FINAL REPORT
on learning environments for remote collaborative music production, with particular reference to the educational and formative system of the partner countries

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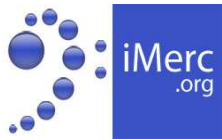| Authors and editors	

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Author:	Sergio Canazza, Alice Eldridge, Gemma Fiocchetta, Evangelos Himonides, Quentin Nicollet, Antonio Rodà
E-mail address:	canazza@dei.unipd.it, alice@brightonart.co.uk, gemma.fiocchetta@istruzione.it, himonides@gmail.com, quentin@earmaster.com, roda@dei.unipd.it,
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Indice

1   Introduction

The Web 2.0 platforms for music-based social interaction are involving a growing user base, who are attracted by the active participation in the fruition process, the tools to facilitate the organization and the creation of musical content. In recent years, many services of this type have been developed (N. Bernardini, and G. De Poli, "The Sound and Music Computing Field: Present and Future," Journal of New Music Research, Vol 36, No. 3, 2007 , p. 143-148): some are related to musical creation. For example, Freesound Project (http://www.freesound.org) is a collaborative database of Creative Commons licensed sounds. The objective of the Freesound project is to create a comprehensive database of snippets, samples, recordings, bleeps, defining new forms of access. In contrast to Freesound, which is focused only on sounds, ccMixter (http://ccmixter.org) is a Web 2.0 site that offers remixes, licensed under the Creative Commons where you can listen to samples and use them to create new songs and mash-up.

In Europe, in the educational context, the combination of music and technology is more and more widely diffused, but the experiences with collaborative environments that use Web 2.0 technologies are still a limited number. With outcomes in music teaching and learning that have yet to be evaluated.

The Society of the XXIst century needs new Educational Models and the Leonardo da Vinci OPEN SoundS project supports this process by promoting a meaningful example of transferability in systems of different forms of access and building of knowledge informally developed in the Internet by its young users.

The OPEN SoundS Project conducts research into innovative solutions for creative collaboration in the Internet for the creation of music or complex multi media projects by individuals in different regions even in different countries and continents. OPEN SoundS considers the world of Virtual Studio Recording for professionals and advanced sharing asset systems for management on the Internet. Also considered are projects or knowledge archives such as Perseus Project, Wikipedia; Open Encyclopedia Project, major transnational virtual communities or knowledge management systems based on XML, Knowledge Base databanks such as those of Microsoft or Adobe/Micromedia created by the contribution of users and experts of all over the world. It thinks and looks at the now and future phenomenon of remote interaction as a widespread working practice. These methodologies transferred in an educational and training environment contribute to the redefinition of contents and consolidated practices in systems because they are able to re-express, via the organisational logic of, and access to knowledge, the formation of knowledge itself.

The report presented below, based on the researches carried out by the partners of the project, not only within the European area, presents a comparative framework of key elements identified for the planning and development of a sustainable model of a remote collaborative learning environment beyond just the complete set of training tools necessary effectively use it.

The research carried out in Italy, Denmark and Great Britain have started from the development of survey tools deliberately designed to test the significance of the presence of certain elements in web portals dedicated to remote music production, and to provide a detailed analysis of the setting up and technological functionality of such portals, and to provide a detailed description of the various types of creative production practises developed there within.

The Report has particular merit in two ways. In one dimension is an unpublished analysis of the state of remote music production, a topic on which little it is generally written and much of that is inaccurate. In another view, it emphasizes in the remarks the outline of the international web portals which now exist, and how they were right to await the outcome of diverging practises.

OPEN SoundS report analyses the background of remote music production, using as a starting point, some services identified with consideration of macro categories found out after an initial close examination of the main characteristics of these environments from a technical and operational point of view. This approach has facilitated the identification of the first quantitative elements of the phenomenon via research into common elements in the working environments and into the most widespread creative working practises.

In OPEN SoundS, the research aims to point out the spread of creative music production practises via "social networking" and identify elements useful to elaborate a new organization model of for educational activities

(school, university, company) closer to those of the social community. The traditional learning model comes from these practises and it is under discussion in a radical and irreversible way.

From here the comes urgency to study and to regain in educational and training functions such new behaviours both in their social and cultural aspects and technological dimensions.

2 Online music: cultural, technical and financial background of reference

2.1 The cultural interfaces and the logic of database

Since computers have forced man to use interfaces to enter and to read data on a screen (HCI, Human Computer Interface), the relationship between technical and symbolic dimensions of culture, and of human behaviours, has radically changed. Before, as a working tool, the computer was only one part of the office or factory where texts and projects were "prepared" before being printed or produced by traditional systems and launched on the market. In the 90's the personal computer has become, linked to the Internet, a creative and universal machine, a cultural machine that can produce, store and distribute all media (texts, photos, songs, movies). Such a profound change to our approach to products of culture, both in a physical sense (by the time they are digital products, it means binary noughts and ones) and a symbolical sense. What is it a photo, a book and a musical piece today if not something that floats in the digital space and that can be manipulated by me as data like anyone else. Lev Manovich says: " As *distribution of all cultural forms is based on the computer now, we are more and more interfacing with cultural data mainly: texts, photos, movies, music, virtual environments. Essentially we are not relating with a computer any more but with a codified culture in digital form"*..1 Products that come from the Internet via the computer and that we manipulate by hardware/software interfaces have become an integral part of traditional interfaces, in fact they are now prevailing. In fact we use "only" cultural interfaces, now that the traditional ones (monitor, mouse, keyboard, windows, icons etc.) are so familiar as to be "transparent", invisible.

The deep logic of the Internet is that of the database, of the archive. In it there is potentially contained all the cultural content of mankind, but in a database form, so not in the narrative form, not communicable. What makes possible the use of the Internet in a narrative form, a cultural one? The answer is the interaction between users of the database (of the Internet). They are those who "talk" the Internet making become a conversation, with culture and cultural products. The illuminating comparison is with language, both verbal/alphabetical and with music and sound. The database is everything inside the alphabet, its endless combinations produce thousand million words in every language, but all narrative articulations that those words can form in every language depend only on speakers. Those that are connected pull out from the database those combinations that are meaningful for them. The same happens in music, from the abstract database of possible melodies musicians extract those that in their cultural context make sense, and "play" only those, giving birth to some new content for the sound database. In conclusion, database is a reserve of possible narrations, but in the database itself is not a narrative mechanism. The impulse of narrations is external to the database but to be able to narrate it is compulsory to interface to the database. This is the logic of cultural productions. And it is the logic of the Internet too.

2.2 The Web: the living music

Terrestrial, cable and satellite television distribution is arranged around the concept of star, a single point of transmission towards millions of points of reception. The Internet has many centres and it is bi-directional and provides an active and intentional use. So the broadcast, as an important and organizational concept on which for seventy years had depended the radio and for fifty years the television, is updated and defined

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[1] Lev Manovich, ¨The language of new media", MIT Press- Olivares Editions, pp.97-98

again by the Internet in the 90's with the concept of a web cast - broadcasting via the Internet radio and television content.

For music, according to mass media, the Internet has meant illegal *download* and the Napster effect. For the most attentive it is a community of practises and learning, endless hours spent to learn how make music, how to use software, how to transform the solitary existence of a mindless consumer to being part of the big family of those people who love music and make music on the Internet. Contrary to the mono directional screen where people must suffer someone elses choices, on the Internet people choose, decide, act and think. And take possession of music, as a part of their own life.

In general sky television web sites let users choose a program from different thematic channels, to watch classic movies in a database (we think about RAI or BBC, that not accidentally are cooperating in the creation of an European thematic database based on the model of Teche Rai), to interact through games or polls, to take part in topical subjects, to influence somehow the broadcast or to cut it to size. Video portals, that are distributors of digital contents on the Internet, permit the purchase, download and sophisticated interactions with online game programs or online learning applications.

Unfortunately for music the rule is always the same: luckily a wealth of information but strictly selected and controlled contents without the new distributive and communicative model that music requires and that the spontaneous communities already consider. However, the MTV model has travelled in the Internet and, excepting the autonomous web sites managed by alternative musicians and communities, official music is always the same, in its behaviours, to that found on and by satellite. Rigid formats, glossy information, standardized language. Everything is rightly used to protect an industry that is largely in crisis and that operates in current modes, strangling its real producer of profits, artistic creativity and music, precluding the assets of the future.

Thus it is not necessary to address recording companies and MTV artists in the Internet but to communities of users, to forums where music is breathed as oxygen. Starting by carrying out research on the Web with search engines or by asking friends, it will soon be realized that the Internet is not killing music as has been said by courts but it is revitalizing it because it is the only medium that individuals can manage both structure and contents. Music has also undergone the effect of losing its communicative hierarchy due to other media contents that can be found in the Internet: not from one to many, not from the top to the bottom but a reticular democratic process of horizontal communication, an endless dialogue that makes the artist get down from the stage and the screen but it does not deprive him of his specific, to be a maker, a source of sound but also, in every circumstance, a member of the community and not a faraway god.

Technologically, on the Internet the approach for music has been written since 1980, when digitalisation of sampling had given rise to the Compact Disc. The web is the last link in the progressive dissolution of the recording support of music or maybe it is only the most logical and suitable support that everyone can imagine for this dissolution: in its web binary music flows as did the analog in the air.

Today on the Internet all the official world of music mirrors itself and acts within as the same media arena. Artists, recording companies, public opinion, fans clubs, music press, radio, television, producers of music instruments, producers of recording technologies, software producers and hardware companies for computers and music, everyone participating with their own point of view and with their own language, vision and expectations. Types are categorised in four types of "presence", of web sites: Official sites of recording companies (artists and recording companies, professional operators, etc), those of parallel communities (fan clubs), those of the music media on the Internet(press, press offices, agencies, radio, television), and those not of the recording music industry (online disc stores, producers of instruments, of hardware, software, etc).

The Internet has therefore placed the media in front of a necessary modernization of themselves. And therefore newspapers enrich their critical thought with video clips and previews of the album of which they speak, radios enclose images for the songs that they transmit, television adds to images biographies and inquiries on singers in rotation, and the record companies have a whole multimedia collection of samples on their own web sites, of which they are producers and holders of rights. And through them they maintain control of the chain as described, supplying it again more or less according to their marketing strategies. The spontaneity of the Internet is checked.

Now the phenomenon of communities of fans or of trainees is important because it eschews the informative monopoly and it throws a new light on a world rigidly managed. This is mutual contamination, between

official worlds and environments where expressive freedom produces new orders and practises. In the Internet, a joint complex media, live of all these new contributions in a huge kaleidoscope of voices and thoughts that defines the real portrait of of contemporary humanity. Not only in music.

2.3 Music Business on line

The most interesting data are contained in the annual report on the state of the world record industry IFPI, which is now being used to outline what is happening on the Internet side of the music industry and business.

The number of services for the online sale music has been in continuous growth during the last decade. Recently, about 500 services, totally legal, have been reviewed in 78 different countries. Merely to the three countries of the Open Sounds consortium, the following services were reviewed:

Italy	United Kingdom		Denmark
7digital	ArtistXite	Napster	3musik
Azzurra Music	Babelgum	Naxos Music	BibZoom.dk
Beatport	BBM Music	Library	Bilka
Cubo Musica	Beatport	Nectar Music Store	Musik
Deejay Store	Bleep	Nokia Music	Billigcd.dk
Deezer	Boomkat	O2	CDON
eMusic	BT Vision	Ooizit	Danmark
Esselunga MusicStore	Classical.com	Orange Music Store	Deezer
Fastweb	Classical Archives	Orange Monkey	DSB
GazzaMusic	Classics Online	Partymob	DVDOO.dk
IBS	Coolroom	Passionato	Ekstrabladet.dk
InnDigital	Deezer	Play.com	eMusic
iTunes	DJ Download	PlayNow	GUCCA
Jamba	Drum & Bass Arena	Pure Music	Inpoc
Last.fm	eMusic	rara.com	iTunes
m2o.it	Fairsharemusic	Spotify	M1
Mondadori	Historic Recordings	Tesco Downloads	Music Unlimited
MSN Music	HMV Digital	Textatrack UK	PlayNow Arena (Sony
Music Planet 3	iLike	The Classical Shop	Ericsson)
Music Unlimited	Imodownload	T-Mobile UK	rara.com
Net Music	iTunes	Track It Down	Spotify
Media World	Jamster	Traxsource	TDC Play
Nokia Music	Jango	TuneTribe	Telia
Playme	Joost	Vevo	TouchDiva
rara.com	Juno	Vidzone (PS3 only)	TP Musik
Sorrisi Music Shop	Karoo	Virgin	VoxHall
TIM	last.fm	Virgin Mobile	WavesOut
Vodafone Live	Linn	Vodafone	WiMP
YouTube	Mewbox (Android)	We7	
ZED	mFlow	Yahoo! Music	
	Mobile Chilli	YouTube	
	MSN	Zune	
	MTV		
	Music Anywhere		
	Music For Life (Talk Talk)		
	MusicStation		
	Music Unlimited		
	MUZU.TV		
	Musicovery		

MySpace	

The digital music sector is extending its business models and reaching out to consumers across the globe. Digital channels have overtaken physical formats to become the dominant revenue stream in the world's largest market, the US. And the digital music market is poised to further expand its reach internationally in 2012.

