Post-Digital Design

The Hyperheritage project

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The cultural heritage domain, as many other domains, is invited to experience new `designs' in harmony with new development and consuming approaches. It should accept to deal with under continuous design objects & information on the first hand and the fact that every information consumer could become, somewhere and/or sometime, information broadcaster, on the other hand. In this paper we present some exploratory projects newly realized within the workshop `HyperHeritage' (Augmented Cultural Heritage) of the Master Program Net. This workshop, which is animated by three staff members of the department of digital humanities, invites 15 master program students to rethink the cultural heritage objects and information by considering the potential uses of information and communication technologies and their socio-cultural impacts. By the following, we intend to present four projects on `HyperHeritage' resulting from this collaborative approach. The suggested prototypes have considered advanced digital technologies, mainly the Internet of Things and the Contact-Less Communication, to experience new form and strategies of mediation and communication of the cultural heritage.

Keywords: Augmented Cultural Heritage, Collaborative Design, Connected Objects, Contact-Less Communication, HyperHeritage, Internet of Things

INTRODUCTION

In the Post-Digital era, at least three major technological trends and one fundamental social shifting, have influenced the activities of curators, mediators and communication managers in the domain of cultural heritage. The first trend is the ongoing developments in the fields of connected objects (Internet of Things) that integrate contact-less communication devices such as NFC (Near Field Communication), Flashcode (QR code), ... The second is the social network technology which is based on sharing experiences and discoveries through communities. The third one is related to pervasive and mobile computing. Thus, things of cultural heritage (object or information) ought to be intelligent, sustainable and geolocated. Those things, that embed technology, have allowed to explore and to imagine new ways of perceiving and practicing times and spaces
of the cultural heritage. One of the most funda-
mental impacts of those technological advances would 
be “Social”. We can observe that the new user (con-
sumer) skill doesn't require, nor expect, an achieved 
and perfect cultural heritage object or information. 
This new consumer calls for usable objects (or infor-
mation) that can evolve in time and space and can 
be considered in establishing and sharing new per-
sonalized object or piece of information. This fact 
brings new debates on the notions of author-rights, 
imintacy, privacy, publicity, individuality and socio-
ability in every cultural heritage space, time, object 
and information design.

To learn more about this phenomenon, we have 
introduced, since 2015, , within the framework of the 
Master program NET (Digital Challenges and Tech-
nology), a new design workshop , entitled HyperHer-
itage. This workshop is focused on designing en-
riched Cultural Heritage Applications based on Aug-
mented and Virtual Realities Technologies.

POST-DIGITAL DESIGN
Designing in the Post-Digital era invites various ac-
tors to rethink their approaches to create, innovate, 
perceive and explore the Human Smart-Things Com-
munication universe. Nowadays, the evolving of this 
universe (as an open set of connected “Things”) is 
very closed to information design, to information 
development and to information practicing. In the 
Post-Digital era every “Thing”-Design encapsulates 
explicitly Information Design . Obviously, every In-
formation Design still has to consider 3 components: 
the “Transmitter”, the “Channel” (material or imma-
terial mediator) and the Receiver (Shannon, 1948 ). 
More obvious, every living envelope remains a set of 
“Things” and information (ex. Cultural Heritage).

In this paper we present our research problemat-
ic on the evolving of Cultural Heritage Information 
perceiving and processing, in a context of PostDigital 
design. This research project is based on three main 
hypotheses:

- The first one observes that Information & 
Communication Technology (ICT), mainly 
Smart “Things”, has strongly promoted and 
preferred mediated communication proto-
cols (Human-to-Human) over Human Com-
puter Interactions protocols.
- The second hypothesis is focused on the fact, 
that Human Capabilities and Human Capaci-
ties to deal with various kinds of information 
still to be explored.
- The third and last hypothesis considers the 
importance of Social dimensions that every 
smart-Thing must embed.

