Pilots methodology and content sourcing

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Included with the deliverable	Executive Summary	☒	Abstract	☐	Table of Contents	☒

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Executive summary

In order to explore different scenarios of re-use of Europeana and other available digital cultural content, the Europeana Space project will develop six Pilots that will cover the following thematic areas:

- Europeana TV
- Photography
- Dance
- Games
- Open and Hybrid Publishing
- Museums

The objective of the Europeana TV Pilot is to enable a novel delivery method of Europeana content to SmartTV environments for both the leisure and elderly market. The Photography Pilot will experiment with the creative reuse of historical photographic material including combining family history images with historical events. The Dance Pilot aims to create a general framework for working with dance content and the associated metadata and in so doing enable the production of two innovative models of content re-use; one for Dance professionals and the other for leisure/casual dance users. The aim of the Games Pilot is to encourage use and experimentation with the Europeana archive by providing three types of game demonstrators across a demographic range. The Open and Hybrid Publishing Pilot will produce an open book about the dynamic relationship between photography and other media. Finally, the Museums Pilot will explore the use of Europeana content for both to enhance the collections of cultural institutions and enhance the interactive experience of visitors.

This document contains the terms of reference for the participants in the Europeana Pilots. It explains the overall development strategy and presents each Pilot in detail. This document aims to establish a common methodology for the development of the Pilots and allow technology providers, content providers and distributors to plan for their development. To this end, the following assessment criteria has been defined and detailed for each Pilot:

- Complexity of the underlying technology
- Content sources / Ease of finding content
- Size of the market segments interested in the products
- Viability of the business models
- Investment requirements
- Readiness
- Legacy components and APIs
- Used Europeana software modules
- Link with other Pilots
- User testing / User groups
- Output rights
- Multilingualism

This document has been developed during the first two months of the Europeana Space project, during a period where partners have been getting to know each other and identifying the strengths that they are able to bring to the project and starting to shape their ideas for the Pilots. To this regard, it should be noted that the consortium of the Europeana Space project is composed by 29 partners from 13 European countries. Such a wide participation has represented a challenge for the partners in terms of knowing each other and learning to work together. During this initial period, many ideas have been considered and it is recognized that there is still further development work to be undertaken before the course of each Pilot is set

in stone. This deliverable D4.1 should be read in this context and with the understanding that the shape of each Pilot will be further defined through discussions and recorded within deliverable D4.2 which is to be prepared by Month 6 (July 2014).

The deliverable is composed of 10 Sections. Section 1 introduces to relationship of the Pilots with the rest of the project and presents the aim and the scope of the deliverable. Section 2 provides the context and explains the coordination strategy for the Pilots. Section 3 defines the assessment criteria that each Pilot has been asked to use to outline their activities, while sections 4 to 9 discuss them in detail in relation to each Pilot. The next steps are considered within Section 10 of this document.

1 Introduction

Europeana Space project will develop six Pilots, which will cover the following thematic areas: Europeana TV, Photography, Dance, Games, Open and Hybrid Publishing, and Museums. The pilots will be a means to explore different scenarios for the re-use of digital cultural content, with a special focus on the re-use of the content accessible via Europeana. The work related to the implementation of the pilots is the responsibility of WP4 "Europeana Space Scenarios: development of Pilots in the six thematic areas".

Two more work packages contribute to the realization of the Pilots, namely WP2 "Technical Space: Infrastructure and tools for content access, use and storage" and WP3 "Content Space: Rights management for creative exploitation of Europeana content".

The results of the Pilots will then contribute to the subsequent phase of the project, devoted to the identification of viable and sharable business models for the exploitation of innovative applications and new creative ventures. This work is coordinated in WP5 "Innovation Space: Valorization and exploitation in the Creative Industries".

The results achieved by the Pilots (as well as by all the project components) are then communicated and disseminated through the activities carried out in WP 6 "Communication, dissemination and sustainability".

The Europeana Space is a very integrated project, where the Pilots represent the core part of the project and for this reason they are interlinked with all the other project activities.

Both the wide number and scope of the Pilots and their connections with the rest of the project, imply a level of complexity in the coordination of the Pilots of which the analysis is initiated in this D4.1 and will be the matter of care and attention along the whole Pilots implementation, as part of the work of task T4.7

The main aim of this document is to start the development of a common methodology to be shared among all the Pilots. To this end, the first scope is to provide the definition of a list of assessment criteria, which are further detailed, for each Pilot. The second scope is to provide the initial context of the Pilots in order to identify common activities and approaches.

Deliverable 4.2 "Pilots coordination - information on technical planning" (to be prepared by Month 6) will elaborate in further detail on the Pilots and build upon the criteria specified in this document.

Throughout the design, development and delivery of Pilot activity, it is important that the objectives of the project are fulfilled and that the wider creative sector is made aware of the digital cultural content that is available, the innovative applications that can be generated through the re-use of this content, and more in general the business opportunities that the digital cultural heritage is offering to the cultural and creative industry. A greater number of individuals and organizations should be able to interact with content to create entrepreneurial opportunities that lead to an increase in skills and jobs within the cultural heritage sector. In addition to exploring innovative options through the Pilots, it is important that tools are left for others to experiment with and develop either through hackathons, as a result of the educational dissemination activities of the project, or as a general legacy for user projects within the Europeana family.

2   Context and coordination strategy

The six Pilots sit within Work Package 4 of the Europeana Space project. Due to the significance of the Pilot content, the project has two Work Package Leaders to help shape and maintain the overview of Pilots' work. Peter Schelkens of iMinds is the prime WP Leader (supported by Frederik Temmermans) with Antonella Fresa of Promoter, the project's Technical Coordinator, holding the second important role within the work package. Both WP Leaders work closely with Tim Hammerton, Project Manager, who reports to Sarah Whatley the Project Coordinator (who is herself leading the Dance Pilot) to ensure that the work of the Pilots fits with the other activity of the project, the Technical, Content (IPR) and Innovation Spaces.

Each Pilot is lead by a designated Task/Pilot Coordinator that leads the work of the partners associated with the Pilot. It is important that there is not only an understanding of the development of their own work, but also links into other Pilots (and projects) to understand the methodology and share best practice.

As part of the project's reporting structure, the prime Work Package Leader provides a WP Management Report to the Project Manager at three monthly intervals; for each Pilot, this will include a written summary of the activity, state of readiness and any issues or risk that the Pilots face. Operating to a similar timescale, each project partner is required to provide an Activity Report to the Project Manager detailing the work that they have undertaken across the project. This overview of all activity enables the Project Manager to undertake follow-up discussions with the WP Leaders and Pilots Coordinators, as appropriate.

In addition to the formal reporting, the WP Leader maintains a regular informal dialogue with partners considering ways in which Pilots can share resources, ideas and areas of expertise to enhance the overall results, as well as considering methods to overcome any barriers to effective operation. This is an important aspect of the Pilots, as they are working to a tight timescale to develop prototypes and demonstrators, as well as leaving a legacy for hackathons, educational use and by others within the creative industries.

As this is a Best Practice Network rather than a research project, the experienced groups of partners will build upon the work of previous projects, both those that they have been directly involved with and also others that have left reusable items as part of their sustainability models, as well as drawing upon knowledge and expertise from within the Europeana family. To ensure that there is a clear delineation of the background intellectual property that the respective partners are bringing to the Europeana Space project, the Coordinating organization has put in place a Consortium Agreement where each partner will register the background included and background excluded as part of the project.

Work Package 3 (Content Space) will examine IPR, the models of reuse of content and Rights labeling. Part of the work of this work package will be to consider the results for sharing any foreground intellectual property developed during the lifetime of the project. This work will also involve the legal department of the Project Coordinator where there is a requirement to amend the Consortium Agreement.

It is a requirement for each partner involved within the project to disseminate details of activity to interested projects, developers, creative sector organizations and members of the public. Through these, the Best Practice Network developed in Work Package 6, the Europeana family and other channels, it is important that a community of interested people is developed who can comment upon and validate the value of work undertaken within each Pilot. The other benefit of this approach is that potential hackathon participants can be identified at an early stage potentially leading to more effective creativity during that phase of the project and

really credible business models being supported through the Work Package 5 incubation activity in the final year of the project.

Having been introduced to each other at the project's kick-off meeting on 6 and 7 February 2014, the Pilot teams had five weeks to develop the ideas and approaches for their projects and to begin to populate this D4.1 document. The next stage was for the Pilots to gain an understanding of the plans for the other Pilots and to develop a common methodology and approach to understand how technology and tools can be shared.

As Work Package Leader, iMinds invited all partners involved in the Pilots to attend a meeting on 19th and 20th March 2014 in Brussels. During the meeting, each Pilot presented their proposed objectives and methodology; assessment criteria was discussed and critically analyzed by all present WP4 members (and the Project Manager) to challenge Pilots to be really ambitious when setting their goals. The resulting output is integrated in this deliverable. One of the aims of the meeting and this deliverable is to identify the common aspects between all Pilots. From these aspects, elementary components or building blocks will be extracted that can be shared among different Pilots. These building blocks can also be used in other use cases and the hackathons.

This work started within D4.1 will be further elaborated in deliverable D4.2. In preparation, a workshop has been organized on 15th and 16th May 2014 in Amsterdam to concretize the shared building blocks. This will include a brainstorming session to define a broad set of use cases and the required components to develop those use cases. The session is to be organized around one key question and 6 trends or developments. "*Which re-usable building blocks can be defined to be shared among the Pilots and used within other use cases and the hackathons*?".

The result of the workshop will provide clear structured requirements for each Pilot. There will also be general requirements put in place to define modules that are shared between multiple Pilots and that can be re-used in other use cases or in context of the hackathons. A follow-up meeting will be organized on the 24th of June 2014 and the results will be presented in D4.2.

3   Assessment criteria

3.1   Introduction

The following paragraphs detail the assessment criteria to be used within this document.

Sharing common assessment criteria is an important element to raise the integration of the Pilots implementation, avoiding the risk that the six Pilots progress as totally independent projects. The criteria will also be a mean to support the WP Leader in the coordination and monitoring of the activities of the individual developments.

The assessment criteria are elaborated in detail for each Pilot further in this document using the following headings.

3.2   Complexity of the underlying technology

This criterion provides a reference for the required technology for deploying and using the application, including the following:

- **Hardware specification**. What hardware is needed to deploy and use the application: device type (smart phone, portable…), memory requirements, specific equipment …
- **Software prerequisites**. List of all third party software required to run and/or use the application, including licensing terms.
- **Installation process**. Expected procedures for installing the application.
- **Processing requirements**. Does the application run in real-time or does it need post-processing? What is the expected scale of the required processing power? Are cloud services required?
- **Network requirements**. Requirements regarding network connectivity.

3.3   Content sources / Ease of finding content

For each content source, the estimated volume is provided, as well as details of access requirements. Indication is made as to Europeana content is to be used. A more elaborated list of content sources will be provided in deliverable D4.2 "Pilots coordination - information on technical planning".

3.4   Size of the market segments interested in the products

A description is provided of the targeted market segments, addressed value chains and if feasible an estimation of the size of the market segments in order to assess potential revenues.

3.5   Viability of the business models

Viable business model proposals for exploiting the application are made by each Pilot.

3.6   Investment requirements

An overview of the investments needed for development of the application and expected investments for bringing it to the market.

3.7   Readiness

Pilots outline the state of the application after finalization within the Europeana Space project and steps required to further deploy the application beyond.

3.8   Legacy components and APIs

Consideration is made of the modules and APIs developed in the context of WP4 that can be used in the hackathons or by third party developers.

3.9   Used Europeana software modules

The software modules used by the applications that are available, or have been developed in an Europeana context (e.g. Europeana APIs).

3.10 Link with other Pilots

A description is provided of the initial thoughts of how each Pilot might integrate with other Europeana Space Pilots.

3.11 User testing / User groups

Each Pilot identifies the user groups that will be involved in testing the applications and explains how they will be engaged.

3.12 Output rights

The rights associated with the output of the Pilot are considered, including rights on software (open source, licensed or patented components …) as well as content produced or provided in context of the Pilot. Pilots are asked to mentioned what content will be provided to Europeana from the Europeana Space project.

3.13 Multilingualism

Identification of the extent of the work required to deploy the applications in multiple languages. This includes an overview of content that needs to be translated as well as implications on the used and provided APIs.

