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Innovative OER in European Higher Education:

Towards the Development of a Model for International Team-based Development

Markus Deimann, FernUniversität in Hagen (Germany)

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OER HE

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Figure 1: Open Educational Resources as a power pole to energize team-based development

"We can and must teach everything to all human beings."
John Amos Comenius
- Didactica Magna -

1 Introduction

The purpose of this chapter is to develop a model for international team-based OER development that can serve as a guide for the joint development and reuse of course materials in European Higher Education.

Along with specific aim, the overall purpose of the European project Innovative Open Educational Resources in Higher Education (OER-HE) is to stimulate other universities since not all EADTU members are involved to join ongoing OER-initiatives or to establish new networks. Consequently we will also focus on:

- how can different levels of academic organization be convinced to utilize OER within their institution?
- how can a win-win-situation be created such as to enable situations where all parties and stakeholders involved benefit through collaboration rather than trying to compete for the "best" OER-solution?

The chapter starts with an in-depth literature review to reconstruct the theoretical base for the understanding of team-based development and academic cooperation. We will investigate what different fields such as psychology can contribute to this inquiry? These fields then need to be balanced against each other to provide a well-adjusted view. In order to develop valuable recommendations for the utilization of OER we will pay special attention to management issues (cost-benefit issues), and we will also cover challenging issues such as language, knowledge management and social constructivism.

We will then introduce our empirical base which consists of two best practice examples within the European Association of Distance Teaching Universities (EADTU): (1) the Humanities Network complementary course production initiative and (2) the Mediterranean Network of Universities (MEDNET). With the background of this two cases we will undertake an analysis identifying the differences and similarities between them. How do they perceive and organise team work? How is their understanding and vision of OER? What are their intentions of utilizing OER in Higher Education, e.g., the use of OER courses for international cooperation in a network of universities in the Mediterranean area? In the next step, we will feed the case studies back to the reviewed literature and provide a summary of the possibilities to approach OER for team-based development.

In addition to that, a number of recent and current projects that members have been involved with and which have had or are still having an impact on OER will be reviewed:

- Open eLearning Content Observatory Services (OLCOS)
- SWITCHcollection
- Multilingual Open Resources for Independent Learning (MORIL)
- Teacher Education in Sub-Saharan Africa (TESSA)
- Lech-e: Co-creation of OER

Each initiative will be documented and analysed with regard to the major themes of this study, i.e., their understanding of OER and of team work as well as their contribution to the facilitation of OER as a network tool.

As another empirical component, we have conducted a qualitative study that focuses on experts in the field of E-Learning and OER. It is based on a previous investigation in German-speaking countries that unfolded several major potentials and pitfalls of OER at the university level (Deimann & Bastiaens, 2010). This work has here been expanded to an European perspective and includes detailed aspects of team work and of OER.

Eventually, our observations and analyses will lead to recommendations for future team-work with the importance of sharing and co-creation of OER. They will provide guidance in the form of best practices for international team-based collaborative development of OER and the possibilities of open licensing and open sharing.

1.1   <u>What are Open Educational Resources?</u>

The term Open Educational Resources has first been adopted in a UNESCO meeting in 2002 and referred to the open provision of educational resources that are enabled by modern ICT and can be used by a widespread audience all over the world. It includes explicit statements that OER is not only freely available but can also be reused or reworked.

The William and Flora Hewlett Foundation has proposed the following definition for OER (Atkins, Brown, & Hammond, 2007):

"OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge."

However, an authoritative definition of OER has not yet been agreed on (Schaffert, 2010); nevertheless the above stated Hewlett Foundation definition is widely accepted. The UNESCO International Institute for Educational Planning (IIEP) Forum has pointed out that OER entail Open Course Content, Open Source development tools and Open Standards and licensing tools. In this regard, open means that the content and its meta data are provided free of any charge, that the content is liberally licensed for re-use, favourably free from restrictions to modify, combine and re-purpose, that it is produced in open format and designed for easy re-use and developed and hosted with open source software (Geser, 2007).

When it comes to production costs and maintenance, it is usually covered by the provider of the very OER. This may be an institution, an investor or a single author. Wiley (2009) presents four possibilities to use and adopt OER, which are typically referred to as the *4Rs*:
1.   **R**euse: use of the work in the same way as it has been retrieved
2.   **R**ework: adapt or modify the work according to specific needs
3.   **R**emix: mix the original or modified work with other work to meet specific needs
4.   **R**edistribute: share the original, modified or mixed work with others

The 4Rs can be applied in a wide variety of formats that are typically available on the Internet such as:
- Slides and other lecture materials;
- Reading materials and assignments;
- Research papers and other scientific publications;
- Figures, tables, photos and other illustrations;
- Tools of e-assessment, such as on-line questionnaires, tests;
- Videos of presentations or "how-to" material;
- Collaborative work, for example developed with the wiki technology;
- communication spaces or applications for learners, for example discussion forums, mailing lists, groups within social network applications, also language learner networks;
- "interactive" materials such as web based trainings;

The following table illustrates the differences according to scale of operation and provider type and deals with institutions and community groups. It should be noted that other types of groups such as project groups and individuals typically contribute to community sites such as Connexions (http://cnx.org/).

		Institution	Community
Scale of operation	Large	**QUADRANT I** **Large-scale, institution-based** MIT OpenCourseWare UK Open University OpenLearn	**QUADRANT III** **Large-scale, community-based** Wikipedia Connexions MERLOT WikiEducator
	Small	**QUADRANT II** **Small-scale, institution-based** OpenER (Open University of the Netherlands) University of the Western Cape Free Courseware Project United Nations University OCW Klagenfurt OCW	**QUADRANT IV** **Small-scale, community-based** OpenCourse Free Curricula Center LeMill
		Provider type	

Figure 2: Categories of OER providers (adapted from OECD, 2007, p. 45)

It will be interesting to observe how these categories will evolve in the next years and if there might be some new and additional categories.

1.2   Components of OER and related activities

The following figure illustrates main aspects of openness relating to OER. It is important to make clear that not all aspects necessarily have to be present in a particular OER as this stresses the importance of content and licensing whereas Open Source software ideally should be used to develop and distribute content but is not always essential (i.e. there are some OER which are based on proprietary software).

While the term "open" has been extensively discussed in the last years, the remaining terms have been rather neglected. This is why recently a debate has started about the educational value of OER and the question whether OER are educational per se. For instance, the author of this chapter in collaboration with the Journal E-Learning and Digital Media have announced a Call for Papers to explore the educational potential of OER which can be accessed here:
http://www.wwwords.co.uk/elea/pdf/ELEA-Call-for-Papers-OPEN-RESOURCES.pdf.

Figure 3: Definition of open (illustration following OLCOS Roadmap, p.20)

Andy Lane, Leader of Work Package 1 "Widening Participation" and a well known expert in the field, argues:

"The educational value of OER depend upon the perspectives of different stakeholders. I list these for certain stakeholders in my UNESCO Policy briefing. Similarly, I have argued in my chapter in the Tower and the Cloud that an educational resource has to have that purpose to be so-called. Any resource can be used for educational purposes but was not designed with that purpose in mind. An educational resource can therefore help someone learn using it more readily than a non-educational resource. However this all depends upon the learning skills of the learner. Sophisticated auto-didacts will learn despite the nature of the resource, not because of it."

Then he goes on to educational support of advice for learning with OER and claims:

"There needs to be guidance for teachers on how best to design and deliver OER and there needs to be guidance for learners on learning how to learn more effectively without peer or professional support. In both cases there are free or open resources aimed at both groups, including on OpenLearn in both the Learning-Space and LabSpace."

So taken together, what does it mean for learning with OER? Does is it make a different compared to "traditional learning"? Lane answers:

In principle no.

The learning process faced is similar whatever the nature of the resources. However it does change some aspects of the learning experience especially when digital resources are dynamic as in AV tracks or animations etc. It can also influence when and where learning might take place and provides more scope for bridging between informal and formal learning experiences.

With this being said, we do not intend to go into much further detail of the various aspects of OER as there are various other documents that have done this (e.g., Geser, 2007). Instead we would like to focus on other fields that can inform our quest for a model of team-based development and in particular some recommendations concerning how individual team members can be supported to utilize OER. These fields have so far not been covered to a great extend, especially their potentials to catalyse OER aspects have been neglected.

This approach can also be a guideline for other researchers that have an interest in exploring new dimensions of OER. Thus, our literature review is only a selection of theories and models that may come into one's mind when reflecting on OER.

2   What does team-based development mean? A Literature Review

The aim of the following literature review is to compile important approaches related to team-based development from related fields such as psychology and Human Resource Development that can help to unfold potentials for the of adoption of OER. In a brainstorming attempt, we will identify issues that come to mind when one reflects upon team and team work. Moreover, they should have some similarities and overlappings with OER. It will follow a problem-oriented approach, i.e., the analysis will be based upon the question: "Is this information really helpful for team-based development?" Special attention will be given to possible synergies within the literature, albeit the review does not claim to be exhaustive.

When dealing with Open Educational Resources (OER), it seems important to start with some remarks to define its core attributes. Since we already have covered OER definitions in the introduction of this chapter, we will briefly summarise the central issues (Geser, 2007):

- that access to open content (including meta data) is provided free of charge for educational institutions, content services, and the end-users such as teachers, students and lifelong learners;
- that the content is liberally licensed for re-use in educational activities, favourably free from restrictions to modify, combine and re-purpose the content; consequently, that the content should ideally be designed for easy re-use in that open content standards and formats are being employed;
- that for educational systems/tools software is used for which the source code is available (i.e. Open Source software) and that there are open Application Programming Interfaces (open APIs) and authorizations to re-use Web-based services as well as resources (e.g. for educational content RSS feeds).

Since its initiation in the UNESCO meeting, OER have been utilized among academic cooperations which have led to several added value (see for instance MIT OpenCourseWare). Before going into more detail with that, we would like to shed some light on the specific nature of academic cooperation.

2.1   <u>Academic cooperation</u>

Academic cooperation is one of the vital elements of knowledge exchange and capacity building. It can include for instance, student and academic staff exchanges, joint research activities, exchange of publications, reports, and other academic materials and information.

Adler (1997) stressed that academic cooperation should be conceived as a continuous process and opposed it to a set of isolated activities. Six stages towards internationalisation in general have been defined as

1.   denial in which there is separation and isolation,
2.   defence in which a sense of superiority or inferiority prevails,
3.   minimization where a transcendent or utopic universalism brings to superficiality.
4.   acceptance which is based on mutual respect for differences in behaviour and values,
5.   adaptation where pluralism and empathy are expected,
6.   integration which wants to achieve synergy through constructive marginality and conflict management.

This categorisation can help to locate development processes of institutions in Higher Education. It also provides a framework to localize problems in team work and can help to extract strategies to overcome them as it provides typical challenges that teams might face at different stages.

In recent years academic staff mobility has been a major issue to enable networks of informal academic cooperations (Enders, 1998). This has been aimed at fostering communication and cooperation among institutions and academics aimed at the advancement of knowledge, the renewal of academic teaching, and

European integration. The promotion of academic staff was the goal of the European Community Action Scheme for the Mobility of University Students (ERASMUS) and the Community Action Program for Education and Training for Technology (COMETT). There is an ongoing effort to foster academic mobility in higher education.

A clear cut in the ambitions of international cooperation in Higher Education can be seen in the years after World War II when the USA and the Soviet Union began to promote international educational exchange and cooperation to get an understanding of the reasons how to maintain and even enlarge their political influence (Knight & DeWit, 1995). Due to the recent historical developments, the world of academia was turned upside down. Moreover, internationalization of Higher Education virtually did not exist at this time. There was a slow uptake of efforts to foster cooperation by means such as research grants. However, the objectives were more related to diplomacy than to academic or cultural exchange. Some decades later, in the 1960s and 1970s, due to developments such as decolonization of the developing world, Higher Education and the universities changed their role towards generators of human resources that enabled a growing mobility of students.

With the downfall of communism the landscape changed even further and regional actors such as the European Community began to play an increasingly important role and they have set up important instruments to increase academic cooperation such as EARSMUS (Teichler, 2001). According to their website, "(...) ERASMUS helps higher education institutions to work together through intensive programmes, networks and multilateral projects" (http://ec.europa.eu/education/lifelong-learning-programme/doc80_en.htm [2011-06-23]).

In this regard, innovative ICT can clearly enable cooperation as they provide various tools for collaborating such as the plattform ResearchGate (http://www.researchgate.net) that entails a semantic search engine for browsing internal and external research databases, including PubMed or CiteSeers. Another helpful tool for sharing and exchanging research is Mendeley (http://www.mendeley.com).

In recent years, a trend to research academic cooperation in the form of student teams has been revealed. Kaldis, Koukoravas and Tjortjis (2007) propose a set of typical problems that are worth to be mentioned here because of the rising usage of open materials in student learning:
- Communication and consistency problems such as difficulties in effective communication and coordination, due to the increased complexity of interaction, especially when the size of a group is large, and issues related to timeliness, availability, lack of commitment, responsibility, and bad task allocation.
- Unfair contribution and lack of clear structure: Group work assessment is often considered to be unfair, because team members who contributed more get rewarded equally with those who contributed less; there are rarely any negative consequences for the loafer—the one who does not contribute effectively to the group. Contrary to the workplace, the lack of hierarchy in a team does not permit someone to impose themselves on other team members to get them to work more effectively.
- Personality conflicts and diversity that are usually related to the human nature and arise from the fact that everyone is different and that there can be no real objectivity. A lot of problems in this category often occur during the phase of selecting the group leader.

We can not go into more detail here since our primary focus in on academic cooperation of non-student teams; however, as this list contains issues that have been observed to occur in team work in general it can help to develop strategies to optimize team work, in particular when dealing with OER.

Within the ongoing trend of globalization, Higher Education is said to provide adequate preparation and support to meet the inherent demands of this phenomena (Qiang, 2003). There are two important factors that influence the international dimension: (1) recruitment of foreign students as a considerable factor for institutional income and (2) utilization and adoption of modern information and communication technologies to deliver education.

Open Educational Resources can play a crucial role for this internationalization process. Pirkkalainen et al. (2010) outline three major examples for that:

- Using shared resources in collaborative teaching settings, e.g., organizing common international study programs
- Re-use and adaptation of materials in international settings: working with common course materials in different locations
- Export of study programs, resources and services: Establishing internationally accessible programs or commercializing resources / services internationally

However, the process to use, share and adapt resources among peers is still not clearly structured or well established. Thus, the key question is: How can internationalization activities be structured using open educational resources and in a team-based scenario? This is not to say that there are no national or institutional teams that can benefit from OER but the core theme of this chapter has an international focus.

It is argued that solutions for this research question may pertain to cultural issues (Holden, 2002). More specifically, creating cultural profiles is seen as a necessary prerequisite to investigate existing cultural differences. Those cultural profiles entail, among other things, characteristics describing users` cultural background such as communication style or preferred media type. They can then help to better tailor OER which means that cultural differences should be regarded as guidelines in the co-creation of educational resources. Once this is done, the context in which the content is provided to the learner needs to be defined. In this regard, meta data are helpful because they can store basic cultural conditions and which should thus be linked to the content.

A related approach has been proposed by Deimann and Bastiaens (2007) and describes the use of OER within different contexts based on the language of instructional design which is defined as a systematic arrangement of resources to facilitate learning. The various models of instructional design have been used virtually all kinds of educational interventions from Kindergarten to Higher Education. Given the relatively complexity of OER it seems promising to link principles of instructional design to it.

