Conceptual framework of the learning environment

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The *OPEN SoundS* project is a novel example of *transferability that promotes the meaningful transfer, re-adaptation and re-utilisation* of systems of different forms of access, whilst celebrating informal learning and the development of knowledge in young internet users.

The background of the *OPEN SoundS* project stems from online creative collaboration between users from different countries engaging in the creation of music and/or advanced multimedia projects. It considers the worlds of professional (and other than professional) Virtual Studio Recording and, in addition, advanced online asset sharing and management systems. The scope of the *OPEN SoundS* project is also informed by contemporary knowledge-transfer, knowledge-archival, and knowledge-management systems, as shaped by practice as well as research from across the world.

OPEN SoundS looks at '*now*' and recognises that *Remote Collaboration* is a widespread phenomenon of both working and learning practices.

The interim research results demonstrated great diversity in the size and type of services offered in current usage of portals for remote collaboration. The portals are distinct from one another, the only shared element being that of the constant and gradual expansion within the sector.

The interim research activity evaluated the following strands of activity;

- the identification of the most important web portals within each sector that exist on the Net, with a subsequent focus on learning environments of the project partners;
- the potential **compatibility of the most innovative practices** developed within the learning environments with the formal education system and, and a result, the **assessment of both the practicality and effectiveness of their integration into the re-planning and re-organization of the MODEM platform.**

The proposals created by the partners of the project have been disseminated and discussed as part of the second project meeting (organized by the University of Padova), dedicated to the consideration of the survey results, and to both the sociological and technical aspects of the re-organisation of the MODEM platform for transfer purposes.

As a result of these discussions, the most significant findings are presented below. The conceptual framework is outlined, alongside findings from the survey results, that will guide the pedagogical and technical approach to the re-organisation and development of;

- **the collaboration platform of *OPENSoundS,* dedicated to musical creation inside the virtual and transnational work team;**

- **building upon shared practices of competence and bodies of knowledge in music as established by the European students network initiated through the project;**

- support tools both for both platform use and for the acquisition of technical and more general competencies, in relation to both the learning environments on the Net and the particular communication modalities of these environments;

- a framework of the learning objectives that will inform the subsequent evaluation process in terms of knowledge, skills and competencies acquirable by different modes of practice within these environments.

1 Web portals to remote collaboration

The primary aim of the research is to better understand the continuing development of the internet as used by different communities to work collaboratively on online projects, and, more specifically, OPEN SoundS.

Some of the distinctive features of the Networks include:

- that they are not only connections
- that the contents, contrary to other examples, are not solely determined by its inventors
- that the user is required to learn how to use it
- that the Internet would not exist without the utilisation of such networks.

Networks can be considered to be:

- Interactive
- Continually evolving
- Collaborative

Networks exist so as to transmit knowledge. This knowledge has two relevant features:

- to replace operations to woks
- to replace current representations with new knowledge

In other words, knowledge on the Internet can be conceptualised as being dynamic, interactive, evolving and collaborative, with the Networks acting as hosts.

Interconnecting knowledge operates only on the Internet and exists as a result of the Internet. Some knowledge exists and can be used/spread/modified by others (for example, in the community of open source software or musicians). Knowledge has a dynamic framework similar to that of a biological organism: able to adapt itself to the environment (the Internet) that feeds and sustains it, whilst simultaneously forcing it to constantly evolve in order to survive.
The interconnecting knowledge and networks forces us, as both authors and consumers of Knowledge, to embark upon a fragmented search for our identities (building our knowledge as 'to know who I am' and 'to know what I have') and a more permanent interface with a machine that delivers novel knowledge. This search can blur the boundaries between man and machine, between the semantic and binary code. The interfacing process with the machine can help to explain the overall organization of our society (as a machine that provides definitions).

Knowledge undergoes multiple translations (between different media, electrical signals, binary codes, semantic syntaxes and programme codes, auditory and visual perceptions, emotions and rationales). We function as active and passive producers of both the technologies we use and of contents that they carry. We have to underline the outcome of this change as:

- knowledge is used in communication on the Internet
- Networks are able to carry knowledge across the Internet

At present, we are able to utilise multimedia technologies that are not necessarily neutral. As technologies of the word (that works to translate the rational thought into a body of knowledge that stretches back over three millennia), aspects of image and sound shape forms of thinking, and, by so doing, form the individual and its culture.

