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Transmedia storytelling and cultural heritage interpretation : the CULTE project

Paper

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1. Objectives

The CULTE (Cultural Urban Learning Transmedia Experience) project that began last year will lead to the development of an ambitious transmedia pervasive game in and around the musée du quai Branly in Paris.

This project fits in a context where museums are bound to bring forward new ways of discovering and interacting with the heritage they promote. Paris is known worldwide for its involvement in the promotion of cultural tourism. Museums and public policy makers are very well aware that in order to welcome and satisfy millions of visitors (both French and foreign) every year, they have to make smart investments to offer new meaningful experiences to encourage the discovery of their collections). The main question is: how can we design such experiences?

In a context where the digital revolution is profoundly altering the way people access information, the objective of the CULTE (Cultural Urban Learning Transmedia Experience) is to facilitate necessary transitions by proposing landmarks and methods for the conception of a transmedia experience that is both fun and pedagogical.

The CULTE project intends to make recommendations for the design of transmedia serious games, through the definition of generic and methodological elements, as well as the collection of usability data. At the heart of this project lies the sharing of experience and knowledge). The participation of different cultural institutions to this project, the organization of regular seminars as well as an international conference at the end of the project, and the publication of a book summarizing the results, are the most salient aspects of our desire to provide guidance to cultural institutions, but

also researchers and digital agencies.

2. Introduction

Several studies exist to understand French young people's behavior with digital media. They show that their favorite activities are, in order of preference, TV (66%), read (59%), internet (48%) and video games (44%) (Guillou, 2012). Few ever visit a cultural institution (55%), as they are often associated with formal education. The 15-25 year-olds access culture mostly through their family, friends or colleagues (93%), then through the Internet and its services (87%), TV and radio (84%), social netwoks (82%), press or magazine (72%) and other ways (42%) (Atelier BNP Paribas, 2012). Thus, culture is most of the time accessed at home, through several media and less often from mobile phones : 40% use them to surf the web (Guillou, 2012). Thus, if museums want to welcome young people, they should adapt themselves to these new ways of accessing culture, using audiences' favorite activities as a means to attract them into the institutions.

Transmedia pervasive serious games mix game and player environments, games and learning experiences. They exploit several types of media (Internet, TV, video games, radios, the press, social networks, museum exhibitions and so on) to hook the player into the game. In the current context of smart cities, they allow the museum to reach out to its public, to meet visitors directly in their familiar cultural sphere.

However, if these games have advantages, they also have disadvantages, namely, they are often expensive and need a collaborative team from four very different domains: cultural education, game design, technology and media – specialists who are not used to working together. In addition, such games do not necessarily appear as obvious ways to promote museum collections for curators, for instance, who are often unfamiliar with game design and storytelling mechanics.

Moreover, the complex design and creation of contents on several media platforms tend to decrease the economical profitability of such projects, which must find a balance between educational and recreational objectives.

To answer these disadvantages, the purpose of the CULTE project is to start by building a solid common ground and a common language in order for the partners to understand each other and share their experiences and expertise.

This project is funded by the French National Research Agency (ANR), by "Cap Digital" and "Images et Réseaux" as well as French competitiveness clusters and will last 42 months, until Spring 2017.

3. Definition of the terms used in the article

Throughout this article, we use a specific lexicon that we need to clarify in order to explain what we mean by such-or-such term. We think this definitional work is necessary to better frame our project. We will focus on two terms: "transmedia" and "pervasive gaming".

This section also aims at framing the theoretical framework in order to answer the question: "In what disciplines is this project rooted?"

The term "transmedia" is particularly useful to discuss in the first place, given the importance and sudden popularity it gained a little more than ten years ago when it was introduced in an American academic context.

The term "transmedia" was coined in 2003 and broadly recognized in 2006 when professor Henry Jenkins – then teaching and doing research at MIT – wrote an article in the MIT Technology Review. Henry Jenkins is a scholar who calls himself an "Aca-fan", a portmanteau word meaning that he has one foot in the academic field and another in the fan culture he has been studying for well over 30 years. Jenkins coined the word "transmedia" to qualify both evolving audience practices in a new media environment and media industry strategies to better meet the expectations of these new types of audiences.

