ARCHITECTURE HERITAGE and DESIGN

Carmine Gambardella

XVI INTERNATIONAL FORUM
Le Vie dei
Mercanti

WORLD HERITAGE and KNOWLEDGE
Representation | Restoration | Redesign | Resilience

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Collana fondata e diretta da Carmine Gambardella

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Le Vie dei Mercanti
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Le Vie dei Mercanti _ XVI International Forum

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Le Vie dei Mercanti
XVI International Forum

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Scholars has been invited to submit researches on theoretical and methodological aspects related to Smart Design, Planning and Technologies, and show realapplications and experiences carried out on this themes.Based on blind peer review, abstracts has been accepted,conditionally accepted, or rejected.Authors of accepted and conditionally accepted papershas been invited to submit full papers. These has beenagain peer-reviewed and selected for the oral session and publication, or only for the publication in the conference proceedings.

Conference report

300 abstracts and 650 authors from 36 countries:

Albania, Australia, Benin, Belgium, Bosnia and Herzegovina, Brasil, Bulgaria, California, Chile, China, Cipro, Cuba, Egypt, France, Germany, Italy, Japan, Jordan, Kosovo, Malta, Massachusetts, Michigan, Montserrat, New Jersey, New York, New Zealand, Poland, Portugal, Russia, Slovakia, Spain, Switzerland, Texas, Tunisia, Turkey, United Kingdom.

160 papers published after double blind review by the International Scientific Committee

Preface

In the present era, technologies are becoming increasingly important in helping and supporting man in research, knowledge and production activities, almost as if they were smart prostheses. With the theme of the XVI Forum "World Heritage and Knowledge", I propose to the International Scientific Community to debate and establish a comparison of knowledge carriers to communicate methodologies of good practices adopted and experiences in the use in the protection, conservation and safeguarding of cultural heritage and landscape as well as in the design of the "new, "that, adopting in the building processes and building construction Innovative Building Modelling, can realise a non-contemporaneity of what has the same date (Giulio Carlo Argan) respectful of the values of the pre-existing, legitimate because it participated ex ante and monitored becoming all its ethical, aesthetic and performance connotations.

With the Internet of things, for example, sensors that are used to produce data autonomously that widen the processes of knowledge on all levels, from the territory with its infrastructures, to the environment, to the artefacts entering into the body itself of their physicality, or, in the case of the new, building the project as a prediction throughout physical consistency.

Nevertheless, the use of new technologies allows for economies of scale, both temporal and economical, not only for the surveying and representation of the built and the territory in the analysis phase but above all for the management of the resulting data that makes the design activity of the restoration of the historical heritage and landscape or of the newly constructed in a single process no longer divided into steps but also unitary in concrete constructions and the realisation of the works, in the intermediate checks, in the testing, in the monitoring and in the programmed maintenance.

In conclusion, it is indispensable for the scientific community to highlight how technologies, without a responsible attitude that commit man's choices and knowledge in dealing with and planning appropriate responses to the issues and needs of the collective, can create a deception that unfortunately materialises with the subtle persuasion of uncontrolled astonishment that overwhelms the imagination.

Carmine Gambardella

President and Founder of the Forum

The Design to valorise local tradition in exhibitions for future generation.

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Abstract
The work aims to communicate local heritage to young people passing them a largest quantity of information through different kind of experiences in temporary exhibitions and local museums.
The research try to collect the cultural and traditional knowledge to find links to the local territory to be transmitted to new generation by engaging exhibition experiences. These ones are based specially on stories, proverbs or recurring events which have been handed down orally for ages and now risk to disappear. Besides the research intends to share the know-how as starting point for future developments.
To this end, the work could suggest new uses of the ancient traditions adapting them to contemporary needs. According to these goals the research also proposes the use of augmented and virtual reality technologies to recreate the reference scenarios of the past for a better understanding of the current cultural identity.
As a result the research traced the foundation to study a platform of open, collaborative and flexible tools able to share the past knowledge, allowing new cultural re-workings starting from the tradition, for possible future changes in different scenarios.
This work is dedicated to new generations so that, through their skills of "digital natives", they can make the best use of new technologies without losing development possibilities offered by ancient traditions.

