synergy and cross-fertilisation and avoiding overlap in TEL R&D and stakeholders consultations activities - To consult stakeholders on their needs and concerns with respect to TEL research, implementation, and adoption

- To establish a de facto reference point and knowledge brokerage mechanism on TEL intelligence in Europe, providing knowledge, information, tools, dialogue, and awareness raising opportunities on TEL challenges, current weaknesses, future trends, enablers and barriers of TEL, as well as recommendations to enhance TEL impact. It provides specific topics, actions to take, and preventive counter-measures.

**Duration:** Full day (7h)

**Target group**

Policy and decision makers (e.g. EU and national representatives involved in the design, development, implementation, evaluation of policies and initiatives related to TEL across all learning domains), EU project coordinators, various TEL stakeholders (i.e. Industry, Academia, end-user associations, professional associations, etcetera) Number of participants 30.

**Outcomes**

Three main results of the workshop:

1) Live outcome: a live website (e.g. TELEurope, www.teleurope.eu) for parallel and live discussion before and during the workshop

2) Immediate outcome: a white paper-report to be published online right after the congress, and distributed via our projects and other major stakeholder networks

3) Long-lasting outcome: a comprehensive journal paper to be submitted in early 2012

## 3 Parallel Modeling track at EC-TEL conference

**Track Leaders:** Vana Kamtsiou, Ambjörn Naeve

**Dates:** 20-23/09/2011

**Main Goal:** Use Conceptual Modelling to construct the “TEL Aspect” space, as a domain map for TEL and position the TEL stakeholders into this map based on 3 parameters: a) their achieved results, b) the impact they are expecting these results to have on TEL, and c) there potential benefits of collaboration with other TEL stakeholders.

For this purpose we organised a parallel Modelling track during the EC-TEL conference, during which we carried out live on the spot modelling of the TEL stakeholders and made the resulting models visible to the TEL community. The idea was to develop a state of the art, “big picture” of TEL with accurate indication of who does what, producing what, using what approaches, which all stakeholders can share.

We built on the modelling activities we organized at the JTEL Summer School where we aim to capture information from PhD-students that represent various EU projects and other TEL stakeholders. (For details, see our proposal for JTEL Summer School 2011):

We built on a similar exercise with the PhD students at the JTEL summer school and during the doctoral consortium at EC-TEL and the proposed “walk-in modelling” activity would be a logical continuation of this, where we can updated the student’s models with input from the more senior representative of the TEL stakeholders via the EC-TEL Modelling track. It would be a good idea to get the posters of the projects to start with the mapping exercise and send the invitations for the modelling activities.

## 4 Workshop at Online Educa 2011

**Title:** Signs on the wall: Reading indicators of change to inform your TEL strategies <http://www.online-educa.com/ap/programme_detail.php?id=f7>

**Date:** Friday 25th at 16:30 Duration: 90 min

**Workshop chair committee:** Christian Voigt (ZSI), Vana Kamtsiou (BRUNEL), Ralf Klamma (RWTH Aachen), Paul Lefrere (OU UK)

**Workshop description:** Technology Enhanced Learning is facing the challenge of ever faster technological change combined with evolving expectations about what form education should take in the future. As a result innovators, researchers, policies and practitioners need to keep track of emerging signs of change in order to anticipate upcoming trends and opportunities. However, it is not a trivial task to recognise the first weak signals of what will become major changes. We identify potential filters that may lead to early warning signs being missed. Typical filters in organisational communication processes include epistemic blind spots (surveillance filters), group think (dominant mental model filter) and information that is not distributed (power filters).

When it comes to driving new policies and processes, not only is it important to bring a comprehensive set of stakeholders to the table, but also to guide communication between all stakeholders in productive ways. A typical mechanism to structure the communication is a Policy Delphi. Delphi studies provide anonymity to prevent groupthink and undue influence of vocal individuals and the possibility to reassess previous views based on arguments coming up during the debate. However, the aim is not to create a consensus in the audience, rather, to discuss polarised responses and create alternative future scenarios.

The input to this debate is based on topics generated from semi-structured interviews we have held with several TEL experts. We asked the interviewees to think about the future of TEL over the next ten years and to suggest possible scenarios anchored in their daily work experience. They were also prompted to include possible developments in the social, technological, economic, political, and legal domain which could either hinder or promote the achievement of their TEL vision. A few examples of the resulting themes which will provide input to the debate include

• the expectations of students in an increasingly expensive higher education sector

• a paradigm shift in universities understanding of their role and activities

• social learning technologies raising new questions for corporate training

The audience attending this session benefitted in the following ways.