4 Europeana TV Pilot

Pilot Coordinator: NISV

Participants: LUCE, NOTERIK, NTUA, RBB, PROTON LABS

4.1 Description (based upon the Description of Work)

The technical objective of the EuropeanaTV Pilot is to enable a novel delivery method of Europeana content to SmartTV environments. The technical framework will make a connection with the Europeana API and offer an editing environment to analyse, personalize and enrich the Europeana content into a publishing format that supports a new TV experience. This Pilot does not perform R&D, but rather builds upon developments from projects like HBB-NEXT (FP7, RBB), LinkedTV (FP7. Noterik) and Europeana Creative (NTUA). The Pilot will support and evaluate two distinct scenarios: one focused on social communities and one on in the context of local communities. Both scenarios have in common that they deal with historical or nostalgic aspects. The first scenario we call the 'broadcast' scenario and has a wider scope in terms of location (Berlin Wall) and reach (broadcasting, communities) and the second scenario has a more local scope (personal memories, family) and reach (living room, classroom), which is currently called the 'local' scenario (for e.g. elderly or educational target groups). As a result, the technique for both scenarios will have different requirements. For the 'local' one more dynamic experiences will need to be created that are tailored to the specific user, while in the broadcast model we expect all viewers to share the same experience. Content will be made available by RBB, NISV and LUCE.

In both scenarios NTUA will provide a system to enrich the content, the system will be based on services using a semantic repository with web-based query answering services (SPARQL endpoint) that stores the metadata, describing the content. The services to be implemented will enrich the content descriptions, expanding the semantic repository, on the basis of ontological representations of the domain and data linking with web resources like Wikipedia, GeoNames etc. The semantic integration and enrichment will be performed offline and the results will be stored to the semantic repository. It is important for the operation of the system to start from a rich structured and/or unstructured description of the content, in order to build services that will enable more sophisticated content access

The technology will be built by NOTERIK and Proton Labs and NTUA. NTUA will ensure the results are contributed to Europeana Labs, built in the context of Europeana Creative.

4.2 Complexity of the underlying technology

4.2.1 Hardware specifications

The hardware specifications are in two distinct areas. On the one side there are the online services hosted by NTUA, Noterik and Proton Labs. On the other side there are clients devices needed during development, user testing and reviews.

The hosting parts for NTUA will be covered by WP2 since their modules in this Pilot are all depending on APIs that are hosted in WP2. For AV storage, ingest and playout Noterik will use a server cluster consisting of 3 frontend servers and 4 transcoding/storage machines. These are all Intel-based 4 or 8 core class machines running Linux or Windows depending on the task and streaming format. Proton Labs software, databases, and encoding process are all supported via Microsoft Azure cloud infrastructure that can scale and be configured for specific user scenarios. Live connections to clients is 99% based on Microsoft Service Level Agreement (SLA).

The hardware needed by the clients consists of mobile devices like smartphones and tablets and SmartTV/HbbTV boxes. A sample is needed for testing during development but larger

numbers are needed during the user-trails. Research will define the available numbers within the organisations and/or do a cost analysis of hiring vs buying devices for use in the trails.

4.2.2   Software prerequisites
Noterik

Server side:

- Apache webserver under the Apache license
- Tomcat applications server under the Apache license
- Springfield video platform developed by Noterik under the GPL3 license
- MySQL database under the GPL2 license
- FFmpeg transcoding software under the GPL2.1 license

Client side:

- Browsers both closed and open source on Windows and Mac (IE, Safari, Chrome)
- JQuery under the MIT license
- Licenses for HbbTV parts we cannot yet determine at this stage because of server and brands

Proton Labs
Server side software

Software / library	Description	License
Ruby	programming language	Ruby License (compatible with the GPL via an explicit dual-licensing clause)
Ruby on Rails	web application framework	MIT License
PostgreSQL	database engine	PostgreSQL License (liberal, similar to BSD or MIT licenses)
Redis	in-memory database	BSD license (very permissive free software licenses)
Sinatra / Grunt	domain-specific language	MIT License
FFmpeg	video transcoding	GPL2.1
Passenger	deployment controller RoR library	MIT License
Nginx	HTTP and reverse proxy server	BSD license
VBOT Depot	video workflows management system	Commercial
Microsoft Azure CDN	content delivery network	Commercial

Client side software

Software / library	Description	License
Ember JS	client-side JavaScript application framework	MIT License
jQuery	JavaScript library	MIT License
Safari (iOS), Internet Explorer (Windows Phone), Android Browser (Android)	web browsers for WebView elements	open source or commercial
Android SDK Application Framework	software used to develop native mobile applications for Android	Apache 2.0
iOS Xcode	software used to develop native mobile applications for iOS	commercial
VBOT Player	software library to develop social mobile video players	commercial

4.2.3   Installation process

For the end user it is not expected that any installation to be needed except for having the standard internet connection and browser(s). For developers from other partners and/or members of the hackathons we will use a SaaS model where we host their applications inside our platform(s). Full installation of all the servers is outside of the scope of this project since about it would require linking up several cloud based systems run by Europeana, NTUA and ProtonLabs.

The mobile native apps will be either made available via Testflight (staging app for development and test purposes) or mobile application stores such as iTunes and Google Play stores. Application download to the mobile/tablet device is necessary and will come with simple on-screen instructions on how to use the application.

4.2.4   Processing requirements

The applications will be running real-time and enough resources will be made available by the different SaaS partners to do so. There is a need for pre-processing of the meta-data and video data before its made available but since there is no overlap the same machines/clusters can be used. It is expected that the 10,000 to 15,000 content items are processed before the first user trails or in the background. The native mobile/smartTV applications will either run in real-time or will apply post-processing depending on the use case and usability required by content owners/providers and TV viewers. The scale of real-time processing power is low given the low computer power found in frontend mobile and TV devices.

4.2.5   Network requirements

The TV Pilot has 2 distinct network requirements that need to be considered, the first is the needed bandwidth for the streaming of media. For this enough bandwidth for 1,000 concurrent viewers using 2x3Gig internet feeds will be provided from one of the mayor internet points in the world (ams-ix) to ensure the best possible connections to all the European clients. The second demand is low latency needed for interactive applications for this the aim is for a maximum of 100ms delay between clients and servers for each European country. For the mobile and tablet parts the application(s) can be optimized for both 3G and Wi-Fi connections. Optimization in regards to memory size of application can also be discussed to offer a mix of locally cached media in the app with streamed media to the app that can then be 'pushed to tv'

4.3   Content sources / Ease of finding content

The three content providers contributing to the Pilot are already aggregating content to Europeana: Instituto Luce Cinecitta 400,000 items through the European Film Gateway and about 3,000 items through EUscreen, RBB 100,000 audio items as consortium leader of the DISMARC project, and Sound and Vision is contributing 4,000 videos through the EUscreen project. Content will be cleared for online accessibility. For the EuropeanaTV Pilot, at least 4,000 items from each provider will be cleared for viewing on TVs.

Instituto Luce Cinecitta will select content from its more recent collections of newsreels and documentaries (from the 1950s to the 1980s).

RBB will provide clips from news broadcasts and documentary video and audio material on the theme of multi-cultural society or similar themes suitable for an edutainment-based leisure scenario.

Sound and Vision will provide newsreels (1940-1975), documentary film and news broadcasts (1970-2013).

The content identified by the three content providers for the EuropeanaTV can be used within both scenarios. Both scenarios in this Pilot have a nostalgic or historical aspect, where a memory of an event, a time period or a place plays an important role. The content that is selected for this Pilot can therefore be seen as building blocks, which can be used in both scenarios where necessary. Initially, the content used for the 'leisure' scenario will mostly come from RBB and LUCE and the content for the 'local' scenario will mostly come from NISV and LUCE.

In addition, the content that is used for the EuropeanaTV Pilot and that is made available under a license that allows re-use will also be available for the other Pilots. In particular this is content from Open Images and Sound of the Netherlands (see below).

The following content sources are foreseen to be used by both scenarios:

[1] Open Images (Open Beelden)

Open Images is an online media platform that offers online access to audiovisual archive material to stimulate creative re-use. (http://www.openbeelden.nl/). Sound and Vision delivers at least 3,500 videos (MPEG-4, MPEG-1) via this platform. All videos on this platform are available under a Creative Commons license.

[2] Europeana

The datasets that are available on Europeana (www.europeana.eu) and that are available for use by both scenarios are:

- Audio: Geluid van Nederland/Sound of the Netherlands www.geluidvannederland.nl) This includes 2,300 Sounds available under a Creative Commons Licence, provided by NISV.
- Audiovisual collections: EUscreen (www.euscreen.eu) and EFG (www.europeanfilmgateway.eu) Both LUCE and NISV have provided videos and photos through their involvement in the EUscreen and EFG project. This audiovisual content covers various topics relevant to both scenarios, including news, sports and factual programming.
- All other types of Europeana content which would be relevant for the two scenario, i.e. text, image. audio, video (in particular content coming from Europeana 1989 (http://www.europeana1989.eu/de/) in relation to the Leisure scenario).

All metadata available on Europeana is available under a CC0 license.

[3] Institutional content

In addition to the content that is available via Open Images[1] and Europeana [2] the following content is foreseen to be used by the Europeana TV Pilot:

RBB:

- RBB 250 videos from RBB (www.berlin-mauer.de) + additional content from archives and user generated content as well. This content is not yet available in Europeana.
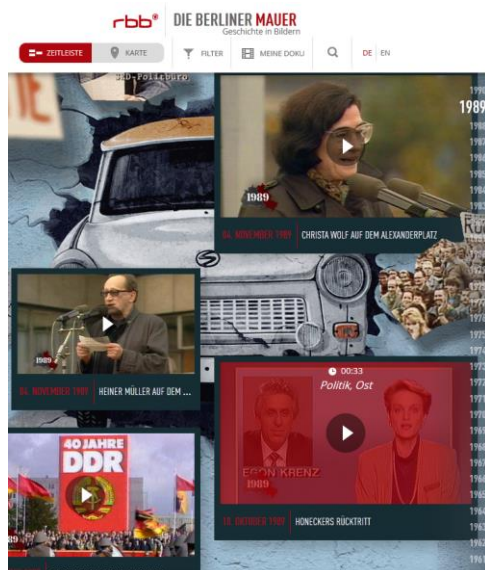
LUCE:

- Instituto Luce Cinecitta will select content from its YouTube channel (https://www.youtube.com/user/CinecittaLuce)
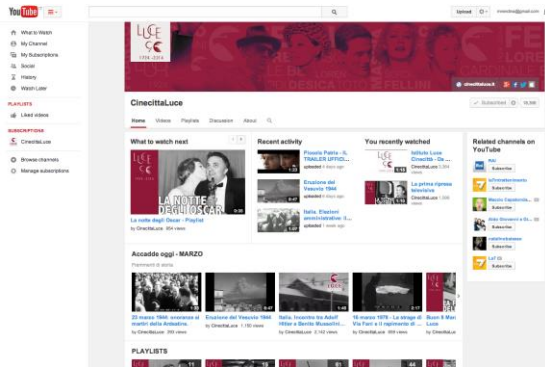
[4] Contextual Information

Contextual information will also be considered for this scenario, namely relevant Wikipedia (www.wikipedia.org) information and articles.

[5] Other content

NISV will look into the possibility to make use of content from the television series 'Van Gewest to Gewest'. This programme, which ran for over 35 years, highlights topics about people and regions in the Netherlands.
http://beeldengeluidwiki.nl/index.php/Van_gewest_tot_gewest

4.4 Size of the market segments interested in the products

The EuropeanaTV Pilot will target the local and broadcast viewer segments. Both scenarios have in common that European citizens, whether they are, teenagers relaxing at home, or the elderly, have their experience of television enhanced by the incorporation of access to archival video material. This enhanced experience may be community building or relive memories through past television. In either case, video material which has already been digitised and made available online, as part of preserving Europe's broadcast heritage, is brought out of the archive where it is stored and must be searched for, and onto the viewer's screen. It is made more useful because it is provided in an engaging manner at the moment a relevant topic or item is in the focus of the viewer's interest. For the video content owner their video material reaches a broader audience, including new consumer groups, and increases its economic and social value as a digital good, encouraging further digitization efforts.

Broadcasting segment:

- Tools to build up a Video-Dossier(s) for Smart TVs very easy for the TV in HbbTV or as MultiScreen Application.
- Interesting for broadcasters, small content providers, developers, production companies

Local segment:

Due to the modular structure of the technical space, and it mainly being location-based storytelling tool, the Local scenario is set up to be flexible so that it can also be applied within other segments such as education and tourism. The Local segment will be of interest to broadcasters, content aggregation services or educational service providers.

4.5 Viability of the business models

The proprietors of archived content such as broadcasting corporations and cable companies

are among the key benefactors from EuropeanaTV. The improved marketing of long tail content will be described here as an example business case built on the EuropeanaTV infrastructure.