There are two models and business towards which these services are being oriented, pay-per-download and subscription services. The first follows the demand of the consumers "to possess" their own music but with a greater flexibility than the CD because tracks can be selected and downloaded "extracting them" from the CDs of origin (in practice acquiring songs like "singles"). Services as iTunes, MSN Music, Wal-Mart US and Tesco UK sell downloads starting from 0,80 cent of dollar for each track. Songs can be transferred onto portable readers or recorded on a compact disc. Subscription services offer a wide choice of music for a monthly price of approximately 9,99 dollars (Napster, Rhapsody, Virgin Digital) allowing the subscribers a streamed listening (without downloading) the desired music or to listen to the digital radio services included in the offer. There is also the option of purchasing at an additional cost of approximately 0.79 cents of dollar per track, that it can be transferred on a disc according to the conditions of several services. Napster as an example has invented "tethered download", that is "the connected" transfer, possible only once one is a subscriber.

DIGITAL MUSIC TRADE REVENUES BY YEAR			
	2009	2010	2011
TRADE REVENUES (US$)	4.6 BILLION	4.8 BILLION	5.2 BILLION
GROWTH	10%	5%	8%

But it is in the mobile market that lies the real business of present and future music, grown on the 3G platforms on which the giants of music and TV are setting out. In Japan alone the market was worth beyond 100 million dollars, and it is growing. In Europe, more longstanding partnerships include Spotify and Telia in Finland and Sweden, Telenor and WiMP in Norway, and Cubo Musica by Telecom Italia and Play Me in Italy.

On mobiles one can download ring tones, song ring tones and whole songs, like on the Internet, and whole live concerts can be listened to, like on Tv. If you download music onto a mobile and then you want to pass it to a different terminal unit, like an MP3 player, you pay copyrights again.

ESTIMATED PAYING SUBSCRIBERS TO MUSIC SUBSCRIPTION SERVICES GLOBALLY	
2010	8.2 MILLION
2011	13.4 MILLION

The last factor to analyse to have a clear picture of online music from the point of view of business is that of the moves by the recording industry towards the Internet and the marketing plans carried out by Net and Telephony suppliers. But it is the marketing strategy of majors and supplier companies, attracted by the profits in downloaded music that have triggered a real offensive. Here there is a synthesis:

9 Partner logo

Marketing Strategies
Digital only releases –
Exclusive artist contents available online and via mobile
Release of digital tracks prior to or simultaneously with the release of the single to radio, ahead of physical release
Web sites' artist offering download tracks and other exclusive materials
More information about recordings with interviews to composers, producers, collaborating performers etc. (emotional marketing)
Niche download sites, such as Warchildmusic.com and Bignoisemusic.com (UK), where a proportion of the price of downloads goes to charity
New digital channels, as 'kiosk services' where consumers can compile their own custom CDs
Specialised campaigns by companies like 7 Digital Media or Recordstore.co.uk who used direct marketing to appeal to a band's fan base
The launch of digital downloads and ringtone charts in different countries
Deals between broadband providers and online music services to offer 'packages' including both services for a single fee (AOL, Tiscali, T-Online)

So the real strategy of record industry majors has been that to digitise the whole catalogue, so that having "goods" to offer to new allies, managers of the Internet and of mobile telephony. Universal Music, as an example, completed in 2005 the digitalisation of the whole catalogue of the European branches (25,000 albums for approximately 300.000 pieces) and now it digitises an average of 2.500 new tracks a week produced by new artists.

The big and small record companies have tightened agreements with online big distributors as Apple, Napster, Microsoft, OD2, RealNetworks e AOL, and with local distributors. The same one has made with the big suppliers of mobile telephony as Sprint, Verizon, Vodafone, Orange, T-Mobile e SKT Telecom.

Ten years after the first online stores emerged in the US and Europe, the music download sector continues to expand internationally and improve its offer to consumers. Download stores account for a large proportion of digital revenues and account for most of the 500 legitimate services worldwide, offering libraries of up to 20 million tracks. Many major markets are seeing healthy increases in single track download sales, including the US, up 10 per cent (Nielsen SoundScan); the UK, up 8 per cent (Official Charts Company/BPI) in 2011; and France up 23 per cent (GfK). Consumer demand for iTunes, the market leader, is growing healthily.

2.4 Social networking vs business networking

We are assisting in the triumph of the Internet as a web of interconnected and available knowledge. The quickest development of forums, blogs and wikis (the Wikipedia is a global case) has put in second place that job of historical cataloguing carried out by the search engines emphasising out the job of creation. It almost seems that knowledge, that once had to be stored and only shared, must always be created from the beginning. It is a new and startling situation: if it is true that Wikipedia organizes well-known learning, it is also true that this organization, both formal (free encyclopedia in the Internet) and substantial (shared writing, verified contents) creates new knowledge giving it a new order, adapted to the digital and present time, often played out in seconds and not on hours or days. A true statistical outbreak also: the qualified search engine Technorati (www.technorati.com) has calculated that every day in the world they come opened 75,000 new blogs and sent 1.200.000 posts. The blog sphere (the Internet area blog) has doubled every six months constantly since 2002. The most are business blogs, products, services, promotion, but also comments, critics, book reviews. The communitarian vision is the soul of the Internet.

This situation is explained with one definition: information is participation meaning that the model gives value to the content. In other words, only if the dimension is participative (social networking or social computing) does that which goes through its channels acquire sense. Big companies and agencies throughout the world are developing internally an open communicative dimension, in order to create community in the place of communication, between leaders and workers. Forums are used to find answers asking for questions, blogs tell in an outspoken way what happens in the own private and/or public life while the wikis are the true model of the social networking and of the work shared in the Internet. By these tools some communities (13.000 workers of the BBC or approximately 50.000 visitors, between workers and exteriors, of Rai.it forums) have introduced changes in the thinking of the respective companies, pushing them to modify visions, behaviours, programs. Another institutional example is that one of the BBC which has undertaken a real self-transformation from "company of communication" to "social network". The BBC has launched an ambitious program, to become a Network of digital content accessible from the Internet by 2010, when the old analog TV disappears. And today it is already opening many specific web portals with forums, blogs and services for young people, in order to intercept new generations and new needs. In particular music, where BBC has a very extensive experience and archives, and that it is bringing back the Zietta (Auntie, like it is called in Great Britain) to the centre of the youthful world, as almost in line with MTV.

For its part record industry has completed a series of key actions, during which we have seen the alliance with Internet and mobile companies in order to supply music for download, careful and fast exploitation of the opportunity found in the world-wide increase in sales of portable music players, of state-of-the art mobiles, of the penetration of broadband (fast) Internet services, and finally an emphasized flexibility for consumers and a hard fight against piracy. There is no lack of examples, like the case of "rootkit" by Sony on CDs attempting to prevent illegal copies .Because inserted illegal software in buyers' computers, they were discovered by a famous computer science engineer on the Internet, Mark Russinovich, and on his blog he has revealed the trick and caused damage to reputation and income for Sony, caused by demands for compensation and by being forced to withdraw all the "infected" CDs from the market.

These setbacks are identifiers of the division that splits the two mentalities that occupy the Internet from the point of view of music. On the one hand industry that sees the Internet like a sales channel, on the other hand an international community that sees the Internet like a creative workshop and a opportunity for cultural growth. The clash between these two conceptions not only occurs in the world of music, but also in the more striking examples of Wikipedia, blog of another kind of information and communities like MySpace or iCompositions, where millions of people meet in the Internet "living it" at the same level of intensity of reality.

Another delicate topic for the social networking is that of feasibility. Local and/or global community infrastructures and the individual show, like all entities that use the Internet, a strong dependency on managers of routers and suppliers of web access. This structural dependency can not be avoided and must always be accounted for.

The feasibility also concerns the time dedicated to the maintenance of the online social life (writing by the contributors, upload of the web site, creation and management of every type of material and activities

necessary to the community need people and their working time), to the costs of materials and connections, to continually renew infrastructures and the continual turnover of members and associates in the community. We can identify a possible horizon of crisis and/or change. Big communities cannot exist without a large amount of money and large business commitments. On the contrary small communities which survive well, until they reach a "critical dimension" that make them become "large", are in crisis because the original model did not predict that order of magnitude and consequently the level of cost to allow them to survive. So the model becomes complex: spontaneous activity, self-organization, but also business, large fortunes, different directions, dependency.

From this recognition emerges a meaningful difference between the behaviours of millions of "consumers" and those of some hundred thousands of "creators" with different roles in music and online music culture.

3   The process and research tools in OPENSoundS

Nowadays on the Internet professional communities are born around projects, visions and shared ideas. Usually they form webs of collaboration, solutions, people who create a sort of collective mind that reflects, all together, on the problem to solve or on the project to realize. They are therefore reticular communities not only in terms of the technologies that they use but also their structure. The same ideas, in a feedback effect, use the community, creating it, managing it, creating intellectual and creative proximities that take the place of the usual space-time proximities of local, territorial or traditional professional communities.

In the Internet communities are born around problems to solve, as an example in the field of software. Problems can be new ones (to create a software that does not exist or that it exists commercially but it is very expensive, case Open Office vs Microsoft Office) or linked to the working of the software or to existing procedures (to solve creative or technical problems). In music the rule is the same: communities of users of the same software, communities associated by a specific kind of music or communities of creative people that exchange information, techniques and music projects.

Given the objectives and purposes of OPEN SoundS, i.e. to build a network of European students within the education system that produces music in collaborative, remote and transnational way, it was necessary to focus the research, that has characterized the first phase of development of the project, on the identification and analysis of the major portals for the remote collaborative production in the field of music, with particular reference to those designed to support the educational practice in the three partner countries of the United Kingdom, Denmark and Italy.

The process that has lead to the choice of web portals to investigate and survey tools to use has started from the comparison of a series of questions that have allowed us to gradually characterize and to narrow our field of scope. In particular, the review has started from the following considerations:
- which platforms exist in the Internet for remote collaboration (existing web portals survey)
- what typology of software is currently usable/necessary for being able to carry out the remote collaboration (necessary software tools survay)
- which possibilities are currently to disposition of users in the Internet in this field (horizon of real possibilities survey)
- which data and files can be currently exchanged in the Internet for these collaborations (real and creative possibilities survey)
- which are the costs of these realities (economic horizon survey)
- which collaborative systems have been experimented in the educational context of the partner countries (United Kingdom, Denmark and Italy)

Defined the research objectives and the scope of possible action, the next step involved primarily the organization of the survey and the development of tools for the data collection.

3.1 Methodology and organization

From the point of view of the work methodology of work, the investigation plan has provided 3 phases

1. focus groups on the collaborative environments
2. analysis of related portals and choice of which one to include in the survey
3. tuning of the tools to collect data concerning the main technological and educational characteristics of the analyzed collaborative environments

A first focus on the number and the main characteristics of the collaborative environments has been made during the first project meeting. The definition and clear identification of the research subjectwas later continued by the partners within small working groups composed at the institutions they belong (universities, research centers, companies, school). Following a careful review and analysis of the collaborative environment dedicated to music conducted in the different countries of the partnership, it has been possible to verify the extent and importance of such environments and to determine which are the type of portals to put at the center of the investigation and how.

The portals addressed by the survey can be divided into two typologies:

> **A) portals for the musical collaboration, adopted by large communities of musicians and/or amateurs, which use the music digital technologis and the Web with different levels of expertise;**
> **B) portali specificatamente pensati per il loro utilizzo e applicazione in ambito didatticoe a fini didattici.**

In more details:

The first typology of portals, the environments for the collaborative production of music are analysed from a **functional** point of view: which are the services and the tools offered to the users for the content production and sharing (DEI-UNIPD)

The second typology of portals, i.e. the environments with educational aim,s are analysed from the following points of view:
- **technological**: which software frameworks are used for the implementation, with particular attention to their sustainability (BAL);
- **usability** and accessibility (EARMASTER);
- **user typology** (DEI-UNIPD, MIW);
- **effectiveness in the educational practice** (IEO)

Subsequently, the survey in the narrow sense was conducted in two stages.
In the first phase were analysed the environments for the collaborative production of music.
In the second phase were instead analysed the educational portals in all aspects above

To deal with the description, the study and analysis of the two main types of portals identified and placed at the centre of the survey were discussed, predisposed and shared two survey grids (Annexes I and II).

The first survey grid (Annex I), more descriptive, was used for detailed analysis of the first type of portals. Through the grid, an in-depth analysis of the portals' functions has been carried out, including available tools and number of access.

The analysis of the second type of portals was conducted instead by the partners, analysing different aspects of interest, according to the structure described in Annex II. This second grid was designed to be able to account for the complex phenomena of aggregation and management of the social bond of communities

animated by members interacting in virtual environments, whether they are professionals and/or youth music self-producers.

Analysis tools (survey forms and interpretative grids) were therefore developed on the basis of the detection of elements useful to the understanding and definition of the scenario and objectives of investigation described above.

4   The analysed collaborative environments

As mentioned in the previous section, in order to analyse the current landscape of systems to make music in a collaborative manner, an in-depth research and description of the different on-line realities has been carried out. The survey, conducted by the partners, has allowed the identification of the main systems (collaborative environments, learning tools, etc.), similar or related in some way to the OPEN Sounds project.

These systems have been divided into two categories:

a) collaborative systems to make music;
b) collaborative learning environments oriented to music.

Regarding the collaborative systems for making music (a), 21 portal were initially identified by the partners. Some of these include plug-ins for music production, to implement distributed jam session, to record sounds, etc.

The list of systems taken into considerations is as follows:

- http://www.myonlineband.com
- http://ccmixter.org
- http://www.dopetracks.com
- http://www.ejamming.com
- http://www.kompoz.com
- http://www.mixmatchmusic.com
- http://www.wemix.com
- http://www.indabamusic.com
- http://www.myblogband.com
- http://onlinejamsessions.com
- http://www.cocompose.com
- http://www.ujam.com
- http://www.cockos.com/ninjam
- http://esession.com
- http://www.digitalmusician.net
- http://www.ohmstudio.com
- http://makemusic.net
- http://www.acidplanet.com
- http://www.mashstix.com
- http://www.scratchaudio.com
- http://ejay-music.com

We carried out a preliminary survey to discard a sub-set of these systems, following the criteria:
- systems without recorded activity (file upload) in the last week;
- systems partially out of the project topics, such as jam session environment;

- systems strictly related to a specific commercial software (i.e. communities of a specific, commercial, software users).