* Participants experience a real time Delphi event, which they can replicate to support their organisational strategy formulation process.
* The upcoming challenges and trends identified in ongoing TELmap research provide insight into current developments which participants can apply to their own work.
* Outcomes of the debate will be modelled during the session and made available electronically after the session.
* Participants input into this session will feed into the broader TELmap roadmapping process, and through this participants’ statements will serve to shape EU research policy in TEL. Other scheduled events/workshops in major conferences



## 5 ICALT 2012: 12th IEEE International Conference on Advanced Learning Technologies

**Date and place:** Jul 4, 2012 - Jul 6, 2012, Rome, Italy

**Workshop title:** "Smoothing the path to TEL 2020: ways to recognise and take account of, or reduce, differences in TEL perspectives, and develop shared goals and roadmaps"

**Short name: "**Smoothing the path to TEL 2020"

**Workshop chairs:** Vana Kamtsiou (Brunel University), Paul Lefrere (Open University UK), Fabrizio Giorgini (eXact learning solutions), Volker Zimmermann (IMC), Tore Hoel (Oslo and Akershus University College of Applied Sciences)

**Description:** A short description of the goals, scope, content and potential outcomes for the Workshop. The contribution of the proposal to the conference has to be clearly highlighted.

The goals of the Workshop are to enable participants to identify and reduce barriers to the accomplishment of their individual and joint goals for how TEL will evolve by 2020.

The scope of the Workshop is ambitious: to explore how participants might work together or with others, during and after ICALT, to develop practical steps to get an overview of how TEL could develop in the medium term (between 2014 and 2020), and how they could have more influence on the direction of those developments. Those steps are likely to be linked and likely to include some of the following: spot emerging TEL trends, identify significant future visions, and develop viable roadmaps for those visions.

**The content:** this will be drawn from ICALT publicity materials, TEL white papers and marketing materials (e.g. from vendors) and TEL policy documents (e.g. plans from ministries and agencies). Participants will experience short but intense discussions of building upon topics in the main conference. Each group of participants will be invited to explore ways of taking account of differences in views within their group or in other groups.

The potential outcomes include energising TEL communities to collaborate coherently and effectively in shaping the future of TEL. Many ICALT attendees are influencers in their home institutions. So this Workshop at ICALT is envisaged as an important initiating event: it could spark the development by attendees of similar workshops at other TEL events, worldwide. To facilitate this, we shall empower attendees by sharing with them the tools we develop for the Workshop, and the processes we use in the Workshop. Those processes include processes in these areas:

- Disambiguation, or being sure that you are understood and that others understand you ("I know that you believe you understand what you think I said, but I am not sure you realize that what you heard is not what I meant.")

- Conversation Mapping, to spot differences in what different sub-communities in TEL mean (eg, developers vs. users; vendors vs. customers);

- Disagreement Management, to identify and handle differences that matter;

- Horizon Scanning, to spot novel and emerging TEL trends;

- Sense-making, to identify significant consequences;

- System Modelling, to develop plausible visions of TEL futures; and

- Dependency Mapping, to create viable roadmaps for those visions

Each participant will receive copies of the background papers for the Workshop (details below), which will provide necessary theory and explanation.

A short description of the format and structure of the Workshop (duration, kind of interaction with the audience, order of activities if more than one, etc.)

Workshop of no less than 2 hours and no more than 3.5 hours (we shall fit whatever time slot is available in the programme). (10 minute overall briefing, then 3 equal sessions. The three sessions are:

1. "Check you are understood" (ice-breaker, using the same examples on each table) followed by "Spot TEL Trends"

2. "Identify Consequences and Future Visions"

3. "Develop Viable Roadmaps for those Visions"

4. A short description of the target audience for the Workshop

The recommended audience will be varied, to encourage cross-disciplinary discussions. We hope for a mix of: researchers into TEL and areas relevant to TEL; students of TEL; policy makers; end-users and people involved with end-users (learners, teachers, trainers); developers and vendors of relevant products and services including publishers.

The folders for the workshop will include news items for many, maybe even all, of the topics in ICALT 2012. The workshop will widen the range of experiences that conference participants can bring to the sessions they attend.