Across the world, people are reflecting on the potential impact of these new and powerful means of expression, not only in their didactic use to transmit knowledge, but also in general as a new way of thinking, organizing and influencing others. This new kind of thinking, learning and creating is located in spaces with a reticular and virtual structure. It is mediated by computers and realized through digital technologies. It assumes the medium itself as a specific place to build where it may act, not only as a tool, but as an active site of thought and action (as was traditionally the place of the word and writing).

Within these environments the thought can be realised, create a culture of practice and provide tools with which to explore personal creativity.

How can this innovative activity be considered creative?
Currently, in the most frequently used web portals, for example www.myvirtualband.com, www.icompositions.com, www.ccmixter.org, and http://www.mi7.com, tools exists that enable users to talk, exchange information and competencies (as part of the social networking area), upload and download files (as part of the technical areas, databases and tools) as well as general and/or technical information areas for 'visitors' – users from the world beyond that of the defined community.

These kinds of spontaneous 'organisms' as created by online communities have a double use: they act as shared access points that allow the user to exchange their own 'goods' at the same level and, in addition, they act as 'classrooms' where users may meet in order to learn and improve their skills together. In such cases, a more experienced learner may lead the shared learning until the point at which the upper level of competence is reached, and another user will provide support and guidance.

Over time, well-structured and 'advanced' web portals may develop economical ambitions so as to sustain the community, and either transform themselves into companies or have the potential to be bought by companies. The interim research activity carried out by the OPEN SoundS consortium has clarified these and other aspects of the phenomenon of web portals for remote collaboration.

Today, just to give an idea of the phenomenon, on the Net there are gigantic business communities of social networking gigantic, as MySpace.com . Over sixty-three million users are members and with more than 42 million songs in its catalog, MySpace is the largest collection of online music in the word
In addition, there are niche communities, made up of thousands of active members. These members are worthy of particular attention since they are most suited to the aims of the OPEN SoundS project: that of modelling their behaviours and transferring them into our work environment.

2 Music and Social networking

Asynchronous exchanges form a vital part of communication on the Internet. The discussion below will seek to describe the OPEN SoundS Learning Area Model. The aim of the project is to develop a remote collaborative learning environment that supplies its users with the necessary tools to use it effectively.

The dual objective reflects the nature of the web portal framework, both in its public (informative and institutional) and operative phase (the area that will make available the resources that enable users to produce Remote Transnational Projects).
The Learning Area Model describes both the contents and technology and, as a result, is the most important outcome of the project. The Base level will be used to create several joint learning groups, whilst the Advanced level will be dedicated to sharing activities concerning materials and knowledge in the Transnational Learning Community. Appropriate support tools will be created for both Base and Advanced levels, that adhere to the learning processes proposed and, more generally, with the existing collaborative environments on the Internet.

What is the novelty and functionality of this structure?
It is in its reflection of the 'new world' that the Internet and its behaviours establish.

It is useful to remember that the world of new technologies has its own logic and symbolic representation versus the alphabetic (books) and mass media (cinema, TV).
According to Manovich, in the new media, the logic of database (paradigm) prevails on narrations (syntagm) thereby reversing the consolidated relationship in the natural language and sequential writing.
In texts, words appear in lines of sequential chains that have sense hiding the paradigmatic side (the major database of words represented by a dictionary of a certain language). In new mass media that model (for example, links, videos, audio, photos, icons, buttons, objects and their behaviours) is always there in front of us as part of the screen display. Therefore, the sequences of links and/or actions undertaken by the user – so-called 'surfing the Internet' – creates the narrative (so that the act of 'surfing' produces, for example, a collection of data, new contacts, play or cultural experiences).
In the same way that we extract the words that we need to explain our ideas from a database (such as a dictionary), we can use the Internet (as a major archive) or the restricted database of OPEN SoundS, to extract and collect what is needed to create projects to share.
Samples, loops, music and other people's experiences can be used to form a database, upon which other can build their projects and/or speeches. These products can then be sent to an exchange area so as to receive responses from other users in the form of sonorous integration, qualitative improvement, verbal or written suggestions to change/improve the project in Open Code and to make it public/private, mine/ours, in a Community that learns and improves at the same time.

In the Learning Area, the Virtual Studio Community will be given the access to two aspects of learning, that of (i) technologies in the field (music) and that of (ii) communicative technologies (the Internet and the remote collaboration). The aim is that from the outset, the logic of the OPEN SoundS project will integrate these two competencies.

On the educational plan the consequences can be identified at two levels of innovation; (i) conceptual innovation, and (ii) operative innovation.