Business model canvas for the EuropeanaTV Pilot:
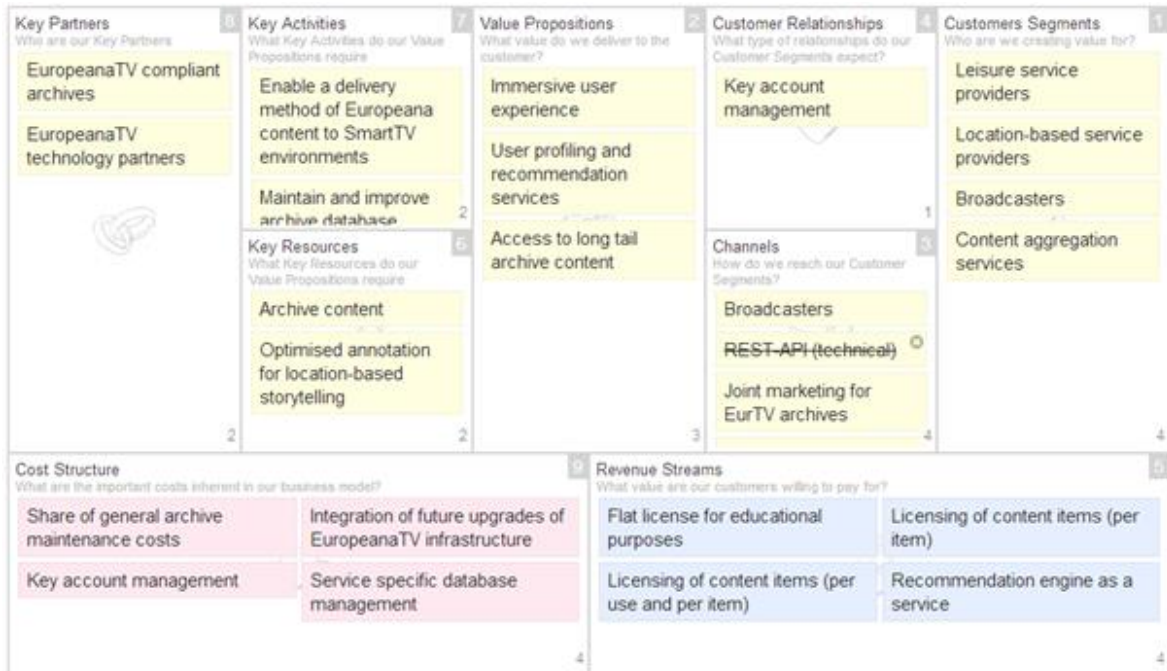
1. **Customer Segments** This business case targets three main customer segments: a) Content aggregation services of any kind, e.g. newspaper websites or magazines seeking to enrich their articles with related videos. b) Broadcasters who wish to enrich their programmes with second-screen services or other kinds of programme-related on-demand services. c) Educational and Leisure service providers, both public and commercial ones. This includes schools and universities.

2. **Value Propositions** The prime value of licensing content from a EuropeanaTV compliant archive is that editors or users get very specific content matching the particular story they want to tell through a standardised interface and easy to integrate REST-interface. The specific value of the recommendation service is that it discovers content that works as a link between a topic or event and a viewer's own reality, resulting in higher immersion into the content and an increased feeling of content relevance to the user.

3. **Channels**
   The B2B marketing will be done via conferences, exhibitions and a website. Additionally, a prospective EuropeanaTV association may be mandated the joint marketing of compliant archives. The content search and retrieval as well as the access to the recommendation service will be provided via a REST-interface. Broadcasting corporations can integrate the technology via on-demand HbbTV services. Details on this are to be specified during the project.

4. **Customer Relationships** As a typical B2B business model, the customer relationship will be managed by key accounts. Most probably the average EuropeanaTV archive will count its customers in dozens up to hundreds with a relatively high turnover per customer, which makes key account management the most feasible way.

5. **Revenue Streams** a) The marketing of long tail content for content aggregators. They would be charged per use and unit, as this the usual way to market content on the web.

b) The licensing of long tail content for broadcasters. They would be charged a flat licence fee per item used in a service, independent from the number of users, as broadcasters are usually keen to have fixed production costs. Especially for programme-related services where new business models are still being established, broadcasters might be more ready to accept a flat fee than a per-user fee.

c) The licensing of long tail content for educational service providers. They would be charged a flat fee for an annual licence. Especially public educational providers usually have fixed annual budgets and cannot possibly subscribe to a per-use model. Also it might be wise to keep the fee low as reminiscence to the public value of long tail archive access for educational purposes. Additionally the recommendation engine may be marketed as a service. It should be considered to offer it for free though, as it can be used as a feedback mechanism to improve the database annotations.

6. **Key Resources** The key resource is the archive content and its high-granularity annotation, which allows for the discovery of very specific long tail content. EuropeanaTV will exploit a large subset of content items that are interesting to a comparatively small group of people instead of exposing the most popular items only.

7. **Key Activities** Content owners will maintain and improve their database according to the needs of users in the leisure segment. Any new content had to be annotated according to the standards set in the EuropeanaTV environment.

8. **Key Partners** Any broadcasting corporation introducing EuropeanaTV technology will stay in close communication with the EuropeanaTV technology partners, likely to be represented by a EuropeanaTV association to be founded. Through this association content owners can make use of the opportunity for joint marketing of content and reaching long tail market segments.

9. **Cost Structure** On the cost side there are the EuropeanaTV specific maintenance of the archive and the key account management as internal costs. Externally constant support and updates from the EuropeanaTV technology developers should be ensured. Further it seems sensible to count in a share of the general content production and archive maintenance costs, which is basically a shifting of costs and revenues between different units of the company.

4.6 Investment requirements

By the end of the project several modules will already be in use either within other European projects or for commercial use. From the start this Pilot was designed to make use of already active APIs and platforms. Since the core of the concept is to be able to create a shorter path to market for projects using the modules and development methods we consider the Pilot a success if we can reduce this time by 50%.

Furthermore, effort from the content partners in this Pilot is needed to source the content. It is expected that investment for this effort is needed particularly at beginning of the Pilot and throughout in case more relevant content is needed, or when rights need to be negotiated.

Some effort is foreseen for the translation into the target languages (English, German, Dutch and Italian) by RBB, NISV and LUCE, but only for a small selection of the video content and associated metadata for the purpose of the specific use cases selected in this Pilot.

4.7 Readiness

The Pilot will create several online applications built up from multiple content and applications modules that combined create the two user experiences outlined in the scenarios. The two scenarios in question are considered to have a limited time value and will not be actively maintained or extended after the project. The different modules, APIs and created content sets will stay available in different places. As a result of cooperation with Europeana it is expected that their APIs will evolve and stay available after the project. The created software

modules will be made available to Europeana Labs/Space repository. The SMEs in question that run the needed Software as a Service (SaaS) elements and APIs are willing to keep the services open and available as long as the projects using them cover the cost incurred for doing so.

As only the selected content for the Pilots will be translated for the specific use cases, preparation of the application for external use would imply a translation of content and metadata on a larger scale.

4.8 Legacy components and APIs

The requirement of re-use of the modules and APIs by workshops and in hackathons means that the software framework we design should reflect that from the start. That means that an extention of the work already done inside the LinkedTV project where Noterik worked on development tools to create, share and deploy multiscreen applications. One of the major goals was to take away the requirements for new developers to host the whole platform but to be able to develop locally and deploy on available clusters in a SaaS environment. Inside that project we only had to consider one underlying platform but inside the TV Pilot there are already two mature platforms (Springfield from Noterik and vBot from Proton Labs) and scanning the other Pilots there are further platforms being used. The solution we will introduce is not to merge the platforms but create a common language between them that is easy to implement for the SMEs but that will open up a wide range of possibilities that are easy to script and create by anyone involved in quick prototyping workshops and hackathons. It is assumed that these extensions to the different platforms (like Noterik's Springfield platform and Proton Labs vBot) will become part of the their code bases and can be reused by active or future projects like EuscreenXL, Europeana Creative, LinkedTV and FLContent.

Using this framework and language it is expected to be much easier to share some of the features in the area of multiscreen and mobile with the other Pilots.

4.9 Used Europeana software modules

- Europeana API

- Open Images API

4.10 Link with other Pilots

Overlap with the other Pilots is limited to the modules NTUA make on top of their WP2 work. For practical reasons their work was split between API work (WP2) and helping to use these APIs inside of one of the Pilots. This ensures that the modules they make can be used in a real scenario. These modules by their nature will be about enriching what is presented to the end user based on external resources (LoD), information from Europeana and possibly what can be extracted from the seed content shown. This goal of extending what is shown to the user is a common theme in all of the Pilots and by defining these in a modular way it should be possible to reuse them in other Pilots. For this reason a management/guiding structure should be set up where NTUA's work in WP2 and WP4 are linked and all Pilots are involved in deciding what modules should be made and what features they should support. Given the fact that the TV Pilot is bigger in scale and has more technical support partners to provide NTUA daily feedback and support we do not see the need to officially change the DoW and we feel hosting the development inside this Pilot is fine.

It should be noted that after the development of the Pilot there is more sharing of development in the form of opening the work to the hackathons; through the hackathons, it will be possible for other Pilots to experiment with parts of the TV Pilots work. As this is near the end of the project and it is not planned as part of the current workflow before that moment

with the exception outlined above.

4.11 User testing / User groups

Evaluating the broadcasting user scenario: A small panel of test users will be established. The users will be recruited via RBB's own channels, e.g. the Facebook page of the RBB youth radio 'Fritz', and selected according to demographic criteria. They will use the service for two months and share their experiences via user experience questionnaires, interviews and a focus group discussion at the end of the trial. Open beta testers will be encouraged to use the service as well by marketing channels available to both RBB and the LinkedTV project.

Evaluating the local user scenario: A small panel of test users will be involved in the evaluation process. The users will be recruited via NISV's own channels, depending on the chosen topics for this scenario. E.g. for a local topic that interest an elderly user group a selection can be made according to demographic criteria and age. Subjects will be observed and their actions will be logged. Also, they will be interviewed and a focus group discussion will take place at the end of the trial.

4.12 Output rights

4.12.1 Software

The rights issues with the created software is a little more complex, since we are using multiple platforms by NTUA, Noterik and Proton Labs we are talking about many possible issues. In general the enrichment and API parts can depends on external software modules and services that are copyrighted or patented. The Pilot will try to pick the services that are the most open if the options are available. The hosting and core video platform we will use is created under an open source GPL license with some external optional modules as outlined in this document. The frontend native parts are part of the proton-labs product range and are delivered under their licenses which are partly controlled by the used platforms and sdk's they use from Apple and Google.

4.12.2 Content

- Europeana: metadata is available under a CC0 license. Content available under various licenses for which rights are to be negotiated for specific use cases, in case the content is under a license that does not allow creative re-use.

- Open Images/Open Beelden: videos available under CC license.

- Sound of the Netherlands/Geluid van Nederland: sounds available under a CC license.

- EUScreen: videos available under various licenses. Rights to be negotiated for specific use cases.

- EFG: videos available under various licenses. Rights to be negotiated for specific use cases.

- RBB (250 videos) Rights to be negotiated for specific use cases.

- LUCE (YouTube videos) Rights to be negotiated for specific use cases.

4.13 Multilingualism

This Pilot will be multilingual in its design and technology but not in the example scenarios. This is because translating the video content used for the Pilots would exceed the hours for the Pilot by an order of magnitude. As a result, a small selection of content will be translated

to the target language in specific use cases, which would be Dutch/English/(Italian) for the local and German/English/(Italian) for the broadcasting one. It is important to note that this only depends on the content selected and that in other uses the created software is able to support other languages. This means that during the workshops and hackathons it supports any language that is dictated by the content selection.

There are several tools available that can support the translation of video content, e.g. the Amara tool. The Pilot partners will investigate which tool is most suitable for the purpose of video translation (subtitles) only for the purpose of the small use cases.

Translation will also be considered for the metadata where necessary and only for the purpose of the small use cases. In some cases, the metadata has already been translated, like the metadata of the LUCE (English/Italian) and NISV (English/Dutch) collections available via EUscreen.

5   Photography Pilot

Pilot Coordinator: KU LEUVEN

Participants: iMINDS, PROMOTER, EUREVA, CUT, CULTURELABEL

5.1   Description

The Photography Pilot will experiment with the creative use of historical photographic material. The first activity will be to collect the content that is ready to be used for the Pilot and to deposit this in the Content Space. The content will be either open images or protected images whose copyright is cleared. Existing technology (i.e. the Blinkster application of EUREVA) will be applied to create easy-to-use repositories: these will be presented to Pilot users (individuals, students and enterprises) and together partners and Pilot users will create new products based on the re-use of historical photographs (e.g. family albums contextualized with historical pictures; colorization of old pictures; family history and genealogy trees with photographs of the different period). At the end of the process, promotional demonstrators will be prepared for presentation to potential customers/investors.

There are two main scenarios that are to be developed:

- a Blinkster app will be adapted for the photography collections and an exploration will be undertaken to understand whether the app could find "similar" photos in the collection.

- a website would be created which would allow people to login through Facebook/Twitter/Google and compose stories/pin selections of photographs from Europeana together with other public web content and user-generated content.

5.2   Complexity of the underlying technology

This website will provide the possibility to search for items in Europeana and other public content using core EDM metadata including type, date, location. The previews can be embedded in a story content type. Through the API, the previews and their metadata, and the list of all objects in a story can be retrieved, so that applications can jump from one object to another.

