D4.5 – Delivery of the Social Networks Pilot

This report describes the progress of the Social Networks Pilot, from the co-creation workshop in month 10 until the final delivery of the Pilot in month 24. It includes a description of the Pilot, the content, technical developments as well as the evaluation, business model aspects and a summary of the Challenge event.

Co-funded by the European Union

The project is co-funded by the European Union, through the **ICT Policy Support Programme** as part of the **Competitiveness and Innovation Framework Programme (CIP)**.

http://ec.europa.eu/information_society/activities/ict_psp/

Österreichische Nationalbibliothek

Europeana Creative is coordinated by the Austrian National Library

Deliverable

Project Acronym: Europeana Creative

Grant Agreement Number: 325120

Project Title: Europeana Creative

D4.5 – Delivery of the Social Networks Pilot

Revision: Final

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Project co-funded by the European Commission within the ICT Policy Support Programme		
Dissemination Level		
P	Public	x
C	Confidential, only for members of the consortium and the Commission Services	

Revisions

Version	Status	Author	Date	Changes
0.1	Draft	Lizzy Komen, NISV	December 01, 2014	Structure of the document
0.2	Draft	Lorna Stokes, ENoLL	December 01, 2014	Challenge Event
0.3	Draft	Enric Senabre, Platoniq	January 02, 2015	Evaluation Section 2.6
0.4	Draft	Lizzy Komen, NISV	January 06, 2015	text for Business Model
0.5	Draft	Tom Miles, BL	January 07, 2015	text for 2.3.2
0.6	Draft	Elisabeth Stricker, ONB	January 22, 2015	Comments
0.8	Draft	Lizzy Komen, NISV	February 3, 2015	Executive Summary and Conclusion
1.0	Final	Max Kaiser, ONB	February 10, 2015	Minor changes

Distribution

Version	Date of sending	Name	Role in project
0.1	December 01, 2014	Lizzy Komen, NISV	WP4 lead
0.5	January 12, 2015	Henning Scholz, EF Andrew Kitchen, RAM	WP1, reviewer, WP5, reviewer
0.6	January 22, 2015	Lizzy Komen, NISV	WP4 lead
0.8	February 4, 2015	Max Kaiser, ONB	Project Coordinator
1.0	February 10, 2015	Marcel Watelet, EC	Project Officer
1.0	February 10, 2015	Project Consortium	

Approval

Version	Date of approval	Name	Role in project
1.0	February 10, 2015	Max Kaiser, ONB	Project Coordinator

Statement of Originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Executive Summary

Five innovative Pilot applications are being developed in the Europeana Creative project to showcase the potential of using Europe's digitised cultural heritage in innovative applications. They are being developed through a process of co-creation involving education, tourism, social network and design experts as well as software developers, business model specialists and other project partners. The Social Networks Pilot and the Tourism Pilot make up the second round of Pilots to be delivered by the project.

The objective of the Social Networks theme is to attract suppliers of websites with social elements to embed Europeana content in their services. The Pilot demonstrates Europeana content to be used by a location-based service (Historypin) and thereby increasing the visibility of digitised content.

The Social Networks Pilot, named 'Sound Connections', created simple and flexible tools and experiences that allowed the project to learn as much as possible about the relationship between social networks and Europeana content. Communities of interest were invited to enrich specific sets of sounds in different ways on the themes of aviation, city soundscapes (London and Amsterdam) and birdlife. Feedback from users has continuously helped to improve the Pilot, resulting in four thematic Pilot pages that can be explored according to time and space: https://www.historypin.org/en/explore/sound-connections

The Europeana API was used to integrate sound assets from the two content providing Pilot partners: the British Library (BL) and the Netherlands Institute for Sound and Vision (NISV). BL and NISV delivered several sound and image datasets to Europeana, from there integrated in Europeana Labs in order to increase discoverability and encourage re-use. The Pilot also helped to inspire creative industries to submit their ideas for the combined Challenge event for Tourism and Social Networks in September 2014. In addition, the Pilot contributed to dissemination not only for the Challenge event but also for the Europeana Creative project and the Pilot by creating an inspirational video produced by an artist re-using Europeana materials.