The resulting selection is:

NOME: My Online Band (USA)
URL: http://www.myonlineband.com

NOME: ccMixter
URL: http://ccmixter.org

NOME: Dopetracks (USA)
URL: http://www.dopetracks.com

NOME: Kompoz (USA)
URL: http://www.kompoz.com

NOME: Cocompose (Germania)
URL: http://www.cocompose.com

NOME: Ujam (USA)
URL: http://www.ujam.com

NOME: Digital Musician (Germania)
URL: http://www.digitalmusician.net

NOME: Ohmstudio (Francia)
URL: http://www.ohmstudio.com

NOME: Makemusic (Danimarca)
URL: http://makemusic.net

NOME: Mashstix (USA)
URL: http://www.mashstix.com

NOME: Scratch Audio
URL: http://www.scratchaudio.com

NOME: Aviary (USA)
URL: http://www.aviary.com

NOME: Freesound (Spagna)
URL: http://freesound.org

With regard to systems designed with educational purposes that we have previously called "collaborative learning environments oriented to music" (type b), the research has focused on the experiences in the countries of the project partners (Great Brittany, Denmark and Italy), being these countries recipients of the technology transfer carried out by OPEN SoundS.

Each partner conducted a survey in its country, providing a list of websites and projects which are listed below:

NOME: Sonic Postcards (UK)
URL: http://sonicpostcards.org

NOME: Sound Junction (UK)
URL: http://www.soundjunction.org/default.aspa

NOME: Usability of Music for the Social Inclusion of Children (UMSIC) (UK)
URL: http://www.umsic.org

NOME: Gigajam online (UK)
URL: http://gigajamonline.com

NOME: Musinet (Italy)
URL: http://www.musinet.eu

NOME: NetMusic (Italy)
URL: http://www.netmusicproject.org

NOME: Musiweb (Italy)
URL: http://www.e-musiweb.org

NOME: Modem (Italy)
URL: http://modem.netsoundsproject.eu

NOME: MinMusik (Denmark)
URL: non è online

5   Descriptive and fundamental characteristics of the analysed portals

5.1 Collaborative systems to make music

The analysis of the first type of portals (a) has allowed us to highlight the most important services for the production of music in a collaborative and remote way. These portals are supported by very extensive communities and have often commercial aims, promoting alternative distribution channels to the traditional ones, controlled by the majors.

5.1.1 My Online Band (USA)

URL: http://www.myonlineband.com

This is a network of musicians and wannabes who want to share their musical tastes and create musical projects in a collaborative manner. It provides a platform for managing shared projects, a space for the file sharing and a recommendation system for promoting the songs made by the users' community. The system is based on the concepts of musical group (band) and song workspace, for the management of collaborative projects. The portal also provides a service of talent scout, in which a band can insert the collaboration offers, specifying the required musical profile.The target of My Online Band are professional musicians and amateurs.The users can judge the compositions and communicate with each other through a chat. There is no forum.The content browsing service is well structured. It is possible to arrange the artists' list, highlighting new entries, or the top musicians. The ranking takes into account the number of accesses to the artist's homepage, the number of downloads and the votes received from other users. It is also possible to group the artists by musical skills (talent) and by the country of origin. The song workspace can be explored, highlighting the most recent projects, or those who are looking for new talent to continue. It is also possible to sort the projects by level of activity, where the score takes into account the number of accesses and the number of comments.

### 5.1.2 ccMixter

URL: http://ccmixter.org
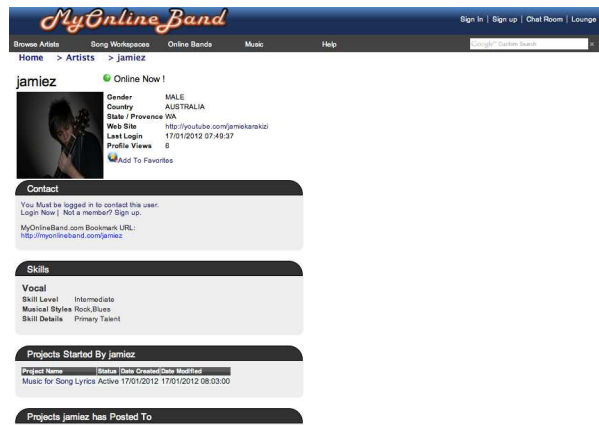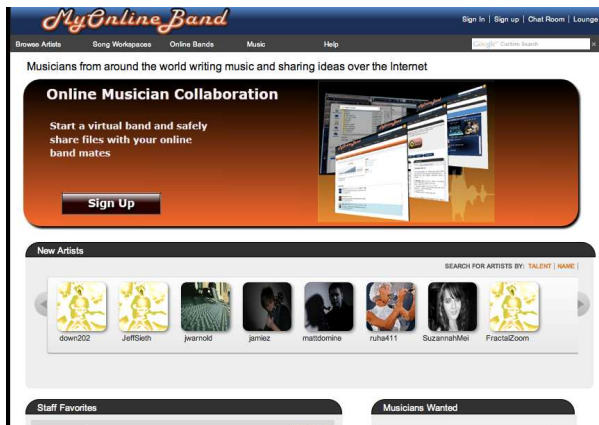
ccMixter is the site of a community of musicians who make musical remixes, licensed under Creative Commons. It provides services for managing shared projects, a forum for the exchange of information among the users, and a recommendation system for promoting the musical products.Users can upload instrumental tracks (sample) or vocal tracks (a cappella). The remix is a project that utilizes both instrumental and vocal tracks made by other users. The system has a trackback service, which keeps track of samples and a cappellas used in the remixe and their authors. The trackback works automatically within the site, but you can manually report also the use of musical tracks outside of the site. It is also possible create and edit playlists, composed by the remixes made by the community.
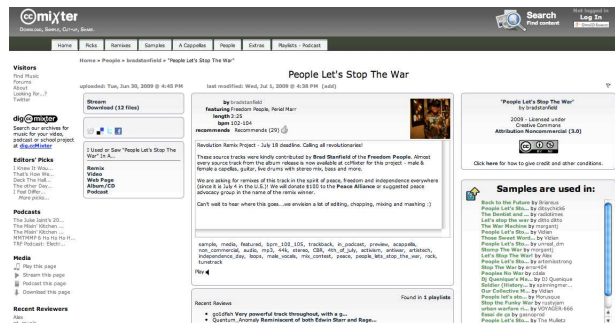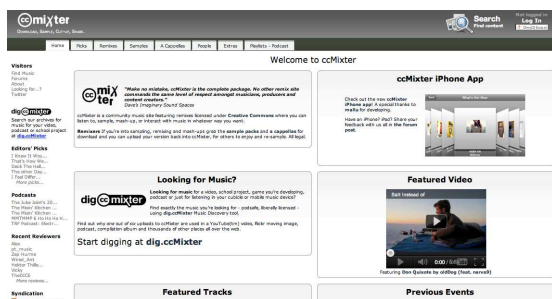
5.1.3 Dopetracks (USA)

URL: http://www.dopetracks.com

It is a social network for musical collaboration, where you can record your own audio tracks and sing with other singers. It makes available to the members a sharing space for musical projects, a showcase for the distribution of their products, and a discussion forum. The portal provides a plug-in for the audio recording, implemented for mobile devices. Various rankings are proposed, broken down by types of users: experts, producers, novices. The rankings depend on the scores (referred to as dope) received from the other users. A special ranking highlights the beats most widely used, i.e. the most rapped beats. An interesting section assists the users in finalizing their products on CD and DVD, completed with a nice packaging.
The portal is aimed to musicians interested to the rap genre.The portal has two distinct sections for the file uploading and downloading: the first for the beats, i.e. rhythmic and instrumental tracks that have no text, and the other for the tracks, where a rapped text is added to the beat. The same beat can be rapped several times, with different texts and by different users.

17

Partner logo

5.1.4 Kompoz (USA)

URL: http://www.kompoz.com
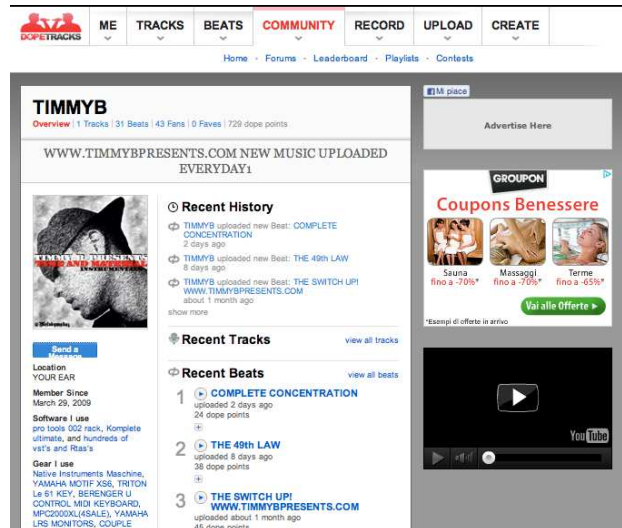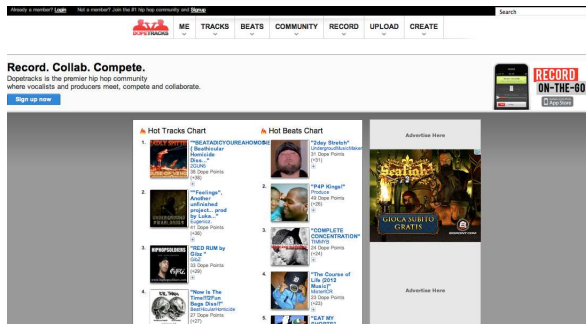
It is a shared workspace for musicians and songwriters. In addition to the service of audio file uploading/downloading, the portal provides a variety of community communication services: blogs, discussion groups, forums, chat. The site has a video section that allows to upload both musical video and tutorial.The key element of the system is the project. The open projects are separated from the completed projects, that are placed in a special section, named finished. The page dedicated to each project is divided into several panels: overview, tracks, discussions, members, info. The overview panel is divided itself into several sections that contain: a brief textual description of the project, the list of the collaborators, the list of the supporters (who likes this project), some meta data such as genre, style, mood, key, BPM, creation date, owner, participation, status of work, license; a log of the recent activities (uploads, downloads, comments) carried out by users in relation to that project; a list of talents required to develop the project.
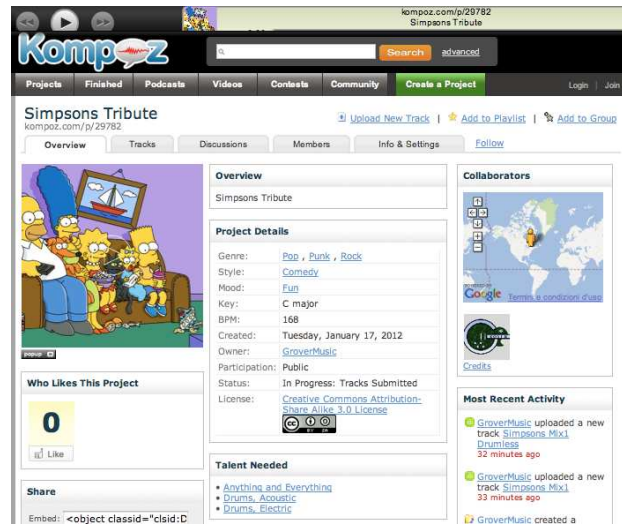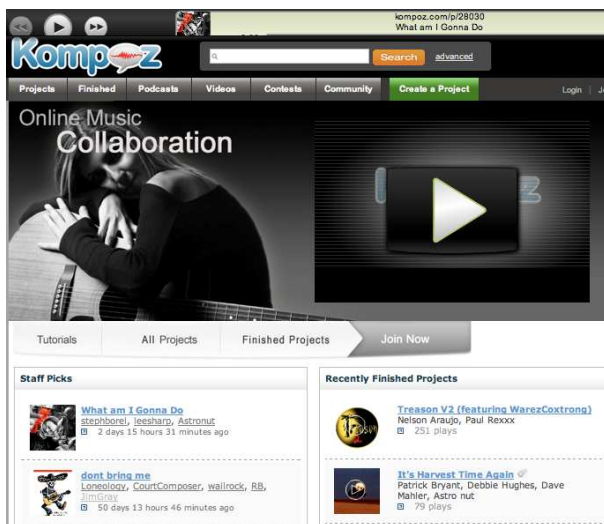
5.1.5 Cocompose (Germania)

URL: http://www.cocompose.com

It is an environment for creating and sharing music. It is based on the collaboration of multiple users within a project. The project may include audio and video tracks, subtitles for the video tracks, cover images, and lyrics. There is a section dedicated to the research of artists for the collaboration to musical projects. The work - both audio and video - can be sold directly on the community's website.