This has been done in the case of the following rules that provide basic assumption for utilizing OER in transnational learning contexts:

- *Rule 1:* OER material should provide context information, in particular those that may be culturally biased. As will be shown later on in our case studies part, neglecting important contextual information can undermine the potentials of OER, here: in an European Higher Education environment.
- *Rule 2:* OER materials have to take into account the growing insight of learners and have to be developed around the scaffolding principle. This means that learners get more and more expertise when they are engaged with OER. Therefore, they do not need the same amount of guidance and/or support, rather in a decreasing way.
- *Rule 3:* OER material provides learners with worked out-, completion- and in the end no-support- learning chunks. This rule is to ensure the pedagogical impact of OER to individual learners and to groups with the help of a validated approach. There may be more of this kind of approach; however, this is especially targeted at complex learning environments that can be found in international Higher Education.
- *Rule 4:* Creators have to provide meta-information on learning chunks in a predefined template. This refers to the increasing importance of meta-data in digital learning that can greatly reduce the complexity of finding appropriate content for very specific purposes.
- *Rule 5:* Support creators with free-to-use tools to develop OER. This is one of the core facet as depicted in Figure 3: Definition of open (illustration following OLCOS Roadmap, p.20). There is an rising amount of software and tools, such as for operating systems: Ubuntu (based on Linux), word processors: OpenOffice, Web browsers: Firefox, or Social Software: WordPress.
- *Meta-Rule:* Equip learners with volitional strategies to ensure goal-oriented learning with OER. In a previous paper we have stressed the importance of self-regulated strategies for learning with OER

(Deimann, 2007). Due to their specific multimedia-based nature, OER greatly expose learners with distractions that can lead to negative effects such as cognitive overload (Deimann & Keller, 2006).

2.2   What are teams and what is team development or team work?

"Teams are assemblies of people who work together to realise specific objectives. In project teams there are normally many members from several (…) departments with different base knowledge, expectations and abilities" (Caupin, Knöpfel, Morris, Motzel, & Pannenbäcker, 1999, S. 50) A core characteristic is that there are often dynamic effects which can either support or hamper project performance. The OpenLearn repository LearningSpace provides further introduction to this topic with the focus on "How teams work" and "Working in project teams"; this can be accessed here:
(http://openlearn.open.ac.uk/mod/oucontent/view.php?id=401439).

Noteworthy is the related concept of group that has been extensively dealt with in social psychology. Of particular importance is how the individual defines herself/himself as a part of the group (Tajfel & Turner, 1986).

When individuals interact in a team, they perform role behaviour according to group expectations. Moreover, a group acts like a social system, i.e., it receives inputs and dispenses outputs. It has become clear that when group members enter a group at the same time then it is more likely that this group will be successful than when individuals enter the group at different points in time (Diethelm, 2001).
Historically, team work has been adopted in organisations some forty years ago as a means to enable more human suitable work as opposed to hierarchical structures. The reasons for the introduction of team were mostly political or sociological as well as educational. It was about enhancing satisfaction of the work force and increasing work motivation and self-determination (Schattenhofer, Schrapper, & Velmerig, 2004). Starting with the 1990ies, forms such as production team, management team, project team were established to foster efficiency. Numerous tasks such as planning and regulating are now fulfilled by teams and they become part of the formal organisation.

Nowadays, team work is still of outstanding importance. Accelerated merging of the global economy towards a global society requires a flexible form of work. This has now also started to impact Higher Education (Tynjälä, Välimaa, & Sarja, 2003) since one of the central characteristic of today's professional expertise is that experts work in collaborative teams, share their knowledge with other experts in their domain and experts from other domains and communicate over networks. From this viewpoint it is suggested that education should focus more on collaborative learning and team work to enable various learning experiences for students from work-based learning.

In order to understand which factors help create an effective and efficient team Katzenbach and Smith (Katzenbach & D. Smith, 1992) propose the following list of aspects:
- shared leadership roles and shared commitment,
- individual and mutual accountability,
- specific team purpose that the team itself delivers,
- collective work-products,
- encourages open-ended discussion and active problem-solving meetings,
- measures performance directly by assessing collective work-products,
- discusses, decides, and does real work together.

Similarly, team work has been characterised by the following constructs (Hoegl & Gemuenden, 2001):
- Communication and information: Does the team have a frequent, open, direct and informal communication?
- Coordination of tasks: Are the tasks well-adjusted within the team?

- Nature of contribution: Is the team member able to contribute according to her/his individual potentials?
- Mutual support: Are there enough help and support in the team?
- Engagement: Are the team members fully engage?
- Cohesiveness: Is there adequate team spirit?

These different constructs have been investigated for innovative team work (Högl & Gemünden, 2001) which has some similarities to OER and is thus worth to be reported here. Moreover, innovative team-based learning has become a teaching method to equip novice students so that they can encounter not only in scientific research projects but also to communicate with each other in teams (Rios-Velazquez, Robles-Suarez, Gonzalez-Negron, & Baez-Santos, 2006).

Subjects in the Högl and Gemünden (2001) study were software engineers working on innovative products in German and US companies. Interviews and standard questionnaires were combined for a sample of 145 teams. Results showed that the six-faceted model is supported by empirical data, i.e., they load on one factor "team work" that explains 73% of variance. Furthermore, quality of team work has been proven to be a significant influence for team performance and for the potential of team members. On the other hand, team work is influenced by the composition of the team and team management (leadership).

The authors utilise their findings to draw the following recommendations:
- For team composition it is important to have sufficient social competence in order to facilitate a productive and open engagement. As long as the team members share the perception that an equally high level of effort contributes to team work quality and team success negative effects such as social loafing (Pearce & Ensley, 2004) can be limited. However, the authors do not specify how much social competence is needed. In addition to social competence, methodological competence should be present within the team to enable similar and parallel working of different persons on the same task. This also implies, as another important prerequisite, that team members should have similar knowledge and experiences.
- For the management of teams it is crucial to facilitate commitment concerning the overall team objectives. They should also not be subdivided into smaller goals for single team members from the outside. Using various forms of incentives can help to reach commitment. The well-known SMART (specific, measurable, attractive, relevant, and time-faced) formula provides a practical tool to work on team goals. For innovative teams it is recommended to have a leadership that aims at equal status of team members. Decisions should be made based on agreement among the team.

In a similar vein, it has been argued that a flat hierarchy is also conducive to team performance, for example in semi-autonomous working groups (Antoni, 2000). It is also reflected in the Japanese principle Kaizen as an "improvement" or "change for the better" based upon continuous improvement of processes in manufacturing, engineering, supporting business processes, and management.
Further insight into factors that enhance team success in innovative projects has been given by Gebert (2004) based on a thorough review of related research. One of such factors is proactive scrutinising which is obtained when a team is persistently solving problems even when it takes them into areas they do not know anything about. Another characteristic is that the team is searching for novel approaches that are not required at the time or that they link ideas originated from multiple sources.

Another well-known model for characterising the processes that underpin team-work has been developed by Tuckman (1965) which defines the following phases:

- *Forming*:
The initial stage of team development during which individuals have not yet gelled together. Everybody is busy finding their place in the team, sizing each other up, and asking themselves why they are here.
- *Storming*:

In this initial phase, people start to see and perceive themselves as part of a new team. However, they may challenge each other, and the team leader, about such things as goals and approaches to achieve them. As the stage title suggests, conflict and confrontation typify this stage. This may result in some loss of performance or focus on the task.

- *Norming*:

This is the phase where team members come together, develop processes, establish rules, clarify who does what, and how things will be done. This phase is characterized by a growing sense of "togetherness".

- *Performing*:

This is the final stage where increased focus on both the task, and on team relationships, combine to provide synergy. Performance is delivered through people working effectively together.

Tuckman`s model can help to understand how teams evolve and how they encounter problems and challenges at different stages. However, it has been argued that the model is limited as it conceptualises team building too linear and sequential whereas in reality it appears to be more iterative. Nevertheless, it provides analytical tools to discuss team working with OER. It can for instance, demonstrate that certain problems that occurred during a team work around OER are caused rather by team specific aspects than by OER itself.

2.3   <u>Management issues</u>

In this section, we will shift the focus from the perspective of operational management (How to best organize and work within teams) to the perspective of strategic management. In particular, we will deal with the question why universities or other institutions in Higher Education should participate in the OER movement. By doing so we aim at facilitating potential OER initiatives.

As soon as major initiatives such as the William and Flora Hewlett Foundation have begun to financially support OER, reasons for doing so have been laid out. A prominently cited example is this one:

"At the heart of the movement toward Open Educational Resources is the simple and powerful idea that the world's knowledge is a public good and that technology in general and the World Wide Web in particular provide an extraordinary opportunity for everyone to share, use, and reuse knowledge" (M. Smith & Casserly, 2006, S. 8). To give an illustration for that, the British Open University launched their OER-initiative OpenLearn in 2006 "to make educational materials available to anyone with an Internet connection" as indicated in the statement "British University Launches Program to Expand Access to Educational Materials Online"[1].

In contrast to other forms of technology-enhanced learning, OER enables access to a no-cost or low-cost content as well as to informal learning experiences in on-line and face-to-face formats. OER can potentially drive down production and delivery costs by shortening the time needed to create new curriculum, learning materials and textbooks for on-line, classroom and blended learning programs (Caswell, Henson, Jensen, & Wiley, 2008). On the other hand, the production of OER has also been reported to raise different types of costs (Schuwer, Wilson, van Valkenburg, & Lane, 2010).

There are potential efficiencies due to the lower cost of OER, however many institutional brands are made by "the quality of their content" and research. Thus, using commons resources, may not be the boon to efficiency that it could be in those kinds of institutions.

In this regard, Geith and Vignare (2008) argue that co-creation and collaborative creation can be seen as the most promising OER approach. It allows the growth of an unlimited variety of courses. They are to open up

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[1]http://www.hewlett.org/newsroom/british-university-launches-program-to-expand-access-to-educational-materials-online [2011-06-24]

participation in the community of content creators: to novices and experts, to content authors and content editors, to teachers and learners. In addition to that, the availability of the tools of content creation through open source software enables production by both professionals and amateurs.

However, as Schmidt et al. (2009) argue a formal approach or model to describe how OER and its implications can benefit management of Higher Education is currently missing. Thus, they propose an open education scenario for a major management issue, accreditation:

- *Trust*: When accreditation needs to provide recognition beyond the community where it is expressed, its value is determined by the trust that is placed in the provider. There are different ways of expressing trust in open source projects, for example through their ability to attract and maintain participants or through the demonstrable quality of the project's output.
- *Relevance*: The assessment and accreditation mechanisms must be appropriate to evaluate and certify relevant learning and skills. Assessment must be an integral part of learning. In open source software, development and assessment are inseparable. The assessment of an individual's contribution is expressed by its acceptance into the actual software code.
- *Scalability*: The model must scale to the demands of the current education environment. A one-on-one system in which a trusted professor manually certifies a student does not scale well. A community-based reputation or voting system scales more easily, but outsiders might question its reliability. Open source software projects have demonstrated an ability to organically develop coordination, quality review, and feedback mechanisms that span communities of hundreds of participants.
- *Transparency*: The possibility to examine all elements of the accreditation system increases trust and quality. Accreditation providers that show how they accredit learners with different assessment results reduce the potential for bias and for subjective accreditations. Errors can be identified and corrected easily. Open systems are by definition transparent and encourage inspection and improvements, leading to high standards of accountability.

With this brief descriptions we want to encourage scholars and researchers to participate in this challenging discussion. We will now cover another important management aspect, costs.

2.3.1   Why are OER attractive in terms of cost-benefit issue?

It has been argued many times that the increased demand for higher education is not likely to be satisfied by new campuses nor by existing teaching and learning methods. Instead, a wide range of courses offered on virtual platforms providing free and open access to everybody has been established.

There is a low or virtually no-cost distribution through the internet combined with new ways of finding resources. Anderson (2006) has described this as the "Long Tail" phenomenon: unlimited availability of resources and individual choice. Whereas in traditional retailing selling books, music or videos are usually dominated by best-sellers (typically 20 percent of the titles account for 80 percent of all sales), e-commerce sellers such as Amazon do not follow this pattern. They can maintain a much bigger inventory of products compared to conventional stores. This leads to a highly different economic equation: Although e-commerce sellers offer best-selling products, the majority of their revenues comes from their vast catalogues of less-popular titles. This means, that a customer is provided with items much more tailored to individual taste and interests.

So why not transfer Anderson's model to learning and Higher Education? Brown and Adler (2008) argued that there is a close relationship between the amount of learning material available on the internet and the Long-Tail-Effect. In traditional educational institutions there is usually a fixed and limited number of courses to be studied in a predefined time. On the Internet the subjects to be covered is virtually unlimited. Major initiatives such as MIT or Open University of UK clearly show this trend and there "is likely to be an online niche community of practice of others who share that passion" (Brown & R. Adler, 2008). This may attract other institutions to get involved with OER to become a similar frontrunner.

This leads to the emergence of new business models that reflect the changed reality (Butcher, 2010). On the one hand there are models based upon ring-fencing and selling content whereas other business models that try to reinvent themselves by continuing to provide valuable products and services. OER can greatly enhance this process as they allow the generation and utilisation of innovative tools. The below graphic tries to illustrate these new mechanisms.

A Circle of Knowledge Building and Sharing

Create
Support for creating representations of pedagogical knowledge

Open Knowledge Exchange Zone
Provide venues for sharing experiences/evidence to improve practice.

Use
Encourage teachers to review, critique, and learn from peers' represented knowledge.

Re-mix
Enable teachers to integrate others' knowledge into their knowledge.

Promote these organically & sustainably

Figure 4: OER learning and the Long Tail (Brown & Adler, 2008)

In the authors view, OER represent a changed educational "reality" that is characterized by a "demand-pull" as opposed to the traditional "supply-push" mode of knowledge transfer. Throughout the twentieth century, education (and Higher Education) has followed one major approach, i.e., helping students to develop skills or competencies that should be applied later in appropriate situations. As long as the economic world has been relatively stable in which careers typically lasted a lifetime there has been absolutely no reasons to modify this approach. It would be needless to say that nowadays a lot has been changed. Thus, a transition from "supply-push" towards "demand-pull" seems to be a necessary step as it facilitates participation in flows of action through enculturation into a practice as well as on collateral learning. Moreover, a demand-pull approach can provide learners with rich virtual learning communities built around practice. It can lead to "passion-based learning" triggered by learners who want to become a member of a certain community of practice or who just want to learn, make, or perform something. These learning processes are often informal rather than formal, i.e. conducted in a structured setting. Learning is dominated by being part of a community of practice (cf. Wenger, 1999) that can also be conceptualized as a "reflective practicum" based upon a close collaboration between newcomers and professional practitioners.

Brown and Adler (2008) demur that the demand-pull approach of learning might seem to be very resource-intensive. However, given the vast repositories that the Internet and Open Educational Resources in particular offer these days it is not very implausible that we will soon witness more and more examples of demand-pull learning approaches.

In a similar vein, Plugge (2006) claims that an education paradox has evolved, i.e. educator's with yesterday's skill are exposed to teach today's students for an unknown tomorrow. However, we do not intend to "scare the horses" but to highlight that a continuous updating of skills and practices in the context of ICT should be on top of the agenda.

2.3.2 OER as a tool to facilitate international experiences

Baumgartner and Zauchner (2007) point out that OER does not only have a significant importance for general humanistic education ("Education for all" as expressed in our initial Comenius quotation) but also for pedagogic innovations such as the development and utilization of instructional and didactic models. This is based upon the assumption that because content is offered openly the focus should turn to the quality of teaching and learning processes. Moreover, as expressed in the saying "content is king", learning has often times been oversimplified as the accumulation of knowledge. However, learning and education does not take place automatically if people are exposed to the "right" amount of content.

By the same token, competition for the best content will be transformed to a competition for the most innovative didactic approaches. Authors advocate more work on feasible models that link didactic or instructional design to essential issues of OER. We already covered this at the part "Academic cooperation" and referred to the work of Deimann and Bastiaens (2007) that provide initial guidance for this line of research. Didactic aspects have been reported to cause major problems from the pedagogical aspect of OER (Chen, 2010). For instance, there may be professors trying to use open courses for their own ones. This requires, however, that the open course is available in a modular structure so that the professor can adopt parts of that to fit within the scope of the course.