Those hypothesis are based on three main observa-
tions:

- “Thing”-Design is more than ever Information 
Design;
- ICT allow new way of living information and « 
Things »;
- “Thing”-Design has become, and has been ac-
cepted as, sustainable non-ended activity

Our research and teaching program is interested 
in hybrid cultural heritage environment, i.e. en-
riched with digital technology by embedding smart-
“Things” that allow exploring various facets of infor-
mation perceiving and practicing (by Human: user, 
designer, researcher). Massive development, and im-
pressive uses, of Information and Communication 
Technology (ICT) as well as immersive devices (Aug-
mented and Virtual Realities) have allowed to dis-
cover new forms of Human-« Things» Communica-
tion. ICT has established new ways, often indepen-
dent of space and time, to access, process and to 
deal with interconnected Cultural-Heritage Informa-
tion and Objects. We observe as well, that new 
Human-to-Human “Mediated” Communication, are 
inviting designers to consider the non-stop evolving 
of the Cultural-Heritage Information (devices, pro-
tocols and data). However, it is important to no-
tice, that our research and teaching project (entitled 
Hyperheritage) doesn’t question the Traditional Cul-
tural Institution itself, it suggests other ways of deal-
ing with Cultural-Heritage Information growing, con-
suming and producing in an interconnected unlim-
ited spaces. Consequently, this leads to consider a double exploratory adventure: on the first hand, to replay / rediscover some of Human Perceptual and Operational Capabilities (in handling cultural information) and on the other hand, as consequence, to re-design (re-engineer) the Cultural-Heritage Information itself.

“Things”-Design achieving is no more a requirement or a constraint, however continues object design has become part of user culture that increases seriously the complexity of « traditional » design process and methodology.

**HYPERHERITAGE WORKSHOP**

The cultural heritage domain, as many other domains, is invited to experience new “designs” in harmony with new development and consuming approaches. It should accept, on the first hand, to deal with under continuous design objects & information and on the other hand the fact that every information consumer could become, somewhere and/or sometime, information broadcaster.

In this context, most of enriched cultural applications undergo these shifting through new strategies of information, communication and mediation. In fact they have mainly considered the “traditional” curator point of view with the collaboration (optional) of a group of user. Otherwise, design approaches have been curator oriented. In this paper we avoid discussing the notion of Curator skill. We believe that curetting practices are also shifting. This can explain the use of the expression “traditional” curator.

Thus, the Hyperheritage workshop has been a place to handle this question in a very different way, where the consumer (master students) has become curator and where the “traditional” curator could become, a day, a user of those new visions. Targets of this workshop are both pedagogical and research. Students have to perform the use of new technology in the Cultural Heritage Information Design and on the other hand to free their visions of it, i.e. try to perceive and practice them in different times (synchrony, asynchrony) and places (hybrid spaces).

This year, as result of the collaboration between students (about 15) of tow master programs of the Digital Humanities Department, University Paris 8, the master NET (Digital Challenges & Technology) and the master THYP (Hypermedia Technology), four projects were developed, in the framework of this multidisciplinary workshop which was held at the university Paris 8 with the support of Idefi-Creatic (Initiative of Excellence for Innovative Training). The workshop duration was about three months, once a week (time estimated to 50 hours / student). Most of the suggested prototypes have used advanced digital technologies as new mediations experiences in the field of cultural heritage.

By the following, we intend to present briefly four projects on Hyperheritage resulting from this collaborative approach. The first and the fourth consider museums as starting and continuous points. They are focused on visual information appropriating and sharing facilities, the idea is also to share benefit between museum administrators (initiating a network of potential interested consumers) and the visitors-collectors (archiving driven project). The second and the third project are completely outside the institution. They suggest visits on the city that are guided and enriched by social network (cultural & social driven project). Using personal mobile devices, offering more personalized content (Celestine 2012, Bariberi et al 2011), hybridization of space and multiplication of visit temporalities have been the priorities of most projects suggested by the student.
We have chosen those relevant projects because we have been surprised by the way the student thought the problematic, the needs, the scope, ... of their designs and applications. This fact will be pointed out after every presentation of those projects.

**Collect’Art: Connectivity as a museum experience!**
Given the growing popularity of cultural heritage objects and information, the evolution of cultural practices and the increasing use of digital devices and tools by the cultural heritage institutions have become more than obvious. The Collect’Art project is part of this perspective, whose aim is on the first hand to supply visitors of cultural heritage place with tools that enable them to restore the role of explorer and on the second hand to free them from certain constraints inherent to the visit of “traditional” museum, such like: the crowd stress, the inadequacy of places and contents for all audiences, etc. Moreover, this device has to satisfy the appropriation desire that new visitor (collector) requires to tag the art work with his/her own sentimental or memorial comments and key-words (htag). Collect’Art provides visitors with an easy-to-use tool for collecting good quality and well-framed images of the selected art works (Figure 1). The application captures (by using NFC technology) the art work and save it in a gallery that the visitor can reorganize at his/her will before sharing them via social networks (Facebook, Twitter, Instagram). Collect’Art should reduce the capture in burst of photos and enhance the fluidity in front of the art works.