**6 Scheduled Roadmapping cluster events**

The MC Fellow in collaboration with the EU funded TEL-Map Project are organizing a series of clusters events in order to apply Roadmapping methods seek to overcome the limitations of earlier approaches where “experts” produced roadmaps for others, but which no one followed, or were rapidly outdated by changing circumstances.

Instead, this approach aims to support clusters with a shared concern or area of interest, whose participants already have, as part of their job, a responsibility for moving it forward, and between them have the resources, skills, authority, knowledge and need to bring about innovation. They first pool their visions and work towards a shared Desired Future. Next, given the turbulent times, scenario planning is used to surface assumptions and key areas of uncertainty, to explore the wider context and project plausible alternative futures that between them capture the range of uncertainty. The Desired Future is then placed in these Context Scenarios, to develop a Roadmap with alternative future pathways, but starting with a single path for the near, and relatively more certain, future.

The development of the first cut at the Roadmap marks the end of the first stage, and, providing the cluster is prepared to move onto actually implementing the roadmap, the second agile part of the process kicks in. The Desired Future, Context Scenarios and challenges are fed into an open collaborative observatory, which looks out for relevant events, changing trends and weak signals, feeding them back as alerts to the cluster. The cluster then has to decide whether to amend its roadmap, revise its context scenarios, or, in a more extreme case, adjust its desired future. Beyond the next increment, all is provisional.

Although the workshop is primarily hands-on, it will start with a slightly more detailed overview of the method and a closer look at its current application to the future of TEL in UK HE (first Roadmapping cluster to serve as a pilot).

For the main part of the workshop, participants, who need to bring their own web-enabled device, will then engage directly with the supporting web site, commenting on and contributing to the work already there.

## 

## Schools Roadmapping cluster event

**Bologna:** May 10, 2012

**Theme of workshop:** Changing schools and creative classrooms

**Workshop chairs:** Vana Kamtsiou (Brunel), Richard Millwood (CETIS)

**Workshop Facilitators:** Bill Olivier (CETIS), Christian Voigt (LSE), Fabrigio Giorgini (EXACT), Lampros Stergioulas (Brunel), , Li Yuan (CETIS), Richard Millwood (CETIS), Vana Kamtsiou (Brunel)

**Purpose of the workshop**: To build a desired and context scenarios for European schools

The workshop aimed to support TEL stakeholders in the schools sector in their efforts to improve the impact of Technology Enhanced Learning in schools by bringing them together with others who share the same goal, facilitating the development of future roadmaps and then supporting their adaptive implementation. To this end, this strategic event in Bologna on 10th of May 2012 is organised in order to kick-start a high-level roadmapping group for Technology Enhanced Learning (TEL) in school education.

**Participants:** 38 participants (types: industry leaders, EU policy makers, government, innovators, researchers, leading-edge practitioners, sector funders, school leaders, technology experts)

**TEL Schools projects and Roadmapping:** TEL-Map, STELLAR NoE, ODS IP, VISIR, iTEC IP

**Methodology**

The process brings together two widely used approaches: Future Search, which is designed to support a variety of stakeholders agree on a shared future that they are happy to work towards; and Scenario Planning, which provides a way of articulating and coping with uncertainties in the wider context that surrounds the area in focus, in this case the future of TEL in Schools. The outcomes of these two processes are then brought together by placing the agreed desired future in each of the (typically) four context scenarios to identify challenges and opportunities that may have to be faced on the way to achieving the desired future. From this the group draws up a roadmap, with variations as needed. The resulting roadmap should be one that all members of the cluster are happy to follow as it aligns with at least some of their aims, and, through the alignment with others, increases the likelihood of success. This will mark the end of the beginning. After that, the organizers will then work with you, and with other members of the wider community, to monitor the wider environment, taking into account your goals and roadmap, resulting in alerts if any part of your roadmap needs to be reviewed and updated, and supporting any adaptation the cluster feels is necessary.

**Cluster Formation and Dynamic Roadmapping**

Two main phases are envisaged, the first (1st event in Bologna May 2012) where clusters form and articulate their initial desired future, context scenarios and roadmap, and the second (2nd event in London September 2012) where they are actively supported in adaptively working towards their desired future, modifying as needed their desired future, context scenarios and roadmap.