5.1.6 Ujam (USA)

URL: http://www.ujam.com
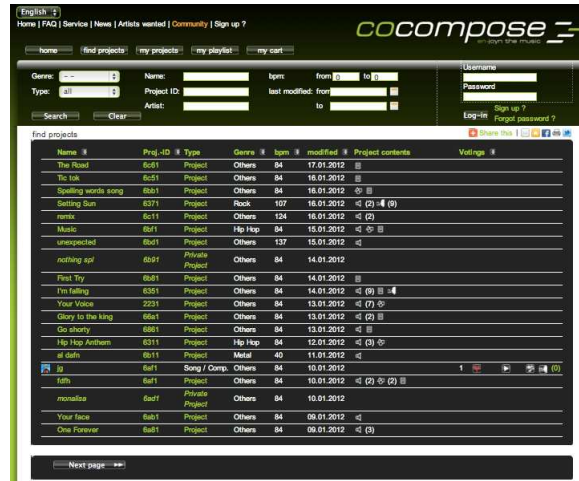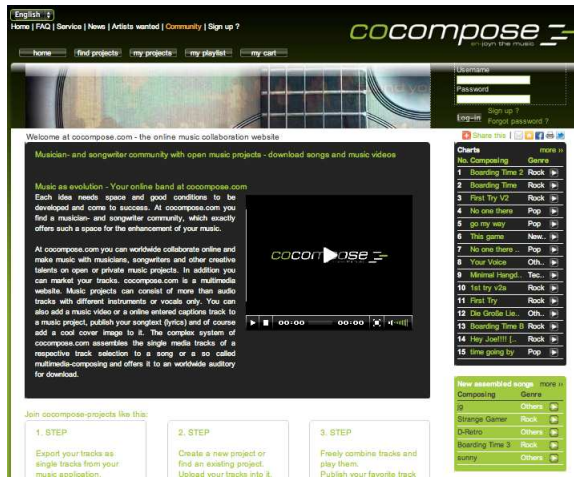
It is a platform, self-defined cloud-based, to create and share music. There is the possibility of creating shared projects. The individual artist creates his own song using a plug-in that provides the functionality of a sequencer with an interface designed for non-professionals. The portal provides a service for distributing the produced songs, interfaced with leading Web 2.0 platforms, such as Facebook and Soundcloud.
The portal is manly aimed to non-professional musicians and it has a community with more than 500 users.

### 5.1.7 Digital Musician (Germania)

URL: http://www.digitalmusician.net
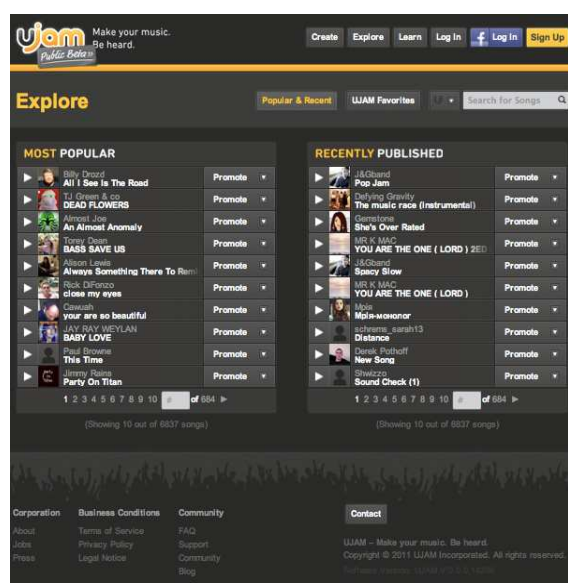
It is a community website for sharing musical projects. The artistic productions are divided by channels. The portal provides a forum and the opportunity to search on-line artists for collaborating on shared projects. As an additional tool, you can download a plug-in developed on VST technology for managing and building their own soundtracks collaboratively. The software provides an audio-video communication channel and a chat tool.It is aimed to professional and non-professional artists. Its community includes more than 18000 musicians, 9000 producers, 5000 composers and 4000 sound engineers, and it is continuosly growing, with about 100 new entries each month.
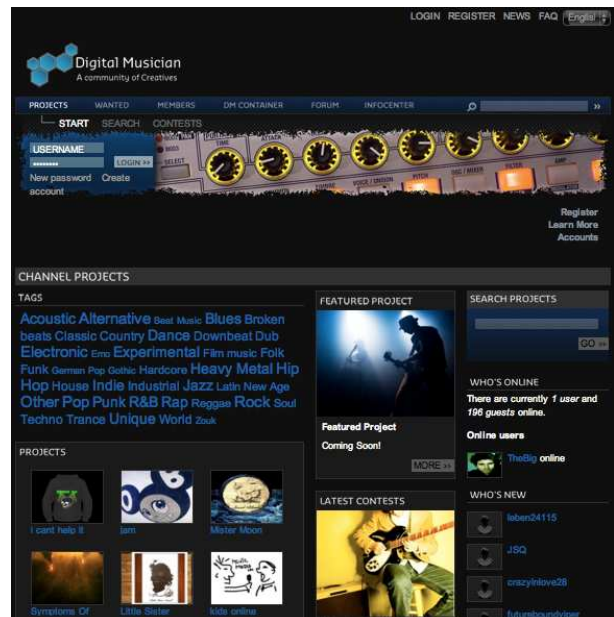
5.1.8 Ohmstudio (Francia)

URL: http://www.ohmstudio.com

The system is based on a free software that implements the functionality of a collaborative digital audio workstation (DAW). The software is multiplatform and it allows to the musicians to collaborate remotely during a song recording. A chat system allows real-time communication among artists. It is possible to create joint projects and to invite others users to participate. The site also offers tools to manage the community. There is a forum for information exchange and the opportunity to search for artists to work with.The portal is aimed to professional musicians, who use the Ohmstudio proprietary software.
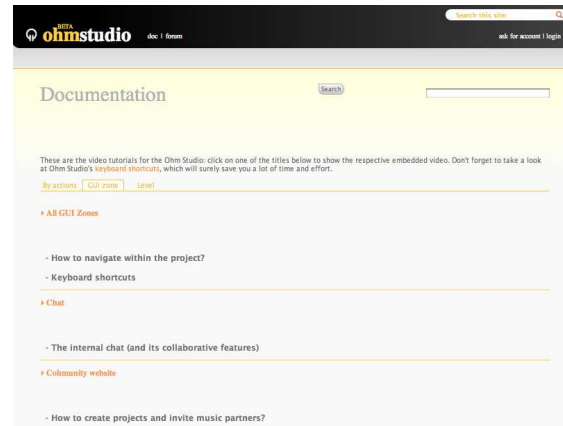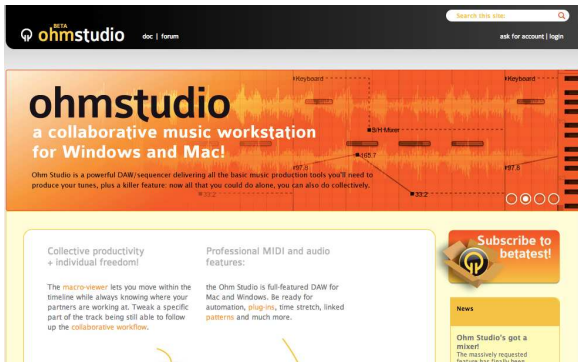
5.1.9 Makemusic (Danimarca)

URL: http://makemusic.net

It is a Danish website in English for the realization of collaborative musical projects. The site makes available to the users a service of uploading/downloading files and a system for project management, with which you can manage the access to shared files and organize working groups and fans groups. Tools for the exchange of knowledge, such as messaging, chat rooms, discussion groups are provided. There is also a system to rate musical compositions and a section dedicated to research artists for musical collaborations.
The portal is aimed to professional and amateur musicians.
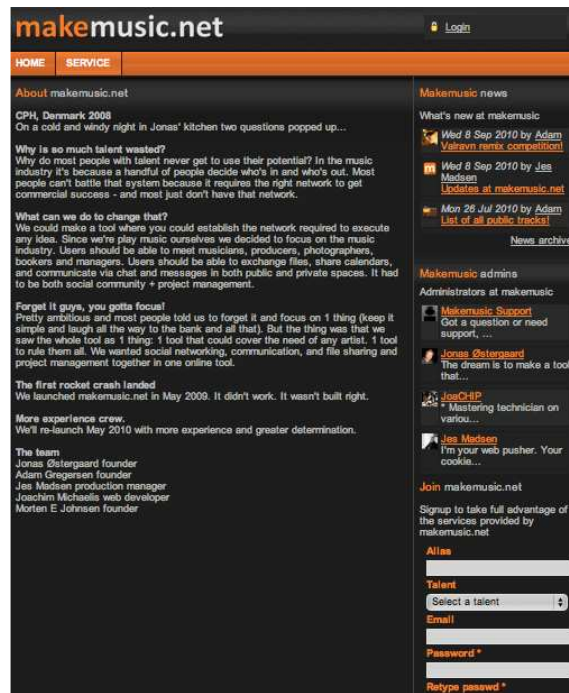
5.1.10 Mashstix (USA)

URL: http://www.mashstix.com

It is focused on the mush-ups (i.e. musical works made by mixing and re-using other songs). The main menu of the site is divided into only three sections: a window to navigate among the best mush-ups already created, a service to submit the users' work and a forums for the discussion among users. A service to rate the songs allows them to grow up the classify and get to be displayed in the display window.

The portal is aimed to users interested in musical re-mix. Its community is particularly active, with about ten mush-ups uploaded for a day.


5.1.11 Scratch Audio

URL: http://www.scratchaudio.com
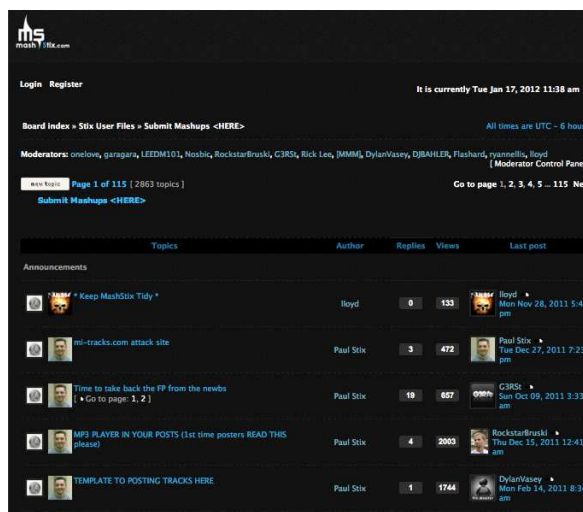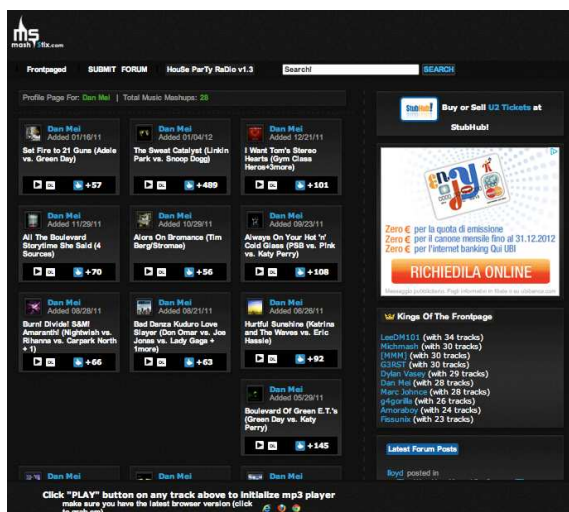
It is a collaborative environment that aims to the simplicity and intuitiveness of its interface, realized as a sequencer. It provides to the community the possibility to leave comments, a messaging system and a forum. Additional services are not offered and there are no particular innovations in terms of technical computing and by a social perspective.

The portal is aimed to amateur musicians, specially interested to the pop-rock genre. The user community has about 400 subscribers.

5.1.12 Aviary (USA)

URL: http://advanced.aviary.com/tools/audio-editor
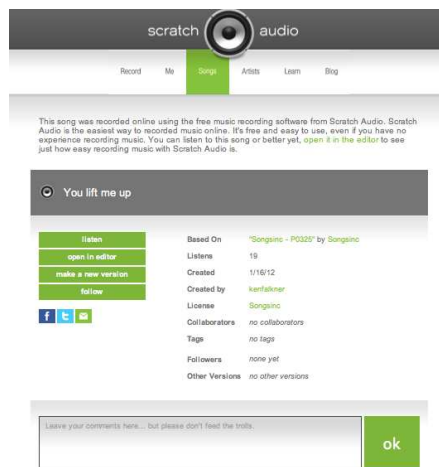
It is a separate section of the portal Myna audio editor, designed for creating music in collaborative environments. Using this framework you can access the web and other Aviary tools for mobile (tools for photo retouching, vector graphics, to create musical loops and melodies). A blog is provided. The available tools are aimed to non-professional users.

The interactive part of the portal is developed in Adobe Flash, a choice that poses a problem in terms of sustainability of the software.

5.1.13 Freesound (Spagna)

URL: http://freesound.org

It is a database for sounds files licensed under Creative Commons, it has also been used in educational settings. The sounds cover different subjects: from field recordings (soundscapes) up to synthesized sounds: they are associated with tags (Freesound offers tagging and geo-tagging), to perform research based on content. It allows viewing of the waveform and the spectral centroid of audio signals. The sounds can be retrieved using semantic descriptors.

Freesound has a very large users community, that includes professional musicians, sound designers, and amateurs.

