Officina Emilia (Italy)¹ & Crafts Museum (India)² present

**Homm_ICT for Hands On Multi Media Laboratories in Museums³**

Background notes for the workshops and meetings to be held in New Delhi, India (dates to be confirmed) and in Modena, Italy (5-6 December 2011)

**Rev. 21st October 2011**

**Abstract**

Museums are identified as agents of economic, social and cultural development that can contribute to lifelong learning and sustainable innovation. Given this perspective, Officina Emilia (Italy) and Crafts Museum (India) propose to develop a set of ICT tools to support hands on multimedia activities in museums (HOMM).

A multidisciplinary team is needed to develop HOMM with regard to: the software application; an initial set of specific contents to be browsed; the test and evaluation of this proposal in a network of museums.

A series of meetings will be held in the next months to boost a discussion on this proposal.

**Keywords:**

Museums as agents of development; lifelong learning; India, Italy; innovation and sustainable development; handicraft; local production systems; regeneration of complex competence networks; interactive multimedia; visitor-museum interactions before, during and after museum visit, supported by ICT

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Eng. Mauro Mattioli, coauthor of this proposal, has developed the sw architecture of HOMM. We wish to thank for comments and support: Elena Bassoli, Ilan Chabay, Agnese Fogli, Francesco Guerra, David Lane, Sander van der Leuw, Paola Mengoli, Barbara de Micheli, Giulia Piscitelli, Rossella Ruggeri, Maddalena Vianello.
1. A comparative perspective in high tech Italian mechanical districts and Indian handicraft sectors

The proponents and the idea

The HOMM project (www.homm-museums.org) is promoted by Officina Emilia Museolaboratorio of the University of Modena and Reggio Emilia, Italy, and Crafts Museum (National Handicrafts & Handlooms Museum), New Delhi, India. The two institutions are, respectively, a new research laboratory on education policy and development, and an old crafts museum.

Since 2000, Officina Emilia has developed hands-on laboratories in science, technology, history and society to enhance the understanding of the processes and contexts of local development, in order to support the education system and encourage innovation.

Crafts Museum, originally set up in 1956, has recently embarked on a major restructuring programme to upgrade its facilities and exploit the possibilities offered by its large collection of handcrafted objects and the vast endowment of Indian craft traditions and technical skills held by crafts persons.

The larger goal of the project is to develop a new identity for museums as effective centres of education for a much wider range of users, complementing the knowledge gained in more formal institutions of secondary and tertiary education with the unique inputs and approach that museums can provide. It is hoped the project will attract the participation of other stakeholders, especially policymakers, at national, regional and local levels, whose support will be crucial in broadening the project’s reach to populations that are not traditional users of museums.

As a specific action towards this goal, it is proposed to develop hands on laboratories in museums supported by ICT tools.

Motivations/Issues to be addressed

The two museums share certain common issues:

First, the mechanical industries in Italy and the craft sector in India are both repositories of abundant skills and knowledge that need to be sustained for future growth.

Second, exposure to skills and practices in these sectors is an important instrument for education and innovation.

Third, to support employment, livelihoods and sustainable innovation in these sectors, it is crucial to nourish the regeneration of both the individual competencies and the networks of relationships, allowing them to be effective within and between organizations. Such networks encompass not only the strictly productive networks (as generally studied in value chains), but also the social and institutional networks of relations in which production networks and innovation networks are embedded. In both countries the mechanisms to support such competence networks must be strengthened, also through a leading role of better education for all.
2. Knowledge Society and New Technologies: Hands on laboratories and ICT for LLL in Museums

Policy programmes to support the knowledge society stress the need for radical change in the traditional educational and training paradigms and the importance of non-formal and informal learning strategies. These are required nowadays for a wide variety of ‘Learners’ many of whom may benefit from Life Long Learning (LLL) programmes. New ‘learners’ are increasingly experiencing new needs and museums can play a vital role in addressing these with new technologies. Museums occupy a very distinct space among educational institutions and have the potential to reach a wide audience. Museums can also target particular constituencies, including disadvantaged or marginalized groups, and help to foster social cohesion and active citizenship.

Hands on laboratories and ICT tools are being used increasingly within museums to support informal learning. Hands on laboratories which involve individual visitors or small (often school) groups are used mostly in science and technology museums, while ICT tools are employed in many museums for interactive games and sharing resources. More recently they have been used to build ‘communities of users’ (e.g., in the Louvre).

The benefits of ICT tools are well known: they can be used repeatedly and in different and personalized ways. Nevertheless, so far, their use in museums, especially their integration with hands on practices, has not been fully exploited. ICT tools can support hands-on labs in several ways including - improving knowledge acquisition through interaction; extending the experience before, during and after the visit, focusing not just on the object or final output but on the processes involved in production, their history, and the relationships within and between producer communities; offering the opportunity to connect, and share information with other users and creating networks of users. The design and evaluation of new approaches to learning are also possible with ICT, adding an important reflexive dimension to such innovative projects.

