E|SPACE

IP and Europeana Space Pilots:
Case Studies

The Games Pilot and Hackathon

Games

The aim of the Games pilot has been to develop three game demonstrators, which draw upon content from Europeana, in order to meet two key aims:

1. show game developers and businesses the potential for using digital cultural heritage content with a view to inspiring new products.

2. demonstrate how the gamification and participation with cultural heritage content can cultivate new forms of interaction for a wide range of audiences.

The Games pilot produced three game demonstrators:

1. a casual game; simple and aimed at a mass audience;

2. a creative game, designed to let users play and remix content;

3. an educational game, providing additional value behind the fun of game play.

Each type of game is designed to appeal to a different user group, but still with the overall objective of showcasing digitised cultural heritage content (from Europeana) in a fun way.

The Games Pilot and Hackathon

Image of the casual picture restoration game

Introducing the Games Pilot and its Approach to Intellectual Property

Computer games are popular leisure and teaching tools. As generations become increasingly "native" to digital technologies, games and interactive technology more generally plays an advancing role in everyday life. Games are now played on mobile phones, tablets and computers, as well as

through consoles, meaning that the potential modes of production are vast and varied. The market is constantly changing and growing, and developers are often looking for new approaches.

The E-Space Games pilot set out to engage with this growing field through the development of three game demonstrator prototypes, which were developed to appeal to a range of audiences, for use in a variety of contexts; a casual game that is simple and aimed at a mass audience; a creative game allowing remixing of content; and an educational game that brings a fun element to learning. These games demonstrators draw on artistic Europeana Content to encourage use and experimentation with Europeana through interactive engagement.

The pilot took the view that it should not try to create a state of the art game in a market that has many competing brands. Within the budget of the pilot, there would be little scope to do this, and it would also be inappropriate to use project funding in this way. Considering best use of the funding and generating a wider reach, it was decided to create three smaller game demonstrators rather than a single one. The focus is therefore upon the potential of the games to inform the development of new tools and ways of engaging with cultural heritage, through Europeana and beyond. With this in mind, the pilot has taken an open approach to sharing the prototypes, disseminating them and sharing the source code with participants at the Games hackathon.

The Casual game demonstrator focuses upon restoration of paintings drawn from Europeana. Based upon the 1980s arcade game QIX, users have to clean/restore paintings quickly; if this generates a sufficient score, they progress to the next painting. The game demands focus and speed, and encourages the player to engage with cultural heritage through a process of revelation of the painting. Information about the artist, title and location of each painting is available within the credits section, and via the Information tab.

The Creative game demonstrator allows users to create remixes of video content, based upon the simple drag and drop technique. It is themed around dance and the playful experience of mixing and matching archived videos of contemporary dance in order to create new "mashups". Players

are presented with a library of dance clips video content that has been curated by the members of the Games and Dance pilots that they are then able to sequence together on a timeline. Attributions are clear, meaning that the user is able to conduct further research of these clips via Europeana.

For the Educational game demonstrator users are presented with a portrait from Europeana; they are challenged to recreate it either by taking a selfie or taking a photograph of friends. The game encourages close engagement with the painting, and draws users in through its relationship to the popular "selfie" craze. Once the picture has been taken, a series of colour and tone filters can be added to alter the picture; the objective is to get the photograph as close to the original picture as possible. For each portrait, information is available relating to archive source, the artist, arts and historical context for the image.

Coventry University's Serious Games Institute (SGI) team carefully planned the design of each type of demonstrator, not only to create an enjoyable player experience, but to illustrate the potential for cultural heritage content to be reused. Different approaches were experimented with, including initial consideration of HTML5 to have the demonstrators available on multiple platforms. In the end the Unity3d platform was chosen because of graphics performance and flexibility.

Challenges of Sourcing Content

The intention was that content for the Games pilot was to be drawn primarily from Europeana with supplementary resources accessed via other archives. For the purpose of the pilot, copyright and quality were considered to be the two defining factors in the selection of media:

- the necessary usage permissions and restrictions had to be examined and understood;
- the media had to be of suitable fidelity to promote the aesthetic appeal of the games and fit with the overall vision for the pilot.

One of the main challenges was always likely to be the tension between providing users with the ability to add content to games dynamically using

the database interrogation facilities available in order to provide a more open experience, and curating the aesthetic presentation and suitability of content in order to provide an engaging user experience.

The Casual game uses content from Europeana; originally it was to be based on specific images available through Europeana within the theme of "games". These were contributed by a particular provider, who, in the final period while the game was in the development phase, elected to remove them from Europeana. This meant that the only content left available for use in the game was the low resolution thumbnails. These were not suitable assets to progress the development of the game, thus it was necessary to change the concept of the game, whilst remaining in the casual arena.

A further challenge was contending with inconsistent metadata structures returned by the Europeana API. For instance, provider names or item descriptions can be held in several different places within the data returned by that API, so it was necessary to set up several rules to check the location and existence of such data, in cases where it even exists at all. For the specific cases of images, video and audio (media data that apps were built around) the usable URL of the assets may be conveniently part of the data package returned by the API, but it is also just as likely to be absent altogether. In all instances, the URL of a container page of the providing archive was present, and in the case of the asset URL missing it was necessary to find the asset. However, in a number of cases the asset provided at the direct URL has been significantly lower fidelity than the corresponding asset in the container page.

Members of the Games and Dance pilots collaborated to curate of a library of dance content videos to form the creative game demonstrator. This became a "static" library of videos drawn from different archive sources (including Europeana sources), that have been downloaded and inserted into the demonstrator, rather than using a dynamic system of loading videos into the software using search terms at run time. This approach has been selected in order to provide the user with a coherent experience as videos were selected based on aesthetic content, quality of image and licensing being "pre-loaded" there are no download times for users and therefore no

negative impact on their download service and any tariffs for data. Also the experience of using the demonstrator and having access to content is not to be reliant on that content still being available directly from Europeana.

