Knowledge and interactive communication as a virtual path for the urban heritage

[Fausto Pugnaloni *]

Abstract— **The understanding of our modern world is strictly linked to the knowledge of the past as the future depends on our understanding of the present.**

This research aims at analyzing and promoting the instruments to develop cultural interaction and knowledge exchange for inter-universities cooperation.

The above ideas will be realized through a shared platform for data communication and its basis device is the digital room project.

It constitutes a space where the faculties of architecture can exploit their work and give it a new dimension, connecting other structures located in the partners' universities. Therefore knowledge will be transmitted through the access to a shared database.

The platform will be implemented through the intervention of several expertises, in order to develop a dynamic system and to share the scientific researching activities and methodologies, in the long term it is foreseen to clone the e-rooms in order to create a network of the most important universities of the world.

Through this devices, Università Politecnica delle Marche is developing an ongoing shared system to cooperate within an international level and within the Uniadrion network, which connects several universities in the Adriatic territory. These ones will have the opportunity to deepen the knowledge of the Eastern Mediterranean culture as a first step for a mutual cultural understanding.

The proposed multi-disciplinary and international laboratory is a virtual infrastructure aimed at supporting the creation and the official constitution of the Adriatic & Ionian Macroregion as a new geo-political institution.

Keywords— **knowledge exchange, architectural communication, innovative training approach, cultural and transnational dynamism, virtual mobility.**

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I. Background and objectives

In many European Higher Education Institutions there is a need of modern technologies for teaching and carrying on scientific projects, in order to improve the spirit of innovation and of cooperation through internationalization and mobility. The Lisbon Agenda had the objective to make the EU "the most competitive and dynamic knowledge-driven economy by 2010", and the Europe 2020 policies are inspired by smart and sustainable economy.

The above normative guidelines encourage education institutions to change their methods in order to become more competitive in the world and to cooperate with other institutions to achieve a higher level of performances; the cultural dialogue represents an added value for the European growth in terms of knowledge and innovation.

The project will achieve the final result of innovating the Adriatic-Ionian Higher Education System through functional steps which are focused on the internationalization of the Universities, enhancing the mobility and fostering the cooperation activities. It is focused on the promotion of the European consciousness through the valorisation of our historical roots and of the transnational cultural identity too.

The contents of the project are based on the historical roots of the Adriatic-Ionian Basin, whose urban heritage represents the cultural basis of the modern society.

The proposed multi-disciplinary and international laboratory is a virtual infrastructure aimed at supporting the creation and the official constitution of the Adriatic & Ionian Macroregion as a new geo-political institution, which will be constituted by the year 2014.

Moreover the project aims at the quality improvement of the European Higher Education system on Cultural Heritage, especially in the Mediterranean area, through the application of innovative didactical and research methodologies, based on advanced technology and on cooperation.

The realization of an e-room network will allow the international partnership to work without a real mobility and to disseminate a common knowledge.

The technology will foster the dialogue and the implementation of an international archive which can be improved, enriched and updated within the project network through the intercultural exchange.

II. Multimedia instruments and "backup" of the dynamic memory

The research results will be achieved through the realization of an on-line laboratory using e-room network, which will allow the sharing of database, know-how and knowledge and the implementation of an interactive archive, shaped to increase the cultural basis of the European researchers.

The sharing of the methodology will allow its application in the future activities of valorisation of Cultural Heritage.

The e-learning system will be overcome by an innovative interactive method of didactics: the first one is a "learning passive tool", the second one allows a dialogue among the users who can directly interact with the multimedia products. This idea represents a modern evolution of the Socratic method of maieutic.

Through modern technologies the virtual classroom becomes a place to collect and share the knowledge of each stakeholder, improving the intellectual creativity of a virtual community and of a single actor, overcoming any difficulties due to geographical distance or physical disabilities.

As stated by Marshal McLuhan "a new technology extends one or more of our senses outside us into the social world" and more "the mentality and culture of people are influenced by the technology they use".

Thus the digital laboratory constitutes a virtual space representing the "backup" of the historical and dynamic memory of the urban heritage.

The interaction among users will be permitted by the on line forums, seminars, workshops, travelling exhibitions and the sharing-comparison and exchange of ideas. These activities are linked to the following objectives: internationalization, cooperation, virtual mobility, creative skills increasing.

Together with the implementation of an e-room, partners will work on a new web portal aimed at the dissemination of the culture and of the innovative didactic method of the Adriatic Ionian Higher Education System.