2.3.3 Decision-making process

It can be seen as an incontrovertible fact: every team of group of learners must make decisions in various ways. Hence, these issue should be picked out as a topic and there is some literature on that issue (e.g., Baron, Kerr, & Miller, 1992). Practices of decision making are illustrated, for instance, by a jury. With regard to OER, a first important decision is to what degree principles of OER should be applied. This can be expressed by the following questions: How far do we want to go with the 4Rs? Under which licence do we want to share our work?

When it comes to the adoption of OER into academic institutions, van Dorp and Lane (2011) bring forward the argument that the widely spread Diffusion of Innovations Model (Rogers, 1983) may be elaborated on to gain new insight into this questions. This model distinguishes between five phases: (1) Knowledge, (2) Persuasion, (3) Decision, (4) Implementation, and (5) Confirmation. Using two major OER-initiatives – MORIL and TESSA (see below Section 3) – the status quo of OER implementation can be pinpointed. Thus, it can also help to promote strategy building, i.e. what needs to be done to reach the next level of OER integration?

2.3.4 How to create a win-win situation

A win-win situation, also called a win-win game or non-zero-sum game in game theory, is a situation by which cooperation, compromise, or group participation leads to all participants benefiting. The term can be applied to many aspects of daily living, and it is contrasted to the zero-sum game or win-lose situation, where the dominant factor is that at least one person wins while another loses. The win-win situation is

different, since its total according to game theory could be two or more. In a two-person scenario, where both people could cooperate and thus benefit, this could be mathematically expressed as +1 plus +1 = 2. Instead of a situation creating a winner and a loser, both people win a roughly equivalent amount. With regard to OER, the movement is based upon the spirit of free knowledge as a public good which then can make the world "better". The famous quotation "If I give you a penny, you will be one penny richer and I'll be one penny poorer. But if I give you an idea, you will have a new idea, but I shall still have it, too" from Albert Einstein impressively stresses the specific nature of academic sharing in the form of a win-win situation. This is also indicated in the following statement from the Hewlett Foundation. Its educational program pursues the goal of using "information technology to help equalize the distribution of high-quality knowledge and educational opportunities for individuals, faculty, and institutions within the United States and throughout the world" (Atkins et al., 2007, S. 2). Moreover, OER includes various open materials such as open digital textbooks that are more interactive, granular, and customizable than traditional textbooks. These textbooks can also help to cut costs which is an urgent problem of education since the costs of traditional materials have been strongly risen (Walsh & Ithaka, 2011). However, this does not imply that universities' willingness to share their core materials is based solely on economic reasons. It also represents a well reasoned reaction to the global change towards a networked society because important parts of the value proposition (e.g., degrees) have been strongly protected.

Following this line of argument, the possibilities to create win-win-situations can be detected at the intersection between altruism and self-interest. This means, that one have to take into consideration that universities may have the motivation to engage for the OER movement but by the same token they also have to maintain their core business. The recently published report "Collaborate to compete – seizing the opportunity of online learning for UK higher education"[1] by the Online Learning Task Force describes some of the attempts related to this issue.

There is another example, from the Open University UK, that perfectly illustrates further possibilities in this direction. The Open Source Software Moodle was adopted to the OUUK and created benefits for:
- OUUK: received numerous help from the Moodle community
- Moodle Community: got the largest numbers of users at one single point which offered new insights into the system Moodle

Lane and McAndrew (2010) – who both work for the OUUK – elaborate on this and come up with the following benefits of OER:
- Enhancing the reputation of the OU;
- Extending the reach to new users and communities;
- Recruitment of students from those who come to see OpenLearn;
- Supporting widening participation;
- Providing an experimental base of material for use within the university;
- Accelerating uptake and use of new technologies;
- Acting as a catalyst for less formal collaborations and partnerships.

In summary, the above cited example seem to have great potentials to facilitate classical win-win-situations. Thus they can also be used as arguments for the "other" side, i.e. reluctant people, teams or institutions.

2.3.5 Community of Practice

Soon after the ignition of the OER movement, the aspect of community building has become an important topic (Yuan, Mac Neill, & Kraan, 2008). They claim that "embedding the development of content in a community of practice is a key way to ensure that OER are relevant to the practice of learning and teaching" (p. 21), because simply providing open access to materials or databases will not trigger the willingness of peo-

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[1] http://www.hefce.ac.uk/pubs/hefce/2011/11_01/

ple to engage in a community. Instead it is suggested to give recognition and support of communities for users. This may contribute to enhanced sustainability of OER.

The concept Community of Practice (CoP), introduced over a decade ago by Wenger (1999), has received increased attention over the last years as it provides alternative explanations to traditional learning. The notion of informal learning has become very popular through the uptake of innovative ICT.

With regard to OER, CoP can help to facilitate its potential as recent reports have shown. Windle, Wharrad, McCormick, Laverty and Taylor (2010) summarise their experience with a OER project in health science education. One of their most significant lessons pertain to communities and participation. The simple but also effective formula "If you want people to engage [with OER], then you must engage with them" clearly describes the author's perceived mechanism. This entails the understanding that educational technology and content should not be a means for itself which is sometimes expressed by the saying "build it and they will come". Rather it should follow core principles of a Community of Practice, which can be utilized according to Windle at al. (2010) as follows:

1. A sense of achievability. So often the creation of high quality resources for sharing is seen as something that "others" can achieve, excluding those who might have the best resources, knowledge or experience to share. The small, granular nature of the RLOs that we have developed, coupled with person-centred processes make content creation accessible for all. This is evinced by an exponential increase in the number of academics engaging in resource creation in our school over the last 8 years, and the broadening of the subject areas being tackled (Windle & Wharrad, 2010).
2. *A sense of ownership*. So often academics feel disempowered by initiatives designed to create or share resources. We find that fostering a sense of ownership of the resources at all stages of development and deployment is a crucial driver towards engagement with our project. Moreover, tutors who have a sense of ownership tend to become active advocates for their resources, stimulating reuse within their own communities.
3. *A sense of support*. It is also essential that academics are provided with sufficient support to enable them to achieve their goals. Apart from the technicalities of development of resources issues such as copyright or meta data can so easily deter someone from sharing their materials. These are likely to require ongoing support for some time to come within the OER movement.

The relations and dynamics of different network types (CoP, informal networks and formal project teams) is depicted in the following Figure.

	Community of Practice	Project Teams	Informal networks
Purpose	Learning Sharing Creating Knowledge	Accomplish specific task	Communication flows
Boundary	Knowledge domain	Assigned project charter	Extent of relationships
Connections	Common application of a skill	Commitment to goal	Interpersonal acquaintances
Membership	Semi - permanent	Constant for a fixed period	Links made based on needs of the individual
Time scale	As long as it adds value to the business and its members	Fixed ends when project deliverables have been accomplished	Long – term, no pre-engineered end

Figure 5: Dynamics of different network types according to Dale 2007

Dale (2007) stress the importance of CoP for scalable OER. They perceive scalability as the ability of OERs to continue to function properly when modified to meet the needs of users . It is argued that because CoP are decentralized they can improve scalability. Another factor for that is different skills and competences of people engaged in the communities with the common overall goal of producing and maintaining sustainable OERs. The way they work together as a team, i.e. blending and sharing their knowledge and expertise, can greatly improve scalable OERs. However, it must be noted that there are no empirical evidences for this assumption yet.

Recently, Ferrer, Berlanga and Sloep (2010) have made another reference to CoP as they introduced the concept of Ad-Hoc Transient Groups: (AHTG) "small groups of people that are assembled with the aim of solving a particular issue and are disbanded once the issue has been resolved". This concept reflects the specific nature of learning and working together in on-line environments with special importance on informal learning. It encourages peer support and social capital with the engagement in AHTGs. However, in order to do so, participants need to establish relationship characteristic and perceive a sense of belonging to the community. Once this is reached, they should start using their relationships for the provision of mutual support. With regard to OER, peer review, peer assessment and peer collaboration are examples for the utilization of AHTGs.

2.4 Human resource development, in particular team-based development

Due to the downsizing and re-engineering of firms, organisations have been moving away from traditional hierarchies to professional groups and self-directing teams. There has been a shift towards the transformation of organisations to make them more productive as reflected in the management literature (Katzenbach & D. Smith, 2008). Related to this, is the (not quite new) tendency to form cross-functional teams. For instance in the manufacturing area, those teams have been established to respond to an increased emphasis on high quality, faster product innovation and improved customer service.

International teams are composed of people with different cultural backgrounds which can lead to considerable challenges. The diversity of a team has to be taken into account for a productive and efficient functioning of the team.

Most of these challenges are constituted by cultural differences (Köppel, 2007; K. Smith & Berg, 1997). Crucial aspects concern authority relations (e.g. how do cultural diverse team-members react to leadership?), disclosure (e.g. how to handle or display emotions within the team?), decision-making (e.g. how to deal with disagreement?), and conflict (e.g. how to manage conflicts, avoiding vs. cultivating?).

As Smith and Berg (1997) have stated, cultural differences are often ignored during group formation, so that the initial stage of group life become anxiety filled. Therefore, it seems highly appropriate to stress the issue of cultural differences right at the beginning. However, it should be noted that in the early phases of team development it might be hard for team members to learn about their differences. Also members often assume that "my way of doing things makes the most sense and when others understand this, things will work out fine". It is thus important that each member clearly states his/her "way of doing things". Otherwise it is extremely difficult to unravel the complexity of what the team must untangle at its inception.

Köppel (2007) points to advantages of cultural diverse teams. Cultural related differences of work styles can be beneficial inasmuch as they augment the repertoire to deal with complex problems. Especially creative tasks require different ideas or approaches to develop innovative solutions. However, throughout the entire project variety is helpful, e.g. for problem analysis or implementation.

Preconditions for inter cultural conflicts are identified as inputs. For example, if an organisation outsources jobs into low wages countries. Team members from headquarters may benefit as their perceived status in-

creases. In other case there may be suppressions by an over-represented culture as has been happening with teams from Asia and Europe (Köppel, 2007). However, on an individual level inter-cultural competence can decrease conflicts. But what is inter-cultural competence? It entails empathy, open-mindedness, patience, tolerance (in cases of ambiguity or frustration), and emotional competence.

The process level stresses the question how inter-cultural conflicts arise. An important issue is that expectations have been violated because of cultural differences. Individuals with a specific cultural background behave according to their own standards. In addition to that, there may be problems of decoding messages. For instance, German team members are reported to have problems with indirect messages because they are used to a direct style of communication. On the other hand, this direct communication may offend Asian team members. Cultural difference is then misinterpreted. These misunderstandings can affect performance and output of team work (i.e., team efficiency) in a negative way.

We will provide further examples drawn from the case studies to illustrate these points since the literature on team working in education is rather limited.

2.5   **Psychological aspects for team-based working**

Psychological aspects affect the effectiveness of team work in various ways. First, there are different personalities in team work. They are key factors of individual aptitude when it comes to interdependencies among team members. Personality can be perceived as the sum of temperament and character. In a team, individuals usually take certain roles and avoid others. The influential work of Belbin (1993) is based on this assumption and differentiates nine team roles:

1.   Plant: A creative, imaginative, unorthodox team-member who solves difficult problems. Although they sometimes situate themselves far from the other team members, they always come back to present their 'brilliant' idea.

2.   Resource Investigator: The "Resource Investigator" is the networker for the group. Whatever the team needs, the Resource Investigator is likely to have someone in their address book that can either provide it or know someone else who can provide it. This may be physical, financial or human resources, political support, information or ideas. Being highly driven to make connections with people, the Resource Investigator may appear to be flighty and inconstant, but their ability to call on their connections is highly useful to the team.

3.   Chairman/Co-ordinator: The "Chairman/Co-ordinator" ensures that all members of the team are able to contribute to discussions and decisions of the team. Their concern is for fairness and equity among team members. Those who want to make decisions quickly, or unilaterally, may feel frustrated by their insistence on consulting with all members, but this can often improve the quality of decisions made by the team.

4.   Shaper: A dynamic team-member who loves a challenge and thrives on pressure. This member possesses the drive and courage required to overcome obstacles.

5.   Monitor-Evaluator: A sober, strategic and discerning member, who tries to see all options and judge accurately. This member contributes a measured and dispassionate analysis and, through objectivity, stops the team committing itself to a misguided task.

6.   Team Worker: The "Team Worker" is concerned to ensure that interpersonal relationships within the team are maintained. They are sensitive to atmospheres and may be the first to approach another team member who feels slighted, excluded or otherwise attacked but has not expressed their discomfort. The Team Worker's concern with people factors can frustrate those who are keen to move quickly, but their skills ensure long-term cohesion within the team.

7.   Company Worker/Implementer: The "Implementer" is the practical thinker who can create systems and processes that will produce what the team wants. Taking a problem and working out how it can be practically addressed is their strength. Being strongly rooted in the real world, they may frustrate other team members by their perceived lack of enthusiasm for inspiring visions and radical thinking, but their ability to turn those radical ideas into workable solutions is important.

8.　　　　　Completer Finisher: The "Completer Finisher" is the detail person within the team. They have a great eye for spotting flaws and gaps and for knowing exactly where the team is in relation to its schedule. Team members who have less preference for detail work may be frustrated by their analytical and meticulous approach, but the work of the Completer Finisher ensures the quality and timeliness of the output of the team.

9.　　　　　Specialist, who brings 'specialist' knowledge to the team.

There is an ongoing debate whether a professional team should be constituted of team members representing each role or not. Also there is criticism with regard to the selective population Belbin recruited for the research (established executives). Therefore, it remains unclear to what extend these team roles are represented in academic teams or in teams working with OER.

Katenbach's and Smith's (2005) important article "The discipline of teams" identifies common commitment as the essence of team. Commitment refers to a motivational construct and is this worth mentioned here. It is defined as a pledge or promise or an obligation of some sort. A common usage of commitment refers to the condition of someone who has made a firm agreement with some other party connected to some future event (Tubbs, 1993).

Another major psychological factors influencing team success is trust. As Garrison, Wakefield, Xu and Kim state: "Trust is perhaps one of the greatest challenges of globally distributed teams because it is a significant determinant of team cohesion and individual performance. Although diversity does not show a direct effect on cohesion, it operates via team trust to influence the extent to which team members feel connected as a group and committed to common goals" (Garrison, Wakefield, Xu, & Kim, 2010, S. 45).

Then, there are three essential capabilities that each team member should exercise:

Giving and receiving feedback: To give a person feedback is to give him/her information about his/her work and they way he/she does that. To receive feedback is to receive feedback about the performance. However, it is not always that simple and there are teams in which this is not handled properly. Therefore, it might be necessary to introduce feedback rules, i.e., how to give and receive feedback in a fair manner. This can avoid that a team member takes comments as personal criticism or as general sign of mistrust (Sharifabdi & Grot, 2002) . The second aspect pertains to adaptability which is the ability to accept and adjust to new people and circumstances. As a team member it is important to make constant efforts to be flexible and adaptable. Otherwise there is danger to fall prey to individualism. Then, the third aspect concerns the management of priorities and commitments and entails to plan ahead and to give each task or matter the necessary importance. The individual team member should be organised so that his/her part of the job can be delivered on time and interruptions can be avoided. Team meetings should be respected, yet not be over used.

Figure 6: Essentials of a meeting, http://www.adminlife.net/?s=meeting)

3 Cooperation and team working using OER – some lessons learned

In this section we want to cover past and current projects and initiatives in the field of OER and analyse their specific team approach and their perceptions of team work for unfolding the benefits of OER.

3.1 Open E-Learning Content Observatory Services (OLCOS)

As a Transversal Action under the European eLearning Programme, OLCOS objectives were to make available information and learning services that will foster and support the creation, sharing and re-use of open e-learning content in and among the European member states. In order to achieve a dynamic growth in open e-learning content, OLCOS provides organisational and individual end-users with practical information required to create, share and re-use such interoperable content. In the realisation of these objectives, OLCOS emphasises that Open Content besides employing appropriate licensing schemes is essentially about collaborative e-learning practices that add value to open e-learning content (for example, through use cases, best practices, and lessons learnt).