At the time, he was analyzing "The Matrix" fictional universe (1999-2005) as a case study that allowed him to observe these new cultural practices in action. It is important to specify that the term "transmedia" was first used to qualify experiences and media strategies in the entertainment field and business. For Jenkins, what the Wachowski brothers had succeeded in doing was to create a dense and complex storyworld that exploited the strengths and the aesthetics of the new networked culture. They strategically scattered the media texts on multiple media platforms in order for the audiences to reconstruct the whole narrative and make sense of what they were experiencing in movies, games and comics. This scattering was made possible by the process of media concentration and the phenomenon of mergers and acquisitions between media industries.

Later on, Jenkins studied how other industries (journalism and tourism, among others) were adopting similar strategies to meet the expectations of their own audiences. He then distinguished between "transmedia storytelling" (to create a demanding narrative for audiences to follow on multiple platforms, simultaneously or successively) and "transmedia navigation" (to go from one media platform to another in order to look for meaningful information or experiences) to span the whole production/reception spectrum.

In the CULTE project, we are interested in analyzing how transmedia storytelling design can produce transmedia-like navigations in a museum context and how a transmedia platform can help narrative designers and museum professionals create these media texts. In doing so, we are also interested in observing how these media strategies, which were designed to answer entertainment industries issues, can fit in a museum context, which has its own issues and relations to audiences.

In order to analyze the phenomena we are beginning to observe at the Musée du Quai Branly, we use methodologies that are used in the Information and Communication Sciences, Computer Engineering and Cognitive Sciences fields.

The second term we will be using is "pervasive gaming". According to Helsinki-based game scholar and designer Markus Montola, pervasive gaming emerged with the growth of mobile communications and wireless technologies. This new technological environment created a new perception of the world for both game designers and players. For Montola, pervasive games exploit the blurring between the realms of games and daily occupational activities.

Game designers must now see the world as a gigantic, evolving game board where everything can become a means to advance in the game. Using feedback loops between the real world and the game world, the story unfolds as new elements appear in real time. The game's storyline will not evolve the same way in the morning as it might in the evening. A key point in the definition of pervasive games is that the game is an ever-evolving one: it does not end when we leave the "magic circle". In this aspect, it is tightly interwoven with "social gaming" (games that are played through the medium of social media platforms) and MMORPG (massive multiplayer online role playing games). The CULTE project seeks to understand how museums can embrace pervasive gaming as a new means to ensure its crucial missions.

4. Challenges we have to face in the CULTE project

There is a series of challenges that the CULTE project aims at addressing. Designing a transmedia pervasive game within a museum context brings up educational and heritage interpretation issues. As we mentioned earlier, transmedia storytelling and navigation were the result of specific motivations and strategies in the media industries sector and the emergence of pervasive gaming was the result of the rapid development of mobile communications and wireless technologies during the same decade. So the question then is how do these evolutions in the entertainment field gain new meaning in the museums sector?

The CULTE project is an industrial research project. This initial postulate guides our research posture and the way we address the following challenges.

The first challenge we have to address is to build upon an existing platform that was designed and developed by the industrial partner of the project, Mazedia. From the very beginning, this platform was designed to be as handy as possible given that the people who would use it on a daily basis would not be developers or IT professionals but rather curators or educators, among others. The main challenge is to continue in this direction while the complexity increases.

The second challenge is to always keep sight of the educational objectives we must meet in order to offer a satisfying experience for the museum visitors. Transmedia pervasive games were the result of entertainment industries issues. Therefore, educational issues were not taken into account. The CULTE project can address this particular issue by building upon a resourceful dialogue between these two approaches.

The first transmedia experiences that were designed in an entertainment context

tried to take into account the audiences' new cultural practices that had evolve with the democratization of the Internet and the culture and values it promoted (collective intelligence, participatory culture, etc.) during the 1990s. Meanwhile, educators in museums were beginning to think about this "meta-medium" as a new learning tool to foster engagement and have been doing it ever since then. The CULTE project fully acknowledges these pioneer works and seeks to put them into perspective to study these phenomena in the long run.