This web portal will allow to extend the positive effects of the project results attracting students and tourists.

The places of the Adriatic and Ionian Basin have common historical and cultural roots, and the participation at the project will enhance their opportunities to know each other and to create a long term and profitable cooperation in the scientific fields, with the help of the academic world competences.

Beyond the participating institutions, target groups are all the final users of the web portal and the stakeholders who will profit of this new didactic and researching methodology. Moreover, an envisaged target group is represented by new cultural tourists interested in the area.

The cooperation with other countries could represent a unique opportunity to create a long term relationship which will take to unexpected results and effects.

The increase of the virtual and real mobility, the sharing and the export of the educational methodologies, the application of innovative technologies, the international cooperation will have important and durable effects.
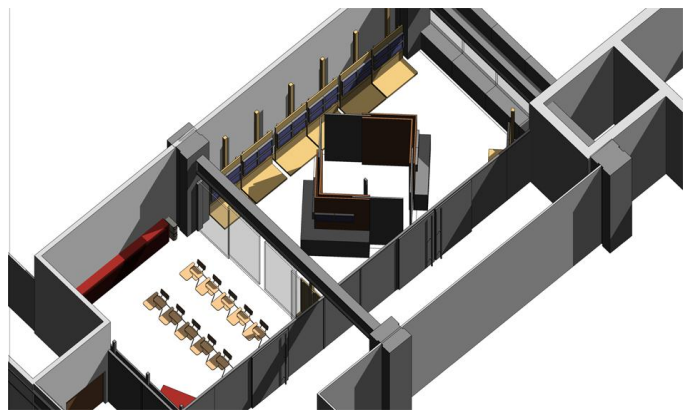

Figure 1. Axonometric view of the digital e-room

The virtual cycle will foster intercultural understanding and exchange.

Third countries, working on the project, will have the opportunity to deepen their knowledge of the Mediterranean culture and to create a partnership which may be developed in further projects. The participation to the project gives the opportunity to learn new didactical methods which may be applied to other subjects and also to diffuse the knowledge of their Cultural Heritage.

That is why the web portal is a smart tool for the dissemination of knowledge and it will have a positive effect on the involved areas, it will foster and encourage a cultural and qualified tourism.

III. Structures and devices: the digital room at Università Politecnica delle Marche

The main digital system is composed by different structures:
- the digital room,
- the shared database,
- the virtual forum
- the virtual classroom.

The main apparatus needs multimedia broadcast, virtual meetings, storing system, database, multi task support, multimedia products, visual materials and texts, pc and servers for warming up and running the system, I/O devices, instruments for visualization, network and systems for broadcast.

The system coordinator can build the system's core, test its beta version and develop an accessible hardware and software structure, responding to worldwide standards and technologies.

In fact e-room technology is a leading provider of services for the collaboration between an organization and its consortium of partners.
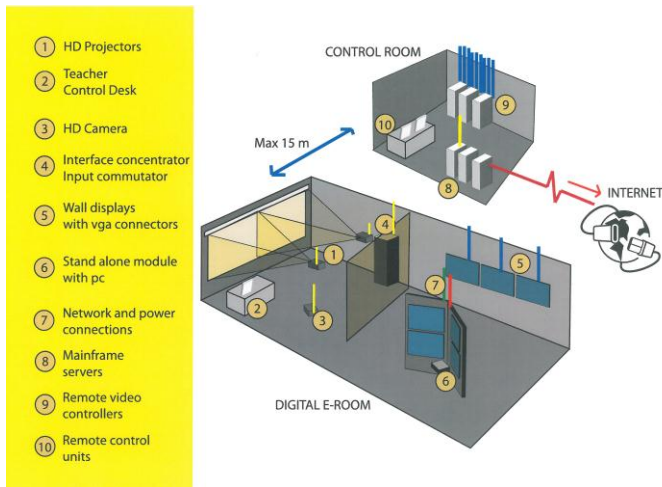
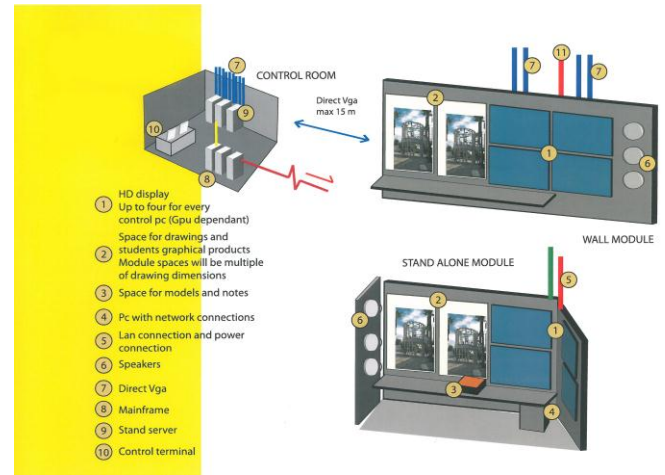Figure 2. Devices for the digital e-room