	Up/Download	Jam session	Distribution	Rating	Forum	Comments	Shared project	Chat	Tools
OnlineBand	Si (MP3, WMA)	No	Si	Si	No	Si	Si	Si	No
ccMixter	Si (WAV, ZIP, MP3)	No	Si	Si	Si	Si	Si	No	No
DopeTracks	Si (MP3)	No	Si	Si	Si	Si	Si	No	Sound recorder
Kompoz	Si (MP3, AIFF, WAV, WMA, OGG, APE)	No	Si	Si	Si	Si	Si	Si	No
Indaba Music	Si (MP3)	No	Si	Si	Si	Si	Si	No	DAW
cocompose	Si (MP3, MP4)	No	Si	Si	Si	No	Si	No	No
Ujam	Si	No	Si	Si	No	Si	No	No	Sequencer (similare a Band in a box)
Digital musician	Si	Si	Si	No	Si	Si	Si	Si	DAW
Ohmstudio	Si	Si	No	Si	Si	Si	Si	Si	DAW
MakeMusic	Si (MP3)	No	Si	Si	Si	Si	Si	Si	
Aviary	Si (Formati proprietari)	No	Si	No	No	No	Si	No	Online Audio Editor
Mashstix	MP3	No	Si	Si	Si(blog)	Si	No	No	
Scratch audio	Si	No	Si	No	Si	Si	Si	No	DAW (loop oriented)
Freesound	Si	No	Si	Si	Si	Si	Si	Si	

The title above the table reads: **Collaborative systems to make music – summary**

5.2 Collaborative learning environment oriented to music

The second part of the survey has focused on distributed systems for the production of music designed for a use in educational environments. Each partner has analysed the selected portals from a different points of view: technologies, usability, user types, educational effectiveness.

5.2.1 Sonic Postcards (UK)

http://sonicpostcards.org

The Sonic Postcards project is an international school project which provides structured activities concerning digital audio processing and including a portal for sharing the results. The project involved about 160 schools in England, mainly primary schools, but also secondary schools and music schools. Sonic Postcard is currently developing a program of international cooperation.

User type:
Sonic Postcards started in 2004 as a national education programme, with the aim of enabling pupils from across the UK to explore and compare their local sound environments through the composition and exchange - via the internet - of sound postcards with other schools. The project involved about 160 schools in UK. Sonic Postcards is currently developing a programme of international collaboration. So far six projects have taken place, in partnership with the British Council; four projects in Chongqing, China with two schools, Numerb 11 Middle School and Shanhu Primary School, and two projecsy in Barcelona with CEIP Dolors Monserda Santapau.

Technology:
MAIN PORTAL: Custom code written in PHP
TOOLS: - Audio playback: Javascript player - Interactive sound toys: Adobe Flash - Off line: The project endorses the use of the following freeware tools - Audacity for editing wav files. (http://audacity.sourceforge.net/) - LAME lib for conversion of mp3s (http://lame.sourceforge.net/download.php) - AudioMulch for composition and performance: (http://www.audiomulch.com)

COMMENTS: The main project portal can be viewed on all devices, but the Flash components cannot be viewed on mobile devices and require users to make regular updates. Source: This information comes from a conversation with the site author

Usability and Accessibility:
Sonic Postcards, an original concept of inviting British schools to combine sound and images in order to create multi-dimensional 'soundscapes' and share them on the web, is introducing several usability issues because of the very nature of the creative process required from the users. Sonic Postcards includes two fields of digital creation: image and sound. Even though the descriptive material and the guidance offered to educators is fairly comprehensive and detailed ('Teacher Pack'), it requires from both the teachers and the students the understanding and mastery of multiple digital tools (software and hardware) in order to fully exploit the platform. Furthermore, the recommended tools are all external to the website and may lead to a fragmented user experience. However, this learning process of the creative tools being advocated as one of the main objectives of the Sonic Postcards project, it must be acknowledged here as a beneficial feature. Our main concern in regard to accessibility is the technology (or lack of) used for the sharing process of the postcards. The portal doesn't seem to offer automated uploading features, and does not offer the option to add description and introduction to the creations. As far as the documentation seems to explain, sharing a postcard is done by sending isolated files (mp3, images, etc.) to an email address. Another accessibility concern is the superabundance of text (descriptions and guidance), which compete directly with the multimedia content of the portal, and thereby diminishes the community dimension of Sonic Postcards.

Educational effectiveness:
Essentially, the project promotes multimodality in pupil's engagement with the expressive arts (music, art & design); environmental studies (social subjects) and information and communications technology. This is achieved through the exploration of sounds and different sonic palettes; the creation and design of sonic content; the collaborative compilation and presentation of sonic deliverables; visual investigation, recording and communication; the acquisition and promotion of 'awareness' about different 'environments' and/or 'contexts'. Nevertheless, the Sonic Postcards project does not really have a novel 'tool' and/or new technology to offer; it rather packages a creative idea and, by promoting a fun approach to creative practice, it provides a context and guidelines for doing so. Therefore, educational 'effectiveness' in this particular paradigm almost solely relies upon each individual's delivery and cannot really be mediated by the technology in question.

5.2.2 Sound Junction (UK)

http://www.soundjunction.org/default.aspa
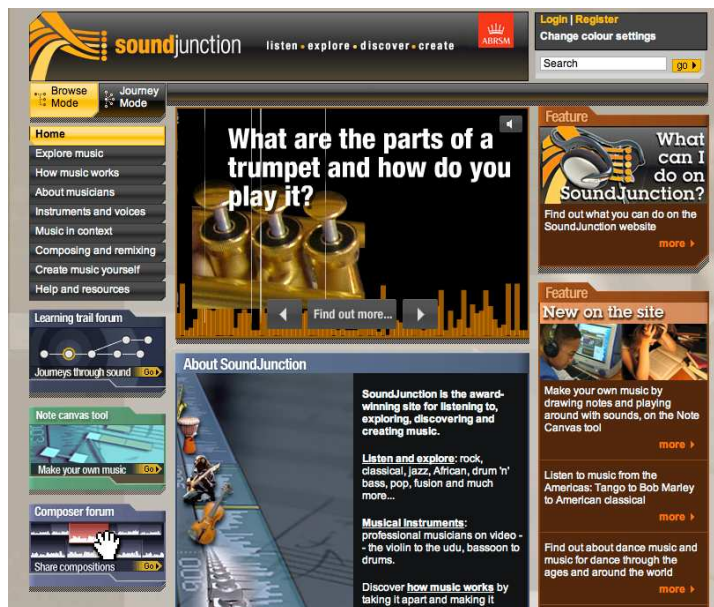
SoundJunction is free-to-use web-based tool for `exploring, discovering and creating music'. It has been produced by the Associated Board of the Royal Schools of Music (ABRSM) in association with Attic-media Ltd and designed for use primarily by young people. SoundJunction is an online resource that is conceived as an interactive, flexible, e-learning tool for engaging in musical exploration, development and creation and is supported by teacher packs for integration into the school curriculum. According to the SoundJunction website, on 3rd October 2006 the site picked up the Music Industries Association award for `Best Supplier Initiative'. Then on 4th October, it won two awards in the Association of Online Publishers (AOP) Online Publishing Awards: for `Innovation', and for `New Launch 2006'. On 9th November, 2006 SoundJunction won the e-learning award for `most innovative new product in e-learning' and on 10th November SoundJunction was shortlisted for the Bett Awards. It is clear that the initiative has been well received by the industry. The SoundJunction package has been developed in discussion with composers and a wide group of potential users in schools, as well as representatives of the music industry and those involved in the provision of music technology in the special needs sector. It si a good example of a holistic learning environment for music that also provides tools for making your own music and sharing your compositions. Unfortunately, some of the technologies are now parochial (e.g. shockwave).

User type:
SoundJunction is produced by the Associated Board of the Royal Schools of Music. It is aimed at students of music, but some of its sections are dedicated to professional musicians and composers. Contains didactic pages for the achievement of the General Certificate of Secondary Education (GCSE) in music, then aimed at English boys of about 16 years. The section for the sharing of the musical compositions had a good level of activity in the years 2006, 2007 and 2008, with an average of about 100 music products a year. There shall be no more any activity for over a year, perhaps because of the difficult access to interactive tools, based on a technology (Shockwave) no longer fully supported.

Technology:
MAIN PORTAL: Custom code written in ASP.NET, a Microsoft web application framework (part of the .NET framework) for creating dynamic web sites, web applications and services.
TOOLS: - Playback of videos: Adobe Flash - Interactive tools: Note Canvas tool, Composer forum, Learning trail forum, Composer Tool: Require shockwave & quicktime plugins. Hangs in firefox; Crashes in Safari; Hangs in Chrome.
COMMENTS: Shockwave requires the user to download updates, something that can deter many users. It is very difficult to make complex applications that work well across platforms, browsers and devices. Source: This information is derived from inspecting the site. The company who built the site (Atticmedia) have been contacted, but at the time of writing have yet to reply.

Usability and Accessibility:
Sound Junction is introducing its main purpose under the following labels, displayed in the website header: Listen, Explore, Discover, and Create. Our first remark is that these very convenient labels, which categorize the different activities offered by the website, are not used as links to sections of the website. That feature would have enhanced the ease of use of the portal to a very large extent. Instead, users are using links spread out across the page to access the specific activities offered by Sound Junction. Consequently, link hierarchy is a direct concern resulting of Sound Junction's page design, as it seems that descriptive material, help, and formal content is overpowering the collaborative and creative activities of the website. The collaborative and creative dimensions of Sound Junction are by Adobe Shockwave, and can be characterized as being interactive. Users can create, share and collaborate without leaving the portal, which enhances the user experience to a large extent, while retaining the standard concepts of music technology (score notation, piano roll editor, basic digital audio workstation concepts). As mentioned above, Sound Junction uses Adobe Shockwave to power its creative and collaborative features. Our main concern in this regard is the high probability of the user having to update the Shockwave plug-in in order to run the provided tools, which requires either the IT department of the schools to maintain their computer park up to date as far as web technology goes, or the user performs the necessary updates, which might involve permission issues on the systems.

Educational effectiveness:
The SoundJunction research evaluation paradigm[2] reminds us about the importance of looking into a technology (or tool) in situo (i.e. how it is being used by both practitioners and pupils). The published report presents the dichotomy between 'intention' and 'pragmatic use', as amplified by the diversity of 'use' within different contexts (i.e. different age groups and learning environments).

5.2.3 UMSIC: Usability of Music for the Social Inclusion of Children (UK)

http://www.umsic.org

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[2] Himonides, E., Laurence, K., Purves, R. & Welch, G. (2008). SoundJunction: A Research-Based Evaluation. London: Institute of Education, University of London. [ISBN: 978-1-905351-08-4]

The Usability of Music for the Social Inclusion of Children (UMSIC) project, run between September 2008 and August 2011, investigated the use of modern music and mobile technology to promote a greater sense of inclusion for children aged three to 12 years across Europe, especially those who may be in danger of marginalisation. The intention was to develop music software that could be used easily by children (including those that fell into the two target groups) in a variety of contexts such as at school and at home. Funded as an ICT collaborative project by the European Commission under the Seventh Research Framework Programme [Grant FP7-ICT-2007-2], the UMSIC project brought together a team of musicians, software designers, technologists, engineers, psychologists and educators from across Europe with additional support from Nokia. One of the main outcomes was JamMo 1.0, a music-making game targeted at children aged between three and 12years. It was released in July 2011 following three years of research, design and development. Two packages, JamMo 3 to 6 and 7 to 12, make use of an extensive library of specially prepared musical materials for singing, composition and sequencing produced by members of the UMSIC team in collaboration with 23 professional instrumentalists and singers in Finland and the UK.

User type:
The UMSIC project targeted two main groups of children deemed to be at particularly high risk. These included newly migrant children growing up in bi-cultural contexts and children with moderate learning difficulties (such as attention deficit disorders) [cf UNESCO, 2010].

Technology:
MAIN PORTAL: Joomla (PHP, MYSQL). TOOLS: - Juke box: Joomla extension: Pro Magic Audio Player - Song bank & sound and loop bank: Joomla extension: Music Collection Module - Discussion forum: Joomla Bulletin Board - Offline (JamMo): The project was carried out on mobile devices. The main interaction system makes extensive use of JSON (javascript object notation) and the Engineering and Authoring modules are bespoke and built using GObject, a free software library providing a portable object system and transparent cross-language interoperability. Source: This information was gleaned from documentation available online.

Usability and Accessibility:

The UMSIC project was materialized through the release of a program called Jammo, run primarily on Nokia mobile devices featuring touch interfaces, but also made available in a later phase of the project for Ubuntu (Linux) desktop computers. The activities offered by Jammo consist in games involving music creation of memory training for younger pupils (ages 3-12). The focus of these games seems to have been put on the intuitive use of the tool's features with the help of a simplistic interface supported by cartoon-like characters and other graphic elements. Besides the pro-active activities of Jammo which introduce pupils to music creation standard processes and automatisms, the platform also includes a community where users have a profile where they may share their creations and results. Deploying Jammo to a mobile platform featuring a touch interface seems like a very considerate choice in regard to the familiarity of younger students with such devices, or the need to become familiarized with them as their use rises exponentially. Such devices are designed with usability and accessibility perspectives set to the fore, and the limitations in regard to application developments on mobile platforms are usually at the benefit of user-friendliness, intuitive interfacing, and functionality efficiency. We may however wonder why development was targeted at two specific Nokia devices as a unique physical platform, since the specifications of the compatible units do not seem to be the most suited for digital music creation, one of which is even described in Jamo's documentation as having too much latency to be used with several of the available activities.

Educational effectiveness:
Partners worked with over 1,400 children, including 345 children across the final year of the project, to assess the effectiveness of the design and its suitability. The assessment protocol included measures of children's social inclusion as well as their music-making. The data provide evidence to suggest that mobile technology has a particular attraction to young children and that it can be a useful tool to promote both musical and social benefits. According to the UMSIC project deliverable report[3]: There is some evidence that participants (including migrant participants and children with special educational needs) felt more socially included on post-test questionnaire (i.e. after JamMo sessions) than they did on pre-test questionnaire – although the cause and effect remain less clear. Nevertheless, classroom observation by the adults involved (teacher, teaching assistant, researchers) also noted that children were collegiate in their approach to JamMo. In particular, many participants considered as less socially included by the teacher and the teaching assistant enthusiastically engaged in JamMo activity. Furthermore, many migrant children and children with special educational needs engaged in the activity. They reported (and were observed) to enjoy JamMo a great deal (p.137).