The third challenge is to study the transmedia pervasive games' fallout on the learning process within a museum context. We will need to build an ambitious evaluation toolkit to understand what learning mechanisms are at stake and how we can possibly qualify and quantify the results. Serious games have been designed for quite a long time and we can benefit from a rich corpus of studies about learning fallout. Transmedia pervasive games are much more complex and require a new set of evaluation criteria to grasp the differences and specifities.

The fourth challenge is to introduce the museum in a larger spectrum of cultural activities and media practices through the medium of the transmedia pervasive game. This project fits in a context where museums and smart-cities infrastructures are tightly interwoven. This influences the way people discover and interact with cultural heritage. Therefore, designing such a game can foster further engagement with the museum's missions and activities. The partners of the CULTE project strongly believe that exhibition design already offers a type of transmedia narrative, encouraging the visitors to move from one medium to another in order to apprehend a theme. Many museum professionals talk about wanting to design a coherent and complementary experience for the visitors before, during and after their visit at the museum. Our objective is to find how we can work efficiently to design this desired continuum.

The fifth challenge is to reach a critical mass that will enable us to shift from a period of experimentation during this 3-year project to an industrialized project that can benefit the museum sector in its whole. Indeed, we intend to build upon this experience to accomplish the following:

- enrich the transmedia platform that can fit the needs of other types of museums;
- determine new game design patterns for transmedia pervasive games;
- understand more precisely new cultural practices in certain categories of visitors.

The rollout of such a project is very challenging given the fact that each museum exhibition and its ecosystem of contents and media channels is unique. Therefore we need to find structural patterns in exhibitions and museum cultural programing that can allow us to support a certain amount of generic actions while leaving room for innovation and experimentation for other parts of the exhibition.

5. Technical challenges

Technologies are a key issue of the project and we need to keep the overall solution as affordable and simple as possible.

The first layer is the front end. Smartphones and tablets are mandatory devices. But we also need to think about display units, touch tables and, furthermore, augmented reality glasses or wearable devices. The generated content should be easily run on different kinds of devices.

The second layer is the back office. The storage system and associated tools need to be able to handle content, different formats for the same content, links between data and points of interests, real and virtual paths across a place (a museum or outdoor related places…). The overall scenario will then be described in TourML.

The Wezit platform, provided by Mazedia, is a good start for the CULTE project. Wezit addresses these two first layers. Wezit will be extended to address transmedia pervasive games and Alternate Reality Games. The Wezit extension will have to implement connections between real and virtual worlds in a way that supports the story that surrounds the game/visit. The platform takes care of different layers of content and controls. It can be very difficult to build a transmedia scenario, and to handle it on top of different mobile and fixed devices with learning and gaming objectives.

This statement leads to the third layer: the authoring tool. It is mostly a functional-related objective. But the authoring tool should be simple enough to be used by the staff of the museum. It is a problem of careful man-machine interface design. The tool should hide the complexity of automated generation of the execution environment.

Last, but not least, the environment will be delivered on different devices and on servers. The scalability of the overall delivery platform is a key issue. It requires accurate tuning and the use of off-the-shelf solutions such as virtualization, cloud computing, security management… We believe that the final solution will be able to run on a hybrid cloud because part of the information is private and should be kept inside the museum.

6. The specific contributions of each partners

The project brings together four partners with complementary skills: LUTIN, a laboratory dedicated to usability studies; CEDRIC a group of researchers interested in interactive applications, specifically in the domain of transmedia and pervasive games; Mazedia, a communication agency that is designing a transmedia platform for cultural heritage and gaming projects, and the Quai Branly museum; which is heavily involved in the growing presence of transmedia inside museums and whose collections will be the subject of the experiments.

1. LUTIN Userlab

How do visitors navigate inside collections? How do they interact with displays? How do they gather information about the artworks, collect pieces of information

and structure personal memories? An important aspect of the LUTIN's involvement inside the CULTE project is to evaluate the success of the pedagogical goals set by the musée du Quai Branly, and to assess whether the game mechanisms are effective in engaging and motivating the visitors.

Also, the pedagogical side of the transmedia experience must be properly tuned so that visitors bring back a sense of the museum's missions and values, as well as some cultural facts about the artworks the museum displays. With the help of scientific methods, these aspects will be measured and quantified in order to provide feedback to the other partners during the project.