Figure 3. Devices for the digital e-room

The e-room product provides a digital workplace allowing organizations to quickly assemble a project team wherever people are located and to manage the collaborative activities that support their changing projects and processes.

It is an opportunity for the users to collaborate on documents, hold chat sessions and share web live applications using a standard web browser. Thus it will be possible to organize cultural events in the same time in different part of the world, to organize video conferences and forum of discussion and to present any kind of material, in particular in the field of the multimedia and image.

It's a non-traditional web utilization, which allows the creation of a researching laboratory whose rooms are located in different part of the world and cultural context.

The stakeholders are all the students and lecturers of the institutions involved, but also all the people engaged in the Cultural Heritage, in this way the e-learning will become "Evolved -learning" or "Global-learning".

Besides, the project allows to promote equal opportunities for disable persons: the modern technologies of communication will allow the utilization of the virtual laboratory by people with physical disability and involve them in the elaboration of the research activities.

Six inter-related steps are requested to organize such a digital and connected world:
- to develop a shared system core;
- to develop a broadcast platform;
- to develop a connected system between the universities' databases;
- to develop the e-learning applications;
- to develop the modules running on the system;
- to develop a web platform.

As explication of the opportunities provided by the e-room system the partnership will realize virtual international exhibitions which can be- together with didactical material- at the disposal of the final users.

IV. "Digital Sustainability" and long term effects of the researching project

The web portal will be implemented in order to achieve several aims:
- to promote innovative methodology on the topic of Cultural Heritage in the Ionian and Adriatic Area;
- to disseminate the Cultural Heritage as a part of an intercultural dialogue;
- to foster tourism in the area.

Each user could approach the portal for different purpose and at different quality level, from the tourist to the researcher, creating a personal profile and a personal path of use.

The contents of the web portal will be presented in an attractive way and it will be implemented as a part of a whole cultural virtual tour, treading in the footsteps on Ulysses, the main metaphor of the human spirit of research and knowledge desire.

The interdisciplinary approach will underline the historical, archaeological, cultural and tourist aspects of the area through a virtual tour aimed at the valorisation of our classical roots.

Mediterranean culture has a strong influence in each aspect of modern life and it teaches us the importance of knowledge as also stated in the Lisbon Agenda and nowadays through the perpectives of Europe 2020.

The web portal implemented by the project is like a "window on Adriatic-Ionian Area" and it gives the opportunity to visit it going back to the ancient Roman and Greek cultures, travelling through space and time, following the development of our culture through the interconnections and links with other people and cultures of the past.
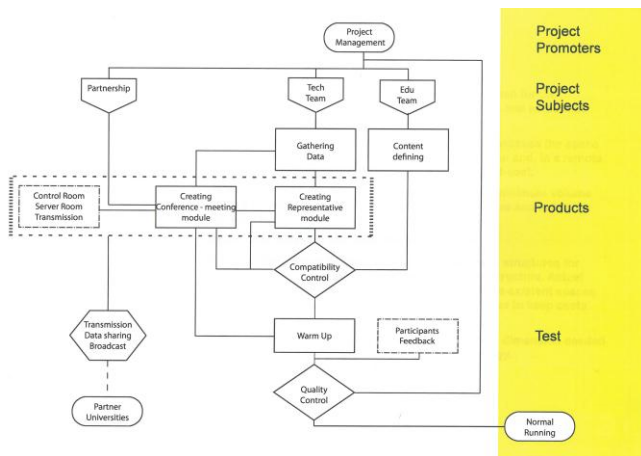
Figure 4. Schematic planning

V. Conclusions

The techniques of data transmissions through the web will be integrated and improved in order to create virtual international laboratory where to organize exhibitions, didactic activities, knowledge and researching activities dissemination.

The sharing of this methodology will allow people to have a direct and active knowledge of Cultural Heritage, in order to foster the intercultural dialogue and understanding.

The project represents the key for the development of the European Higher Education system and of its social and economic context.