The Photography needs a repository for the photographic materials and a website that offers users the ability to select materials from different web sources, allows them to upload own content and users to group content together in visual stores. Users must be able to login with their Facebook/Twitter/Google account and be able to add annotations to the content. Users will be able to mash up sources and user-generated content into new creations.

For a second prototype, the Eureva app will be used to access photographic content on Europeana and other sources such as Wikipedia. The technology will be based upon standard html5, responsive design principles and web services.

Details of the Blinkster application's underlying technology are provided in section 9.2.2.

The will develop a Drupal website portal, linking to storage provided by Europeana Space and offer a web service to access the user-generated stories on the Drupal site.

5.3   Content sources / Ease of finding content

There are a number of sources that the Photography Pilot will use to access content. Some content will be available from the 430,000 images acquired through the Europeana Photography project, as well as from photography collection stored within Europeana itself.

Other sources to be used include publicly licensed materials on other web sources such as Mediawiki commons or Flickr Commons.

As the Pilot will involve both colorization of photographs from family albums, as well as the integration of family images into historical pictures, user generated content will also be used.

As with the use of all photographic materials, specific tests will be undertaken to ensure the copyright status of potential content.

5.4   Size of the market segments interested in the products

The Photography Pilot has a versatile market to aim for and will utilize the expertise of the partners involved to maximize this market potential.

The first area is the photo-agency and museum/archive market that would primarily be targeted for the commercial use. (There could be an overlap with the Museums Pilot in terms of enhancing institutional collections.)

There could also be the opportunity for free use for end users in the educational sphere to use historical photographs.

The Pilot will also target the market of educational publishers, as there is scope to enhance existing texts books and learning methods through integration of photographs that set historical contexts and record significant events.

Cultural merchandising, for individual events and photo services is an area that we are keen to investigate either using original photographs on merchandise for individuals to purchase, developing bespoke products to be used at events or through colorization of family photographs or integrating family members into famous photographs.

We will investigate this range of market opportunities more closely to identify which are the optimum opportunities to follow within the Photography Pilot.

5.5   Viability of the business models

As discussed within the previous section on market segments, there is potential to generate income in various ways.

Revenues can be generated through advertising, and through direct linkage to enhanced services such as colorization, calendar prints etc. Culture Label have established an effective business model by working with a range of cultural heritage institutions to great effect.

There would also be the opportunity to enhance the visibility of collections through Europeana to generate extra sales on a per-image basis.

The business models will also be discussed with the earlyphotography.eu group, stemming from members of the EuropeanaPhotography project.

Opportunities for the use of photographs within educational publishing will be explored, as the education sector (in its widest sense) is also exploring new ways to teach and provide interactive content for students.

5.6   Investment requirements

No external investment by third parties is needed. There needs to be provided storage space at the Europeana Space project level (preferably a cloud solution).

Development time would be needed to set up the Drupal environment,

The Blinkster solution is already funded through the project and there would be overlap with the activities taking place for the Museums Pilot.

5.7   Readiness

In the initial phase, a selection of content needs to be developed. The EuropeanaPhotography physical exhibition (which is to open in April 2014 in Pisa, Italy, before moving on to Leuven, Belgium) will be photographed for the Blinkster app (5 pictures per photo) and recorded so that when visitors take a picture of the original photograph they will have access to relevant data about it and the photographer.

Eureva is confident that a specific database, made for the Pilot for Blinkster can be populated and available quickly for use to visitors.

5.8   Legacy components and API

As the Photography Pilot is exploring a range of activity models, there is also a range of legacy components that can be supplied to the hackathons and other interested parties.

There should be the option to use web services that would allow access to the user-generated content and the user-defined stories. When a searched object features in a story, a list of the other objects in that story can be retrieved, as well as the story URL, drawing upon the Blinkster API.

We also envisage opportunities for commercial reuse of photographs and the opportunity to create mash-ups for material to be reused for the general public and also the educational market.

5.9   Used Europeana software modules

We will use the Europeana API for search, and the retrieval of metadata and preview images.

5.10 Link with other pilots

There is a link with the Museum Pilot, and for the approach of the educational publisher market there will be a collaboration with Euopeana Space Task 5.6 and also the Europeana Creative project's Pilots.

5.11 User testing / User groups

Students of the MA in Cultural Studies at KU Leuven (ca. 70 yearly) will develop example scenarios and act as initial test groups.

Through the links established by Culture Label, there would be the option to test the commercialization options with the user groups related to both institutions and innovative SMEs.

Given the opportunities to reach the educational sector, there may be the opportunity, as part of Task 5.6 to test the use of photographs in next contexts within this Pilot.

5.12 Output rights

The stories will be published with a CC-BY license. The content of the EuropeanaPhotography Pilot portal will also be presented as CC-BY.

Software developed by Eureva are proprietary software; some prerequisites of standard products are needed to install Eureva software (Windows & MongoDB).

Rights related to contents (whether provided or produced) are cleared by the content owners.

When copyrighted materials are accessed through the Blinkster app, this will be indicated to

the user.

5.13 Multilingualism

The EuropeanaPhotography collection on Europeana uses a multilingual thesaurus in 12 languages, but the main focus of the tests will be in English.

For Blinkster there is less multilingual scope, as for this Pilot the only language will be English, unless the mobile phone accessing the material is set up to translate the information into the user's own language.

6   Dance Pilot

Pilot Coordinator: COVUNI

Participants: UNL-FCSH, IN2

6.1   Description (based upon the Description of Work)

Dance is a form of art that can transcend national borders and the diverse European cultures. Moreover, traditional folk dance carries a very rich cultural heritage - but is generally performed at a regional level only. However, there is limited access to this type of content for the general European public; and with online material there is the added technical problem that this rich cultural heritage is not easily discoverable: dance content has tended to prove resistant to re-use because of its resistance to search tools. The rapidly increasing availability of digital technology and the myriad of platforms to view and engage with dance video should mean that more people can access dance, connect with dances of the past and distribute dances of their own for much wider consumption, contemplation and enjoyment

While technology has provided new insights and opportunities for those interested in dance, it is still learning how to adequately capture and categorize the complexities of the human body in motion for search and discovery. Consequently, although there are novel motion tracking and motion capture methods for recording live dance (available for those with specialist expertise), most existing recordings of dance are on film, and so effectively render a 3D process into a 2D form. When video is then distributed online via a screen interface, the kinetic, temporal and spatial components of the dance disappear further. Novel research has begun to offer searches by visual similarity, but these are limited by the content and text-based searching that still dominates. This compounds the problem of a lack of a universally-applied and understood taxonomy of movement and complicates what is ordinarily a non-verbal art form, introducing language to the search and discovery process and preventing discovery of rich content that tends to remain buried in archival collections.

The aim of the Europeana Dance Pilot is to create a general framework for working with dance content and the metadata accessible through Europeana and in so doing enable the production of two innovative models of content re-use – one for research purposes and one for leisure. As such two applications will be developed based on this framework: DanceSpaces and DancePro.

DanceSpaces focuses on the needs of the general public, dance enthusiasts and pre-professionals (e.g. dance learners and educators, those who participate in dance as a social and/or recreational activity, dance audiences/viewers and tourists, etc.) who want to share and explore content about a particular dance aspect. As such, DanceSpaces targets leisure, teaching and learning at the same time.

DancePro focuses on the needs of researchers and dance experts (e.g. dance artists, choreographers) who need a set of much more powerful tools for accessing dance content and creating extensive metadata.

The two scenarios will be described in more details in D4.2.

This Pilot will make use of research outcomes and existing tools developed by IN2 and FCSH-UNL, namely the ON:meedi:a platform for content management and publishing, and respectively the Creation-tool software for capture and multi-modal real-time annotation of performance art video and Knowledge-Base, an archival platform functioning as an open and collaborative resource for the analysis, documentation and transmission of bodily-based arts. Apart from these specialized components, the Dance Pilot will make use of the infrastructure and tools of the Technical Space. To this end the main tasks to be performed will be:

- define the metadata model to be used for the Pilot applications and devise a taxonomy for the categorization of dance movement
- select content (from Europeana and own archive) and clear content IPR
- link and annotate dance content
- adapt existing technical components based on the Pilot requirements that have been extracted during an initial user workshop
- design and build interfaces to dance content
- prepare API for components
- integrate the two scenario applications

The deliverable at the end of the Pilot will give an overview of the Dance Pilot, describing in detail the two scenarios that have been developed and evaluated. The aim of the document is to show to the wider public how cultural content and the connection through Europeana can be used by the creative industry in order to develop innovative applications. To this end, it will describe the different steps in the creation and integration of the two use-cases, providing best-practice advice on how to handle performing arts content both from a technical (e.g. tools and standards to use) and legal (e.g. IPR) perspective. The document will also contain the taxonomy for dance movement that has been developed in the Pilot.

6.2   Complexity of the underlying technology
One of the aims for the technology used and further enhanced in the Pilot will be "flexibility", in the sense that it should be relatively easy for the technology to be integrated with other external components and to make use of new content sources (e.g. 3D imaging sensors, movement analysis, etc) and associated metadata as these become mainstream.

6.2.1   Hardware specification
The Dance Pilot will not make use of any special hardware.

Interaction with the system is envisioned on multiple platforms, i.e. desktop computers, tablets and smartphones. However, some functionality will not be available on all platforms.

For the creation of expert annotations using the CreationTool a tablet or a PC will be necessary, preferably with a pen based interface. Although all web-browsers are supported, best user-experience is achieved with Firefox or Chrome.

The application for the end-user will be web-based, again with preferential support for Firefox and Chrome. More, responsive design principles will be applied such that the user-experience is great also on tablet computers and smartphones.

The backend of the system is hosted on a number of servers. The back-end works by having different system components exchange messages with one another.

6.2.2   Software prerequisites
The Dance Pilot will make use of software tools and services developed by the consortium partners, namely:

- ON:meedi:a platform from IN2 for managing and publishing multimedia documents
  - web-based, cross platform
- Creation Tool from UNL-FCSH
  - Windows based (and to be ported to OSX)
- Knowledge Base from UNL-FCSH
  - web-based, cross platform

Integration of the different software components will be facilitated by the use of XML, as a format for information exchange, and a thin middleware adaptor that will cater for the different

XML schemas to be used.

6.2.3   Installation process

The Creation Tool is distributed as a standalone tool that can be installed on the host operating system, similarly to installing other applications on the host operating system.

The other parts of the applications will be web-based and as such no installation is necessary, provided that a web-browser is preinstalled on the end-user-device. The user will need to enter a specific URL in the browser and most likely login/register with the application.

6.2.4   Processing requirements

Some aspects of the application (i.e. content transcoding, content linking, content indexing, etc.) will require post processing to be carried out by the backend services in a cloud processing fashion. The other workflow elements (e.g. render content to be viewed, answer to search queries posted by the user, etc.) are performed in real-time.

6.2.5   Network requirements

Apart from the Creation tool, the rest of the applications will require continuous network connectivity (minimum 3G).

6.3   Content sources / Ease of finding content

Pilot content will be drawn from the regional, national and private archival collections of partners, including that within FST, OCC, the TKB project; FCSH-UNL, and the dance content within the Siobhan Davies RePlay digital archive. Dance content will embrace contemporary dance, classical ballet and other theatrical dance forms as well as social and popular dance, folk, national and indigenous dance forms, and more ancient dance forms including those inscribed on historical artifacts (drawings, objects, paintings, texts and other kinds of inscriptions), notations and other forms of dance scores, books and other textual objects, publicity and marketing materials (posters, programmes, etc.), audio-visual recordings, photographs, and digital visualizations (using motion capture and other tracking devices).

Additional content will be drawn from Europeana, which is available through Creative Commons license or which has already agreed to the content being used for Piloting purposes. These include content providers from the ECLAP project, including the Muzeum in Ljubljana (64 videos), the University of Amsterdam (UVA) and NISV (social dance videos). However, it is the case that the available content in Europeana is currently very limited so that the Pilot will aim to work with the widest variety of dance content, within a limited number of objects, to develop the potential of the technologies in relation to this content, thereby demonstrating the potential added value provided by the technology, which will increase engagement with existing dance content and lead to the integration of an increased range of content as brought into the project by the partners (subject to IPR and licensing agreements).

6.4   Size of the market segments interested in the products

Dance is a vast market, extending across professional artist companies and organizations, community and recreational dance societies and groups, students, teachers and researchers, as well as a number of related interest groups, including those within the health and therapeutic communities, in sport where dance plays a role within the training and analysis of movement and for audiences of dance, who might be those who never participate in dance but will access dance to view it and will enjoy tools to enhance their appreciation of dance.