The OLCOS information and learning support services offers practical information, advice, and guidance for the following key target groups of end-users: Students, teachers, trainers and tutors, both as learners and promoters and mentors in the creation and use Open Content for a variety of learning settings and processes. The main environments where these target groups are, or will become, active are schools, pedagogical academies, pedagogical institutes (teacher training) and other vocational training centres, (e-) universities and other distance learning institutes.

Team related aspects within OLCOS consortium can be identified on two different stages. The first concerns the internal partnership of core OLCOS members. Their work closely followed a traditional project management approach with a series of phases to be completed until the project is terminated. In each phase a distinct product (see Figure 5) was to be created and following that the quality was internally monitored. The second stage pertains to the external activities that occurred during OLCOS. Using a specific wiki type (WikiEducator) several specific forms of team work such as discussion forum could be facilitated.
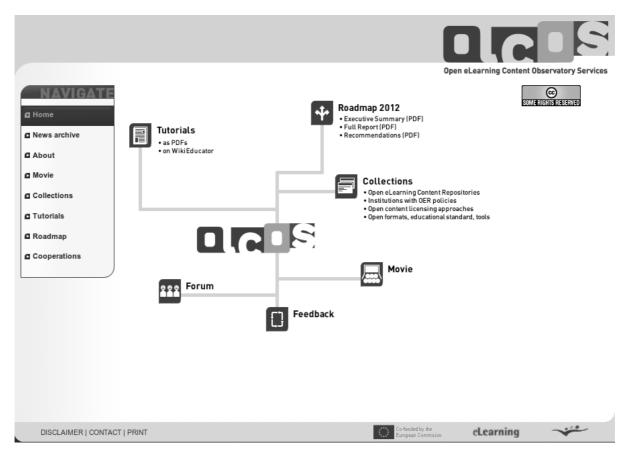
Figure 7: OLCOS main activities

The main activities were:
- To provide organisational and individual e-learning end-users in Europe with orientation, perspective, and useful recommendations in the form of a medium-term open content roadmap;
- To offer to the end-users easy, but intelligent access to practical information and support services in the creation, sharing, and re-using open e-learning content (tutorials, guidelines, best practices, and specimen of exemplary open e-learning content),
- To establish a larger group of committed experts throughout Europe who not only share their expertise with the project consortium, but also steer networking, workshops, and clustering efforts,
- To foster and support a community of practice in open e-learning content know-how and experiences

At the beginning of 2007, OLCOS published the "Roadmap 2012" to bridge the gap between traditional educational practices and current innovations of OER. It entails several practical recommendations that are targeted on educational policy makers, educational institutions, teachers, and students. Following are two explanatory recommendations for teachers and students. They can illustrate what tremendous expectations are being attached to OER.

Teachers should devise processes that engage students in active, constructive engagement with learning content, tools and services. Rather than concentrating mainly on transferring subject-based knowledge, they should coach students in how to identify and study real world problems, assess the quality of information sources, and critically discuss results of their studies. In open educational practices, such as collaborative study projects, teachers should also advise students to document and reflect on their study progress (e.g. in an e-portfolio) and to share learning experiences and results with others.

Learners should demand that educational institutions and teachers help them in acquiring the competences and skills to participate successfully in the knowledge society. They should ask for educational approaches that ensure that learning experiences are real, rich and relevant, for example through addressing real world problems, working collaboratively, using new tools and information services, and critically discussing content and study results. Moreover, learners should set up and develop their own e-portfolio for documenting and reflecting on the progress and results of their study work.

OLCOS officially ended in 2007; however its website is still available and provides valuable information for beginners to get acquainted with the concept of OER and related activities.

3.2   SWITCHcollection

SWITCHcollection is a national library of reusable learning objects like courses, modules, images, video clips and text documents contributed by Swiss universities
It is an excellent example for a team-based approach and can serve as a guide. It provides subject-oriented networks (e.g., psychology).

Figure 8: SWITCHcollection start page

The goals and motivation of SWITCHcollection are as follows:
- Re-use e-learning content
- Enhance collaboration (intra- and inter-institutional)
- Make teaching activities visible to peers and to the public
- Make teaching activities citable and referenceable
- Attract students (Marketing)
- Long-term archiving and distribution of content with stable URL (content life cycle)

- Single point of entry for all kinds of e-learning contents – independently from distribution platform

Initial contact with SWITCH has been established (namely with Rolf Brugger) and further cooperation has been agreed on. This entails, for instance, an in-depth interview concerning team-related aspects (see below: Delphi Study).

3.3   Multilingual Open Resources for Independent Learning (MORIL)

MORIL is a leading-edge Open Educational Resources (OERs) initiative by the Open and Distance Teaching Universities within the EADTU membership. The MORIL initiative is a multi-country initiative, and is to make educational content more broadly accessible (by means of OERs) to a vast array of both (lifelong) learners and institutional users.

MORIL can be regarded as new generation ("Second Wave") in the OER development. Their focus is now towards materials and instruments to support self-directed study in online environments. A significantly more flexible approach compared to classroom-based learning results form this approach. It has been concluded that MORIL is an important project in realising UNESCO's goal of "education for all" and lifelong learning.

Figure 9: MORIL start page

3.4   Teacher Education in Sub Saharan Africa (TESSA)

The TESSA community, and the TESSA materials, have been created by teachers and teacher educators working in a variety of contexts. An expert team has prepared handbooks suggesting some of the ways in which the TESSA community and materials can be used to plan and implement teacher education and training programmes, courses and activities.

Handbook for teachers: 'Working with pupils' is a short handbook for teachers explaining how to use TESSA materials in your classroom. Download and print the PDF version or download and adapt the word document for your own school or institution.

Handbook for teacher educators: 'Working with teachers ' is designed to support teacher educators to use TESSA materials in courses and programmes. It is for lecturers, advisers, professional development leaders, policy makers and other colleagues working in teacher education. 'Working with teachers' includes the handbook for teachers, 'working with pupils'. The appendices give examples from institutions across Africa.

Figure 10: TESSA start page

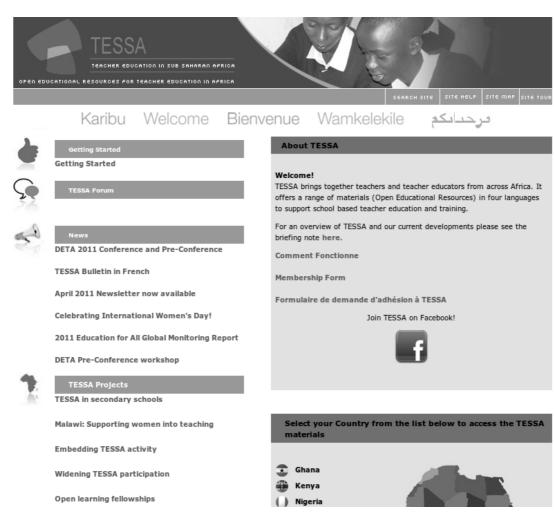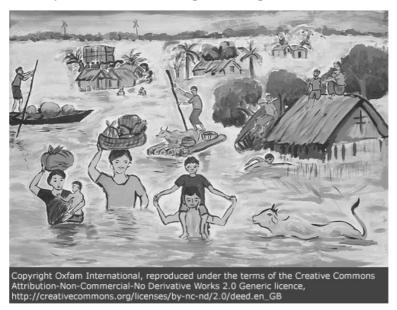### 3.5 Lived Experience of Climate Change (Lech-e)

Lech-e focuses on the lived experiences of climate change and asks how individuals and organisations conceive and respond to its perceived local impacts such as extreme weather or biodiversity changes. Through collaboration between nine participating institutions, designing innovative teaching modules and a virtual learning space, it aims to create a European community of scholars, students and citizens who collectively make a major contribution to the United Nations decade on education for sustainable development.

Figure 11: LECH-e start page

Supported by the European Union Lifelong Learning Erasmus Programme, the project will develop online curriculum resources and virtual learning communities. These resources will support Masters dissertations in the broad area of the lived experience of climate change -- how individuals and organisations conceive and respond to its perceived local impacts, for example extreme weather or biodiversity changes. They can be used flexibly by Universities to complement existing postgraduate programmes. At the end of the project in May 2011 they will become open educational resources for any University to use.

Two virtual learning communities are planned. One will be for students undertaking dissertations in the area and their supervisors. It will essentially comprise a virtual mobility space across Europe for interactions of students and supervisors. The second will additionally include the individuals, communities and organisations with which students are engaging in their research activities, thus contributing to an effective, informed European citizenry to complement the crucial understanding provided by the scientific community over the years.

Theses best-practice examples should give an insight into the question of how teams are organised in the co-creation and usage of OER. Typically they follow a project-based approach because of their status as being third-party funds. Therefore, it is interesting to see how other teams that are not depended on that financial status organise their team work. We will take a close look at this issue in the next section as we provide two selected case studies of OER-initiatives in European Higher Education.

4 Case studies of OER in European Higher Education

4.1 <u>Humanities Network</u>

The first case study pertains to the Humanities Network with their project "Open Educational Resources for Complementary Curriculum: A case study in Heritage Studies" (Herbert, 2010).

The Humanities Network of the EADTU is one of the longest established and most active of its subject networks. It exists to share understanding of open and distance learning and teaching systems, particularly the application of such systems to the Arts, Humanities and Social Sciences. Its membership is open to representatives of any open and distance teaching institutions, but its focus is on the activities of relevant academic faculties. The group has previously worked on joint course production and on EC-funded projects, most recently the eMove project for which it developed the International Course Exchange (ICE) scheme. In this scheme six institutions created a model aimed at showing how students might spend part of their degree study at a different institution to the one at which they are initially registered. The scheme provided a means to ensure that all study taken through 'virtual mobility' would accumulate credit towards their degrees.

We will first lay out ideas for a scheme in which open educational resources (OER) can be assembled to simultaneously meet two different, but related objectives:
- to serve and comply with the fundamental ethos of OER by providing entirely open-access self-contained study units aimed at a broad range of users.
- to create a group of 'complementary' OER units which, by addressing a commonly agreed theme, and following broadly similar structures and learning objectives, will provide teaching and learning aids that can be used in programmes of study in several different institutions

It is important to stress that the project is not at this stage aimed at the production of study units. Rather it is aimed at the creation of a process and methodology that could be used to implement such a scheme. For practical purposes Heritage Studies has been chosen as the theme for this pilot project.

4.1.1 <u>The idea of complementary curriculum</u>

The idea of complementary curricula emerged from broader discussions concerning joint course production. There is an acknowledgement that individual institutions have particular specialism and perspectives from which other institutions might benefit. Equally there is an acknowledgement that intellectual traditions, learning systems, degree structures and a range of other factors present important barriers to joint course development that fall outside routine credit transfer arrangements.

The group has therefore sought to examine ways whereby learning materials can be shared. In particular it has considered the possibility that OER materials might serve a dual purpose in which learning materials designed for open access can also compliment a commonly agreed curriculum theme. In such a system the differences that are normally seen as barriers to integration - are turned into benefits and opportunities. Put somewhat differently, the resolve has been to maintain subsidary and to perceive the distinctiveness of individual national cultures as an advantage.

4.1.2 <u>Heritage studies as a theme for the model</u>

Heritage Studies is chosen as the theme for this exercise for several reasons:

- It is a relatively new subject area and its meaning is not overly influenced or linked to long-standing and often contrasting national ideas about the core literature and methodologies of the subject.

- It is interdisciplinary: it draws on the work of historians, art historians, classicists, linguists, philosophers, social scientists and several other disciplines. It is a theme to which most humanities methodologies can be applied.
- It benefits from different national and regional perspectives
- It can be applied not just to different states but also to regions that have distinctive cultural identities but lack administrative autonomy.
- It can contribute significantly to employer engagement initiatives by combining with other skill areas relevant to tourism, business studies, curatorial and museum studies etc.
- It makes a significant contribution to the enrichment of the consumers of heritage, and as such is relevant to lifelong-learning agendas.

Notwithstanding the relative openness of Heritage Studies as a curricula theme the subject has accumulated a broadly shared meaning, a literature and centres of expertise that have given rise to key debates and advocacies about heritage and how it is studied,. Various debates have also emerged about its appropriation and manipulation for a range of commercial, governmental and other agendas.

One of the tasks of the group has therefore been to negotiate very broad parameters for the theme and agree on the sources from which such reference points might be obtained.

4.1.3   Sources for Heritage Studies and OER

The Open University (OU) and the OUNL have been at the forefront of publishing open educational resources. The OU's OpenLearn has two substantial open educational resource areas: LearningSpace for learners and LabSpace which allows teachers and others to re-edit or mix materials from the LearningSpace area. Both areas can be accessed at http://www.open.ac.uk/openlearn/home.php

An evaluation of the OpenLearn project can be found at http://oro.open.ac.uk/17513/ The OpenLearn unit has also provided sources for advice on the creation of OER in open and distance learning style which can be accessed at:
http://openlearn.open.ac.uk/course/view.php?id=3636

There is further guidance on remixing material in the learning tools section which can be found at http://openlearn.open.ac.uk/course/view.php?id=3416

Open University material is being used as a model for the scheme because it offers examples of material that can already be viewed by everyone. However, these units are intended as exemplars rather than as blueprints and institutions may want to take this into account when developing their own provision. Existing units of study are used in this scheme because they provide tangible means of exemplifying the future shape and content of OER as they might be applied to Heritage Studies in the broadest sense. The following examples offer a suitable focus for the group because they reveal so many differences of approach and intent. The following study unit titles can be easily accessed through the OpenLearn search engine.

4.1.4   Aberdulais Falls: a case study in Welsh heritage

This case study is interesting because it deals with natural as well as industrial heritage. It is taken from the Open University's Level 1 course Heritage, whose heritage (A180). Unlike some of the other examples cited below the unit was written for a course that was intended to explore the concept of heritage and the methods through which heritage is determined and disseminated commercially. A summary of the course from which this study unit is derived can be accessed at:
http://www3.open.ac.uk/study/undergraduate/course/a180.htm

Heritage case studies: Scotland

This unit adopts a somewhat different approach in that it presents a number of different case studies that are intended to reveal the distinctive concerns of Scottish heritage and particularly the impact of heritage sites on the idea of national identity.

Welsh History and its Sources

This is one of the largest OpenLearn units and one of the most visited since publication. It was created not as a site to promote heritage studies but to support the study of the history of Wales and the methods that historians use to create 'histories'. Unlike other sites this one places a heavy emphasis on multi-media resources rather than a more singular didactic narrative.

Brighton Pavilion

This study unit has the singular objective of presenting the story of one of England's best known buildings, placing it in the historical and cultural context of the time when it was built and particularly drawing attention to the multiplicity of styles that were drawn on when the building was created.

War memorials and commemoration

Two units are included here: Commemoration: visual texts and War Memorials and Commemoration. The latter is intended as an introduction to the former. War memorials are an ubiquitous feature of modern landscapes. The study units set out to reveal issues about commemoration, but they are also intended to use this theme as a means to understanding how the arts are studied.

It is anticipated that this list will be extended, drawing on the course Understanding Global Heritage newly developed for 2009/10 at the Open University.

4.1.5   **Methodologies**

The examples given above indicate some of the different interpretations of heritage studies and what the subject might embrace, indeed it could be argued that some of these units are not strictly about heritage studies at all: essentially they exploit more traditional areas of discourse – history and art history for example. However, for the present purpose it can be agreed that each unit could be interpreted as informing or contributing to a general study of heritage - how it relates to peoples' understanding of their own culture, and identity, and how such ideas might feed into the way that heritage is exploited for financial or cultural capital.

The examples also show different approaches to the way that OER units can be constructed for this purpose, but based around a similar template. Some or all of the following features are present in the UK model

- A definition of learning outcomes: the skills and knowledge areas that students are expected to have acquired through doing the unit (always included)
- A notional estimate of the learning hours that an average student is likely to spend on the unit (always included)
- Some type of formative assessment (not always included)
- The use of more than one media with each media being used for distinctive purposes (usually included but the extent of mixed-media is varied)
- Implicitly some questions that the unit is devoted to helping to answer

- Allied to this is a set of tools that help students study and provide the opportunity for social networking (always included).