Conceptual innovation

Besides the logic-deductive-linear thought as found in the alphabet and printing presses throughout the centuries, writing merges in the digital network world as a logical-associative-

reticular, symbolical and analogical-imaginative thought that has been associated with the primitive thought (Levi Strauss and Leroy Gourhan) or to the pathologic and visionary thought (Jung, Guenon)
On the Internet, knowledge and its multimedia connotations is both complex and multi dimensional and, as a result, removes the domination of the logic-deductive-linear traditions by introducing the a-centrism and/or the multicentrism. This causes a crisis within the hierarchy of knowledge (science and art, cultured and worldly knowledge etc.), and at the same time, introduces the threat of contamination of knowledge, transversal codes and usual practices.

Within this changing world the main streams of reflection can be found in cognitive and constructivism schools of thought, as well as schools of communication sociology that go back to McLuhan as well as those of De Kerkhove, Castellets and Levy. We cannot underestimate other ways of thinking such as:

- complex and multi dimension knowledge (Morin, Varela, Prigogine);
- Knowledge as a choice between word and silence between different perspectives (Wittgenstein);
- virtual and sensory realities (recovery of the body as a cognitive machine; technologies of 'mind-body'; deep knowledge)
- integration between analogical and digital languages;
- Multiple and distributive knowledge and learning conception (Oslon, Gardner, Cole, Bruner)

All of these perspectives anticipate, create and/or reflect on the impact of machines, of logic automatic processes, and on the various, new, executive and communicative creative methodologies linked to technology and the Internet, in order to evaluate its cognitive, pedagogical, play and functional aspects.

New technologies are changing our understanding of knowledge and literacy. What skills and bodies of knowledge are necessary as a result of this?

The (new) literacy necessitates that the user has the skills and knowledge in order to:
- live in a culture that is surrounded by media
- communicate fluently using both old and new media, comparing, choosing and evaluating texts, images, sounds and videos
- understand and screen the meaning of multimedia messages that form our environment
- understand and manage the differences between what is virtual and what is real, fiction and reality, as well as communication and advertising.

Operative innovation

Operative innovation can be defined as the ability to develop creative content that can cross Networks and new social environments that are formed within virtual communities.

Mass media literacy supports the development of creative contents through the use of new media, so as to be able to:
- analyse the representation and meaning of contents in the multimedia context.
- produce and give out contents linked to the Internet multimedia reality.
- increase own social participation by media and competence (aware and motivated information).

It is important to underline the role that innovative new media plays, in that it has produced and continues to produce new kinds of jobs, new ways of thinking and new ways of organisation, as well as developing those that already present such as new professional groups

that are trained by the Internet and technologies that innovate, change and improve what exists.
Typical examples of this are the open source in all its aspects, communities that play and produce games and the technologies linked to them, the musical field of self production, as well as online independent recording companies.

It is necessary to identify other aspects that make these innovations particularly meaningful for their impact on the training and educational plan. These link to both the conceptual and operative innovation produced by practices on the Internet in music and/or creative environment.

To this end, the most interesting results arise through the analysis of the practices developed in music web portals as identified in the interim research results:

- learning is continually evolving
- teams of learners and communities are created and continually evolving
- the creative element is essential to the process
- teams of learners and shared projects can be defined as belonging to specific content, a theme, an interest or a problem linked to music
- the learning environment supports and promotes collaboration
- motivation always prevails on technology
- motivation is interpreted and managed by authors around the idea of a quality product
- improvement by the individual and the ability to work in teams is realized mainly by a criteria of skills that support creativity and quality
- building competence and knowledge based on skills supports the development of creative projects
- communication strengthens team working
- the resources used are supplied by the participants and shared by participants

3. The environment to build

The most important objective of the OPEN SoundS project is to develop a remote collaborative learning environment and to supply its users with the necessary training tools to use it effectively.
This objective is achieved by combining two parallel phases:

- the technical content phase – starting from an existing model and informed by a study of similar environments present on the Net, a Remote Collaboration area is established where users can share music productions from different places.
- the cultural content phase – the creation of learning environments to support the acquisition of technical competencies, specifically regarding creative environments and software for music production as well as the more general competencies linked to the network learning environments and to the communication modalities of these environments.

The working and project environment developed by OPEN Sounds will therefore be a virtual environment dedicated to the remote expression of creativity. At the same time, OPEN Sounds will build transnational communities of peers that, through the creation of common musical productions, develop constructive and large-scale learning processes.

The environment built by OPEN Sounds will have:

- a collaborative and remote learning environment developed according to the educational needs of the students
- a technological model that supports the pedagogical framework of the learning environment (choice of typologies of suitable platforms, media and formats to support specific trends on the educational and training plan)
- personalised learning objectives and competencies pursued by students through the practices developed in these environments.