Keywords: Local tradition, cultural heritage, exhibition, augmented reality, young people

1.   Local territory and tradition values
The research starts considering the ability of design to valorise all the aspect of a territory, from the history to the knowledge. This attitude underlines the main role of design to promote cultural heritage. Consequently the focus of the present research is the strategic role of design for the enhancement of the cultural heritage or of elements characterising a specific territory.
The reflections on the relation between design and territory have always been at the centre of cultural and scientific debate, but recently the idea of considering the territory as "design context" changed perspective considering the territory as "design object". Two main factors are at the base of this different thought. On one hand, the evolution of the discipline of design has progressively expanded the concept of product towards more extensive and systemic dimensions in connection with the cultural aspects of the society. Strategic design and the design of services are the main disciplinary developments, towards product systems and services increasingly complex and intangible. On the other hand the change of the economic scenarios and the new competitive value of the territories leads to approach the concept of place to the concept of commodity. The cities and the territories are emerging more and more as important economic actors: they become able to amplify economical, cultural and productive systems with values to recognize and to communicate.
The first university's research on the peculiarity of a territory was called DRM Design Research Map, started in Italy in 1998.

The aim of the DRM research was to map the experiences of design research in Italy. In particular it aimed to identify the peculiarities of national design research contexts, to develop strategies for future researches. Moreover it aimed to awakening the Institutions about capacities of design research for participating to the development of the country. Above all, the research underlined new forms of design applications to enhancing products of local culture and tradition in areas far from production systems, design oriented. In summary the DRM research underlined the importance of the design territory oriented.

To this regard Ezio Manzini, one of the most famous scholars of design for sustainability, talk s about a "cosmopolitan localism" referring to a balanced intersection between local and global dimension, closely connected to sustainable exploitation of local resource.

The territorial identity is able to become the starting point of any project planning for the developing of a territory. An identity that it is necessary to be selected among the different ones that a territory could express, recognized, rebuilt or "designed", and, therefore, shared and participated in the first place by local actors.

The methodological process of territorial design can be synthesized through the following main steps: building identity, detecting diversity, communicating the identity and individuating congruent scenarios of development.

In order to design the identity of a place, to propose the development and exploitation of scenarios, it is also necessary to trace the differences, in comparison to other contexts, because in a territory like the Italian one, very rich of historical, artistic, cultural and environmental presences, it risks becoming increasingly undifferentiated.

The territorial identity becomes the starting point of any project for the development of a territory. An identity that must be selected from the different ones must be recognized, rebuilt or "designed", and, therefore, shared and participated by local actors.

Reading and interpreting the territory, visualizing it, building areas of meaning and shared visions, promoting forms of participatory planning, transforming visions into actions and viable initiatives, designing service interfaces, promoting and implementing an effective communication of the whole process, they are all capabilities of strategic design, service design, communication design and of product design.

Therefore the design is able to participate into the processes of local development, both with a role of overall direction of the whole process, and in the realization of specific actions.

In temporary exhibitions or in the exhibition of permanent collections in museums an innovative approach allows to use the exhibition itself as a instrument to pass and promote different aspect of local culture.

1.2 Context of reference
In order to outline a clear image of the intervention area, has been necessary to carry out a careful analysis on what is the state of the art of exhibitions, fairs and museums, looking for possible significant elements of innovation and strategy design.

According to this point the research collected and analysed of a large number of local museum and temporary exhibition on the subject.

The museum contributes to strengthen the identity and social growth of a community. At the same time, it is the cultural expression of a territory, historical memory, an economic opportunity and factor of cultural promotion.

Starting from the traditional idea of museum, it is possible to state that the meaning of "museum" changed: from container of "goods" to a conceptual space where it is possible, at the same time, to organize customized experiences and to offer services not only for the conservation and fruition but able to improve promotion, communication and enhancement of material and immaterial products, artefacts, habits, oral tales and know-how of a territory.

The main factors of innovation consist in offering different experiences to all kind of visitors, from tourist, to scholars, from families to students.

The classical idea of museum as monument changed to focus on enhancement of the "product" in exhibits, the exhibition backgrounds become neutral and more attention is for illuminations and interactive technologies.

According to the new trends in museology, and the increasingly spectacular exhibitions, virtual solutions become responsible of changing the visit experience into the museum according to new needs of society and visitors. The "objects" in exhibition become the expression of a community, a culture and a territory.

Fig. 1: Traditional exhibition. Harp Museum Victor Salvi at Piasco, Cuneo, Italy

1.3 The importance of Information and Communication Technology (ITC) for exhibitions and applications to valorize territories

In order to outline a clear image of the intervention area, has been necessary to carry out a careful

In recent years, the development and dissemination of Information and Communication Technology (ITC) has undergone considerable transformations, becoming an integral part of our daily lives and in particular of young people are defined as "digital natives".

Digital technologies have therefore become an infrastructure that enable much of human activity, from training to working, from fun to socialization, from online payment to the delivery of different types of services. The diffusion of ITC has also multiplied the number of relationships among

people, changing people behaviour, which is continuously surrounded by the flow of information.