2. CEDRIC

The CEDRIC laboratory of the CNAM (Conservatoire national des arts et métiers – National Conservatory of Arts and Crafts) is the coordinator of the CULTE project. It has already been involved in several industrial research projects that led experiments in pervasive and transmedia game design. In addition to game design, it also has significant experience in interactive sound design and storytelling.

Its objectives in the CULTE project are to define game design patterns, model the design process of such games and facilitate the conception of editing tools.

3. Mazedia

For the past four years, Mazedia has developed a business strategy around the design and development of a transmedia platform based on open source standards (Dublin Core, Fedora Commons, TourML) to provide museums with the right tool to manage all their content on multiple devices and platforms (interactive tables, smartphones, websites, social media, etc.) in a more efficient and coherent manner.

Mazedia will be able to build upon its previous work to ensure a stable and appropriate platform for this ambitious project. The CULTE project will benefit from Mazedia's experience and expertise in this field.

4. Musée du Quai Branly

The Musée du quai Branly of arts and non-Western civilizations, is a public institution under the supervision of the Ministry of Culture and Communication and the Ministry of Higher Education and Research. A constant dialogue with its audiences is one of its main missions. It is positioned as an innovative institution using new technologies associated with traditional methods of learning. It has established an incubator of ideas and experimentations with different partners such as big private companies, designers, high schools, researchers and so on in order to create tomorrow's museum tools. This incubator is based on visitor needs analysis, skills crossing, concrete experimentations with the public and a global approach.

For instance, in Spring 2012, the musée du Quai Branly organized a one-week event to allow the public to freely experience several new tools and devices to discover its collections in an original way. Still in 2012, it was the first national

museum to offer an NFC smartphone application within its permanent collections thanks to the patronage of Orange. In 2013, it was also the first museum to offer kits for NFC interpretation outside the walls of libraries, hospitals, schools and so on. Furthermore in 2013 the musée du Quai Branly has trialled a major partnership with a suburban city to create a kind of out-door museum during one month in this suburb. It is therefore able to undertake ambitious projects and to showcase the new digital learning tools.

Beyond that, what is also relevant for the CULTE project with this museum is that it is both a museum and a research center for anthropology, ethnology and art history studies. Its collections are among the richest in the world in those particular fields. What is interesting in these collections is that they echo many contemporary issues: respect, diversity, tolerance, open-mindedness, etc. allowing them to connect with the visitors' daily lives. It offers a perspective on the world we live in and encourages civic thinking. For all those reasons, the museum can build multiple entry points in the city by using adapted media platforms, one of the strengths of transmedia. The game can start in the museum or outside its walls, thus building bridges between the collections and the daily experience of the city.

7. Conclusion

To conclude, the purpose of the CULTE research project seeks to conceive and to experiment a transmedia pervasive game in order to:

- Create links and continuity between learning museum tools that already exist;
- Create and sustain the visitors' engagement before, during and after their visit;
- Attract new kinds of visitors and lead visitors to become museum ambassadors.

Our hypothesis is that transmedia and gamification are ways to achieve these goals.

The schedule of the main experiments is as follows:

Date	Testing
School holidays – Spring 2015	Game-testing inside the museum
School holidays – Autumn 2015	Game-testing connecting both the museum and a suburb of the city
School holidays – Spring 2016	Game-testing connecting both the museum and another suburb city or a part of Paris
End of 2016	Launch of the final version of the transmedia pervasive game

Table 1: The project's planning

Four main issues will need to be faced:

- The co-creation of museum and exhibition tours between the museum staff and the visitors in order to have them experience a more interest-centered visit;
- The type of learning and knowledge acquisition to promote;
- The easy creation of pervasive transmedia games with little to no external assistance thanks to a well-thought-out back-office for non-programmers;
- The definition of a generic approach for different types of museums

The CULTE research project will help us to provide answers to those crucial questions.

As the project develops, results will be shared with all those who show interest in the project and the theme it explores. Therefore, a three-day international conference dedicated to transmedia issues in a museum context will take place at the Musée du quai Branly in Paris in spring 2017.

To follow the CULTE project: www.culte-project.org
To contact us: contact-anr-culte@cnam.fr

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