Research in the UK (http://www.danceuk.org/resources/dance-facts/) estimates that the dance economy employs around 30,000 people directly and many more in related professions (producers, designers, physiotherapists, medical and alternative practitioners, and writers etc). Beyond subsidised dance companies (c 200), dance plays a key role in

supporting commercial theatre, including musicals, opera, film, television, live music and video etc. If this number was scaled up to represent the full European community, those directly employed in dance professions might be in the region of circa 1M employees within the dance profession.

Research has also revealed how audiences for dance have grown and is the fastest growing art form with over 13% of the population now attending dance performances. When dance is broadcast on terrestrial television, audiences reach hundreds of thousands and dance programmes such as the BBC's Strictly Come Dancing is regularly watched by 10.5 million viewers. This success has been replicated, as the programme, often under the name Dancing with the Stars, has been replicated in 28 European countries. Audiences for popular dance forms and musicals are continuing to increase with box office receipts for the UK reaching £480.6M.

Students studying dance at all levels is also increasing, whether for examinations within the education system or through private examinations, representing an increase in the last decade of 229% in the UK, participation in social dance engaged over 4.8 million in the UK in 2000. The research undertaken in the UK is a good measure for the breadth of the market and the different market segments across Europe. Related professions that access dance are even larger and would extend the potential market by a considerable number.

The Dance Pilot will have the potential to generate much larger audiences for dance, increased participation in dance, and an opportunity for professionals within the dance sector to develop products that will have wider uptake and may thus increase the marketability of dance as live and recorded content.

6.5   Viability of the business models

The Pilot will investigate a number of possible business models for its outcomes. A more in depth description of this will be prepared for D4.2 and further expanded as the Pilot evolves. Below we present the initial ideas around business models.

For the DanceSpaces a freemium business model will most likely be used. This is because consumers of cultural heritage and hobbyists are generally not used to pay for digital services. Having targeted advertising (i.e. adverts related to dance content) is a more probable business model for the web-application. Naturally, this business model has implications related to the IPR of the content displayed. A thorough analysis of possible issues and solutions will be undertaken as content is being prepared and IPR issues resolved.

Another possible business model for DanceSpaces would be to charge a fee for accessing the tool for creating a dance space which can then be hosted online, either on the default server of the Pilot or the a website of choice specified by the end-users. In this model, anyone would be able to access the authored dance spaces and for their creators there should exist also a trial version or a free plan (limited by e.g. the number of items).

For DancePro a business model based on software licensing is the most likely approach. This is because academic institutions, which would be the main purchasing target group, are more used to this particular business model and internal workflows are already in place at these institutions in order to make software license purchases.

During the Pilot investigation will take place to assess the feasibility of marketing the different APIs of the tools. The business model for this could be a pay-as-you-go approach based on the number of API calls.

6.6   Investment requirements

To bring the Pilot to the market after the end of the project an additional investment will be necessary in order to cover the costs for marketing the application and maintaining & running the backend services which support the frontend. A preliminary analysis would suggest that one full person will need to be employed (full time) for the marketing activities while for the backend a technician working a third of his time will suffice.

Note that this calculation does not include the further enhancement of the technology.

6.7   Readiness

At this stage, the outline for Dance Pilot activity is:

- Months 1-12: content search completed; taxonomy for dance terms defined.

- Months 13-24: testing exercises and open lab events – refining first iterations.

- Months 25-36 months: testing via university groups and hackathon; evaluation workshops and dissemination events

At the end of the project the Dance Pilot will produce two applications that are at prototype level and have been tested with a number of representative users.

6.8   Legacy components and APIs

At this stage of the Pilot it is not yet clear what components or APIs will be used in the hackathon.

Investigation is taking place to assess the possibility of providing an API linked to the content that will be available in the Pilot. However, there are critical points about the IPR of the content that need to be solved before the technical work on the content API can begin.

It is envisioned that DanceSpaces will provide, as input into the hackathons, a series of templates together with content authoring capabilities, to enable the developers taking part in the hackathon to innovate and design components which could include new interfaces and visualizations using CSS and JavaScript.

6.9   Used Europeana software modules

The DancePilot will make use of the Europeana API for accessing content. In addition, it is planned to use a tool of the Technical Space for enriching content (e.g. by linking it to other resources, such as other objects on Europeana, or DBpedia articles, etc).

6.10 Link with other Pilots

Links will be developed with the Pilot on TV and possibly with Games as both are developing technologies that might have value for the Dance Pilot. We will also be liaising with partners in the Europeana Creative project for any additional content that might be available.

6.11 User testing / User groups

The applications will be tested by running open testing sessions with the University communities, in Coventry and Lisbon, working closely with dance researchers, students, artists and teachers who can test the tools as they are in development. The communities already exist and reach across different European groups and frequently meet either physically or virtually to test and review new applications so are ideally placed in this regard. For example, C-DaRE runs an annual programme of symposia and artist-led events that bring together a wide range of interest groups and the work of the Pilot can be integrated within this schedule.

Following the further elaboration of the scenarios, functional and system requirements will be elaborated following a dedicated workshop where also a limited number of end-users will be consulted. After the first version of the Pilot application is produced, an evaluation session will be conducted. Based on the feedback received a second iteration will fine-tune the integrated environments of the two scenarios and a final evaluation of the Pilot will take place.

6.12 Output rights

Some content used in the development of the Pilot will have rights associated that limit open access but new content will be developed through open source and open access to ensure the widest possible access to the Pilot outputs.

The software developed in the project will remain the property of its creators. Both UNL-FCSH and IN2 follow a closed source approach to software development. Therefore source code owned or developed by UNL-FCSH or IN2 will not be made openly available. However, API access to software tools can be provided as well as licensing and subscription agreements.

6.13 Multilingualism

It is important to maintain coherence, which is why one language (English) will be used. The taxonomy will be in English but a dance taxonomy is in itself multi-lingual and where there are regional or linguistic variations that need to be retained, they will be identified and appropriate translation offered.

7 Games Pilot

Pilot Coordinator: COVUNI

7.1 Description (based upon the Description of Work)

The objectives of this task are:

- Review Europeana content with partners and storyboard themes for games
- Select appropriate content for use in games
- Create 1 mini game to engage and inspire casual gamers and children
- Create 1 creative social game
- Create 1 educational game

The aim of the Pilot is to encourage use and experimentation of the Europeana archive by providing game demonstrators across a range of demographics. This will involve three distinct development phases:

1. Storyboarding user experience and system architecture

2. Rapid prototyping of games

3. Iterative testing until release

The task will include a scribble video that will show people how to make their own simple game. The Serious Games International development studio of COVUNI will produce a range of digital games that draw on and are inspired by content provided through the Europeana portal and from other content holders' collections to engage users and inspire further development using Europeana content. This involves the redeployment of archived imagery, audio and moving image material into video game experiences in order to increase exposure to the content to a wider cross section of the public. By embedding content into digital games, innovative and non-standard methods of engagement will be encouraged, whilst simultaneously increasing the reach of the Europeana brand.3 specific categories of game will be produced in order to target specific game playing audiences and will involve different levels of game mechanics, complexity and sophistication:

1. Mini game. This will address the market for casual and children's games, and will draw on selected archived imagery to create short and engaging experiences. This will draw on existing proven gameplay models such as sliding block puzzles and match three games.
2. Creative game. This will target social network users and will be produced to allow players to manipulate, collage and juxtapose imagery from the content collections and redistribute, share and rate their creations through social networks. This will include Facebook and Twitter integration.
3. Educational game. This will target learners of all ages and stages of education and will provide specific information, tests and quizzes inspired by information from the collections.

Each game will be presented as a mobile friendly web apps allowing players to access them from a variety of platforms and ensuring high accessibility. The games will be developed in accordance with the PEGI guidelines and the guidelines for IPR from WP3. The Pilots will be iteratively validated during the development and during validation in WP5 with the key stakeholders identified before being taken to final release stage. They will then be distributed through the Europeana Space dissemination networks as well as over social and mobile networks and integrated in the Europeana Labs.

7.2   Complexity of the underlying technology

In order to promote accessibility the proposal is to use standard HTML 5 / Java Script to develop each of the Games Pilots, therefore allowing players to access the games as 'web apps' either through a computer or mobile device. HTML 5 is an emerging platform standard for accessible games development that will allow developers to develop once and deploy across platforms. However, it has not yet reached maturity and if it is felt that these tools hamper innovation and engagement within the development process, the decision may be made to port development to the Unity games platform, which will facilitate independent deployment for Desktop, web and mobile devices. Access to the Unity platform for players would require the installation of a plugin for web-based play, or an App for mobile play. Desktop machines running recent versions of Windows and Mac OS can simply download and play standalone executables.

7.3   Content sources / Ease of finding content

The content for the Europeana Space Games Pilot will be drawn primarily from Europeana resources with supplementary resources drawn from other archives. For the purpose of the Pilot, copyright and quality will be two defining factors in the selection of media to be used. Firstly, the necessary usage permissions and restrictions must be examined and understood. Secondly, any media must be of suitable fidelity that it promotes the aesthetic appeal of the games and fits with the overall vision for the Pilot. In addition, there is a 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. This will be negotiated through testing in the development phase.

For the casual game aimed at children we propose using imagery of children's games, puzzles and toys in order to reference how children would have played in the pre digital age. These will be primarily drawn from the main portal at europeana.eu using the search facility and linked back from within the game to raise awareness of the archive and the context of the images used.

For the creative game we propose sourcing moving imagery from euscreen.eu and europeanfilmgateway.eu which players will be able to 'mashup' and create new and experimental visual narratives which they will then be able to share with other users. More research is required in order to decide how this will be achieved technically and whether users will be provided with a set palette of imagery from which to draw, or dynamically search the archives as part of the game experience.

For the educational game we will undertake specific research into educational content for a game on a specific theme. More research is needed into other education games initiatives that are taking place around Europeana (ie Natural History Educational Games http://bit.ly/1njbkWa which has been developed as part of the Europeana Creative project.) in order to avoid duplication and maintain innovation and originality, whilst also seeking any synchronous benefits. Specific media (images / film) will then be drawn from the Archive to illustrate a self-contained game with quizzes etc designed around it, possibly drawing on Wikipedia for contextual information to enrich the subject.

7.4   Size of the market segments interested in the products

The Games Pilot will address two key markets:

1.   the game player / consumer

2.   games developers.

The purpose is to understand the potential for Archives such as Europeana to provide valuable content for video games that engage audiences and therefore offer a viable content source to developers interested in business models that can exploit this data further. By promoting content from Europeana in the games, awareness of the archive and its content should also be raised more generally.

Within the Pilot specific audiences of game players and users will be addressed:

1. The Casual Game: Casual game players – this is a broad audience, although typically described as older and predominantly female. The simplicity and content of the game may also appeal to younger players with less sophisticated gaming requirements.

2. The Creative Game: This will be aimed at more sophisticated users of games technology who are keen to play with and explore media and to share their ideas and creations. Typically teenagers and young adults. This game should also appeal to media enthusiasts interested in tools that redefine narrative within moving image.

3. The educational game: will target the pedagogic needs of teachers and students with a specific age group / key stage of student to be defined in part by the subject matter chosen. The development team will work with existing contacts in education in the UK to define this further.

7.5 Viability of the business models

The business model for video games is in a changeable and emergent state, led by the rising popularity and accessibility of mobile games, the Apple App store and subsequent Google Play store. The Pilot will examine the value of releasing games into this market that draw on Archives such as Europeana and the viability for monetizing this process using the following models: Freemium with Upgrade options; Free To Play; and In Game advertising; in order to generate revenue toward sustainability and profitability. As Europeana provides content with a variety of copyright and use agreements, specific permissions should be sought from content providers in order to adopt images into game content.

7.6 Investment requirements

In order to develop gaming products that utilize content from Europeana, specific skill sets will need to be recruited including:

- **Game producer**, having an overall vision and understanding for the game and the processes and steps required in order to achieve it. Able to manage the team and workflow, with an overall knowledge of the technical and aesthetic challenges in game development.

- **Code developer**, having specific understanding and experience of programming languages and APIs for game development, and able to work within cooperative and multi-skilled team. Different code developers should be required depending on the platform being addressed (ie web / app / console etc)

- **Game designer**, experienced in creating engaging user experiences using the vocabulary of games, and within the technical infrastructure of games. Experienced in creating designs that understood and can be realized by the development team.

- **Game artist**, capable of creating graphical artwork optimized for use within games, including specific game assets and UI requirements. Depending on the nature of the project (ie 2d, 3d, static, animated etc) different artists skills would be required.

Sound artists may also be required to create audio material for the game, and should be experienced in understanding the art of sound design for games and the associated best practice for the use of sound effects and music within interactive and platform dependent digital projects.

- **Researcher**, capable of sourcing and collating Archive content for use by the development team. This may correspond closely with the game design role with regard to creating a narrative structure for games produced. If the game is to target specific audiences (ie education) then a research role should be created to understand specific requirements and translate these effectively to the Designer and thus into the game.