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[3]http://www.umsic.org/D9.2.pdf

5.2.4 Gigajam online (UK)

http://gigajamonline.com

It is a portal that provides a variety of educational materials to learn to play some musical instruments. Resources include written texts, audio samples and video lessons, conducted by professional musicians.

User type:
The portal offers lessons and tutorials to learn to play a musical instrument, in particular electric guitar, electric bass, keyboards and drums. The limited number of supported musical instruments indicates that the target users of the portal are young, interested in pop-rock genres. The subscribers to the service are over 1100. Despite this, the level of participation in the discussion is quite low, with just over 300 posts in the last 3 years.

Technology:
MAIN PORTAL: Bespoke code written in ASP.NET.
TOOLS: - Online lessons: Currently HTML and Flash, but the company plans to move to HTML5 - Community: YAF - http://yetanotherforum.net/ - Offline: Xtractor analyses MIDI input to give feedback on lessons. Bespoke code written using the Microsoft.NET framework. - Third Party: The Studio lesson is based on Steinberg's Sequel 2 for which there is a 45 day free trial
COMMENTS: The company has sustainability and ubiquity concerns over the use of Flash for the delivery of their online multimedia content and plans to move to HTML5 in the near future. Their philosophy is to create as simple an experience as possible in order to support learning. Source: This information was provided from email and telephone conversations with Brian Greene, Director of Gigajam.

Usability and Accessibility:
The main aim of Gigajam Online is online instrument and music theory tuition via video lessons and via the performances of musical exercises executed with a MIDI controller and evaluated by a software program. In this sense, the collaborative and creative aspects are very limited and are mainly taking place within the frame of a standard user forum. The user is mainly watching

instructional video material on the website and training his instrumental skills in tuition software. Link hierarchy and easy access to the main features of Gigajam Online make the web portal rather intuitive to use. However, the software used to carry the tuition seems outdated and requires the use of non-standard component: .Net Framework on Windows, external Quicktime plug-in on Mac, and the Mac version of the software is made for older PPC machines which were discontinued several years ago and not supported any longer as of OS 10.7 Lion. For a younger user base, this might lead to a negative first impression of the system regardless of its pedagogical worth, and a diminished interest of the platform over time.

Educational effectiveness:
The nature of the educational experience is therefore mainstream and quite 'didactic'. Collaborative practice and engagement in collaborative activities is not particularly evident. Informal learning is though central to Gigajam's ethos and certain examples do exist that add value to the experience (e.g. the performance analysis and email feedback from instructors).

5.2.5 Musinet (Italy)

http://www.musinet.eu

It 'a pilot project to ensure access to innovative ICT-based materials (eg, multimedia educational materials, websites and e-learning) to a large number of people. The project aims to contribute at improving the quality and foster innovation in vocational training. These two objectives operate in an integrated manner so that tools, methods and concepts, as well as concrete materials which are developed during the project, can be used or adapted to changing environments.

User type:
The project is aimed at students of secondary schools, with no particular musical skills. This is a pilot project that has been experimented in 15 schools located in southern Italy.

Technology:
MAIN PORTAL: Microsoft ASP.NET TOOLS: N/A Source: This information was derived from an inspection of the site.

Usability and Accessibility:
The evaluation of Musinet's usability needs to be placed into the temporal context to which it belongs (2002-2004). As argued in Musinet's project descriptions, the use of digital tools for music creation in schools was poorly developed in 2002, and Musinet was in that sense having different objectives than those of Open Sounds. The dissemination of the project's material was to intended as a guide to digital self-production, which could then lead to sharing ideas and reflections on the portal. In 2011-2012, the possibilities of digital creation are better known and the tools more potent and diverse. Musinet's website is intuitive but also somewhat conformist. The nature of the project

resulted in giving the project's background information, research and dissemination most of the focus, whereas the creative functionalities are difficult to find and, therefore, to access.

Educational effectiveness:
One needs to look at the Musinet initiative from an appropriate perspective, and within a different temporal context. Regardless, it is rather extraordinary to witness the research team's insight and informed intuition regarding the social-centrality of learning with technology at that early juncture. This project essentially framed the overall ethos of European Research in the field during the years that followed.

5.2.6 NetMusic (Italy)
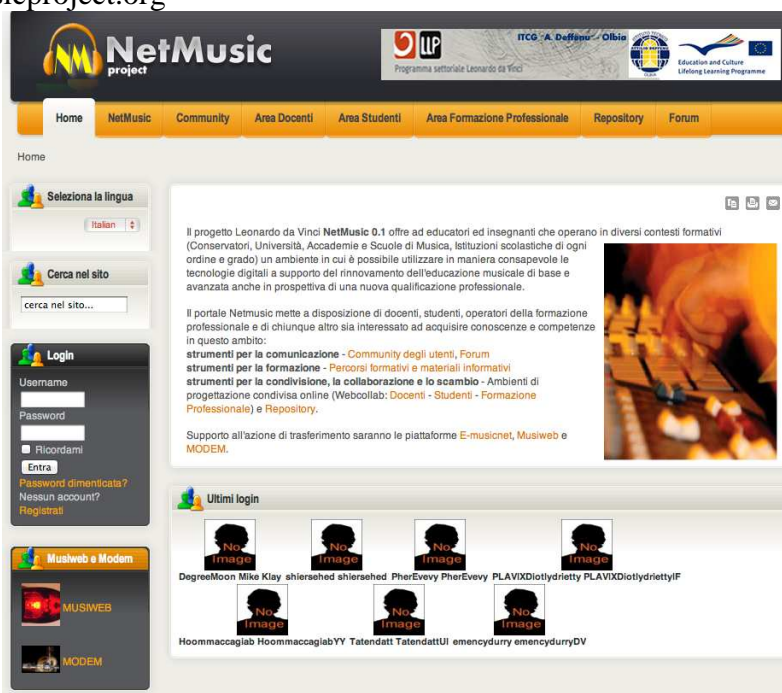
http://www.netmusicproject.org

It provides teachers, educators, students, professional operators tools to communicate (users community, forum, groupware), learn (teaching and learning pathways, formative materials and papers), collaborate and exchange (a web enviroment for the project management, WebCollab, and a repository where upload and download projects).

User type:
The project started to experiment alternative educational activities in schools of all levels, with particular attention to music conservatories, music schools and vocational schools, primarily Italian. The presence of bilingualism has subsequently facilitated the formation of a community at a international level which has over 1500 members from 97 countries. The most present countries are the United States and Italy.

Technology:
MAIN PORTAL: Joomla 1.0 (PHP SQL, LAMP)
TOOLS: - Social networking & Subscription Management software: Community builder (Joomla extension) - Forum: Fireboard (Joomla extension) - Collaborative project management: Webcollab (http://webcollab.sourceforge.net/) - Repository: DOCman (Joomla extension) Source: This information was derived from an inspection of the site.

Usability and Accessibility:
In direct filiation with Musinet, NetMusic shares the same aims as its predecessor, but does it in a more user-friendly and structured way. Using familiar and solid technology (Joomla), the menu structure and the general navigation on the portal is fluid and natural. The different sections of the portal are organized following user-oriented areas of interest, such as a teacher area, a student area, a community, an information sheet on the project, etc. The main negative concern we have regarding NetMusic is its community feature, mostly because of its impersonal profiles due perhaps to the lack of music-related descriptive fields. The amount of information offered on NetMusic seems equivalent or perhaps superior to what was available on Musinet, but its access is benefitting tremendously from a better organized navigation and link structure, as well as highly efficient Joomla web design elements which are in phase with a standardized web user-experience.

Educational effectiveness:
Following the impact of Musinet, the NetMusic team was employed to perform a systematic 'migration' (i.e. 'transfer') of all Musinet findings and information into a holistic environment that fosters digital creativity but also provides research-informed evidence about the power and potential of such a relationship. This initiative fit under the collective European ethos regarding the importance of the development of skills and competencies of young people but also the promotion and reinforcement of the contribution of vocational training and the lifelong acquisition of skills and competencies, with special attention to fostering co-operation. The foresight for structuring such a project is commendable and, once again, celebrates the importance of incorporating modern digital -and collaborative- technologies in music making.

5.2.7 Musiweb (Italy)

http://www.e-musiweb.org
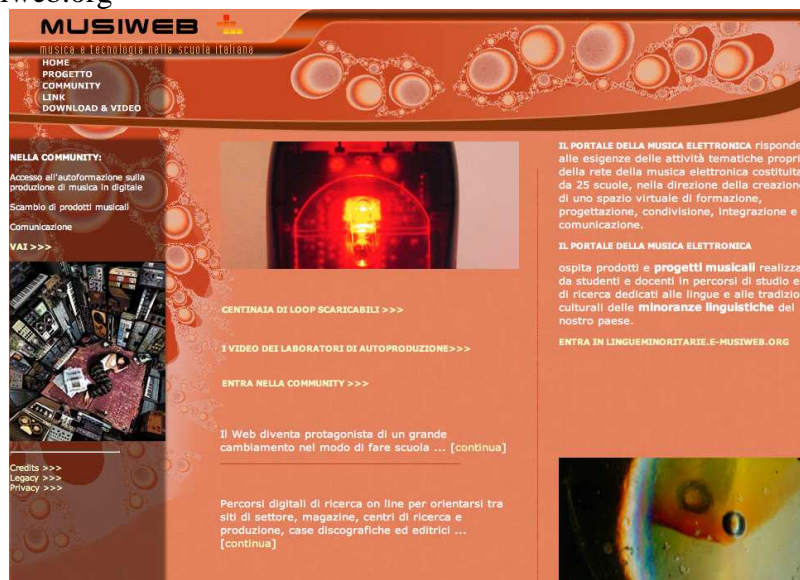
It is an Italian portal that provides educational resources on computer music. It meets the thematic needs of the network of electronic music made up of 25 schools, in the direction of creating a virtual space for training, design, sharing, integration and communication. In addition, the portal offers products and musical projects done by students and teachers, and researches devoted to languages and cultural traditions of linguistic minorities in our country.

User type:

The portal is aimed at students in Italian schools. The experiment involved 25 secondary schools, located in southern Italy.

Technology:
MAIN PORTAL: Microsoft ASP.NET
TOOLS: - Video streaming: Adobe Flash Source: This information was derived from an inspection of the site.

Usability and Accessibility:
Musiweb, being a pre-MODEM project limited to Italian schools, was disseminated in the Italian language only and doesn't offer information n other languages. The assessment of its usability is therefore focusing mainly on design considerations. Being made in 2005, Musiweb is characterized by a static page format where user input is conveyed to specific areas of the site, such as the community area for instance, where users can share experience on good practices, use a database of sound samples, and find advice on the use of ICT for educational purposes. Access to the collaborative areas of Musicweb is closed to unregistered visitors, which is a useful feature to protect the privacy of the students, but it also means that Musiweb isn't showcasing its collaborative and creative features by other means than descriptive texts and other formal content, and that the results of the project's research is not shared to a full extent with schools or students that are not registered on the platform.

Educational effectiveness:
The Musiweb portal provided online access to self-paced learning modules focusing on the utilisation of specific digital tools for music creation; the exchange of creations amongst peers, and inside a secure learning digital environment; access to raw musical material for further development of musical ideas. This, once more, is a powerful exemplar of a highly creative and intuitive initiative that celebrated —nearly eight years from the time of writing— notions and educational principles that are currently endorsed by Governments and Educational policy makers across the world.

5.2.8 MODEM (Italy)

http://modem.netsoundsproject.eu

The MODEM community is for european artists who wish to colloborate to create music without needing to be in the same location. The forums provide the basis for communication where music projects may be initiated and managed. MODEM provides tools for the uploading of original tracks and mixes.

User type:
The portal is aimed at students of music schools in Europe. Currently, members are about 40 and in the last 12 months they have shared a dozen music tracks.

Technology:
MAIN PORTAL: CChost (PHP SQL, LAMP)
TOOLS: - Multimedia Sharing and collaboration: CChost (PHP SQL, LAMP)

Usability and Accessibility:
The MODEM portal combines several of the features that we have reviewed in this report into one well-organized, feature-rich multilingual website (English, French, Italian and Spanish) for cross-border collaborative music creation and sharing of good practices. It is very apparent that MODEM is built upon years of experience in community building gained through prior similar projects, and the main beneficiary of this experience is the user who is offered an integrated solution for digital music collaboration in pair with more commercial products, but without the bias and economic barriers of such solutions. The creative part is featuring an online sequencer made in Flash with a very intuitive user interface and a comprehensive user guide found in the help pages. Besides enabling the user to have a fully-integrated experience (i.e. not having to leave the portal for offline recording), the online sequencer also carries the idioms of digital audio workstations and can therefore also be assessed as a pedagogical introduction to the world of digital music production. The collaborating page is also fully integrated into the portal, letting users upload files, comment on them, and participate to projects initiated by other users. Access to the creative, collaborative, and informative features of the website is done through a horizontal navigation bar which is accessible everywhere on the portal. The navigation on the portal is fluid and easily interpreted by the user. Vertical navigation on the left side of the website links to background information and descriptive sections of the project. The registration procedure to MODEM is following standardized of user registration concepts and should by no means refrain users from using the features of the portal.