Coordination of the Games Pilot and IP

The pilot's work began in February 2014 and methodology was established with the Pilot Coordinator acting as the interface between the project and Serious Games developer at Coventry University. The pilot reviewed Europeana content with partners, and storyboarded themes for the games demonstrators. It was decided that the team would hold meetings every three months to discuss idea, progress and ensure that work was being conducted within the timescale.

Unfortunately, the Pilot Coordinator left the university in August 2015, just at the point where the games were to become available for user testing, this meant that development of the games stalled while the team was reorganised. The Project Coordinator decided that at this late stage of the pilot's work, the Coventry University based Dance pilot team and Project Manager would take over, rather than wait for a new Pilot Coordinator to be recruited. This led to a delay, as the new team assessed the situation; this was hindered further, as the developer of the three games had also left the university during this period and therefore, none of the original games development team was in place by the end of 2015.

One of the challenges facing the new team was the lack of documentation regarding the development status of the game demonstrators and the also the situation relating to IP. By returning to old e-mail discussions and through meeting colleagues of those involved originally, a picture began to form. The issue with being unable to access dynamic content was understood, as was the use of libraries of content for each game, all with attribution of sources. However, there was a wider question, that could have implications for the hackathon and that related to the intellectual property of the source code used within the development of the games. Did it belong to Coventry University or could it be shared with hackathon participants (and other

interested parties)? Would the source code be available to be shared with participants at the hackathon in April 2016?

Source code for the games was provided to the new pilot team in late February 2016, which was checked by partner imec. In parallel, SGI forwarding standard terms relating to foreground and background IP. When asked to quantify foreground and background definitions in relation to the game demonstrators, no answer was available. This was a direct result of none of the original team still being in place and no clear documentation maintained to establish any demarcation at the onset of the work. SGI did however give the E-Space project permission to share the source code with hackathon participants and partner imec therefore placed it into an accessible git repository.

The Games Hackathon and Approaches to IP

The organisation of the Games hackathon was a task to be sub-contracted; the event was scheduled to take place in April 2016. The departure of the Pilot Coordinator also impacted upon this process, as his initial planning became inviable without his involvement. This led to procurement being initiated at a relatively late stage, as the new pilot team tried to understand the game demonstrators and their IP status.

In light of this change, it could be considered that the hackathon ultimately took place too early, although the weekend of 16 and 17 April 2016 was the only date that would fit with the diaries of the organiser and project personnel. The hackathon was held at Game City, the National Gaming Centre in Nottingham, UK and was preceded by a Salon event for participants in London the week before. The organiser set a very artistic and creative tone for the event which was entitled Art//Games//Hackathon. Tim Hammerton introduced Europeana to the group and NTUA presented the E-Space Portal as a way to access content.

Image from the Games Hackathon

The new pilot team ensured that messages about the project's work were communicated to participants within the invitation letter; that they would have access to the code of the three game demonstrators; and that three teams would be selected to progress to the business modelling stage and then potentially onto business incubation, based upon their business idea and integration of digitised cultural heritage within their gaming concept.

Intellectual property was discussed during the morning introductory session of the event, with copies of the E-Space guides for hackathon organisers and attendees circulated. As with other project hackathons, the message given was that it is not possible to protect an idea. If participants were worried about their concept being taken by others, it would be better to not reveal it. Following this discussion, there were no further IP related questions during the hackathon.

The hackathon was not as successful as had been hoped or as other hachathons within the project had been. None of the teams chose to use the source code for the three games and may not have been aware of it in advance; the cultural heritage requirement and progression to business modelling aspects were not the main consideration of participants. Three teams were selected as hackathon winners to progress to the business

modelling stage, but none significantly featured the requisite cultural heritage element. Although they were asked to incorporate it into their planning for the next stage, participants were reluctant and ultimately, by not meeting the project's specified criteria, none progressed to the business incubation stage.

Although the hackathon may not have produced teams that would be supported to start a business, the results are as interesting to consider as those from other successful project hackathons. The loss of the original Pilot Coordinator meant that new plans had to be put into place at short notice and availability meant that the date was a little earlier than was ideal. The creative tone set by the organiser may not have encouraged the use of cultural heritage content and the recruitment of teams with a desire to establish their own business (in the way that a project partner may have done). It could equally be considered that gaming is a sector that has a regular hackathon culture and that participants were familiar with the traditional ethos rather than the business orientated nature of the E-Space hackathon and therefore did not want to progress further. Regardless of the outcome and despite the multiple hurdles faced by the pilot team, a hackathon was held and was enjoyed by those that attended the event.

Lessons Learnt from the Games Pilot

When reflecting upon the Games pilot, the assumption that all staff would remain in place for the duration of the pilot and that verbal agreement and understanding was enough was flawed. Although it is not unusual for some people to leave, in this case all of those involved in the Games pilot had gone by the mid-point of the project, and a new team had to gain an understanding of the status of work. This was particularly relevant to IP, as there was uncertainty over the application of foreground and background IP; what might be shared with hackathon participants and what is owned by Coventry University. When commissioning any product development, a document ought to be drawn up at an early stage that clearly outlines the expectations of both parties that remains in place regardless of any staffing changes.

The selection of content for use within the game demonstrators was not as smooth a process as had been envisaged. Originally the selection of dynamic content was planned, but due to the difficulty of accessing content via Europeana it was replaced with a static library. This is an important consideration for future game based work that incorporates digitised cultural heritage content. At a later stage in the project, the E-Space Portal became available that would help to address this requirement through its federated search functionality.
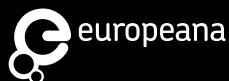
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