4.1.6   Language and technical platforms

The language of the study units will be the language of the contributing country with an English language translation.

The question of platforms and other aspects of technical creation and management are not addressed in this paper. However, the broad technical requirements are evident from the exemplars that are given. Whether the individual units are hosted by a single central site or the sites of individual institutions is not seen as a major problem. It will be important however that all material can be accessed via the major web browsers.

Defining the broad parameters of Heritage Studies as a subject
It is intended to define Heritage Studies in a clear but broad sense that will allow for common understandings but also local differences. Heritage Studies then involves the study of the products of heritage which may be tangible or intangible. Tangible Heritage includes larger objects such as buildings, public sculpture, memorials as well as smaller objects etc. Thus it can include both a museum and the objects within the museum. Intangible Heritage includes oral history, festivals and customs etc. Natural objects – national parks, conservation areas, sites of natural beauty – can fall within the definitions of tangible or intangible heritage. Heritage Studies also focuses on heritage as a process, asking 'What does heritage do?' and 'Who is heritage for?' etc. Systems of national and World Heritage listing are included here, but Heritage Studies can consider the politics and practice of heritage in a range of ways (including what might be described a 'dissident heritage' or 'heritage from below').

Defining a 'producer' template for size, shape and content

In order to help define key parameters the group has identified three Open University OpenLearn units as exemplars. They are chosen because they reveal different approaches to Heritage Studies and because they show a variety of sizes and shapes. The three units are:

- Aberdulais Falls: a case study in Welsh heritage (A180_2)
- War memorials and commemoration (A103_2)
- Brighton Pavilion (A207_7)

The group has identified a small number of parameters that, at this stage of the project, will be sufficient to define a template for the size, shape and content. These parameters are indicated in the table below which is deliberately short and straightforward. The appendix to this paper provides a template which contributing institutions are invited to complete. For added clarity the template has been applied to the three OER units given above.

This template contains the following items: Title (a short descriptive title), an abstract (a descriptive paragraph of no more than 200 words), the study time (describe the number of hours that an average learner would take to study the material in terms of one of three bands 1hr-5hrs, 6hrs to 11hrs, 12hrs to 20 hrs), the target audience, and the material (describe the level at which he material is written).
There are additional questions around the template:
- What are the learning outcomes and how will students know when they have achieved them. For example, it is anticipated that each unit will contain interactive self assessment to help learners do this.
- What media would be used: Text, still pictures, video, audio? Would you anticipate a need for copyright clearance?

The Humanities Network also considers that it would be useful to introduce a user template. This would provide a means whereby producers could monitor the usage of their OER materials. More importantly these user templates, held in a central location, would provide useful feedback and guidance to other institutions considering the use of these or other OER materials. As before the group proposes the use of deliberately short and straightforward parameters:

- In what context is the OER being used? Describe the programme of study and the educational level in which the OER is being used. Describe the intended audience. (See previous template for some possible generally understood terms.)
- What proportion of the course or learning unit does the OER provide? Explain in more detail how the OER fits within the programme, and whether it forms the entirety of the learning unit (as it might for a leisure learner or professional development programme), or forms just a part of a larger learning unit (perhaps teaching a particular skill, providing a case-study).
- Has the OER been adapted or translated? Or have particularly elements been replaced by things more suited to the user's local context?
- Is students' study of the OER material being assessed? And if so, how?
- Will any formative assessment contained in the OER be used, or replaced?
- Will the learning that is enabled by the OER be assessed in a summative way with performance contributing to an award of credit?
- If the OER has been adapted, will the new version be made available as OER?
- If the OER has been adapted will the materials be made available as OER? (Within the OU UK system, for example, Open Learn OER materials may be adapted and fed back into the 'Lab Space'.)

4.1.7   Open Educational Resources as Building Blocks for Course Production

Note: The following contribution has been provided by Jaap-van Marle (OUNL) (van Marle, 2011).
For Distance Teaching Universities (DTU's), the internationalisation of their curricula is a complicated issue.

As is well-known, the differences between DTU's are tremendous, both in relation to the

- structure of the curricula,
- structure and seize of the modules that are offered,
- teaching traditions,
- pedagogy
- traditions in assessment and assessment types
- fees
- formal and legal infrastructure

II

Evidently, DTU's have put much effort in solving these problems and within the framework of EADTU there have been several attempts to set up systems within which *course exchange* has become possible. The – provisional – final stage in the setting up of course exchange systems is EPICS, which defines a comprehensive system within which course exchange has be become feasible, i.e. has been made main stream.

III

However this may be, course exchange, however streamlined, remains a highly formal kind of undertaking, which presumes bilateral agreements between the participating institutions covering assessment, study point transfer, language use, responsibilities for the students involved, etc.

IV

Within the Humanities Network of EADTU the question arose whether other types of international cooperation are possible. Clearly, there is the time-honoured kind of international cooperation which involves *joint course production*, but the few successful projects make clear that, more often than not, the eventual product is not considered successful by the participants. The fact is, that such projects are both time consuming and expensive, and the eventual course, being a compromise by definition, is generally in poor harmony with the teaching systems and curricula of most participating institutions. Consequently, the both famous and notorious *What is Europe?* course has never been widely used, and the main reaction of many of those who were involved in this project was 'This never again'.

V

Within this context – and in an attempt to find ways to cooperate which are less expensive, more flexible, and more informal – our college Trevor Herbert of the UK OU came up with the idea of *complementary course production*. Essential to this concept is that there is no question of one common course at all – as a matter of fact, each participating institution makes its own course –, what is common, is only *a specific theme*.

Put differently, complementary course production does not involve team-based co-operation. Complementary course production is not team-based but theme-based. This renders complementary course production its loosely structured character. It is a highly flexible concept: the participating institutions choose a common theme, make their own courses, while, crucially, *these courses are based on open educational resources*. These courses are based on open educational resources which are already available, whereas newly made materials are offered to the partner institutions for free. Essential to complementary course production is content exchange, content in the form of OER.

VI

The crucial question in this connection is, of course, to what an extent OER constitute natural building blocks for making courses. Clearly, more often than not, OER are not devised as elements for course production, and the obvious question is whether they can be used in this way.

In order to come to grips with this question the Dutch OU is involved in a pilot project the aim of which is to answer this question. Specifically, this pilot tries to find out to what an extent the heritage materials offered by the UK OU on OpenLearn can profitably be used for a Dutch OU course on heritage.
This pilot has not been finalized and I will report on this pilot in more detail at another moment. However, in this context one of our main conclusions is relevant. In our view there can be do doubt that the value of the OER offered by the UK OU is highly limited within the context of complementary course production.

Clearly, this does not mean that the materials are uninteresting as such, nor does it imply that the concept of complementary course production is ill-devised.

VII

What it does mean, however, is that complementary course production should be structured much more rigidly to become a fruitful way to make courses in an efficient way. Before institutions embark on a project

of complementary course production, the institutions should invest in determining the characteristics of the course that is envisaged and the OER that will be offered/exchanged. That is, complementary course production should start with a team-based first stage, a purely theme-based approach seems to be too loose.

In the present situation, the only thing that is determined beforehand, is the theme, in this case 'heritage'. There is no additional focus, nor is the level (bachelor, master, what level) fixed.

Also, there is no question of clear properties that the OER offered should meet. Not even the size is fixed, which is illustrated by the fact that the British materials vary between a few hours and many hours of study. The course on Aberdulais Falls, for instance, is considered to take only 2 hours of study (and note that 1 hour courses are offered as well!), whereas the course on Welsh History 25!

In addition, many of the materials, however interesting as such, are far too specific to be of direct importance for a related course in another country.

VIII

Clearly, the above does imply that the value of *existing* OER for course production is far from clear. These materials may be relevant, but this need not be the case. What is more, the idea that *a complete course* can be made on the basis of exiting OER is even more doubtful.

Clearly, this seems to indicate that complementary course production is most fruitful if it is preceded by an intensive, team-based stage in which the participating institutions make clear arrangement in relation to what each member has to produce. In general, the role of existing OER seems to be limited, it seems wise to concentrate on the exchange of materials which should still be made.

Further developments

The second stage of this pilot project will have the following broad aims:
Further refinement of the coherence of the common templates. For example, in the producer template the group has considered the possibility that each unit would begin with an interview with a heritage expert from the country who would contextualise the topic of the unit in terms of its local and international significance. Commentary on formative assessment structures and on other facilities, such as inter-institutional networking for students and faculty staff.

* Extensions of the number of contributing institutions to join the existing group (OU, OUNL and FernUni) include Spain (UNEL), Catalonia (UOC) and Portugal. (Uab).
* The inclusion of a critique and evaluation of the project highlighting challenges and opportunities.
* Other changes to the style and content of this paper that make it appropriate for a final report.
* OUUK and OUNL which have OER portfolios will consider a further set of contributions to the initiative.

4.1.8 Recent and future development: European Joined Seminars (EJS)

In 2011, the Humanities Network has agreed to launch a new project that will expand its prior efforts on complementary course production (see previous section). It is intended that the seminars should be international and bilateral, i.e. offered to students by two partner institutions of the Network. They should be based on Open Educational Resources and combine elements of traditional and of virtual teaching and learning (blended approach). The seminars should further offered at BA-level and have a size of approximately three days (weekend seminars).

The EJS will include more institutions than the former complementary course production project. It aims at enlarging the offerings of OER at the institutions inasmuch as the seminars are based on OER available at

the institution and the amount of OER might be expanded given the demand of the students. The seminars are conceived as a testbed for utilizing and promoting OER in Higher Education. Furthermore, they can be regarded as incentives for the internationalisation of study programmes because students who have participated in an EJS might be willing to enlarge their international expericence by a Virtual Stay Abroad on the basis of International Course Exchange (ICE: http://www.eadtu.nl/academic-networks/humanities/) or European Portal for International Courses and Services (EPICS: http://www.eadtu.nl/epics/).

In addition to the face-to-face seminars, it is suggested to have online versions (i.e., online seminars) in order to be able to test different versions of EJS during its initial phase. At this time, it has not yet decided whether a single event should be opened also to students from more than two universities that offer the seminar. Offering a single seminar to students from more than two institutions might be a much more complex management. It was also left open whether the seminars should be opened to non-students. On the one hand this may attract more learners to the study programmes and would be in the line of the overall OER-movement but on the other hand this may exclude regular students from a seminar. It is thus proposed to include participants from professions with a thematic affinity to the topic of a seminar.

For the initial phase, there is agreement on the following issues. A general scheme should be developed for the sixteen bilateral seminars between eight institutions collaborating in the EJS-project in the course of one academic year. Each institution will not only host but also be a guest for one seminar. To do so, each institution will get in touch with the guest institution to find an agreement on the topic, time and location for the seminar. Each host institution will guarantee the availability for the required infrastructure for the hosted seminar. The sixteen seminars will be complemented by two online seminars.
A first pilot for the EJS-project will be a bilateral seminar in Berlin on "Historical Consciousness", offered by the OUNL and the FernUniversität in Hagen (September 19-21, 2011). To test different versions of bilateral seminars, it is agreed that there should be two more pilot seminars: An online seminar offered by the OUUK together with UNED and a seminar offered by KU Leuven and UA as a joint seminar between a distance teaching university and a traditional university. The EJS-project will therefore have a comparision of different version of bilateral, international seminars.

4.1.9   Organisation of team work

The following position of the Humanities Network is relevant to describe the team approach (Herbert, 2010):

The Humanities Network believes that OER can be of great benefit both in terms of cross cultural understanding (akin to that developed through the ERASMUS project) and in terms of cost-effective development of learning materials. Within that context it argues the following.

The occasions when a group of institutions will come together jointly and in a single team to develop OER for shared use will be extremely limited (this is because teaching methods and curricula are highly culturally conditioned and culturally specific). Transnational and transcultural production of OER is complex and difficult and a worthy subject for study in a number of respects (group interactions, materials production etc.) The way the OER is produced in its 'home' institution should not be a concern of the project, but be treated as a matter for the home institution under the principle of 'subsidiarity'. The project should be concerned only with the outcomes of these processes. In most cases the use of OER will depend on the extent to which they can fit into a new cultural context. They are likely to be used as case-studies, exemplars, or to teach particular skills. OER will almost always require mediation to fit into a new context, or adaptation. The focus of the OER project should be on developing an understanding of – and piloting – the infrastructure needed to enable cooperation.

Heritage Studies has provided a good area for exploring these issues demonstrating that even in an area where 'global' principles are advanced (e.g. World Heritage sites), the most meaningful investigations com-

bine these with study of local situations. Heritage Studies then provides a good area for testing the use of materials produced in one location as OER for use in other locations as will be the case in the OU/OUNL pilot.

4.1.10 Other cases in the Humanities: The HumBox

Besides the EADTU Humanities Network, there is another network worth mentioning here. The HumBox Project which is constituted in the Subject strand of the Joint Information Systems Committee (JISC) Open Educational Resources Programme. It follows a specific team approach which is described as "shared ownership" and involves project leaders and their partners (Dickens et al., 2010). The project partners had little knowledge about OER or technical solutions for sharing resources. The goal was to create a "fledgling community" of OER participants which will later become a sort of ambassadors for the OER initiative. The design of the HumBox was aimed at facilitating easy access to small pieces of information ('bite-sized' chunks such as a PowerPoint presentation). One material has been uploaded, a peer-review process focussed on trust and quality has been initiated in the form of workshops. The intention behind this was to alleviate the willingness to share materials and "to reduce the 'fear factor' associated with publishing one's resources openly online" (Dickens et al., 2010, p. 12). Attention has also been paid to legal issues. The evaluation of the team approach identified several success factors such as the peer-review. However, it was also stated that it should be modified to capture the whole notion of OER. Thus, it was suggested to draw on the terms "use" and "shareability".

The case of the HumBox is a good example to illustrate how a carefully designed and thoroughly planned approach can lead to fruitful outcomes. In particular, their close orientation on some of the key principles of team work and on factors that have proven to be influential for OER dissemination in academic cooperations (Deimann & Bastiaens, 2010; Geser, 2007) is convincing.

4.1.11 Reflections

The Humanities Network represents an ongoing and well-established initiative within European Higher Education with a special focus on recent trends in OER. Although we will further analyse this case in a later section, it has become clear that this team work grounds on a certain approach which is being refined on a regular base. It is interesting to see how such a group responds to a massive innovation located in their core business, Higher Education.
The decision to work with OER in the field of heritage study is worth to be reflected upon. Besides the reasons given in section 4.1.2 there are also some that pertain to the concept of OER. As we have laid out in the definitions, OER grounds on a humanistic ideal that perceive knowledge similar to air or water as a common good. Knowledge about the origins of human beings or of a group of humans situated in a specific region of the world emphasizes this even further. This is expressed also in the conceptions of European universities (de Ridder-Symoens, 2011). as well as in the philosophical foundations of humanistic education (Aloni, 2007).

4.2 MedNet

The Mediterranean Network created by the distance and traditional Euro-Mediterranean Universities for Higher education and Vocational Training aims, among its specific objectives, at promoting a process of harmonisation of the Euro-Mediterranean educational and training systems through the adoption of a common psycho-pedagogical model. Therefore, it created a common technological platform to carry out distance teaching and support learning processes. The Mediterranean Network contributes to the sharing of

each partner's human and technological resources and promotes cooperation and exchange of knowledge among countries of different cultures.

Open Educational Resources have been recently included in the strategic development plan of the Network as instruments to enhance accessibility and share of educational contents.

Uninettuno guarantees an increasingly diffusion of OER by satellite and analogue TV broadcasting at an international level. OER can be freely accessed since broadcasted by two TV channels (i.e. RAI NETTUNO SAT1 and RAI - Radiotelevisione Italiana RAIDUE terrestrial channel integrated into NETTUNO's broadcasting schedule). The video-lessons, as open educational resources, can be freely accessed without any registration at the University.

OERs are included in the curricula that the University offers to regular students as bachelor degree programs, and they are adopted by professors and tutors as their main didactic contribution for classes of enrolled students.