Educational effectiveness:
MODEM is a very well thought out, researched and implemented web of technologies and resources that provides ground breaking support to students/artists across Europe. Overall, the collection of resources within Netsounds appears to be highly impressive. Users are provided access to a plethora of material (e.g. good practices, video resources and tools). The modem interface is intuitive, creative and is perceived to enable users to engage in creative discourse across Europe within a secure, supportive, accessible and intuitive environment. One would really have to try very hard in order to find a point of recommendation to the research and development team; this is an impressive resource.

5.2.9 MinMusik (Denmark)

This portal funded by the Mid-Jutland region in Denmark is under development. It is supposed to be released in the start of 2013. The aim of the project is to develop a social network website for music students from age 9 to 18. Very similar to FaceBook and other social networks in regards to its layout and functionalities, it is singularized by additional features relevant to musicians and music students such as collaborative music making.

Technology:
MAIN PORTAL: Existing community platforms (Wordpress, Joomla, Drupal)
TOOLS: - Multimedia Sharing: Standard 3rd party intermediary solutions: SoundCloud, You Tube etc. Source: Development was scheduled to commence in Nov 2011. Existing reports, (kindly translated by Quentin of EARMaster) imply that the above technologies will be used.

Educational effectiveness:
The incorporation of technology within particular socio-cultural contexts in order to foster social inclusion and celebrate creativity is something that is becoming highly popular globally. This was also witnessed with the UMSIC European research project (presented above). Current literatures support the notion of focusing on the social (i.e. collaborative and communicative) aspects of creativity, a field that is immensely benefited by modern technological innovation.

Comments:
The portal is not currently on-line.

Comparative framework of the educational portals aimed to the collaborative and shared production of music, with regard to the partner countries UK, IT and DK (collaborative learning environment oriented to music)

The following table compares and summarizes the main characteristics of the portal analysed by the survey.

Collaborative learning environment oriented to music – summary					
Name:	Tecnology	Comments	Usability	User type	Educational effectiveness
Sonic Postcards	PHP, Javascript, Adobe Flash	The main project portal can be viewed on all devices, but the Flash components cannot be viewed on mobile devices and require users to make regular updates.	The descriptive material and the guidance offered to educators is fairly comprehensive and detailed.It requires from both the teachers and the students the understanding and mastery of multiple digital tools. The recommended tools are all external to the website and may lead to a fragmented user experience.	The project involved 160 schools in UK. Sonic Postcards is currently developing a programme of international collaboration.	Essentially, the project promotes multimodality in pupil's engagement with the expressive arts , information and communicatios technology. The Sonic Postcards project does not really have a novel 'tool' and/or new technology to offer. Therefore, educational 'effectiveness' in this particular paradigm almost solely relies upon each individual's delivery and cannot really be mediated by the technology in question.
Sound Junction	ASP.NET, Adobe Flash	Shockwave requires the user to download updates, something that can deter many users. It is very difficult to make complex applications that work well across platforms, browsers and devices.	The collaborative and creative dimensions can be characterized as being interactive. Users can create, share and collaborate without leaving the portal, which enhances the user experience to a large extent, while retaining the standard concepts of music technology.	The section for the sharing of the musical compositions had a good level of activity in the years 2006, 2007 and 2008, with an average of about 100 music products a year. There shall be no more any activity for over a year.	The SoundJunction research evaluation paradigm reminds us about the importance of looking into a technology (or tool) in situo (i.e. how it is being used by both practitioners and pupils). The published report presents the dichotomy between 'intention' and 'pragmatic use', as amplified by the diversity of 'use' within different contexts (i.e. different age groups and learning environments).
UMSIC	Joomla, PHP, MySQL	The project is aimed at children, but give useful information about JamMom, a specific software	Besides the pro-active activities of Jammo which introduce pupils to music creation standard processes and automatisms, the	The UMSIC project targeted two main groups of children deemed to be at particularly high risk. These included newly	Partners worked with over 1,400 children, including 345 children across the final year of the project, to assess the effectiveness of the design and its suitability. The assessment protocol included measures of children's social

Partner logo

		developer for Nokia mobile devices.	platform also includes a community where users have a profile where they may share their creations and results.	migrant children growing up in bi-cultural contexts and children with moderate learning difficulties.	inclusion as well as their music-making. The data provide evidence to suggest that mobile technology has a particular attraction to young children and that it can be a useful tool to promote both musical and social benefits.
Gigajam	ASP.NET	Commercial product, it is important to assess the technologies on offer as well as the user experience, as it is highly popular and successful	Link hierarchy and easy access to the main features of Gigajam Online make the web portal rather intuitive to use. However, the software used to carry the tuition seems outdated and requires the use of non-standard component. The Mac version of the software is made for older PPC machines which were discontinued several years ago	The portal offers lessons and tutorials to learn to play a musical instrument, in particular electric guitar, electric bass, keyboards and drums. The subscribers to the service are over 1100. Despite this, the level of participation in the discussion is quite low, with just over 300 posts in the last 3 years	The nature of the educational experience is therefore mainstream and quite 'didactic'. Collaborative practice and engagement in collaborative activities is not particularly evident. Informal learning is though central to Gigajam's ethos and certain examples do exist that add value to the experience (e.g. the performance analysis and email feedback from instructors).
Musinet	ASP.NET	It is a pilot project, aiming at guarantee a larger number of people the access to innovative materials based on TIC (i.e. multimedia didactic material, websites and distance tutorship)	Musinet's website is intuitive but also somewhat conformist. The nature of the project resulted in giving the project's background information, research and dissemination most of the focus, whereas the creative functionalities are difficult to find and, therefore, to access.	The project is aimed at students of secondary schools, with no particular musical skills. This is a pilot project that has been experimented in 15 schools located in southern Italy.	One needs to look at the Musinet initiative from an appropriate perspective, and within a different temporal context. Regardless, it is rather extraordinary to witness the research team's insight and informed intuition regarding the social-centrality of learning with technology at that early juncture.
NetMusic	Joomla, PHP, MySQL	it provides teachers, educators, students, professional operators tools to communicate (users community, forum, groupware), learn (teaching and learning pathways, formative materials	The menu structure and the general navigation on the portal is fluid and natural. The different sections of the portal are organized following user-oriented areas of interest, such as a teacher area, a student area, a community, an information sheet on the project, etc. The	The project started to experiment alternative educational activities in schools of all levels, with particular attention to music conservatories, music schools and vocational schools, primarily Italian. The presence of bilingualism	Seguendo l'approccio di Musinet, il team di NeMusic è stato impegnato nel trasferire scoperte e contenuti di Musinet all'interno di un ambiente olistico, che favorisce la creatività digitale, fornendo evidenze sperimentali sul potenziale delle attività collaborative. Questa iniziativa è conforme alle linee guida europee riguardo l'importanza di sviluppare le abilità e competenze dei giovani, promuovendo e rinforzando al tempo

		and papers), collaborate and exchange (a web enviroment for the project management, WebCollab, and a repository where upload and download projects).	main negative concern we have regarding NetMusic is its community feature, mostly because of its impersonal profiles due perhaps to the lack of music-related descriptive fields.	has subsequently facilitated the formation of a community at a international level which has over 1500 members from 97 countries.	stesso il contributo della formazione professionale e dell'apprendimento permanente, con particolare attenzione alla cooperazione.
Musiweb	ASP.NET	Italian portal of educational resources on computer music.	The project is limited to Italian schools and was disseminated in the Italian language only. It is characterized by a static page format.	The portal is aimed at students in Italian schools. The experiment involved 25 secondary schools, located in southern Italy.	The Musiweb portal provided online access to self-paced learning modules focusing on the utilisation of specific digital tools for music creation; the exchange of creations amongst peers, and inside a secure learning digital environment; access to raw musical material for further development of musical ideas. This, once more, is a powerful exemplar of a highly creative and intuitive initiative that celebrated —nearly eight years from the time of writing— notions and educational principles that are currently endorsed by Governments and Educational policy makers across the world
MODEM	CChost, PHP, MySQL	Framework for the creation of creative musical project developed on the Web.	Multilingual website (English, French, Italian and Spanish), it offers an integrated solution for digital music collaboration. The creative part is featuring an online sequencer made in Flash with a very intuitive user interface and a comprehensive user guide found in the help pages. The navigation on the portal is fluid and easily interpreted by the user. The registration procedure to MODEM is following standardized of user registration concepts	The portal is aimed at students of music schools in Europe. Currently, members are about 40 and in the last 12 months they have shared a dozen music tracks.	MODEM is a very well thought out, researched and implemented web of technologies and resources that provides ground breaking support to students/artists across Europe. Overall, the collection of resources appears to be highly impressive. Users are provided access to a plethora of material (e.g. good practices, video resources and tools). The modem interface is intuitive, creative and is perceived to enable users to engage in creative discourse across Europe within a secure, supportive, accessible and intuitive environment.

			and should by no means refrain users from using the features of the portal.		
MinMusik	Existing community platforms (Wordpress, Joomla, Drupal)	Portal funded by the Mid-Jutland region in Denmark is under development. It is supposed to be released in the start of 2013. The aim of the project is to develop a social network website for music students from age 9 to 18.	The portal is not currently on-line.	The portal is not currently on-line.	The incorporation of technology within particular socio-cultural contexts in order to foster social inclusion and celebrate creativity is something that is becoming highly popular globally. This was also witnessed with the UMSIC European research project. Current literatures support the notion of focusing on the social aspects of creativity, a field that is immensely benefited by modern technological innovation.

6   Conceptual framework of the learning environment

The OPEN SoundS project promotes a meaningful example of transferability in systems of different forms of access and building of knowledge informally developed on the Internet by its young users.

The Open Sounds background is that of creative collaboration on the Internet in different countries for the creation of music or complex multimedia projects. It considers the world of Virtual Studio Recording for professionals and advanced sharing asset systems for management on the Internet. Also considered are projects of knowledge archives or knowledge management systems created by the contribution of users and experts of all over the world.

Open SoundS thinks and looks at *now and present phenomenon of remote interaction as a widespread working usual practice.*

Thecurrent landscapeof the useof portalsforremote collaboration, as demonstrated by theresultsof research, is extremelydiversified for sizeand type of servicesoffered. Indeed, there arerealityquite distinctandverydissimilar, which preserveas common elementsthe presenceof aconstant andgradualexpansion ofthe entire sector.

Throughtheresearch activitywas completedthe analysisand evaluationof:

- the mostimportant sectorial web portalsexisting in general on the Net, then focusing the analysis to those directed to the learning environment of the partners of the project;
- the **compatibility of most inovactive practices**developedinside themwith theformal education systemand, of course, the **assessmentof theireffectivepossibilityto be integrated in the phase of re-planning and re-organization of the MODEM platform** to the transfer purposes.

The proposals processed to this purpose by the partners of the project have been shared and deeply discussed during the II° meeting of the project organized in Padova and during the seminar, organized by the University of Padova, dedicated "to the consideration on the survey results and on the sociological and technological main aspects of the re-organization of the MODEM platform to the transfer purposes.

The most significant results of these considerations are presented in the next pages, where it will be outlined, consistently with the survey results, the **conceptual framework that will direct on the pedagogical and technological level the re-planning and the development** of the:

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

- **building shared practices of the knowledge and of the competence in the music field feaseble by the european students network builded through the project**

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

- framework of the learning aims that will direct the evaluation process of the experimentation results in terms of knowledge, skills and competences acquirable by means of practices realized inside it

6.1 *Web portals to remote collaboration*

The main phenomenon to understand the proportion of development on the Internet is to reflect on its features developing a better vision of its use by Communities and about OPEN SoundS, by musicians that cooperate online share projects.

Some of the features of the Networks:
- they are not only connections
- contents, on the contrary of the Internet technical typology are not rigidly determined by its inventors
- the Internet forces to learn how to use it
- Internet does not exist without using it

Networks are
- Interactive
- In progress
- Collaborative

Networks without streams of knowledge that pass through do not have sense. Knowledge enters on the Internet has two main relevant features:
- to replace operations to woks
- to replace representations with new knowledge production

In other words, on the Internet **knowledge is dynamical, interactive, in progress and collaborative as Networks offering hospitality.**

Interconnecting knowledge operates only on the Internet. It exists because the Internet exists. Some knowledge exists and can be used/spread/modified by others (in the community of open source software for example or in that of musicians). Knowledge has the dynamic framework of a biological organism that adapts itself to the environment (the Internet) that feeds, sustains and welcomes it but forces it to endless adjustments to survive.

Everywhere the interconnecting networks and knowledge force us to sustain as authors/consumers of Knowledge, an interrupted identity game (building of our knowledge as "to know who I am" and "to know what I have") and a permanent interface with a machine that brings to knowledge that I do not have. This game gets through the borders between machine and man, between the semantic and binary code. The interfacing process with machine explains the overall organization of our society (a machine for definition)

Knowledge cross many translations (between different media, electrical signals, binary codes, semantic syntaxes and programme codes, auditory and visual perceptions, emotion and rationality). We are active and passive producers of technologies we use and of contents that they carry. We have to underline the result of this change:

- In communication knowledge is used on the Internet
- Networks carry knowledge everywhere

Nowadays we have at disposal multimedia technologies that are not neutral to express us.

As   technologies of the word (that translated the rational thought and have been building for three millenniums the only approach to knowledge by man) those of image and sound shape the form of the thought and of the soul, and therefore the individual and its culture.

In the world people are reflecting on the impact these new and powerful means of expression have and will have, not only in their didactic use to transmit knowledge, but in general as a new way of thinking, organizing and placing it in environments where the thought acts.

The new kind of thinking, learning, creating, located in spaces with a reticular and virtual structure, mediated by computers and realized by the digital technologies, it is assuming the medium itself as a specific place to build and realize not only a tool but to become an active place of thought and action (as once was only the word and the writing).

In these environments the thought realizes, becomes culture in practices and handmade tools of the personal creativity.