The virtual environment will be developed to integrate both the technological and pedagogical demands that will ensure that the technology is suited to both school and training needs, including:

- variety and complexity of the creative actions achievable by team of users and shared projects that are geographically dislocated;
- knowledge of the new psychological profiles and new value-maps that guide choices, attitudes and social practices, virtual and real, of the users;
- the construction of virtual learning environments supported by technology that allows its constant reconfiguration in relation to each new acquisition, in terms of both technoloyl and communication.

3.1 The learning environment

In the model platform planned by OPEN SoundS, the learning environment will be essentially **participative** and **led by planning.**
A) The model platform means to maximize the participation of users, providing the students with the opportunity to express the passion and motivation. Their emotional involvement in the experience is a necessary condition that ensures that the shared project will progress and develop. As the wish to participate is a key aspect of the process, the learning environment should have the following features:

- participation in each activity should feel natural/normal
- the creative/music products at the core of the project should be commonly shared
- interaction forms may differ (in terms of languages) (lyrics, audio, ideo etc.) and be better suited to different communication environments (different project areas but also chats, forums, blogs etc.)
- different contributions will be guaranteed at a minimum level of competency and importance so as to guarantee constant and growing interest in the shared activity
- the production and legitimacy of creative productions must be constantly shared
- within the learning environment the role asked of teachers, tutors, educators and any other intermediary facilitate access to the platform is that of:
    - expressing a sensitive and moderate form of leadership
    - develop suitable supporting strategies
    - to experience and encourage the emotional elements that are the key for the active sharing of projects in virtual team work
    - to acknowledge the breadth of learning styles throughout different project groups
    - to promote and sustain activities within the environment

B) Another important element of the learning environment realized by OPEN SoundS is aimed at planning. The learning environment is one where the integration of languages, interdisciplinary features and planning build knowledge processes.

Every working and project path will result in different potential users of the platform:

- knowing how to elaborate on projects so that they can be shared by different people
- knowing and respecting the implicit rules of sharing in transnational group projects
- creating an original production network where every single output is the integrant part of a communication-sharing-collaboration-use circuit, that is directly connected with all the other outputs as well as with all of the participants of the cooperative exchange.

It is important to point out that, that in this context, in order to part of a team, it is necessary to have technical competence as passion and a willingness to take part will not suffice. The technical competence level possessed is in fact, the principal barrier to accessing any group or shared project.

In order to link knowledge to planning, the environment built will aim to integrate the support of team working skills with knowledge-objective evaluating base knowledge and competencies so as to ensure that spontaneous trends based on vocations, spontaneity and participation can be identified and progressed.

Another fundamental element to lead planning is the creation of a working environment characterized by technological solutions coherent with the planning outlined above.
These technologies are aimed to bring together people that have a shared vision and want to achieve through collaborative, transparent and open working processes, using technologies born and developed by communities with the same aims.

3.2 Technological environment

The main element concerning the building of the platform framework has been the choice and definition of the sustainable technological model that can support both technical functionality and the pedagogical framework.

An analysis of the most important web portal in the field has guided this process. The comparison of the collected data has provided useful information that forms and informs discussion, being based on processes and possible activities, the organization of different working areas, tools to support, forms and interaction modalities.

The technological environment planned on completion of the transfer and experimentation phases of the OPEN Sounds project is described in the document 'Conceptual Framework II. Technological environment' (here enclosed) and was developed by Brighton-art , Nuvole e CSC.

This document presents the platform framework to exchange and produce music in remote and technological appliances to its support.

In particular, the 'Conceptual Framework II. Technological environment' presents:

- the platform framework, the various project areas, the production activity typology planned within: Project Area and Tools area;
- description of the organization of the various project areas and the production typology communication activities and support to the sustainable training;
- description of the main technical requisites of web appliances to develop to support the environment.

4.**Learning outcomes**

The general aim of OPEN SoundS is to reorganize and transfer to the education system a virtual learning environment that supplies its young users with suitable tools to develop music production activities on the Internet. This is achieved through by teams working in different countries to benefit the training and educational plan.

The project, through a highly innovative and creative practice aims to stimulate and support:
A) the development of key competencies for initial and continuing training;
B) a more concrete possibility of transition into the labor market.

This is achieved through the development and management of practices and creative processes, mediated by the use of digital music technologies and networks within a learning environment that has been specifically designed for this purpose.