7.7　Readiness

The Pilot games will be ready to deploy across networks, and to be used as case studies for future projects. The Scribble video will be ready for deployment to support future projects.

7.8　Legacy components and APIs

At this stage it is unclear which components and APIs the Game Pilot will be using. Further research will be undertaken in order to attempt to develop systems of dynamically calling content from the Archive directly into games. However we anticipate that this will generate further IPR questions which may require the use only of defined batches of Archive material for static use within the game environment. Ideally APIs will be developed that can be taken forward for use in the Games Pilot hackathon, allowing ready access to Europeana content.

7.9　Used Europeana software modules

We are investigating the use of the Europeana search engine, EUScreen search engine, and European Film Gateway search engine to provide content for the games.

7.10　Link with other Pilots

We anticipate developing links with the dance and Europeana TV Pilots, both of which have cross over commonalities in the use of moving image to engage audiences.

7.11　User testing / User groups

The Games Pilot will engage most closely with education providers in the development of the educational game in order to select specific target audiences, themes and content and further to then test the emergent prototype game. Coventry University will also be able to draw directly on its student population in order to conduct initial testing of the casual and creative games, before distributing them more widely across networks and through the project partners. Game development is typically iterative and responsive to user feedback, and the project team will use a series of testing loops with ever increasing numbers of players in order to develop and refine each of the prototypes.

7.12　Output rights

Any original software developed during the Games Pilot will remain the property of its creators. Where possible this will be done using open and freely available development tools. Development tools such as Unity are not open source, but are freely available and permit users to distribute content across a variety of platforms. It is therefore anticipated that all tools and processes used in the creation of the games will be freely available to other teams hoping to create games using content from Europeana. There may be limitations on the types/sources of content available to developers owing to IPR restrictions that will become apparent and documented over the course of the Pilot.

7.13　Multilingualism

Whilst each of the games will be primarily produced using the English language, this will not restrict them for using content sourced in other languages, and this could be particularly apparent when using film content. Games will be created using platforms that allow for the substitution of any text / spoken content into other languages, although there can be a design tension when working with particularly verbose languages that require increased screen real estate.

8 Open and Hybrid Publishing Pilot

Pilot Coordinator: GOLDSMITHS

Participant: COVUNI

8.1 Description (based upon the Description of Work)

The Pilot will produce an open book about the dynamic relationship between photography and other media. Titled *The Open Book of Photomediations*, the book will use open content and run on open software. The project will involve the following steps:

1. Designing the thematic structure of *The Open Book of Photomediations* (OBP); identifying ca. 10 sections that will act as its 'chapters' (e.g. The History of Photomedia; Exhibiting Light, Movement and Sound);
2. conducting search of Europeana and other archives, databases and open access journals in order to identify relevant text/image content;
3. Checking IPR of content – and clearing copyright if material not available under CC-BY license;
4. Constructing a web version of OBP, using Wordpress;
5. Developing the exhibition section of OBP; sending out call for works to European and global photomedia artists and curators; holding both online and on-location exhibition;
6. Transferring the web version of OBP to other platforms (tablet; smart phone) as a responsive template, pdf (or another format closed version of the open book) or app (project will explore all these options);
7. Testing project with students (COVUNI; GOLDSMITHS; online community of self-learners) and in the hackathon in Athens;
8. Running a symposium on open and hybrid publishing to publicize the project.

8.2 Complexity of the underlying technology

The site will run on Wordpress, with either a purpose-designed theme or an adjusted ready-made theme (currently exploring options). The possibility of 'closing' the book into a pdf – and/or an app product which can subsequently be commercialized, will also be investigated.

In line with its planned openness both on the level of content and form, the growth and transformation of the book will be promoted through embedding two 'open zones' (or 'open chapters') into it. Those two 'open chapters' will facilitate active participation from the book's users: a curated exhibition space and an educational forum with pre-prepared activities and a discussion list.

Photomediations Machine, http://photomediationsmachine.net/
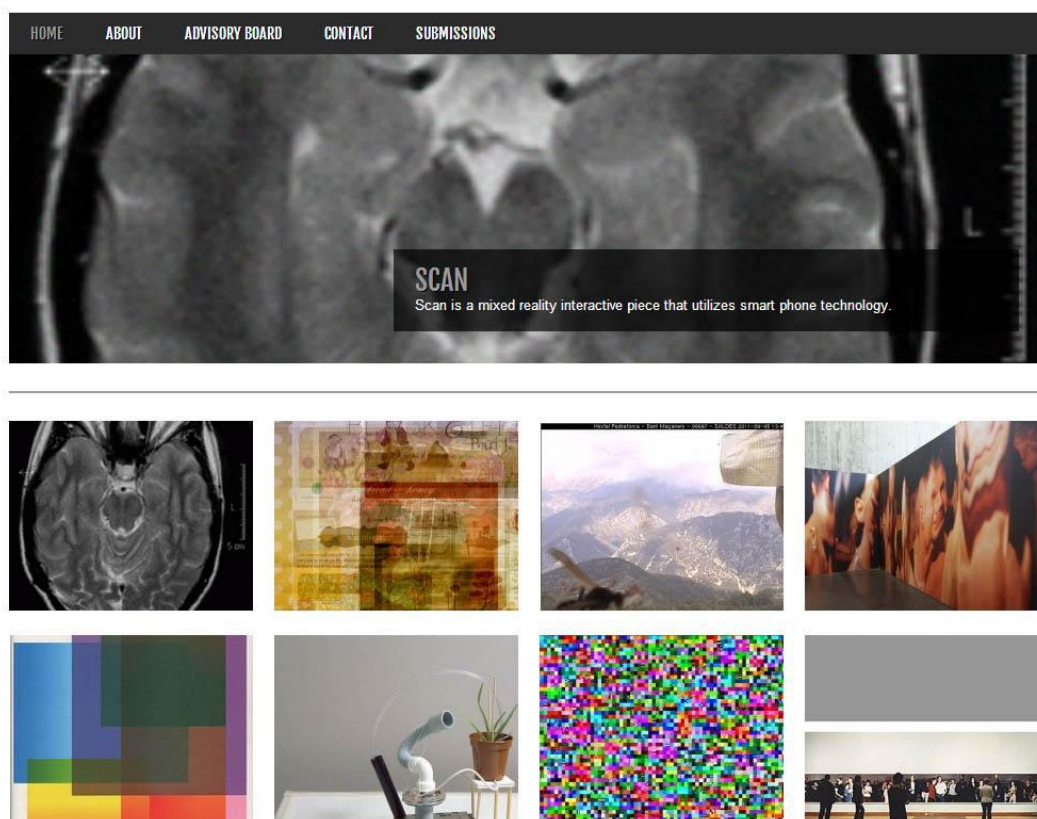
## 8.3   Content sources / Ease of finding content

The content of the OBP, principally drawn from Europeana resources and supplemented with content from other archives, will be put together by the project team led by Prof. Joanna Zylinska of GOLDSMITHS, with Jonathan Shaw of COVUNI, in full respect of copyright and related rights. Specifically, OBP will contain:

- still and moving images concerning the evolution and current practices of photography and its engagement with other media
- academic and curatorial texts on photography and media.

(1) Europeana digital content will be the first point of reference when sourcing the material but other archives and open access journals will also be consulted, to ensure the intellectual and visual coherence of the resource being put together. An initial study of the Europeana content already took place when preparing the bid to ensure the availability of material. However, a more detailed investigation will need to happen now, as part of the research process of the Pilot. Selecting and editing the appropriate specific content for OBP while ensuring thematic and visual coherence is one of the principal tasks of the Pilot. Content will be chosen using the 'search' function on Europeana and other websites, in accordance with different thematic sections that will form the structure of the Open Book (e.g. The History of Photomedia; Exhibiting Light, Movement and Sound; Media Convergence in Digital Devices, to name a few). Specific headings for individual sections of the book need to be selected shortly.

(2) The Europeana content will be supplemented by content drawn from other online archives and databases – principally visual material gathered in Wikimedia Commons (a media file

repository making available public domain and freely-licensed educational media content such as images, sound and video clips), Critical Commons (a public media archive and fair use advocacy network that supports the transformative reuse of media in scholarly and creative contexts) as well as academic journals published as part of the Public Knowledge Project's Open Journal System. The Pilot Coordinator has experience of researching and working with different types of IPR, as evidenced in her earlier Living Books about Life project. Some material will also be added to Europeana, thus enriching its content.

Living Books about Life, http://www.livingbooksaboutlife.org/
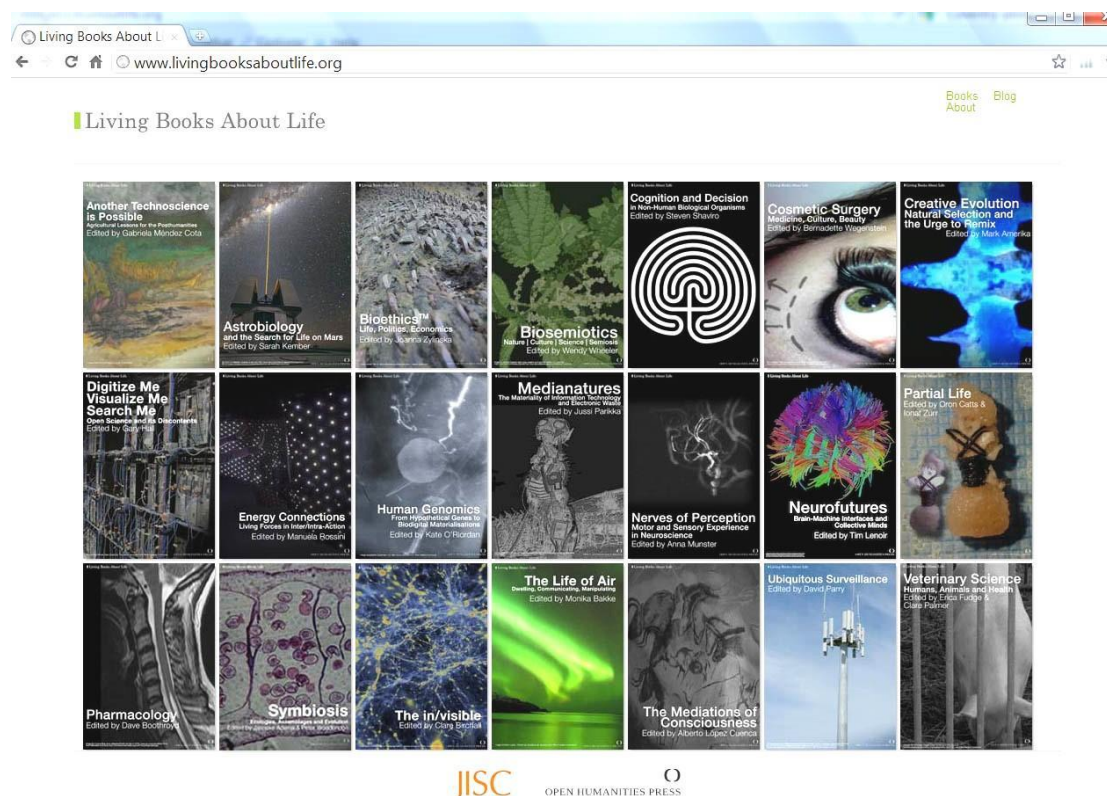
For the purposes of this Pilot, all copyright restrictions will be carefully checked and adhered to. The goal is to make extensive use of material available that uses CC-BY Licence (which lets others distribute, remix, tweak, and build upon the original work, even commercially, as long as they credit the author for the original creation). The initial study conducted so far shows that many visual sources in Europeana are available under such a license. Where material has a more restrictive license, permission will be sought from the original rights holder to clear copyright; failing that, material will also be available through a 'free access' link to the Europeana website. The majority of the material available in the other databases such as Wikimedia Commons, Critical Commons and Open Journal System that will be used for this project is available under CC-BY and similar open access licenses and hence can be used without too many restrictions. Research conducted by WP3 will be drawn on.

8.4   Size of the market segments interested in the products

This project will propose an innovative structure for publishing, in a low-cost sustainable manner, an open and hybrid visual/textual resource that will be of interest to many stakeholders dealing with still and moving images: educational institutions such as schools and universities, museums and galleries, artists and arts managers, cultural centers and consultants, business organizations working with media images, as well as individual users

interested in still and moving images. Last but not least, it will engage existing communities of learners, distributed all over the world, in the active use of this resource by offering an Open Education class that uses it as a key resource. It is important to emphasize that this project has an important social and cultural dimension. Its social significance lies in its promotion of the socially significant issues of 'open scholarship', 'open learning/open education' and 'open access'. As this Open Book can be updated year on year, this openness will enable a more strategic and lasting engagement with digital content.