They include the digitised video-lessons and their related didactic materials. The following features are implemented into the International Telematic University UNINETTUNO's digitised video-lessons:

- content's modularity that allows the student to access a specific level of competence;
- indexing of the subjects that favours hyper-textual navigation; and also plays the role of cognitive mapping, showing the student different training paths. This way it becomes a cognitive tool that is useful to strengthen memory and to stimulate hyper-textual navigation as well bookmarks that play an essential role: they are graphical icons that blink and turn on during the lesson to lead the student in an hyper-textual way to the information included
- Practical exercises and the Virtual Laboratory to integrate theoretical knowledge acquired with practical work through a "learning-by-doing" learning process
- Training materials linked to the video-lessons, and
- Media Library for more-in-depth study to be carried on using the texts stored in the database.

Students in Virtual Classrooms are able to interact both synchronically and diachronically through video-conferencing, chats, video-chats and discussion forums. They are able to have access to collaborative and cooperative on-line activity with other students, to start a dialogue with the professor or tutor who can support and help the student during the training process, to interact with other actors in the educational process coming from other cultural and linguistic contexts with a view to learn in a global and not in a local perspective, and to fully investigate a specific subject in websites that were selected by the professor.

Through the fruition of the courses, a possibility is given not only to start symbolic-reconstructive learning processes, linked to the classical linear mode of teaching, but thanks to the modular organisation of contents, to the indexing of subjects, to bookmarks, the student will be able to develop hyper-textual and multimedia learning processes that will allow to enrich and improve the meta-cognitive strategies, that will favour the customisation of the learning processes and thus will allow to promote active, constructive and interactive learning processes.

TV broadcasted video-lessons are the main resource Uninettuno currently offers as open educational materials for students that can't rely on fast (enough) Internet connection. This is particularly relevant in the case of students from Euro-Mediterranean countries, and more specifically from rural areas that are not provided with fast Internet connection, and from Northern and Southern Italian mountains regions as well.

4.2.1 <u>Video-lessons as quality OER</u>

The quality of Uninettuno open video-lessons is guaranteed by strict internal procedures, such as the adoption of Uninettuno psycho-pedagogic model and the video-professors' selection procedure. The video-

lessons are at the core of the UNINETTUNO teaching model, at least from the perspective of individual study activities based on the teaching materials available to the student, thus not taking into account interactive activities, collaborative learning experiences and online tutoring. The best professors from Italian and international universities are selected by the UNINETTUNO Scientific committees and are called to learn new languages and new ways of teaching in order to produce a complex materials such as video-lessons, not only presented to students as a "learning object", but situated in the context of a hyper-medial and modular environment, linked to other heterogeneous learning materials (such as text, slides, concept maps, bibliographies, websites selections, exercises, virtual labs) and to interactive activities managed by tutors and professors during the course delivery as well.

The video-lessons are developed following the Uninettuno psycho-pedagogic teaching and learning model and this involves changing the university teachers' traditional teaching competences. The use of a tool such as television changes any traditional didactic communication. In the new didactic model, the professors have to learn new ways of explaining, synthesising and presenting their knowledge to virtual students in order to trigger their critical and reflective learning processes.

With regard to the development of learning, it is important to note that the study strategies set up during digitised video lessons allow enhance a learning process where it is the student who masters time. Actually, the student, through on-screen controls like play, stop, fast forward, rewind, is able to manage his teacher and the lecture; to watch and watch again parts of the video-lessons as many time he or she wishes according to individual needs; to pause to think and see if there is need to consult further sources, to review what already has seen to enhance storage in long-term memory; to see parts of the video that can reveal interesting connections with other materials or sources. These are not only technical functions linked to the styles of use of the video-lessons, but they also refer to meta-cognitive strategies that facilitate self-evaluation of one's own comprehension activities. During a traditional lesson it is not always easy to stop the professor to make him or her repeat what has been explained, and it is practically impossible to stop to reflect or consult other resources.

The second process guaranteeing high quality is the selection procedure of video-professors. The video-professors selected are widely recognised in the academic and scientific community as scholars and major domain experts. In addition, some of the priorities that the UTIU gives to itself in its business model are:
• Quality of the video-professors, selected among the best ones of the Italian and foreign universities;
• Quality of the educational structures achieved thanks to full, regular and associated professors, recruited through strict selection procedures.

4.2.2   Case description

The OER-initiative carried out at the International Telematic University UNINETTUNO stems from more than ten years experience in national and international networks of traditional and distance learning universities.

The International Telematic University UNINETTUNO was born in 2005 from NETTUNO - Network per l'Università Ovunque model, an Italian association of distance universities, including 43 Italian and foreign universities operating in Italy since 1992, and from the success of the European Project Med Net'U - Mediterranean Network of University (2002-2006), funded by the European Commission in the framework of the EUMEDIS Programme. The project was coordinated by NETTUNO - Network per l'Università Ovunque with the participation of 11 Mediterranean Countries.

The main result of the Med Net'U Project is the realisation of a networked structure based on transmitting and receiving bi-directional satellite technologies. From the structural viewpoint the Med Net'U Network is organised according to NETTUNO's model, which has been adapted to an international perspective. It includes the following structures:
• Euro-Mediterranean Centre: it coordinates distance didactic activities.

- National Centres: they serve the coordination of activities at a national level and are connected to the Euro-Mediterranean Centre.
- Partner Universities: they manage students' registration procedures and deliver academic titles recognised at European level.
- Production Centres: they produce multimedia educational products to be delivered on satellite television and on Internet via Satellite.
- Technological Poles: they supply students with all the necessary technologies, satellite television, Internet via Satellite, and multimedia educational materials in order to realise distance teaching and learning processes. Technological Poles can be set up at each partner's site, at Universities, but also in off-campus sites or at students' homes.

The satellite allowed a Med Net'U European satellite television channel to be entirely devoted to distance teaching in the Euro-Mediterranean Area and a Didactic Portal on the Internet via Satellite. These technologies enabled the following universities and institutions involved in the network to interconnect and to develop 11 Production Centres and 31 Technological Poles at the Mediterranean Partner Universities' sites:

Country	Institution	URL
Algeria	Institut Supérieur de Gestion et de Planification (Bordj-El-Kiffan, Alger) Université Djillal Liabès de Sidi-bel-Abbès (Sidi-bel-Abbès)	http://www.isgp.edu.dz http://www.univ-sba.dz/
Egypt	Cairo University (Cairo) Helwan University (Helwan, Cairo) Egyptian Association Incubator (Cairo)	http://www.cu.edu.eg/ http://www.helwan.edu.eg http://www.eia.org.eg
France	EUTELSAT (Paris) Fondation Sophia Antipolis (Sophia Antipolis Cedex) Institut National Polytechnique de Grenoble (Grenoble)	http://www.eutelsat.com/fr/home/index.html http://www.sophia-antipolis.org/ http://www.inpg.fr
Greece	Aegean University (Mytilene, Lesvos) University of Crete (Heraklion, Crete)	http://www.aegean.gr http://www.uoc.gr/
Italy	NETTUNO Network per l'Università Ovunque (Rome) Politecnico di Torino (Turin) Istituto per il Mediterraneo (Rome) Consorzio per la Formazione Internazionale (Rome)	http://www.uninettuno.it http://www.polito.it http://www.imednet.it http://www.cfiroma.org/
Jordan	Jordan University of Science and Technology (Irbid City)	http://www.just.edu.jo

	Yarmouk University (Irbid, Jordan)	http://www.yu.edu.jo
Lebanon	Management and Technology Consulting Group (Beirut)	http://www.mtcg.biz
Morocco	Ecole Nationale Supérieure d'Informatique et d'Analyse des Systèmes (Agdal, Rabat)	http://www.ensias.ma
	Université Cadi Ayyad (Marrakesh)	http://www.ucam.ac.ma
	Ministère de l'Emploi et de la Formation Professionnelle, Secrétarait d'Etat chargé de la Formation Professionnelle (MFP/SEFP)	http://www.dfp.ac.ma
	Universite Ibn Zohr (Agadir)	http://www.enssup.gov.ma/etablissements/univ ibnzohrAgadir.htm
	Université Mohamed V Souissi (Rabat)	http://www.enssup.gov.ma/etablissements/univ mohVsouisRabat.htm
	Université Hassan 1er	http://www.uh1.ac.ma/
Syria	University of Aleppo (Aleppo)	http://www.alepuniv.shern.net
	Damascus University (Damascus)	http://www.damasuniv.shern.net/
	Syrian Virtual University (Damascus)	http://www.svuonline.org/
Tunisia	Ministère del'Education et de la Formation (CENAFFIF) (Tunis)	http://www.cenaffif.nat.tn
	Ministère des technologies de la communication et du Transport /SEII (Tunis)	http://www.ministeres.tn/html/ministeres/com munications.html
	Institut National de Bureautique et de Micro-Informatique /INBMI (Tunis)	http://www.ministeres.tn
	Université de Tunis El Manar (Tunisi)	http://www.mutan.org/UElManar.htm
	Université Virtuelle Tunisienne (Tunisi)	http://www.uvt.rnu.tn/uvt/
Turkey	Ege University (Bornova, Izmir)	http://www.ege.edu.tr

Thanks to this network, the only one of this kind existing in the Euro-Mediterranean Area for distance education, today all partners can produce, broadcast and receive restricted and open educational contents, through the development of a didactic platform based on Internet via satellite (www.uninettunouniversity.net), in four languages –Arabic, French, English and Italian– and the availability on the satellite channel, RAI NETTUNO SAT 1 of an area entirely devoted to the broadcasting in four languages of the video-lessons realised by the professors of the universities of both the Arab World and Europe.

Further to these results, in the last four years, two new Technological Poles have been established within the network:
- at the site of the Secretariat of State for Vocational Training in Rabat, in Morocco. In this structure the Government of Morocco uses the distance computer-literacy courses realised with the Med Net'U Project and aimed at training the executives of the ministries in the use of the new technologies.
- at the Helwan University' site in Egypt and nearly 40 students are enrolled in the Computer Engineering Degree Course of the International Telematic University UNINETTUNO and already successfully passed the exams of the first year.

Beside the increasing number of Technological Poles, an academic agreement between the first Egyptian e-Learning Distance University, the EELU Egyptian E-Learning University, and the International Telematic University UNINETTUNO has been undersigned (2008). By a special provision the Egyptian Government allowed the Egyptian students enrolling to UNINETTUNO courses to get the acknowledgement of the Egyptian–Italian joint academic title.

From this experience UTIU inherited a marked Euro-Mediterranean characterisation and international vocation and orientation as well that allowed to rapidly become part of the European higher education institutions context, developing a significant strategic alliance with the countries of the Euro-Mediterranean area.

Furthermore, the International Telematic University UNINETTUNO is based on a close cooperation with traditional universities of the Arab World, the United States, and Latin America and at present it is concluding new agreements with universities in China, Russia, Middle East and Africa. The alliance of university institutions of many countries of the world allows supplying wider and more diversified offers as it regards the teaching staff and the subjects and educational contents as well.

The institutional aims and the values that guide the Mediterranean Network's strategic choices and its international dimension and the psycho-pedagogic didactic model used, are reflected in the organisation of the network on the territory as a flexible and open organisation and in its organisation that is capable of putting into practice the programme orientations identified by the collaborating governing bodies.
The organisation structure on the territory appears as a "network" structure: a Coordination Centre (UTIU) and Technological Poles and Production Centres located on the national and international territory interconnected by telematic networks and through transmitting and receiving satellite dishes. At present, the UTIU can rely not only on the Technological Poles already set up in Italy, but also on the structures and technologies of 31 Technological Poles and 9 Production centres, set up at the universities' sites and vocational training centres of the Med Net'U Project partners and dislocated in 11 countries of the Euro-Mediterranean area, as shown in the picture below:

The Technological Pole is a didactic structure equipped with the new Information and Communication Technologies (ICT) distributed on the national and international territory that put at the students' disposal all the technologies needed to attend distance teaching courses, to participate in the training activities by video-conferencing, to take the exams. It has coordination and supervision function of the training and research activities in its respective territory and it supplies a physical place of interaction and meeting among students, professors and tutors. Students who do not dispose of a high-speed Internet connection at home and

therefore to all the distance services supplied by the UTIU, can benefit from the services offered by the Pole. Students instead who cannot provide themselves with appropriate equipment (a PC connected to high-speed Internet, also via satellite) set up a receiving workstation at home.

The Production Centres are structures provided with the equipment to realise multimedia educational resources (video-lessons, online exercises, texts, Internet sites, multimedia products) like broadcast on satellite television, Internet via satellite that are available in the learning environments on the didactic portal, the first distance teaching portal in the world realised in four languages (Arabic, English, French and Italian).

Operational management of the network and management of the OER initiative are part of the institutional strategy of UTIU. The Rector and the Board of directors carries on the task of planning, promoting and making decisions on the general strategic orientation of the University within the network. It supervises the administrative, financial and economic management of the University. Among these tasks there is the strategic plan defining the video-lessons to broadcast via the two TV channels and the priorities for daily programme timetables, i.e. selection of disciplines and courses to broadcast. At the operational level, the Supply of Didactic Services structure is in charge of ensuring the effective coordination and the operational support of didactic activities, and of ensuring the compliance with the Statute of the Student Services. In particular, this department is in charge of the Secretariat for Students, the coordination of the Technological Poles on the territory, the management of programs' schedule supporting the distance delivery of university courses, and the online didactics management.

More specifically it:
- Coordinates the activities of the Faculties and of each Degree course or training course delivered at distance;
- Coordinates the didactic and organisational activities of the decentralised structures of the national and international Technological Poles;
- Coordinates the production of the video-lessons and of their related didactic materials on the Internet;
- Supervises the training of the professors and tutors;
- Realises the database system of didactic materials produced and realises the databases as well as the satellite and telematic connections between the head office and the various national and international Technological Poles;
- Manages and prepares the programming schedule of the video-lessons delivered by the satellite channels;
- Manages the Internet-based didactic portal.

4.2.3 Delivery of OER

As it regards course delivery, the University utilises a mix of the Internet technology, the RAI NETTUNO SAT 1 satellite channel and the RAI - Radiotelevisione Italiana RAIDUE terrestrial channel during NETTUNO's broadcasting schedule.

NETTUNO system uses two different "web channels" (http://www.uninettunouniversity.net and http://www.consorzionettuno.it/) for courses and learning contents delivery. The International Telematic University UNINETTUNO (UTIU) portal (http://www.uninettunouniversity.net) provides free access to both the informative sections, to those relating to institutional communications and University research activities. However, access to educational resources is reserved for those who have a registered profile (administrators, teachers, tutors, students, Faculties Dean officers). Access profiling is dependent on several features of the UTIU portal concerning: student's personalization of both individual and group learning activities, student's activities tracking, student's performance reporting, teachers' and tutors' content uploading capabilities, as well as privacy issues. The Consorzio NETTUNO portal (http://www.consorzionettuno.it) is fully open, and allows access to web streaming video-lessons, to related didactic contents (i.e. presentation slides, bibliographies, websites selections, articles and papers) and online exercises. In addition, a selection

is available of "special video-lessons" not directly related to specific curricula, but still held by university professors, recognised experts, and public figures. Approximately 25,000 video content titles related to degree programs are available on Consorzio NETTUNO portal, and more than 12,000 pages of online exercises.

The users can freely access open educational resources that are broadcasted by the two TV channels:

- RAI NETTUNO SAT 1 is the first television channel of the world that delivers its contents in 4 languages. On RAI NETTUNO SAT 1 the UTIU programming schedule has been realised and every day the video courses related to the faculty programmes implemented by the UTIU are aired 24 hours a day.
- Radiotelevisione Italiana RAIDUE terrestrial channel follows NETTUNO's broadcasting schedule: everyday from 04:15 a.m. to 05:45 a.m.

In particular 300 Undergraduate courses related to 10 bachelor degree programs under 6 Faculties are broadcasted via RAI NETTUNO SAT 1 satellite TV channel in equal distribution among first, second and third year courses. Each course includes an average of 24 video-lessons.