These practices are able to influence the cognitive processes of the audience because of they prove to be easy attractive and satisfactory.

As a consequence and effect of this change of society, digital skills (Innovation Communication Technology) have also gained a significant place in the European education system as instance for learning and teaching at school.

Starting from this consideration the research proposes the use of ITC as method to attract, involve and pass culture heritage inside museums and exhibitions.

New digital technologies result a very effective method of communication also to be used in exhibition systems for cultural valorisation.

Thanks to the support of 3D computer graphics educational films, holography, serious games and augmented reality apps, emotional and participatory virtual spaces, the exhibition spaces are able to establish an extremely engaging relationship with the visitors, making tangible what up to a few years ago it was only the result of imagination.

Consequently these new applications of information technologies, becoming strategic one, offer

the material and technical support to implement visiting experiences , towards a wider systemic approach that takes into consideration new relational qualities and peculiarities.

As instance all the values of an object in exhibition become more visible and understandable because they are inserted in a wider referring system and every new and unexpected aspect helps to interest, understand and pass knowledge.

2.   The aim of the research

The research mean to create new opportunities for pass cultural and territorial tradition: museums and exhibitions are very interesting place for this purpose.

The aim of the research is to greater promotion of cultural heritage to be realized also carrying out technological innovation in exhibitions inside museums.

The employments of innovative processes of ITC are able to create exclusive experiences in museum and exhibitions.

The main purpose of this work is to propose a referring methodological system to promote, pass, valorise and actualize traditional products and culture of a specific territory .

The proposed systems allows to conserve the value and the know how of a territory and at the same time offer a new point of observation for reinterpreting tradition by actualizing them using new technological innovations.

The final objective of the research is to greater promotion of cultural heritage to be realized also carrying out technological innovation inside museums.

The research demonstrates the necessity to find a series of different solutions to promote and communicate cultural heritage to a very wide public inside exhibitions.

The use of augmented reality also allows the involvement of young people, the digital natives. This kind of public is more attracted by this kind of entertain/exhibitions because of the use their "language". At the same time the Augmented reality allows to live a very innovative experience by the visitors.

In this way the exhibit not only offer the state of art (to conserve as memory) but it is able to pass knowledge involving different senses. In the case of augmented reality the exhibition not only entertain but it is able show the rebuilding of what it is not possible to see (i.e. the environment) and understand it (i.e. the relations among people). This kind of information are not possible to communicate in classical exhibitions.

This new kind of visit suggests to use the ancient knowledge in an innovative way according to the contemporary society allowing it not to disappear but to be use in a contemporary way.

A new way to pass cultural heritage to new generations.

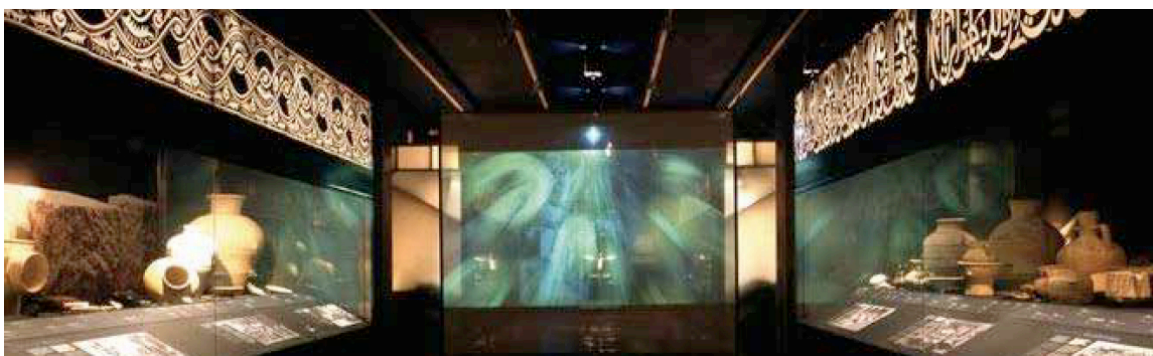**Fig. 2:** Enhancing exhibition. Van Gogh Alive. The Experience.

Fig. 3: Exhibition with multimedia products. MARO Provincial Archeological Museum, Alicante, Spain.

3.   Method and referring public of visitors

The research uses a multidisciplinary approach involving different disciplines from museology to architecture, from psychology t educational science, from sociology to ITC. For instance, the sociological science are necessary to individuate the socio-demographic profile of user, while the psychological one helps to understand if the visit experience has been useful and educational

The Design has the main role of director of the entire process able to connect all the discipline involved. Furthermore the design uses as starting point the user experience and the human centred design. The Human factors are at the centre of the proposed solutions for exhibitions. In fact the research studied the needs and behaviours of different kind of visitors in Museums and exhibitions in order to propose ad hoc solutions visitor-centred.