This application fingers out new spatiotemporal relationships between the consumer and the cultural heritage place. Those relations show some paradoxes. It is not really necessary to come to the place to get the photos and to share them. Nevertheless, it still looks important to locate and live such social experience before sharing it. What is more, the use of NFC was to avoid the crowd and the use of social network was to connect with people outside the place. However, those are just observations.

**Cultural Walking**
This second application “Cultural Walking” is based on the principle of geolocation (Figure 2). Its users can predefine itineraries that allowing them to discover artistic places in Paris. This project is not meant to be a health application stricto-sensu, but rather a playful application, aimed at promoting the cultural heritage through physical activities. It highlights the principle of journey, enhanced with fitness trick as the steps progress. Thus, the appreciation and promotion of the cultural heritage are highlighted by visual indications throughout the different programmed paths. The project emphasizes the community dimension and encourages human contact and mutual support for the practice of physical activity and the promotion of cultural heritage.

This application puts forward 2 vitals issues that have very often omitted or forgotten until now by the vast majority of cultural heritage promoting devices. The first considers the role of the human body and its involvement in the cultural heritage information exploring. The second issue is strictly social; it is the matter of using cultural heritage as an alibi to develop, in new ways, the social life.
The Paris Insolit project is a mobile application designed for smartphones and tablets, whose aim is to discover Paris through its most unusual places and its lost monuments (Figure 3). It offers users access to emblematic places (available in the form of a database), guided by geolocated features. It allows its user to discover facets of Paris that are unknown to the general public, it proposes to them to visit places that are invisible for the profane or the “uninitiated”. It also suggests an enriched visiting experience in a space-time, thanks to augmented reality.

In this third experience, the designers (the students) have put forward, very strongly and on all levels, the explorer side of the users. They must explore places that are unusual, unknown and very weakly documented by the cultural heritage institutions. These explorers (users) are also invited to enrich the information and the realities related to these places. They can make use of augmented reality products to learn more or to say more about them.

FlashMU
FlashMU is also a mobile / tablet application designed for visitors of a cultural heritage establishment (Figure 4). This application is turning completely to the visitor experience. FlashMU is a platform that allows its users to directly comment on works of art from the collections of any museum (for example the National Center for Modern and Contemporary Art in Paris). This is to foster the museum experience of visitors by allowing them to share visitor comments that include valuable information expressed in the form of reflections, opinions, feelings, criticisms or impressions about the observed art works or the institution itself. FlashMU promotes the museum experience of visitors by posting comments that are shareable and accessible to all others users of the application.

This last project on the augmented cultural heritage applications, is to promote the connectivity between the visitors of the institution, between them and their friends (who would be new visitors) and finally and above all to bridge the institution to its visitors and their friends (potential visitors). Like the first project (Collect’Art), the comments posted en FlashMU offers to the institution a great open data to enhance its exhibitions policies and marketing strategies.

CONCLUSIONS
Observations on the developments of these projects (especially Projects 1 and 4) can not leave us indifferent. To our great and pleasant surprise, the approaches and visions of all the students, which are harmonious and very convergent, do not correspond at all to what we have been waiting for. No team asked about the spatial organization of the institu-
tion, nor the layout, nor the documentations, nor the communications strategies, etc. Everything was centred on the human, the visitor and the consumer who is outside of the institution, and on its new communication and information universes (mainly his mobile devices and his social networks). Thus, cultural heritage and arts institutions have become a kind of repositories (data warehouses) of information and points of intersection and sociability.

These experiences have challenged us on another surprising point concerning the cultural heritage itself (case of projects 2 and 3). The available, documented and accessible cultural heritage information has not seemed to attract enough the explorer-visitors. They would have preferred to seek what is not yet on the digital space, may be in order to make it exist and to sign it (to leave traces) before sharing it.

In sum, those experiences in addition to others experiences that we have developed in the area of Hyperurban (Bursztyn et al, 2015, Zreik, 2008) confirm that human perceiving and practicing of information, objects, spaces and times have been liberated and they are in continuous evolving. On the other hand the quantitative and qualitative requirements in terms of space and time are also moving by the integration and the appropriation of mini, micro and nanotechnology by every objects (IoT). Every architectural or urban design project is deeply concerned by those facts and those open debates.

N.B. The HyperUrban approach considers the concept of “city” as a complex and hybrid urban space that produces, maintains, exchanges, transfers and transacts information related to services and products. HyperUrban presents also reflections about the concept of “social city”, where the ways of communication, socialization, learning, sharing, work, etc. pass through different states of self-regulation, and where a large number is based on information and communication technologies

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