4 Post-graduate Master programs are also offered as OER through RAI NETTUNO SAT1. They include 6 courses on Basic Literacy to learn how to read and write in Arabic, and 15 courses for the Master's Course in Euro-Mediterranean Cultures and Policies. Both programs are broadcasted via RAI NETTUNO SAT 1 TV channel.

A selection of best and innovative courses, especially regarding Humanities, Psychology and Communication Science are offered through the RAI - Radiotelevisione Italiana RAIDUE terrestrial channel following NETTUNO's broadcasting schedule. Special academic video-lessons are scheduled for specific periods of the year (e.g. Christmas, New Year's day, Academic Year Opening, etc.). In these periods UNINETTUNO's TV scheduling ranges from contemporary arts courses (e.g. music, theatre, etc.), over artistic performances, to video contents related to specific events (like Nobel Prize ceremonies).

Since RAI NETTUNO SAT 1 satellite channel is accessible through Eutelsat's W3A satellite, it is able to cover the Mediterranean Basin and the whole of sub-Saharan Africa providing direct connectivity to Europe. UNINETTUNO students who reside abroad represent 20% of the total and come from: Belgium, Brazil, Bulgaria, Czech Republic, Egypt, France, Germany, Greece, Morocco, Nigeria, Netherlands, Russia, United States of America, Switzerland (source: Ufficio di Supporto al Nucleo di Valutazione, Uninettuno).

4.2.4 Towards a definition of Open Educational Resources

Open educational resources are educational materials and resources offered freely and openly for anyone to use, and under some licenses, to re-mix, improve and redistribute.

Open educational resources as conceived within the Mediterranean Network include learning contents, such as full courses, course materials (presentation slides, exercises, and articles), content modules; and tools to support on-line learning communities, such as forum, wikis, chat.

Implementation resources, such as intellectual property licenses to promote open publishing of materials, ownership and localization of content, are currently under investigation and development within the network.

4.2.5 Adoption of Open Educational Resources

Undergraduate, post graduate and basic literacy courses have been developed as Open Educational Resources.

As already mentioned, 300 Undergraduate courses related to 10 bachelor degree programs under 6 Faculties are broadcasted via Rai Nettuno Sat1 satellite TV channel in equal distribution among first, second and third year courses. The following bachelor programs are available:

- Engineering Faculty (Civil Engineering, Information and Communication Engineering; Telecommunication Engineering and Management Engineering);
- Law Faculty (Legal Expert in Development and Internationalisation of Enterprises);
- Economics Faculty (Economics and Business Management, Management of Tourist Enterprises)
- Psychology Faculty (Psycho-social Disciplines);
- Literature Faculty (Cultural Assets Operator);
- Communication Science Faculty (Communication, Media and Advertising);

Each course includes an average of 24 video-lessons. Three Post-graduate Master programs are offered through the RAIDUE terrestrial channel during NETTUNO's broadcasting:
- the CBVE-Cross-Border Virtual Entrepreneurship Master's program includes then 10 courses broadcasted in three languages (Italian, English and Spanish),
- the Master's program in Euro-Mediterranean Cultures and Policies, and
- Archeomap - Archaeological Management Policies Master programs, both including 15 courses.

One Basic Literacy program is also offered as OER at UTIU: the "Basic Literacy to learn how to read and write in Arabic" course that includes 6 courses. Both this course and the Master's Program in Euro-Mediterranean Cultures and Policies are broadcasted via Rai Nettuno Sat1 satellite TV channel.

4.2.6 **Work flow**

The workflow for the production of Open Educational Resources within the network is organized by UNINETTUNO and involves different kind of professionals. The instructional design of courses and the teaching plan belong to the responsibility of the Faculty Council and Professors, who determine the specific approach of the different delivered curricula, as well as the contents to be covered in each provided course. In case of courses provided in multiple languages, UNINETTUNO does not produce a single and subtitled course, but rather the Teaching Commission, composed by professors from the partner institutions, is in charge of the instructional design of the multilingual course. Guidelines for producing video-lessons are thus established and video-professors are selected by each academic institution from the involved countries in order to ensure a multicultural and respectful approach toward local diversity taking into account specific approaches toward teaching subjects in each country where courses will be provided.

Teachers and tutors are, then, trained by experts in education and learning technologies from UNINETTUNO in order to properly use of information and communication technologies for teaching. Preparing a course, before being included in the teaching plan, requires the training of full professors, teachers and tutors responsible for video-lessons.

The Production department is responsible, after the training, for recording the video-lessons with the professor in charge. The video-professor is supported in the creation of a "storyboard" of the lessons to be recorded, according to the psycho-pedagogic model developed by Prof. Maria Amata Garito. The storyboard will be used in the production of the slides for the video-lessons as cognitive artefacts soliciting students with auditory, visual and verbal stimuli. In this process video-professors are supported by the graphics department of UNINETTUNO.

After the production of the slides, the teacher proceeds with recording the video-lessons themselves at the UNINETTUNO production studios. The recorded video-lesson is, then, edited, post-produced, and exported both in a traditional TV broadcast format, and as digital video to be published on the UTIU platform. The

teacher also points out the main topics to be covered during each video-lesson that will serve as the "index" of the lesson itself in the web version, and he defines additional educational materials (books, articles, references, web references) linked to the topics covered in the video-lesson.

Teachers and tutors are further involved in the preparation of the whole educational material. There is a broad range of materials, like text (books, essays, notes, articles made available on the portal) multimedia (animations, sideshows, video clip, podcasts), references and web links selected by lecturers in accordance to the video-lessons, exercises (used to assess the progress toward the learning objectives) and, for specific disciplines, virtual laboratories (e.g. learning by doing simulations in which students are allowed to experiment in that specific knowledge field).

The ICT department supports teachers and tutors with editing and publishing the educational contents, training them to use the platform, directly dealing with digitalisation and indexing of video-lessons; syncing with the additional educational contents; and publication of the slides. In addition to the teaching materials, a series of metacognitive learning support materials are designed, developed and published in the preparation of the course. Besides the syllabus, enhanced with hyperlinks to the video and curriculum vitae of teachers, video-professors and tutors, a conceptual map is available to the students. This conceptual map includes the titles of the lessons, the structure of the issues within each lesson and the bookmarks that link them to the educational materials (books and article, CD-ROM, bibliographical reference, list of websites, exercises, and virtual laboratories) related to the various issues treated. In the conceptual map one can see the scheduled chat sessions that are linked to the issues of both the video-lessons and the related educational materials and it is possible to highlight the issues of a lesson and the main educational materials associated with them.

The Didactic Planning is another document that contains information on the approach and delivery timing of the teaching programme, the parameters regarding academic credits, and other information relative to the teaching subject. Lastly, the Exam Guide is a document that specifies and displays the exams dates and gives indication about admission and assessment.

The student' activity, during the delivery of the course, is controlled by the system that keeps a record of all training performances. The information stored in such a way is put at the disposal of the tutors to enhance and increase the effectiveness of their interventions to solve learning problems through constant monitoring, of the professors to complete the final evaluation process that takes into account both the results of the intermediate tests proposed to each student, and quantitative data on the use of the training material, and of the students to check their own progress and, through a self-evaluation process, to adjust their study pace in order to attain the training objectives.

Through real-time video conferences and recorded forums, the telematic tutor organises and structures collaborative learning sessions to favour the opportunities of interaction among the different actors in the educational process and develops networked socialisation models between communities of distance students and teachers.

By means of interactive sessions with the students, the tutor manages text chat, virtual classroom chat, and Web-based UNINETTUNO Second Life "Island of Knowledge" sessions through which additional supporting material is produced as "user generated content". It is in fact collaboratively produced by the students under the supervision and with the support of tutors. The Virtual Classroom sessions are, then, published on the Portal as educational material for further study. The text chat protocols are saved and published on the Forum, in order to track and share collaborative discussions about the themes of the course. The forum, being an asynchronous instrument which is persistent over time, becomes "yet another library of educational contents" that continues to be filled in after each delivery of the course and is made available through the academic years.

4.2.7   Prospect Part: OER Vision in UNINETTUNO system

UNINETTUNO OERs are exchanged in peer-to-peer networks. An internal research carried out during 2007 reported that main p2p networks indexed and shared UNINETTUNO video-lessons, both single lessons and entire collections. Since 2007, thousands of UNINETTUNO files and collections were shared in several p2p networks; UNINETTUNO's internal research focused on three well-known p2p networks: eMule-eDonkey, Torrent and NeoModus Direct Connect; eMule searches gave thousands of results; forums, blogs and torrent search engine indexed thousands of links to UNINETTUNO video-lessons, and in some cases also to UNINETTUNO didactic materials.

A further internal research, that has been carried out during 2009, reported that UNINETTUNO's open educational resources are illegally on sale as DVD in several national - like Annunci.net; Bakeca.it; SuQui.it; ForumStudenti.it; Annunci.it - and international shopping websites, and on centralized networks for posting online classified advertisements, like eBay and Kijiji.

The research reported that complete Uninettuno courses, especially related to Engineering and ICT, but also regarding Psychology, Economic Studies, etc., are on sale as single or multiple DVDs containing the video-lessons with DviX satellite ripped quality. Such video-lessons have been recorded, ripped and digitised from satellite broadcasting and put on sale by private individuals or companies. OERs are not designed, developed and published/broadcasted to make profit but to pursue the primary objective of Higher Education institutions, included UNINETTUNO, being the promotion of knowledge, learning and teaching. Moreover the development of technical solutions that guarantee appropriate content licensing is recognized as one of the major challenges in the OER domain.

Further examples of this trend are the fragments of the video-lessons posted on social networking sites such as YouTube. Video-lessons' extracts are used as open educational resources to support discussions on specific topics (such as the relationship between psychology and ethology) within the community that spontaneously arises around subjects of interest. Fragments of video-lessons included in social networking portals receive positive appreciation and catalyse the interest of the participants in the discussion.

The circulation of open educational resources (such as texts, ppt. presentations, video-lessons) in p2p networks and national and international shopping websites represents one of the main factors having a positive impact on the reputation of the Institution on the web and, as a consequence, on the number of the users interested in joining the University.

In the next five years the constant widening of possibilities for producing contents, and more specifically educational resources, will bring about several new educational possibilities as well as new challenges to be faced.
One of the main challenges to be faced is connected to the definition and assessment of OER quality standards. For instance, since many years UNINETTUNO asks teachers and tutors to supply suggestions about relevant websites to avoid that students merely rely on the mainstream web search engines to study a specific subject in depth. This is done because most users who search the web limit themselves to the first five results obtained or, at best, to the first ten contents displayed on the screen. However, nobody can assure that the first results for a given set of keywords is actually more relevant from an academic perspective or scientifically valid. With the proliferation of predominantly educational contents, the problem will increase and the search for quality assessment of OER systems should become top priority.

In this respect, UNINETTUNO is strongly committed in assuring the quality of its educational model by a constant control of the educational systems delivered and of the learning progress also in its international research activities. For instance, the results of the E-xcellence+ Project, funded by the European Commission, established the assessment criteria and quality standards of distance teaching systems and of e-learning to be adopted at European level. The project, that involved the best European distance teaching

universities and among them UNINETTUNO, enables to trace a path of integration of the e-learning at European level and to point out the fact that distance teaching is and can be a synonym for quality in education where the best practices, consolidated at international level, are adopted.

With the increase of resources at disposal, the questions linked to meta-dating, classification, sharing, retrieval and interoperability of the proposed educational contents gets more urgency. From this perspective an evolution of the learning objects meta-dating standards is expected. At present the most widespread standard is undoubtedly the SCORM one which aims at describing the specific resources as well as higher levels of aggregation of resources, student's activities tracking systems as it regards meta-dated materials and learning paths, to be proposed to the students themselves. The approach used by these meta-dating systems is, in some cases, quite mechanical and highly oriented on computer and LMS rather than towards the student or the teacher as content producer.

In addition, the students will increasingly become more producers of contents than mere users. The integration of social networking tools into formal training processes is still in its embryonic stage. However in the next five years the student's role will be ever more that of an "active user" who edits contents proposed by teachers and tutors in order to reformulate the training paths and adapting them to their own characteristics. They will use the possibility to recommend available contents to their colleagues and to propose new ones for further check by teachers and tutors. These features, even if currently only available in some 'excellence cases', will probably become part of daily Web-based distance teaching/learning processes.
Finally, the appearance of new devices and new interaction systems will promote the creation of completely new OERs. Their main task will be carried on by new and more natural interfaces allowing to manipulate and access new contents according to emergent and unforeseen modalities. Besides the input systems, the possibility for ever user-friendly mobile connections, with lesser band costs and ever higher performances will offer new opportunities to instructional design.

4.2.8   <u>Reflections</u>

The MedNet case represents a structured approach to utilizing Open Educational Resources in European Higher Education. A relatively profound perception of the concept of OER can be seen and is indicated by a definition that closely follows the one suggested by the UNESCO. It can also be concluded that the team is aware of the complexity of OER and is willing to deal with crucial issues such as IPR.
The team approach of MedNet is organised in the form of a network as it was previously discussed in section 2.3.5 (Communities of Practice). For instance, the time scale of MedNet is unlimited and they are intending to extend relationships with Mediterranean institutions of Higher Education. The means of communication are highly developed and can ensure the productivity of the network.

MedNet also exemplifies how modern technologies can be capitalised on to share knowledge in an international context. In this regard Zhuge (2002) argues that the Internet provides compelling mechanisms to coordinate the knowledge flow in distributed team facing challenges as increasing communication costs or employee turnover.

5   Methodology and Results

In this section we provide an overview of the methods being used and the results drawn out of them. In addition to the just presented case studies, we have conducted a Delphi study in German-speaking countries that has been published in a German-speaking journal (Deimann & Bastiaens, 2010). For this chapter, we have expanded this work by investigating the status quo of OER with relation to team work in Europe and beyond. Finally, we have analysed the case studies to extract success factors for international team-based development.

We will now document the different study, starting with the Delphi research.

5.1   <u>Delphi study in German-speaking countries</u>

The Delphi Study is a way of making tacit knowledge more explicit and is an increasingly used method to unfold the potentials of under-researched fields such as the integration of the nature of science to school science (Osborne, Collins, Ratcliffe, Millar, & Duschl, 2003). The Delphi method aims to improve group decision making by seeking opinions without face-to-face interaction and is commonly defined as ''a method of systematic solicitation and collection of judgements on a particular topic through a set of carefully designed sequential questionnaires, interspersed with summarised information and feedback of opinions derived from earlier responses'' (Delbecq, Van de Ven, & Gustafson, 1975). Assuring anonymity to the participants and utilizing questionnaires can avoid major problems commonly associated with group interviews (e.g. bandwagon effects).

In the Delphi method, a person describes not only what has been done but also the "why", thus providing context and explaining the judgement behind the actions. Interviews are often easier for the experts than having them write down all the details and nuances.

The criteria for selecting the experts in our study were as follows:
* documented experience with Open Educational Resources and team-based development, respectively
* familiar with recent developments or trends in e-learning

The main research questions was on the current situation of OER use in German-speaking countries. What are the main obstacles and what is the potential? In particular, what strategic attempts at implementing OER in higher education have been adopted? Whilst at an international level OER use has made considerable progress, this has not been achieved in German speaking countries (Germany, Austria and Switzerland). There is some anecdotal evidence about possible reasons for this but firm empirical data are missing. Many questions are still unresolved, such as why are university teachers and students reluctant to share educational materials freely with peers?