In particular the research investigated young people which are very important as visitors because they represent the future generation. Nowadays museums and exhibitions visitors are embodied by a very wide and heterogeneous public. According to the evolution of society In the last thirty years, also the museum systems changed their relationship with the public..

Once ago the museum were oriented to a specific public of reference, today, following the improvement of higher education took place the increase of many kind of visitors with different needs and knowledge.

The present studies allow the museums to evaluate the visitor experience starting from the motivation to the learning process and the choice of the services. The results of these analysis allow the museum to improve and plan activities and services underlining strength and weakness of visitors experiences.

In order to determine new strategies for museums and temporary exhibitions it is necessary to consider not only the single" object" in show but the "use" scenario and contest of reference at 360° its culture and connected society.

The present study suggests the extension of the investigation from the "object" in exhibition to the context. According to this idea the "material object", using augmented reality, become not only the historical memory, the "witness" but a new way for describing traditional, social, cultural, historical and territorial phenomena.

4.   Insights from case study, result and conclusion

The case study is an exhibition on the Lombard culture that was set up inside the Scuderie of the Visconti Castle of Pavia; the exhibition used ITC for the transmission of concrete knowledge related to the territory.

The exhibition makes available to the public numerous materials inside traditional displays, furthermore theoretical concepts developed through interactive videos.

The use of a strategic system able to reconstruct historical fragments of a population which contributed to the construction of the cultural foundations of Italy, within a thematically significant reality such as that of Pavia (which became the capital and seat of the coronations from 620 AD, until the end of the Lombard domination) is a clear example of cultural enhancement of the territory.

The will to put together the fragments recovered within a territory and to unite them together in a single context with the aim of realizing a real "cultural reconstruction" is the starting point to study a strategic system that integrates traditional display materials with innovative technologies.

It is precisely the use of technology to make more universal and contemporary the possibilities of the new system of exhibition that uses both the traditional method of exposing tangible elements, (such as historical artefacts and works of art,) and interactive monitors and video projectors showing intangible heritage as traditional knowledge or local stories

Therefore reconstructing culture means passing on the knowledge, culture and history of our society. The system can be defined as strategic one because it aims not only to present the contents, but to communicate their tangible and intangible values.

The use of technologically advanced solutions allows the visitor to detach almost completely from the material object, which is anyway exhibited reconstructed or reproduced,

in order to give the visitor a fixed point of consultation. At the same time it involves the user in an emotional experience unlike the traditional museum experience.

The main purpose is therefore the transmission of traditional culture with messages made evident by the virtual reconstruction of ancient scenarios and traditional elements , which, however fragmented or difficult to render, allow to recompose the past to build new foundations for the future through experience.

The paper opens the debate on the surrounding relational network and the way in which it could enhance the design process. Through the analysis of some case studies, and

integrating with sociological and anthropological theories, the present work outlines some research hypothesis on how to involve a wide number of visitors and in particular young people stimulating

them in new relation with people culture and objects. The exhibition in this way could enhance and facilitate visitor attraction, acceptation and satisfaction.

Innovations and processes mentioned are able to led to the increase in the number of visitors enhancing knowledge passing and besides facilitating the relationships among people and new uses of this know how , transforming the exhibition into amazing effective useful experience.

Therefore the Design is able to participate in the processes of local development, with a role of general direction of the whole process, and at the same time proposing specifics targeted actions, using a set of skills and tools useful for the realization of specific solutions.

The design solutions are chosen among methods and techniques differentiated and flexible indispensable for the promotion of the peculiarity of specific territory in constant evolution.

The present research try to bring technological innovation within the local museum structures with a view to greater promotion of regional cultural heritage to young people.

The interactive solutions using ITC allow a wide audience of people, and in particular young people "digital natives" to understand local culture and consequently enabling them to use this knowledge for future applications. Finally the research propose the visitors, at the end of the museum experience, to use the knowledge learned in the exhibition itself for further application and to share the own experience in a dedicated platform on the web and on the social media.

This later activity it is able to involve a lot of other people becoming a multiplier event in order to communicate, pass and spread more and more culture and values of cultural and territorial identity.

Fig. 4: Design proposal: the use of augmented reality to "rebuilds" damage artifacts easily

Fig. 5: Design proposal: the use of virtual reality to rebuild and show the life inside the Longobard huts (thesis titled Fragmentum of Andrea Pellegrini) A way to involve, interest and passing culture heritage to young people

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