Cluster’s Formation Phase

* The workshop will be for a relatively small number of invited senior decision makers and leading edge practitioners, all having a direct responsibility for the future of TEL in their organisation.
* Between them they should have the necessary knowledge, authority and resources needed to realise any desired future for TEL that they agree on and in principle are willing to commit to
* The first meeting will lay down the foundations for, and an initial cut of the cluster’s desired future/s, context scenarios, and roadmap/s that will be further developed online between, and firmed up at, the second f2f cluster meeting.

**Formation Phase – during first event at Bologna 10 May 2012**

1. Collaboratively generate rapid 'histories' of TEL, its larger context and participants’ personal experiences
2. Collaboratively generate a 'force field' - the drivers, +ve & -ve, acting on TEL and order along significance/impact and confidence/uncertainty dimensions (The basis for developing broad ‘future context scenarios’)
3. In small groups, sketch out (flip chart or whiteboard) a vision/s for the future of TEL in UK HE
4. Consider whether these visions overlap, are complementary or distinct visions, aggregating and merging as appropriate (Working towards a shared desired future)
5. Carry out a 'future history', looking back to see how this was reached from the current state, articulating the threats and the opportunities encountered along the way.
6. Set out the main challenges that will need to be addressed and a rough sequence to address them in.
7. Further analyse and ‘condense’ the external context drivers into 2 dimensions of high impact and high uncertainty
8. From these, 2-4 context scenarios will be developed, outlining their evolution from the present and setting out key signals to watch for indicating the direction of their development

**During the second event, London September 2012:**

1. The desired future will be filled out and the development and challenges they present filled out in greater detail, with further signals to watch.
2. The desired future will be set out against each of the context scenarios and from 1 to 4 roadmaps developed
3. A single converged roadmap will be set out for the near-term future
4. Drafts will be made available as they are completed for comment and revision to International Programme Committee

## OnlineEducaBerlin 2013, Berlin, 27-28 November 2012

## TEL Relevance Workshop &

**Schools Roadmapping cluster event**

* Organised a joint Workhop on TEL Relevance, jointly with the VISIR project (28 Nov).
* Organised and held a Schools Roadmapping cluster event, piloting the Dynamic Meta-Roadmappiing Framework (27 Nov).

## EC-TEL 2012-Saarbrücken (Germany), 18 - 21 September 2012

**Roadmapping group:** TEL industry

**Date:** 19th September 2012

2 days workshops

**Workshops title:** -TEL Industry Roadmapping group workshop: "Future Trends in Technology-Enhanced Learning: Voicing the TEL future"

**Workshops chairs**: Vana Kamtsiou (BRUNEL), Bill Olivier (Bolton), Katharina Freitag (IMC), Fabrizio Giorgini (eXact)

**Workshop description:** The workshop was held in conjunction with the Industry Track of the Seventh European Conference on Technology Enhanced Learning EC-TEL 2012 (18-21 September in Saarbrücken, Germany). All 8 industry track speakers participated in this workshop as well as about 15 additional invited TEL providers (vendors, software developers, solutions providers, etc.) who had been registered through the EC-TEL website. The workshop was a 2-day roadmapping event, while on the first day (Tuesday full-day) scenarios especially relevant for stakeholders in Schools and Higher Education were addressed. The second workshop day (Wednesday) focused on topics relevant to the TEL industry specifically for the EU school’s sector. The goals of this second day was be to identify technology trends, their maturity, corresponding TEL opportunities and possible barriers together by combining different expertise and views, to inform both the Commission as well as the TEL schools stakeholders Roadmapping group, hosted by the DYRECT and TEL-Map projects. Input to this workshop were the voices and visions of TEL stakeholders from Schools, University and LLL sectors and map them against the market plans and visions of TEL vendors. Together we developed a list of TEL opportunities based on visions derived from the stakeholders organized and supported by TEL-Map project and contributions from workshop participants. Working in groups, participants analysed these opportunities to establish the TEL approaches and technology development required. The output of the workshop was afterwards fed into the Roadmapping groups in order to support them in planning of specific actions and projects for their TEL futures. Workshop participants were invited to join any Roadmapping group that is clearly relevant to their aims.

The TEL providers worked around tables using a template to identify areas in the vision that they see opportunities for innovation. For each opportunity, they described the possible value propositions from the industry perspective, technologies that could be used, and technology gaps that need to be addressed through research.