Consequently, a study that provided a detailed insight into reasons for major OER pitfalls was conducted with the aim of identifying the potential for future developments. The Delphi method was chosen because it offers a systematic approach to investigating such a dynamic field as OER. Two steps constituted the study: First, twelve experts from German speaking countries were individually interviewed concerning their perceptions of major OER aspects. They were identified by a carefully designed list of criteria. Second, an online survey was administered based on the qualitative data from these interviews. Participants had to express their personal opinions with regard to a set of OER-related statements. The interviews were based on major categories with specific questions. followed a predefined list of questions:

Category	Questions	Main results
Conceptualisation and perception	How do you define OER as a teacher in relation to your work? How do you make use of OER? How do you perceive OER in your work?	Experts indicated an elaborated understanding of OER ranging from a very broad (all resources from a discipline without any didactical guidelines) to a narrow definition (only resources that are licensed under Creative Commons).
Obstacles of OER	What are the main obstacles of OER? What kind of obstacles do you identify in your personal work?	Cultural: HE teaching is not oriented towards sharing and disseminating content. There is a strong focus on research at the expense of teaching. OER-related: It has been stressed that OER is still too unknown and there are few OER available. Moreover, there are no nationwide initiatives in German speaking countries (in contrast to the Open Access movement) Legal: There is uncertainty with regard to legal conditions, e.g., "How can I use materials in a legally-sound way?" Technical: Lack of technical solutions to utilize OER and unsatisfactory usability of some OER.
Personal commitment	What would you do to push OER (for your students, for your institutions, and for your career)?	Different aspects of commitment were stated: Some experts reported that they have a special introduction of OER in their courses and seminars. Others stated that they freely share their work or engage in political activities to help progress OER.
Institutional integration	How could a broad institutional integration of OER be reached?	Concerning the strategic approach to enable institutional integration of OER, a top-down approach was favoured. This should entail concerted actions supported by the management of the institution. It is also advantageous to progress in small steps and have comprehensive information/briefing of the mid-level faculty. Another strategy suggests linking OER to major reform processes such as Bologna.
Vision	Where do you see OER five years ahead?	In general it was stated that the future of OER is not predictable; however some visions have been outlined: • OER activity will continue at the same level as now • There may be some form of self-commitment by big organisations to publish content openly • The awareness of OER will increase • There will be more OER available and more collaboration taking place • The concept of OER will become less prominent and subordinated under the topic of media literacy • The practical utility of OER will grow, in particular in improving day-to-day teaching and learning routines • There will be more progress of OER use in research than in teaching
Summarizing	At the end of the inter-	The development of OER is not declining; however a progres-

thoughts	views, the experts were asked to summarize their thoughts on OER.	sion covering large areas is not expected There is a lot of detailed work yet to be done, in particular at the subject level Altogether, little progress has been made because of the "culture" and "technology" obstacles A broad discussion regarding the goals of OER continues to be important and should cover politics, education, and technology

Taken together, these results showed several interesting patterns: Experts expressed a highly elaborated perception of OER, identified "cultural climate" as the current highest hurdle and suggested several practical strategies for implementing OER in higher education. As one of the first attempts to assess the OER movement in German speaking countries, this study has unveiled not only crucial obstacles but also much potential for future development of OER in these countries.

It also seems that although Germany is known for a very decorated history of educational theory (e.g., Humboldt's classical concept of "Bildung") it has also developed a rather reluctant attitude towards core educational values such as sharing.

5.2 Qualitative expert interviews

We have conducted additional qualitative expert interviews, this time with an international focus. This method has been chosen as an appropriate means to explore the relatively new and emerging field of OER and team-based development. The interviews with experts should be used because they describe the view of acting persons in a new field "from the inside" to reveal information that would not be available otherwise. A similar approach has recently been conducted in the area of public health (Hemingway, Angell, Hartwell, & Heller, 2011).

5.2.1 Procedure of the study

At first the experts (coming from countries such as the United States, United Kingdom, Belgium, Italy and Switzerland) were welcomed by the interviewers. Then a brief introduction of the background and objectives of the project was given by referring to the position of the Humanities Network to illustrate the background (see Section 4.1):
OER has received a lot of attention. It provides a lot of possibilities to improve educational processes. However curricula and teaching methods are culturally specific. Transnational and transcultural production of OER is complex and difficult. In most cases the use of OER will depend on the extent to which they can fit into a new cultural context. They are likely to be used as case-studies or to teach particular skills. OER will require mediation to fit into a new context, or adaptation.
This line of arguing led to our main research question: How can we gain an understanding of the infrastructure needed to enable cooperation around OER? However, we pointed out that before we go into more details we would like to discuss some general issues of OER.

This entails the following questions:
- Could you please give me a short introduction of your person and your relationship to OER. What are your experiences with OER?
- Do you think OER makes learning "different" or "special"?

- Which educational theories or concepts can OER be linked to?
- Do we need new educational concepts and theories for learning with OER?
- How should an educational theory of OER be constituted?
- What are the main challenges of OER? How can one meet that challenges?
- What are the most important obstacles of OER? How could these obstacles be overcome?
- What are you willing to do so that OER can become more prominent?
- What of the OER approach has possibly highest priority in your activities?
- How can academic staff be convinced to utilize OER in their daily work?
- What are possible hindrances in persuading them?
- After this part, we started to focus on the following question: What kind of infrastructure is needed to enable cooperation in terms of OER?

Then, we intended to get some information concerning the personal background of our experts and asked them to describe their experiences with team work, including specific role and the team goals:

- Do you have information about literature studies on team work? If yes, could you indicate the most important aspects of team work as signalled by the literature?
- What are the main advantages/disadvantages of team-based development?
- How should a „good" team be constituted in order to contribute to team-based development? (Please specify the procedure and the actors and their roles).

5.2.2   Results from the interviews

One of our main research approach was to analyse factors that facilitate team-based development around the context of OER. In this regard we can conclude that it is highly important to clarify that both parts can realise added value in using OER. Added value for teams and organisations can lead to the following effects:

- raising the quality of teams' or institutions' design of educational resources through building experience with developing valuable and open resources (*quality effect*)
- boosting new technologies, methods, approaches and techniques in development and distribution of OER (*expertise effect*)
- gaining access to other teams and institutions that can cooperate as a partner in producing OER (*cooperation effect*)
- producing high-quality OER that influences the perception of intrinsic quality by other teams and partners, which contributes to a positive image of the team and institution (*marketing effect*)
- linking OER with more commercial products of the organization, like educational or training programs, courses, modules, that belong to the regular offer of the institute (*commercial effect*)
- re-using educational materials in new contexts or other languages (*scale effect*)
- gradually explore and elaborate functional networks for OER design, development and delivery (*network effect*)

From a user's standpoint, added value of OER can compromise:
- Having access to free, relevant OER (openness of access)
- Being able to tune OER to individual education and training needs (tailored education solutions)
- Contacting, via OER, institutions that offer high-quality educational resources and programs (study career or professional opportunities)
- Interacting with peers around cases and problems in an educational context (embedding OER in a human network)
- Using actual social networks (Facebook, Twitter, LinkedIn…) to share and comment on OER (social networking) as a 'human shield' that surrounds OER
- Facilitating self-regulation through incorporation of OER materials into the own study process (co-design of study trajectory)
- Raising expertise in information searching and managing (information literacy)

Another important category for improving win-win-situations has been identified as benefit or mutual gains (G. Wilson et al., 2011). In has been pointed out that concrete benefits firstly need to be understood in their specific meaning for individual team members and secondly they need to be defined. Without a clear shared understanding and a clear definition, it seems impossible to achieve benefits.

Related to the meaning of benefits is the importance of reward system for teacher and educational staff. One of the biggest hurdles why they do not utilize OER much often is the policy of the institution. Thus, it is recommended to change that in favour to OER. However, this is not an easy task and needs a deliberate and careful approach. A detailed example of such an approach is described within the context of TESSA (Thakrar, Wolfenden, & Zinn, 2009) – a project that we reviewed earlier in this chapter (section 3.4).

5.3   The case studies
We have conducted two case studies in the area of European Higher Education that follow two different approaches for the adoption of OER. The main categories are depicted in the Figure below.
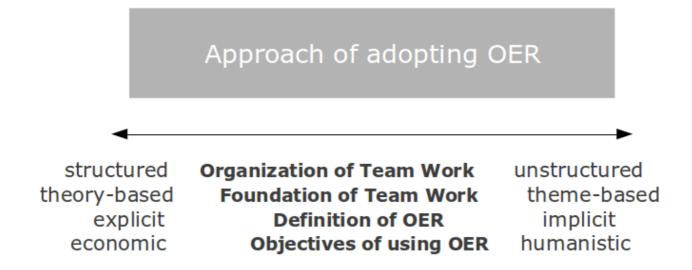

Figure 12: Differences in approaching OER

Based on our general approach in this section, we propose the following categories of adopting OER in Higher Education:

- *Organization of team work*: In the literature review we covered models of organizing teams so that they are both effective and efficient compared to individual work. There is the list developed by Katzenbach and Smith (1992) that constitutes team work. This has been elaborated by Högl and Gemünden (2001) and stress, among other things, the importance of social competence. A classical approach of analysing team-work has been proposed by Tuckman (1965) with distinct stages.
- *Foundation of team work*: This category reflects the degree at which a team work is based upon scientific research findings. We have revealed in our expert interviews that this can be highly different.
- *Definition of OER*: Since the OER movement is quite sophisticated it is interesting to assess the team's perception of its core assumptions, i.e. the definition of OER. We have introduced different definitions such as the one from UNESCO and our own project-based version. We have also argued that an authori-

tative definition is still missing (Schaffert, 2010). Thus we have analyse the case studies with regard to their definition which can be either explicit or implicit.

- *Objectives of using OER*: Although the OER movement has originated in rather humanistic ideals ("Education for all") there are also economic reasons which have recently been documented in the UNESCO report "Open Educational Resources – Conversations in Cyberspace".

In addition to that, there have been some cultural issues that have been observed to occur when adopting OER in international teams. Please not that we have already discussed cultural aspects in greater detail in section 2.4.

Within the Humanities course exchange programme a pilot study revealed that OER courses offered by the UK OU could not be adopted at the Dutch OU programme because of different cultural backgrounds (van Marle, 2011)

6 General conclusions: towards the development of a model for international team based development

Based on the previous reflections and on a literature review (Chapter 2) we will represent a model and derive some recommendations. They are targeted on the following questions: How to set up an effective team that is working in the area of OER? What characteristics are important from the literature and our empirical data?

We will also discuss a guide for the delivery and use of OER in a setting of international academic cooperation. What is the specific nature of academic cooperation?

The recommendations are based upon our reflections of experiences with OER initiatives (Humanities Network and Mediterranean Network) as well as on empirical data gathered through expert interviews.

This method has been chosen as an appropriate means to explore the relatively new and emerging field of OER and team-based development. The interviews with experts should be used because they describe the view of acting persons in a new field "from the inside" to reveal information that would not be available otherwise (Meuser & Nagel, 1989). They are also a way of making tacit knowledge more explicit. A person can describe not only what was done but why, providing context and explaining the judgement behind the action. Interviews are often easier for the experts than having them write down all the details and nuances.

The interviews presented in this chapter are based upon previous research to explore pitfalls and potentials of OER in German-speaking countries (Deimann & Bastiaens, 2010) and thus helped sharpening the focus of analysis. In particular, it was to be investigated to what extend OER is facilitated or hampered by utilizing a specific approach of team work or cooperation. Ten experts of distance education and online learning which have profound experience in international academic cooperation coming from several European countries participated in the study. Besides the discussion of OER in general, special attention was paid to team-related aspects.

Results indicated that our experts showed a considerable heterogeneity concerning their individual knowledge of team work. All participants acknowledged the importance of international cooperation to face the challenges of the globalised world. A specific and detailed approach could be revealed in the context of a European project on climate change (Wilson et al., 2011). It follows the empirically based principle that it is very difficult to create a team spirit and a shared mission just by electronic means. Therefore, regular face-to-face meetings were established.

It was also initiated at the beginning that every team member has a distinct role of which s/he is accountable for. In order to enable mutual gains, social capital has been built between the actors. The concept of social capital originates in writings of Bourdieu and has recently been transferred to online learning and "stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Lesser, 2000, p. 48). There has been additional research on how to increase social capital in online learning communities which can also be used as guidelines for team-based development (Fetter, Berlanga, & Sloep, 2010).

On the other hand, experts stressed important challenges that need to be faced in order to enable team work. For instance, all team members should speak the same language, both literally and with regard to the goals of the project. This also requires a sufficient amount of time for teams to get acquainted with each other and to familiarize with the objectives. This is why face-to-face kick-off meetings at the beginning are so important. Although costs for travel and accommodation become more and more challenging, they are by the same token factors to stabilize the project and to ensure team success.

Our investigations of the European OER networks, Humanities and Mediterranean, reveal highly different team-based approaches leading to diverse effects on team work and achievement. Whereas Humanities network follows a rather loose and unstructured approach, the Mediterranean network is guided by a pre-

arranged professional work flow. It has become clear that for a relatively unknown field such as OER it seems essential to discuss the potentials of OER in your team and then based on that set clear goals for the work with OER. As have been revealed in the Humanities case, a neglect of a team approach can not necessarily be compensated by an agreement of subject matters.

In summary we would like to propose the following recommendations for the infusion of OER to team work (see also Deimann, van Dorp, & Pollini, 2011).

1.   **Establish a common knowledge base (team related aspects and OER):** Team work and Open Educational Resources are both areas exposed to a high degree of subjectivity. Thus it is crucial to ensure mutual benefits for all stakeholders by setting clear goals for the engagement with OER. In particular it is highly important to stress pitfalls and benefits of OER and team work, for instance by referring to theoretical or experienced-based literature. However, a profound expertise of theoretical models for team-based development is not a prerequisite as has become clear in our expert interviews.

2.   **Set shared quality criteria for OER:** since a common knowledge base is established, the definition of shared quality criteria for OER are needed in order to create a coherent and persistent framework to accept existing resources as OER and design new ones. Shared quality criteria to set up OER may support the regulation of teamwork by providing a structure to identify OER and the perspective for future developments. The common theoretical framework needed for agreeing upon quality criteria may also support the development of team cohesiveness (cfr. Hoegl and Gemuenden 2001).

3.   **Propose a team approach:** Working in teams has tremendous potentials to face current challenges of globalization. A team-base approach is a valuable means to foster knowledge, appreciation and valorisation of different cultural and scientific background. Yet to unfold them, it is necessary to structure the development process and to ensure clear responsibilities of each team member. Although recent developments in ICT have generated great tools to facilitate team work in an efficient and effective, i.e. virtual, manner (e.g., wikis, e-groupware), regular face-to-face meetings are still a critical factor.

4.   **Definition of logical and pedagogical infrastructures for OER:** advanced developments of team related aspects and OER may be favoured by sharing the logical and pedagogical infrastructures within which OER are being exploited. One of the features that currently identify OER is the possibility they offer to be used as stand-alone educational resources. Team-based exploitation of OER could benefit by sharing knowledge about the perspective under which they are adopted, meaning the logical structure and the pedagogical approach that guided their developments. Further adaptation of OER may benefit from grounding on the development of such knowledge-base.

5.   **Develop strategies to promote OER:** Despite several successful OER initiatives (MIT Open-CourseWare, OpenLearn), it is still in the phase of early adopters. Consequently, efforts to mainstream OER are currently on top of the agenda (Opal, 2011). This includes strategies to sensibilize stakeholders so that they began to utilize OER in their daily work. In this regard, it became apparent that highlighting mutual gains and a win-win-situation are good starting points for a strategic approach. There are numerous concepts such as social capital that provide a validated framework that can be adopted to OER.

Given these recommendations we truly hope to enable further teams to utilize the concept of Open Educational Resources for their various purposes. They have the potential to unfold the fundamental promise of education. Furthermore, we hope to have addressed one of the currently most urgent questions, how are OER-communities organised? Our detailed look insight OER-networks has unfolded the underlying mechanisms that facilitate the utilisation of open content and practices. Moreover, future research can use our recommendations as guidelines for developing models of specific OER-Teams, e.g., OER in secondary education.

Our report also shows that it is rather unlikely to have one "right" way of adopting OER. Rather it is a highly discursive and interactive approach which should encompass all relevant stakeholders of the project. In this regard, it is a major factor how individuals or groups are willing to abandon old traditions and move towards more innovative forms of learning and teaching. We have also pointed out that this may lead to new and inspiring forms of organisations in which team members can re-focus their goals.

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