How is this innovative activity creative? Nowadays in exchanging web portals more frequently in use as www.myvirtualband.com, www.icompositions.com and www.ccmixter.org, http://www.mi7.com, exist tools to talk, exchange information, competences (social networking area), upload and download file (technical areas, database and tools) and informative areas, both technical and general (for visitors, the so called world outside the community).
This kind of spontaneous "organisms" created by communities have a double use: they are as harbours to reach where to exchange our own "goods" at the same level and on the other hand they are "shops" where learners meet to improve together and where a more experienced learner comes out to start leading the common work till the upper level of competence where someone else will take the leadership.

After a certain period of time the well-structured and "advanced" web portals start to have economical ambitions for sustaining the community and transforming themselves in companies or they have bought by companies. The survey carried out by the OPEN SoundS consortium has clarified these and other aspects of the phenomenon of web portals for remote collaboration.

Nowadays to explain the qualitative phenomenon on the Internet exist communities of major social networking as MySpace.com, with more than one million users in the world and 12 millions are members of the 3 millions of music groups that have their place the community within.

And there are niche communities, made by thousands of active members, and we put our attention on these, because they are the most suitable to the educational view of the OPEN SoundS project, with the aim to model their behaviours and to transfer them in our work environment.

6.2 Music and Social networking

Considering this world and the modern structures of the Internet that encourage asynchronous exchanges, now we can try to describe the OPEN SoundS Training Model as thought in the project to develop a remote collaborative learning environment and to supply to its users the necessary training tools effectively use it.

This double objective reflects naturally on the web portal framework, both in its public (informative and institutional) and operative phase (the area where will take place its shape and where the resources will be at disposal of users of the web portal should use them to produce Remote Transnational Projects).
The Learning Area Model described both in its contents and technology as it follows is the most important outcome of the project.
The Base level will be used to create joint and several learning groups, the Advanced level will be dedicated to sharing activities of materials and knowledge in the Transnational Learning Community.
For both these levels will be created appropriate support tools coherent with the learning processes proposed and, more in general, with the use of the collaborative environments existing 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 set up.

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 the new media the logic of database (paradigm) prevails on narrations (syntagm) reversing the consolidated relationship in the natural language and sequential writing.
In texts words are in line in sequential chains that have sense hiding the paradigmatic side (the major database of words where have merged represented by the dictionary of a certain language) in new mass media that (links, videos, audio, photos, icons, buttons, objects and their behaviours) is always there in front of us in the screen and the sequences of links/actions done by us – the so called "surf the Internet" – create the narration (it means what the surfing produces as for example to collect data, new contacts, play or cultural experiences)
As in the major database we extract words we need to tell/write our ideas, in the major archive of the Internet, or from the restricted database at our disposal in OPENS SoundS we can extract and collect what we need to create projects to share on the Internet.
Samples, loops, music and other people's experiences will be used as a database, on the logic of the Internet, to build up our projects/speeches to send in the exchange area and to have/press some replies, in the shape of sonorous integration, qualitative improvement, refuse, verbal or written suggestions to change/improve our 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 technologies of the field (music) and that of communicative technologies (the Internet and the remote collaboration),* aiming from the beginning, in the logic of the OPEN SoundS project to integrate the two competences.

On the educational plan the consequences can be identified at two levels of innovation: conceptual one and operative one.

Conceptual innovation

Besides the logic-deductive-linear thought that has shown in the alphabet and in its tool during the centuries in press technology, 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 introduce the paradigm being complex and multi dimension and as a logic consequence it produces the destruction of consolidated centralities by traditions introducing the a-centrism and/or the multicentrism. This causes a crisis of hierarchy knowledge (science and art, cultured and worldly knowledge etc.) and comes alongside a simultaneous opening to the contamination of knowledge, transversal codes and usual practices.

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

- complex and multi dimension knowledge (Morin, Varela, Prigogine);
- Knowledge as a choice between word and silence between prospectives always different (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 these perspectives anticipate, create and/or reflect on the impact of machines, of logic automatic processes, on the various, new, executive and communicative creative methodologies linked to technology and to the most recent digital and of the Internet, evaluating the cognitive, pedagogical, play and functional aspects.

New technologies are changing certainly the concept of knowledge and literacy. What does it mean to boys in training literacy to media?

The (new) literacy involves to be able to and to have skills for:
- living in our time being surrounded by media
- communicating fluently using old and new media, comparing, choosing and evaluating texts, images, sounds and videos
- understanding and screening the meaning of multimedia messages that form our environment
- understanding and managing the difference between virtual and real, fiction and reality, communication and advertising

Operative innovation

It means to be able to develop creative contents to cross Networks and new social environments that have been formed within (virtual communities).
The mass media literacy lets to develop creative contents using new media 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 remains to underline the role that new media provide being innovative means (they have produced and produce new kinds of jobs, thought and organisation) and develop ones (new professional groups are trained by the Internet and technologies that innovate, change and improve what exists)
Typical examples are the open source in all its aspects, communities that play and produce games and technologies linked to them, the musical field of self production and online independent recording companies too.

It is necessary to underline and to point other aspects that make these innovations particularly meaningful for their consequences on the training and educational plan linked to the conceptual and operative innovation produced by practices on the Internet in music and/or creative environment.

In this direction the most interesting results merged by the analysis of the practices developed in music web portals analysed in the survey and that we intend to point out as follows:

- learning is always in progress
- team works and communities are born and always in progress
- the creative element is essential in the process
- team works and sharing project can be defined only belonging to a 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 quality product
- Improvement of the individual and of its competences in a team work is realized mainly by a criteria of skills to support creativity and quality
- Build competence and knowledge based on skills to develop creative projects
- Communication leads to build constant meeting
- Resources to use are its own and supplied by all participants

6.3   The environment to build

The most important objective of OPEN SoundS is to develop a remote collaborative learning environment and to supply to its users the necessary training tools to use it effectively.
This objective is achieved in the project by combining two parallel phases:
- the technical content plan – reorganizing, starting from an existing model and from the study of similar environments present on the Net, a Remote Collaboration area where to develop sharing music productions even though not in the same place.
- the cultural content plan – the creation of learning environments to support the acquisition of technical competences, specifically regarding creative environments and software for music production and the more general competences 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 remotely and creative expression and at the same time   to build transnational community of peers that through the creation of common musical productions, develop constructive and larger learning processes.

The environment we are going to build 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)
- l'individuazione degli obiettivi formativi e delle competenze che si ritiene possano essere perseguiti dai ragazzi mediante le pratiche sviluppate in tali ambienti
- Individuation of thelearning objectives andcompetenciesthat we believe tobepursuedby the studentsthroughthe practices developedin theseenvironments.

Reflection on the virtual environment to achieve has therefore beendevelopedintegratingtechnological level andpedagogical one, towards ause of technologyin school andtraining systemthat includes:

a)   variety andcomplexity ofcreative actionsachievable inteam of   working and project   common geographicallydislocated;
b) knowledge of the newpsychological profilesand newvalue-maps that guidechoices, attitudes andsocial practices, virtualand real,of the people;
c)   the   construction   ofvirtual   learning   environmentssupported   bytechnologythat   allows itsconstantreconfigurationin relation to eachnew acquisition, in technological andcommunication terms.

6.3.1 The learning environment

In the model platform planned by OPEN SoundS, the learning environment will be essentially **participated** and **led to planning.**

A) It must be <u>participated</u> it means to maximize the participation, intended as a chance to students to express motivation, passion to do.The condition of motivation, their emotional involvement in experience is a necessary condition so that the work and project team that are born having as aim that to realize share music products that can be in progress and develop

Because reason to participate as a central element of the process must not be discouragedbut improved, the learning environment should have some relevant features:

- participation in each activity will be natural.
- Creative/music products as the core of the project should be commonly shared.
- Interaction forms will be different (so many different languages) (lyrics, audio, ideo etc.) to realize in different communication environments (different project areas but also chats, forums, blogs etc.).
- Different contributions will be guaranteed at a minimum standard competence and importance to guarantee constant and growing interest for a sharing activity.
- Production and legitimacy of creative productions realized must be constantly shared.

In this learning environment the role asked to teachers, tutors, educators and any other intermediary or people that make an easy access to the platform planned to be used in an educational and training environment as in self learning paths is that to:

- Express a sensitive and moderate leadership
- Develop suitable helping competences
- live and increase the emotional experience elements that are the key for the active share to projects realized in a virtual team work
- guarantee the acknowledge of learning styles regarding different project groups
- provide to promote and sustain activities

B) Another important element of the learning environment realized by OPEN SoundS is <u>aimed at planning.</u> An environment where building knowledge processes are led to the integration of languages, interdisciplinary feature and planning

Every working and project path will lead to different potential users of the platform:

- to know how to elaborate projects open to the sharing of different people
- to know and respect the implicit rules of sharing to transnational group projects
- to create an original production network where every single output is the integrant part of a communication-sharing-collaboration-use circuit directly connected with all the other outputs and with all participants to the cooperative exchange.

It is important to point out that, to be part of a team work, in this context it is necessary to have **technical competence** because passion and voluntariness is not enough. The **competence levelpossessed**, in fact, are the factor, more then others, that **establishes the possibility to be part of a group** to develop a specific project (access barrier).

To lead knowledge to planning, the environment we are going to build will considerate the above mentioned trends leading harmoniously the training team work to knowledge-objective evaluating base knowledge and competence to be sure that spontaneous trends are based on vocations, spontaneity and participation can be outlined and in progress.

Another fundamental element to lead planning will be provided by the choice **to put at disposal a working environment characterized by technological solutions coherent with the planning above mentioned.**

These technologies are aimed to put together people that share a project and want to realize it by means of collaborative, transparent and open working processes, using technologies born and developed by communities that live and animate the Net to this aim.

6.3.2 Technological environment

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

The consequence on the environment to plan has been led by the analysis of the most important web portals of the field that are on the Internet. Comparing the collected data has given useful information to diversify and articulate, 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 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

6.4 Learning outcomes

The general aim of OPEN SoundS is to reorganize and transfer to the education system a virtual learning environment to supply to its young users suitable tools to develop music production activities on the Internet by team works in different countries to benefit on the training and educational plan.

Theproject,through ahighlyinnovativeand creativepracticein factwantsto be ameans to stimulateand supportfor:
A) the developmentof key competenciesforinitial and continuing training;
B) a more concrete possibilityof transitioninto the labor market.

All this throughthe developmentand managementconscious ofpracticesand creative processesmediatedby the useofdigitalmusictechnologiesand networkwithin alearning environmentspecificallydesignedfor this purpose.

Consistentlywith the objectivesofthe project, therefore, an aspect,no less significantand complex has been the integration by the technological model and pedagogical framework linked to a define framework of training objectives and competences really achieved reallyachievedby young peoplein training by the use of planned remote collaboration environment.

It should be emphasized that the designed environmentwill promotelearning processesand construction of activitiesthat impacton thepossible innovationofteaching processesinformal systems. And that theseprocesses, in their turn, aim to achievespecificeducational goals andskillsby young peoplein training

The framework of **results expected by the students as users of the environment is, therefore, a central partof a more generalconceptual frameworkproposed**and, beyondto guidethe aimsof the project,hasdeterminedthe structure, form, content and functioningof actions andproducts to be developed.

This frameworkwas defined startingand in compliance with **the descriptors that define the European Qualifications Framework (EQF) and the respective 8 levels[4] of qualification** in whichis 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-)

More in particularin the definition andconstruction of theframework:
   a. have been identified a numberof learning outcomes, related to use ofan environment dedicated to the music production in transnational virtual team,such as theOPEN SoundS platform
   b. the learningidentifiedwereformulatedin a form consistentwiththe descriptorsof achievements andabilities associated withqualifications/academic titles that, intheEuropean Qualifications Framework, represent the endof each cycle
   c. theframeworkof learninghasbeen articulatedin linewithall eightlevels, providedby theframework,since, in the testing phase in addition tostudentspresent in thesecond cycleof educationandvocational training system(targetelective), will also be involvedf studentspresent in the first cycle andtheConservativesin order totest andverifythe entireverticalchainof musical trainingand the educationalpotentialof the use ofcollaborative learning as OPENSounds platform

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[4]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[5]

FRAMEWOK OF THE **KNOWLEDGE , SKILLS AND COMPETENCES** MUSIC AND TECHNOLOGY RELATED

KNOWLEDGE[6] In the context of EQF, knowledge is described as theoretical and/or factual.	SKILLS[7] 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[8] In the context of EQF, competence is described in terms of responsibility and autonomy
• Know thenew languages and newcodesof the music, information and communicationworld, 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, • Access, recognition and	• Ability to ménage new information and communication languages and codes on the Internet • Ability to use with autonomy toolsandcollaborative 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 and creative skills	• 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

[5]**"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;
[6]**"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;
[7]**"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);
[8] **"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

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

Attachment I: survey grid for the analysis of the collaborative systems to make music

	Up/Download	Jam session	Distribution	Rating	Forum	Comments	Shared project	Chat	Tools

Attachment II: survey grid fpr the analysis of the collaborative learning environment oriented to music

Collaborative learning environment oriented to music					
Name	Tecnology	Comments	Usability	User type	Educational effectiveness

Technological analysis (**BAL**)
- General software frameworks
- Software used for specific tools
- Sustainability

Usability and accessibility (**EARMASTER**)
Please follow the guidelines in the ISO/IEC 9126:
- Understandability
- Learnability
- Operability
- Attractiveness
- Accessibility

User typology (**DEI-UNIPD**, **MIW**)
- Target (professionists, students, occasional users)
- Community size
- Geographical distribution

Effectiveness in the educational practice (**IEO**)