A significant and complex aspect of the project has been the integration of the technological model and pedagogical framework so as to define a framework of training objectives and competencies in the use of remote collaboration environments.

The virtual learning environment will be designed to promote learning processes and include activities that impact on the possible innovation of teaching processes in formal systems. These processes, in turn, will aim to achieve specific educational goals and skills by young people in training

Therefore, a central part of the more general conceptual structure proposed is the framework of results that the student, as users will achieve. This will guide the aims of the project, determine the structure, form, content and functioning of actions and products to be developed.

This framework was designed in compliance with **the descriptors that define the European Qualifications Framework (EQF) and the respective 8 levels[1] of qualification** in which it is divided (Recommendation of the European Parliament and of the CounciL on the establishment of the European Qualifications Framework for lifelong learning- of April 23rd, 2008-)

In detail, the definition and construction of the framework:

a. has identified a number of learning outcomes, related to use of an environment dedicated to the music production in transnational virtual team, such as the OPEN SoundS platform
b. the learning outcomes identified were formulated in a form consistent with the descriptors of achievements and abilities associated with qualifications / academic titles that, in the European Qualifications Framework, representing the end of each cycle
c. the framework of learning has been articulated in line with all eight levels, provided by the framework, since, in the testing phase, in addition to students present in the second cycle of education and vocational training system (target elective), will also involve students present in the first cycle and the controls in order to test and verify the entire vertical chain of musical training and the educational potential of the use of collaborative learning as OPEN Sounds platform

[1] In the European Qualifications Framework are previewed 8 levels and for each of them is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at the learning outcomes relevant to qualifications at that level in any system of qualifications

Learning outcomes[2]

FRAMEWORK OF THE **KNOWLEDGE , SKILLS AND COMPETENCIES** MUSIC AND TECHNOLOGY RELATED

KNOWLEDGE[3] In the context of EQF, knowledge is described as theoretical and/or factual.	**SKILLS**[4] In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	**COMPETENCES**[5] In the context of EQF, competence is described in terms of responsibility and autonomy
• Know the new languages and new codes of the music, information and communication world, on the Internet • Know the tools for the cooperative team work • Know the use of the network process • Know the procedures and tools for the creation shared of music by digital technologies • Develop of contextualized, integrated and useful musical knowledge,	• Ability to digest new information and communication languages and codes on the Internet • Ability to use with autonomy tools and collaborative environments on the net • ability to use procedures and tools for music creation and sharing by digital technologies • ability to search, understand, select, manipulate and create data and information • Ability to use personal aesthetics, expressive	• Work, study , project with some autonomy • take responsibility for completion of tasks in work or study • adapt own behaviour to circumstances in solving problems • develop a project with some autonomy • manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts • Show the skill to lead its own learning and understand the learning processes

[2] **'learning outcomes'** means statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence;
[3] **'knowledge'** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual;
[4] **'skills'** means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments);
[5] **'competence'** means the proven ability to use knowledge, skills and personal, social and/ or methodological abilities, in work or study situations and in professional and personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy

• Access, recognition and valorisation of own curiosity, critical attention, interest to studies and carried out projects • Know the relevance of the development of the creative skill • Know the value of communication, cooperation and negotiation • Access to collaborative learning processes that valorise the diversity of points of view and approaches • • Knowledge of processes / learning environments welcoming, motivating and able to strengthen interests and develop vocations • Know the importance of diversity, understanding, membership and multiculturalism	and creative skills • Ability to create and give a real contribution to a shared project development • Ability to integrate accepted knowledge in an informal environment with knowledge learnt in formal contexts • Ability to analyze and suggest solutions to solve problems • Knowledge of personal learning strategies activated in different situations in the proper way • Ability to interact in a critical, positive and constructive way with other people • Ability of Self analysis and self evaluation • Ability to Communicate, cooperate and negotiate • Ability to manage the change and complexity • Ability to express a personal vision of the world showing understanding and respect for diversity	• review and develop performance of self and others • manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts • take responsibility for managing professional and creative development of individuals and groups • manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches • Develop strategic approaches applying specialist knowledge and creative responses • take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams • demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research •Demonstrate knowledge of the importance of diversity, understanding, membership, and multiculturality

Compatibility with the Framework for Qualifications of the European Higher Education Area

The Framework for Qualifications of the European Higher Education Area provides descriptors for cycles. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle

- The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the Joint Quality Initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5.

- The descriptor for the first cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 6.

- The descriptor for the second cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 7.

- The descriptor for the third cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 8.