The community-building aspect of the project will be worked on in a number of ways:

- by running an Open Education class, based at COVUNI but freely available to European and global learners online as described above; and thus engaging international university students as well as self-learners in the use of OBP;

- by publicizing the project amongst art, curatorial, publishing, wider cultural sector and digital media communities outside academia on mailing lists and via Twitter feed;

- by organizing a symposium on the project as well as a physical exhibition in a London location. The material for the exhibition (which will consist of two parts – an online component within OBP and a physical component in London) will be collected via an open call for submissions issued to various mailing lists.

8.5 Viability of the business models

The project will develop a model for fast open access publishing as an alternative to the currently collapsing traditional publishing model. The availability of open access material and the growing support for open models in higher education and the art world means that the primary costs for future implementation of such projects will be to do with staffing, i.e. with the setting up of such projects, copy-editing and, proofreading, but the majority of costs associated with the traditional publishing business will disappear.

The project will also address (and proposes solutions to) the more specific issue of the changing nature of academic publishing. By promoting open access (and also, partly, open content), it will show an alternative to the model promoted by large commercial publishing conglomerates such as Springer and Elsevier. Last but not least, it will explore, on a practical level, the issue of sustainability of online resources.

8.6 Investment requirements

Resources needed: research assistant (to help with identifying content); technical assistant (to help with designing the Wordpress site and with making the project multiplatform; Shaw and team will partly fulfill this role); time (principal resource for Zylinska; partial buyout from teaching duties required); web hosting; some funds to pay for copyright (the majority of content used will be free; but if source is necessary but unavailable under CC-BY, we will consider paying a small amount); cost to organize on-location exhibition and symposium

8.7 Readiness

Months 1-12: content search completed; template for the online version of the OBP designed; structure of the book agreed on

Months 13-24: OBP available online plus in another format (as an e-book or possibly as a app); online exhibition (exhibition 1)

Months 25-36 months: testing via university classes and hackathon; dissemination via real-life exhibition (exhibition 2) and a symposium on open and hybrid publishing

8.8   Legacy components and APIs

Since Wordpress is being used, and since it's important to keep the project both open and relatively simple on the technical level, there are no upfront requirements for specific APIs. However, there is a possibility of requesting the project's technical to develop a specific functionality at a later date that can be easily 'cut and pasted' as code into the Wordpress template.

8.9   Used Europeana software modules

Europeana exhibition template for staging a virtual exhibition in year 3 will be explored.

8.10 Link with other Pilots

The most obvious link is with the Pilot on Photography; there's also a possibility of exploring link with the Pilot on TV to see if some of the moving image content could be used. The parallel projects. Europeana Photography and Europeana Creative, will be of great use in terms of providing content.

8.11 User testing / User groups

The project will be tested by running an Open Education class, based at COVUNI but freely available to European and global learners online; and thus engaging international university students as well as self-learners in the use of OBP.

In the hackathon, an open book 'editing sprint', where an open access book is edited by a group of people in 2 or 3 hours, while also receiving instruction in both open access publishing and copyright issues - of will be proposed - of the kind project leader Prof. Zylinska ran at the Biomediations festival in Mexico City in 2013 together with Prof. Gary Hall of COVUNI (who is also part of the Europeana Space project).
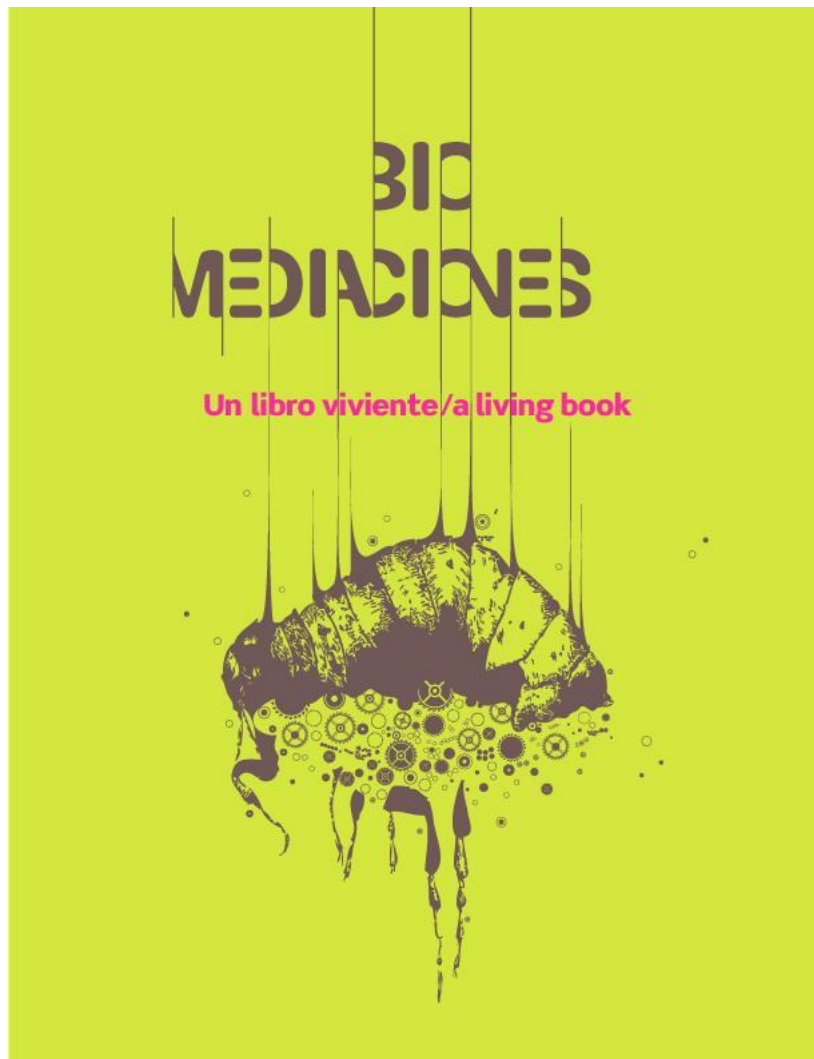
Biomediations 'living book'

8.12 Output rights

Due to the nature of the Pilot it is important for it to remain both open source and open access. Some limitations may arise; various options will be explored with a view to producing different versions of the final product.

8.13 Multilingualism

It is important to maintain intellectual and visual coherence of the OBP, which is why one language (English) will be used. However, the hackathon will explore the possibility of adapting the project and the model it outlines for other languages. Indeed, the 'book sprint' in Mexico City, discussed above, resulted in producing a bilingual English/Spanish resource.

9   Museums Pilot

Pilot Coordinator: FST

Participants: EVK, MUSEUMSMEDIEN, LAM, EUREVA, SPK, CULTURELABEL

9.1   Description (based upon the Description of Work)

The Museums Pilot task is divided in two main activities, both addressing cultural institutions - museums, memorials and cultural sites - as **contents providers**, **end users** and **service providers.**

9.1.1   Integration of the "Toolbox"

The leader in this activity will be MUSEUMSMEDIEN, provider of the Toolbox. This activity will target mainly educational staff and exhibition managers from small and medium-sized museums and memorials, with the aim of enabling them to use Europeana in preparation for creating educational videos and promotional worksheets. Content will be gathered from Europeana, from the content provider Silent Heroes Memorial Centre (German Memorial Resistance Foundation).

Best practice video examples will be produced from this and short guides will show the use of Europeana in the production process.   The following picture provides an overview on the toolbox process:
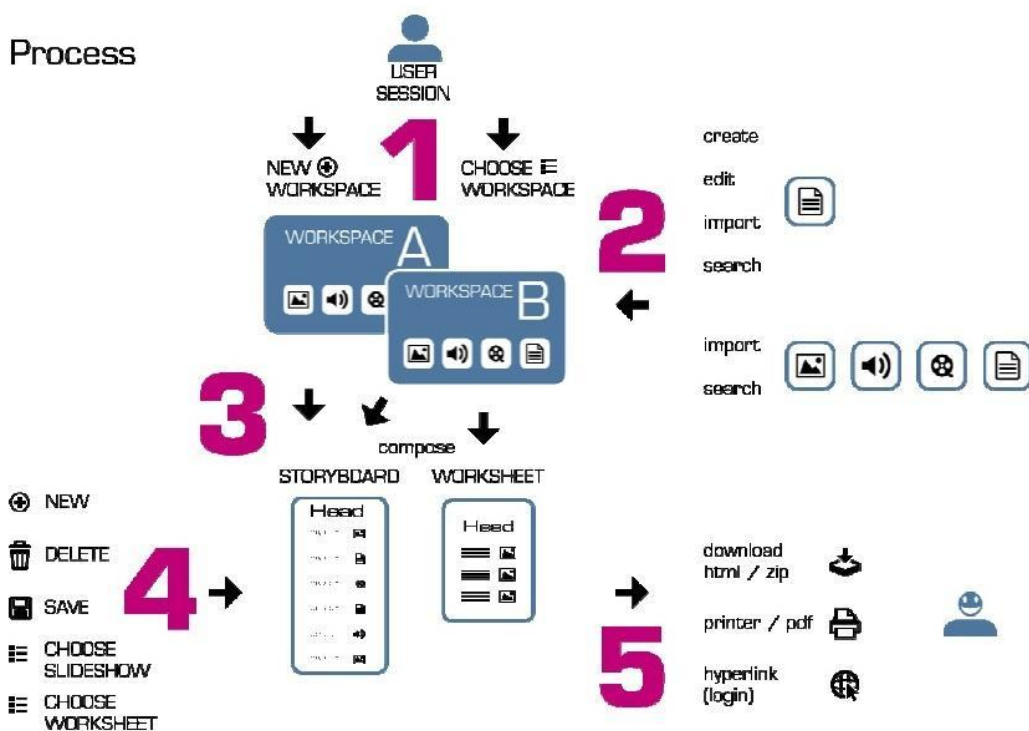
A staff member of a memorial or a museum can start a session after login (automatically generated login and password):

1.   the user can start a new workspace or use choose an existing version (created by him/herself)

2.   the user can create, edit, import or search data at the workspace

3. choose a template and

4. compose data for a worksheet a storyboard or a slideshow (per drag and drop from workspace),

5. the finished and saved "work" is available in the workspace, for download, to print or to send as hyperlink.

9.1.2   Integration of the mobile application for museum visitors

This activity will be lead by EUREVA and contents will be gathered from the Lithuanian Art Museum, Vilnius (LAM), Conservation Centre Kanut, Tallinn (EVK), Museum of Antiquities and Museum of European Culture, Berlin (SPK).

Museum and Cultural Heritage Sites Visitors with smartphones, museums staff involved in the preparation of exhibitions will be the main target groups. The main aim of this activity will be the provision of customized mobile application, based on an app developed by EUREVA called Blinkster, to enrich the users' experience by integrating the content providers' material to other sources from Europeana. Demonstrations will be prepared in the form of videos and presentations for promotional purposes.

9.2   Complexity of the underlying technology

9.2.1   The toolbox – technology and function

The toolbox uses open source web-technology based upon a Linux/Apache Webserver with an Typo3 CMS 6.2 installation. In detail there will be used PHP, MySQL-Database, JQuery and other Java Script Frameworks.

All software used within the Museums Pilot will be open source.

The toolbox works as a web service. Therefore it has to be hosted on a webserver that will meet the technical requirements, needed by the above-mentioned software.

The toolbox will be hosted on the Museumsmedien webserver, using the subdomain *europeanaspace.museumsmedien.de*. This domain can be easily linked to the Europeana Space server, in such a way that the user will not notice that it is physically hosted by Museumsmedien. The hosting has to be on the Museumsmedien server, to allow full control during the development process. It will be possible to transfer everything onto other servers, at a later stage.

The toolbox is running as a web service, so there is no need to install anything for the user. Minimum requirements will be a current web browser with activated JavaScript and cookies. Nearly all platforms and devices will be supported. No cloud services will be used.

9.2.2   Blinkster application

In order to guarantee the proper functioning of the technology that will be delivered, these specifications are required:

*   **Hardware specification**: an Androphone (a device with an Android operating system 2.2+) or/and an iPhone (iOS 5.0+). There is no memory requirements or specific equipment needed.

*   **Software prerequisites**: We do not need any third party software. All the technology provided is issued of developments made by Eureva.

*   **Installation Process:** For tests purposes we are going to provide an Android

executable (easier than iOS executable). At the end of the Pilot we are going to deploy both applications (iOS and Android) on the stores**.**

- **Processing requirements:** the application is running in real-time, there is no pre-processing need. Our servers are cloud-based services.

- **Networking requirements:** A 3G internet connection is needed on the device to ensure the connectivity from and to our servers. This networking requirement has to be checked within the museum, and/or Wifi connection is to be added to fulfill this network requirement.