A variety of communication tools, appropriate to different ages and audiences, is necessary to support the different levels of learning implicit in the idea of ‘lifelong learning’ from ‘cradle to maturity’. By combining principles of LLL with ICT, museums can become significant alternative sites for non-formal education. HOMM intends to give a contribution in this direction.5

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4 On formal, informal and non-formal learning, see OECD “Recognising Non-formal and Informal Learning: Pointers for policy development”, March 2010, http://www.oecd.org/document/25/0,3746,en_2649_39263238_37136921_1_1_1_1,00.html
5 These are core issues in promoting sustainable development, as discussed in the idea of ‘generalized ICT’ proposed by the INSITE EU project. HOMM is an example of what this concept implies for the future of ICT and its role in building a sustainable society. See http://www.insiteproject.com/pagine/163/it/generalized-ict--technology-in-agentartifact-space
3. A demo to kick-off the project

With HOMM we intend to produce an integrated set of tools based on ICT for museums, to support learning practices, for individuals and communities participating in workshops on technology, culture and society.

As a first step we are developing a demo to illustrate the main features of both the software and the multimedia contents, in particular, an audio video presentation with images, text on history, economy, technology, science, culture and society related to Officina Emilia and Crafts Museum. The demo will be presented in the workshops to be held both in New Delhi and Modena by the end of 2011.

The software-demo will present the tools to manage, in an interactive way, multimedia contents, in all the phases of visitor-museum interactions.

HOMM software is designed to allow each user, i.e. a museum visitor, to access an online ‘personal space’ that will support her use of the contents and activities proposed by the museum on the web and on site. Activities are multimedia interactive presentations that can be integrated in the modular architecture of a personal space. Examples of such activities are ‘network of stories’, where the user can navigate the present documents in a personal way and ‘timeline’, allowing a browsing of documents in a temporal perspective. Interactive games could also be developed at a further stage. The personal space will offer a range of activities to enrich user knowledge and interest on the themes proposed by the museum.

The personal space will follow and trace the user from the first contact before the visit, to activities accessed inside the museum or during workshops, to a follow-up web consultation that will offer further elements of recall, self-evaluation and deepening.

The HOMM demo will show the current advancement in development of a prototype of one of the ‘activities’ (‘story network’) based on the architecture defined for personal space integration. The current implementation is the ‘story network’ about ‘The Monarch Lathe’ an important piece in the Officina Emilia collection. In addition to the validation on the field for software architectural design, this ‘story’ is currently used to evaluate both the process of content organization and the resulting user-experience for a non-linear storytelling model.

The presentation of the demo in the next months will give the HOMM team the opportunity to describe other functionalities of HOMM with regard to different types of users involved in the learning activities, such as: the producers of new contents on the part of museums; the tutors coordinating groups of students in a class; the classes of students or the on-line communities that will be able to use HOMM to share contents (documents and links related to the museum’s activities); those responsible for education services in the museum who will be endowed with tools for evaluating HOMM.

4. Further development

The further development of HOMM will involve the identification of a network of museums interested in funding the development and implementation of HOMM. Expanding the set of museums will make the investment required to develop the ICT tools more attractive and viable because of significant economies of scale; it will also
allow economies of scope, with the sharing, evaluation and development of effective practices from which all partners will benefit, even if these are not offered by each; it will help satisfy the growing demand for informal education that museums can uniquely provide.

To develop a business plan for realizing HOMM in such a network will require the following:
(a) identifying a multidisciplinary research team which should include computer engineers, mechanical engineers, handicraft experts, designers, manufacturers of hands-on experiences for museums, multimedia communication experts, experts in complex systems, education planning experts, professionals in the design and implementation of multimedia documents, researchers (history, technology, economics) for the production of multimedia content.
(b) defining the appropriate format for laboratory activities with different groups of users;
(c) developing the features of the contents and interactions targeted at different groups of users and at different phases of interaction in the museums involved. Multimedia products will be produced specifically for HOMM. These will include video clips, 3D modeling, graphic design slideshows. The multimedia production will be modular and scalable and will cover historical, cultural, social, economic, technical and organizational topics.
(d) designing a methodology for monitoring and evaluating the implementation of HOMM in the network of museums.

5. A series of workshops to boost a discussion

Officina Emilia and Craft Museum are seeking partners for the multidisciplinary team, and financial support to develop and implement HOMM. In line with this goal, a series of meetings and two workshops – promoted within the Coordinate Action INSITE - will be held in New Delhi (November 2011, exact dates to be confirmed) and Modena (5-6 December 2011).

The two venues, in India and Italy, will provide the opportunities to identify people of the many communities (listed above) required for the discussion. Moreover, the active involvement of other agencies will be crucial in taking this concept to the public, and developing the proposal to use HOMM in innovation, development and education policy. Private investors interested in a new field of social investment for communities would be an essential part of the project.

The workshops are intended to help develop a broad view on the state of the art in this area and to evaluate the potential for further applications of multimedia ICT tools in museums. The workshops will be open to invited speakers and discussants (approximately 15-20 participants).