9.3 Content sources / Ease of finding content

For the Toolbox activity, content provider will be "Silent Heroes Memorial" (part of German Resistance Memorial Foundation) in Berlin. Silent heroes are people who helped other people that were persecuted and threatened by the Nazi regime between 1933 and 1945. The existing exhibition is titled "Silent Heroes - Resistance against the Persecution of Jews 1939 – 1945" and the exhibition in preparation will be titled "Silent Heroes in German-occupied Areas 1939 – 1945". The expected content will be documents, photos, publications and hopefully audio-interviews. The Europeana contents cannot be specified yet, this selection has to be decided in detail with the staff of the memorial.

In the Blinkster application, all required content is provided by the content providers and museums. A museum room in Tallinn we'll be selected for the testing of this subPilot. A back office will be supplied in which every content provider can save its data. A mobile application will be also provided that will ensure sample photos uploads of museum's artifacts directly at EUREVA databases, for best image recognition possibilities (i.e. image recognition of a painting that is exposed behind a glass is made easier when taken on-site). The application has the possibility to link results of image recognition process to external links such as Wikipedia.

9.4 Size of the market segments interested in the products

Potentially, the outcomes of this Pilot are of interest for all the museums, memorial and cultural sites, especially the small and medium ones, not only in the countries where the Pilot will be tested but also in other EU countries. It is not an easy task to provide concrete numbers to describe this market because cultural statistics are fragmented and not always updated, however, counting only the number of museums tracked on EGMUS (European Group on Museum Statistics), there are over 18,600 museums in EU.

Creative industries overall represents also a potential market segment as they might use the outcomes of this Pilot to create new products for cultural institutions.

The staff of small and mid sized memorials and museums and memorials will be the main target of the toolbox. The staff will be able to produce storyboards, which can be used for educational purposes; on the other hand, this can be a very useful basis for producing short videos or trailers for exhibitions. Usually this is outsourced. The toolbox can offer the possibility to create a storyboard as the basis that the creative partners work with. The targeted market segment for the mobile app is essentially the on-site museum's visitors, a market that is similar to existing museum's audio guides market.

9.5 Viability of the business models

The possible business model for the toolbox could be the workspace technical maintenance – at a fixed annual fee for instance – and the sale of customization services to museums and memorials including training events for the staff. This could help to enhance the media-expertise of staff in museums and memorials.

The foreseen alternatives for a viable business model for exploiting the mobile application could be:

- sale of the application at the entrance of the museum for a few Euros.
- integration of the technology in the sponsoring and/or communication plan of the museum.

Provided the museum has a sufficient number of entrances, a shared revenue business-model with the museum can be set-up after the completion of project activity.

9.6   Investment requirements

Manpower has to be invested to learn the use of the toolbox. Datasets has also to be added, if an institution wants to use the toolbox effectively.

Museum digital contents shall be made available, or investments to provide this content.

Hosting costs of the solution are small and the tailoring a mobile application is to be provisioned. The application can also be integrated as a module of an existing mobile application of the museum.

9.7   Readiness

The toolbox can be used as a whole after the end of the project through Europeana Labs. The service toolbox is free of charge for memorials and museums after registration. It has to be decided if and how new groups (e.g. from museums, memorials) can be added and how new members can be supported (if support is needed).

Once all digital content is available, around two months are needed to deliver the mobile application and to integrate the content.

After tests of acceptance, the application for both iOS and Android versions in the respective stores (Google and App Store) will be deployed. It will take around two weeks for validation and then the application will be available for download.

9.8   Legacy components and APIs

Museumsmedien will realize the toolbox using Typo3 CMS. We will produce Typo3 extensions to provide the functions of the toolbox. Depending on the status of the development, these extensions can be used during the hackathons.

Description of modules and APIs developed in the context of WP4 that can be used in the hackathons or by third party developers will be provided, as well as:

- the public mobile application for the image recognition that will be deployed on both Apple And Google stores.
- an android mobile application that will upload samples of each point of interest (artefact) directly in the Blinkster database.
- the back office as a public web site.

9.9   Used Europeana software modules

The main module needed for the toolbox will be the Europeana API in order to able to connect to the Europeana database.

Concerning the mobile app there is no in-depth knowledge of Europeana software modules at this stage to being able to list the modules that might be used.

9.10 Link with other Pilots

The main link for the Museums Pilot will be with the Photography Pilot, although there is

potential for great links with other projects and Piots such as Europeana TV..

9.11 User testing / User groups

Generally this Pilot targets exhibition managers, educational staff and, in the case of the Blinkster application, also the visitors of small and medium sized museums.

The users that will test the two applications will be staff from the selected content providers: Silent Heroes Memorial Centre (Berlin) for the Toolbox and project partners Conservation Centre Kanut (Tallinn), Lithuanian Art Museum (Vilnius) and Museum of Antiquities, Museum of European Culture (Berlin) for the Blinkster application.

The evaluation process for the toolbox will be divided into two parts: the first part deals with collecting and managing data in the toolbox. The scientific and educational staff of Silent Heroes Memorial is involved in this part directly. Feedback Questionnaires will give information for interpretation of data.

For the second part, concerning the work between the memorials/museums and creative partners, selected German creative partners will be asked to join. Museumsmedien will assemble a suitable group of 2-3 creative partners with experiences in work for comparable memorials/museums, exhibitions and topics.

Eureva will test first the application with the Conservation Centre Kanut (Tallinn) and then will proceed in the Pilot application with the other contents providers.

9.12 Output rights

The service toolbox is free of charge for memorials and museums after registration. The users / usergroup have to manage the rights of the material they use within the toolbox. This is, because every user will be able, to load up their own content, and Museumsmedien will not be able to control the copyright issues.

All rights on the produced material (worksheets, storyboards, etc.) will remain in property of the producers (memorials/museums). The producers decide, if and when they will give access to the products they made with the toolbox.

All software used to build the toolbox is open source. The toolbox itself can be used in conjunction with Europeana Labs. It is not intended to put the different modules, extensions and scripts under any copyright.

Software developed by Eureva are proprietary software; some prerequisites of standard products are needed to install Eureva software (Windows & MongoDB).

Rights related to contents (whether provided or produced) are cleared by the museums.

9.13 Multilingualism

Best practice examples of the toolbox application (worksheet and video example on one topic on basis of one storyboard) will be provided in English and German. The cooperation with the content provider during the project will be in German.

After providing the toolbox on Europeana Lab, the backend could be in different languages. The underlying technology of the toolbox is multilingual (Typo3 CMS). The toolbox itself will be multilingual. We will offer two languages, English and German, to suit the needs of our content providers.

The Blinkster application supports multilingualism. For the Pilot purpose, however, it will be provided only in English. In general, the multilingual content might be displayed if the mobile

phone is set-up in a language that has translated content in Blinkster: in this case the content will be displayed in this language. If the language set-up in the mobile phone does not have translated content in Blinkster, then the default language (English, in our case) will be displayed.

10 Next Steps

10.1 Summary

This document has been developed and written during the first two months of the Europeana Space project. It has been a valuable exercise for all partners involved with the project's Pilots, as it has introduced new concepts, approaches, technology and techniques, which are still being evaluated. It was always going to be the case that by the end of Month 2, and through the deliverable D4.1, the Pilots would still be at an early developmental phase and that the project would provide a more definitive definition of activity at Month 6 through the submission of deliverable D4.2.

The project has always been aware that there are different levels of maturity within the Pilots and that has been reflected within this document. Some partners, such as the Europeana TV Pilot have a long-term association and have been able to build upon prior activity and therefore have a greater definition of activities at this stage. Other Pilots such as Dance have partners working together for the first time and even Photography, that is building upon the Europeana Photography project, is taking a new innovative approach to the reuse of content with new partners and is therefore still defining its business case. We do not see this as a problem and in some ways it is an advantage, as Pilots can learn from each other and gain fresh perspectives on what is possible, the technologies available and what can be developed jointly. Although, Pilots will develop in the direction that best suits their areas, the way that they can most effectively lead into hackathons and have a commercial legacy, the support that is available within the work package and the project as a whole is a strength of our activity within a Best Practice Network.

10.2 Opportunities for sharing best practice

It is clear that the initial two months of the project have provided a significant learning curve for partners, but lessons have been learned. As each Pilot presented their working activity in Brussels in late March 2014, it became clear that there were similar approaches, both technological and methodological that could be shared. It was agreed that the WP4 Pilots partners would develop a series of common building blocks that could be used in each of the Pilots where appropriate, rather than each Pilot developing similar tools in isolation.

The meeting scheduled for mid May 2014 in Amsterdam will explore this shared approach further through the GPS brainstorming methodology to explore trends that could be used further within the Pilot approach.

Within the Description of Work there are 20 months allocated to NTUA for technical development within the Europeana TV pilot. Following a wider discussion of all of the Pilots, there is clear value in sharing some of that time across all of the Pilots.

10.3 Pilots within the wider project context

Although the Pilots play a significant role within the Europeana Space project, even as a wider group, they cannot operate alone without interaction with other work package activity and other associated projects.

The association with WP2 and the Technical Space is clearly important in terms of accessing APIs and content, which will involve accessing the Europeana Labs website, as well as potentially ingesting new content and metadata into Europeana itself. This is an area where some Pilots have knowledge and expertise and where others will have to be supported.

The awareness of the Content Space WP3 requirements for IPR and Rights Labeling have been initially considered within this document, but in all cases, there was acknowledgement

that there has to be further exploration before activity can commence. This is a key factor to be considered in the development of the next stage and the formulation of D4.2.

One of the main areas that Pilots were asked to consider, during this initial two month period and for the formulation of this D4.1 document, is the way in which legacy would be left for the WP5 Innovation Space activities, specifically the hackathons and subsequent monetization and incubation phases, as it is important that Pilots do not create fabulous ideas and approaches that have no market value in two years time. It is also worth noting that although each Pilot has outlined potential sources of income through the reuse of content, there is no intention that the Europeana Space project will generate income through the Pilots.

At this stage, due to the time available, the development of D4.1 has been undertaken at Pilot level, including the definition of the markets targeted by the Pilot's work. As D5.1 Market Analysis is also due to be submitted at Month 6, the Project Manager has already facilitated a process to ensure that D4.2 and D5.1 will align content to thoroughly assess the viability of the marketplace. Pilot activities will be considered again in the light of the market assessment.

Although it has not been formally considered at this stage, the Project Manager has also asked Pilots to specifically consider how D4.2 can outline the Pilot's contribution to D5.6 Innovative access to content for education. All of the Pilots have made reference to education within this document, but there has been no actual link made at this stage; it should be in place by the submission in Month 6.

Representatives from the Europeana Space project recently attended the Europeana New Projects Meeting at The Hague. This allowed several projects to introduce themselves and enabled real discussions to take place covering a number of topics at operational level. Over the coming months, it will also be valuable to explore how each of the Pilots could benefit from interaction with projects within the Europeana family (and more widely.)

10.4 Timelines

One of the areas that needs further considered is the timescales that have been indicated by each of the Pilots. At this early stage, Pilots were asked to outline their ideas to be tested by the wider WP4 group and to be developed further by Month 6's D4.2 submission. Over the next four months, the project timelines and the Pilot indications need to be compared to ensure that there is total compatibility.

The Description of Work outlines that D4.3 Prototypes is to be submitted in Month 12 and that there will be demonstrator events that will tie in with the project's mid term conference circa Month 18, with deliverables D4.4-9, the outcomes of each pilot due at Month 24.

Some of the outlines provided by the Pilots do not fit perfectly with this timeline, with some looking to have prototypes ready at Month 24, with activity scheduled to continue into the project's third year. At this stage, for the submission of the outline approach D4.1 in Month 2, it was decided to leave the pilot timelines intact, but to investigate them further in time for the Month 6 submission. It may be that some of the work in the third year is purely dissemination and therefore fits with the project timeline or it might be that the project needs to consider an amendment to the timelines - still within the overall project duration - to maximize the impact of the Pilots.

Clearly, the Pilots will have to feed into the hackathon activity from Month 24 and therefore that and the Outcome deliverables at Month 24 are fixed, but it might be worth considering, in some cases, the viability of Prototypes at Month 12 and demonstrators at Month 18.

Following our dialogue with the Europeana Creative project, it is clear that their final

conference will fall in July of 2015, the month also allocated for the Europeana Space mid-term conference. It is therefore likely that the Europeana Space conference will have to be moved until later in the year, which will in turn impact upon the demonstration activities of the Pilots. This is a factor that will be considered as part of the interrogation of the Pilot timelines in preparation for the submission of D4.2.

10.5 Conclusion

As described previously, D4.1 is the initial document to describe Pilots methodology and content sourcing and is delivered at Month 2. It is acknowledged that some ideas require further development, but that was always going to be the case at such an early stage of the project when partners are still getting to know each other and when there is scope for further development to be presented within D4.2 in Month 6.

Although there is still work to do, both at individual Pilot level, through WP4 Pilot meetings in May and June 2014 and for the Project Manager and Technical Coordinator to tie this activity together with that of other work packages and complimentary projects, valuable work has already been undertaken which has set the projects off in the right direction and with the potential to achieve a wide variety of innovative and exciting results.