The Pilot has been developed by partner We Are What We Do; partner Ontotext provided services for geo-referencing of data based on entity extraction.

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1. Introduction

The Social Networks Pilot is developed within the Europeana Creative project. The project aims to demonstrate creative re-use of Europeana resources by developing test applications in five thematic areas: History Education, Natural History Education, Tourism, Social Networks and Design.

This deliverable summarises progress and the delivery of the Social Networks Pilot, which was developed between month 10 and month 24 of the project. It gives insight about the product that has been made, and the process by which it has been developed. This included the co-creation process, the agile development of the Pilot, the business plan behind it and the evaluation process.

The Social Networks Pilot, named 'Sound Connections', created simple and flexible tools and experiences that allowed the pilot team to learn as much as possible about the relationship between social networks and Europeana content. Communities of interest were invited to enrich specific sets of sounds in different ways.

The Pilot core team consists of four project partners. There are two data providers (Netherlands Institute for Sound and Vision and British Library) who both have experience with crowdsourcing projects such as Sound of the Netherlands and UK Soundmap. Both partners have a wide range of sounds in their collections, including field recordings, wildlife and ambient sounds. The partners were interested in how these sounds could be surfaced in an interface which facilitated discovery and exploration, and which enabled their enrichment by members of the public. The technical partner (Ontotext) supported the geo-enrichments of the sounds and finally We Are What We Do (WAWWD) led the design of the Pilot and took care of the integration of the sounds via the Europeana API. The Pilot makes use of the social media platform Historypin (HP), which was developed by WAWWD and is also used in several other Europeana projects such as Europeana 1989 and Europeana Sounds.

2. The Pilot

2.1 Co-creation Workshop

The starting point for the Pilot was a co-creation workshop in Palma, Mallorca, in November 2013. The main objective of the workshop was to inspire, guide and help development of the Pilot in the area of Social Networks, with a content focus on sound assets. This was accomplished via discussions and co-design activities concerning the possibilities of user generated content and crowdsourcing, in connection with examples and collections of content and ways to digitally interact with it. The workshop was attended by the Pilot project partners as well as local experts and people interested in sound recordings.

Fig. 1: Lots of interesting ideas during the co-creation workshop

The workshop followed a structured approach, which was developed by project Partner Platoniq as part of their activities in Workpackage 1 of the project, i.e. to build a co-creation infrastructure to support the Pilot themes. The method was adapted to suit the needs for this Pilot and it builds upon the structure that was used for the first two co-creation workshops for the (Natural) History Education theme.

In Palma, participants were given the opportunity to listen to existing sound assets from Europeana, to inspire the development of the Pilot at the start of the workshop. After listening to the sounds, a framework of different motivations helped to guide the conversation. The motivations for re-use ranged from more intrinsic (enjoying, experiencing, learning) to more extrinsic ones (attract, share), around samples like an Albert Einstein's talk, a church bell sound, a natural soundscape with frogs, an old instrument playing and a swarm of bees. Comments and observations had to do with different issues around motivations:

- Need to access sound files with more contextual information and other formats (image, map, audio, etc).
- The impact that voices from famous people could have on the user, as usually voices are more unknown than their images.
- The potential interest of saving and sharing sounds from heritage objects (like instruments, old machines, endangered species, etc).
- The more experimental approach when comparing similar sounds from very different sources (for example natural and industrial sound which may follow similar patterns)

After this 'ice-breaker' session the participants worked on scenario forecasting of potential developments. They focused on personas, basic actions, audio assets and related actions and content in the near future related to an application using (open) audio content. Initially in small groups the participants wrote individual scenarios in one sentence, with the following structure:

"[What if as a <type of user>] [I could <action>] [<audio content>] [<additional content/actions>]"

An example forecast scenario was: "What if as a music lover I could record with my mobile the song of a street singer and put it on a map for others to see it". The main objective of the scenario forecasting activity was to have a common visualisation of areas of potential interest, as well as a shared language of which could be the development of the Pilot in different versions and/or its main features, also taking into account the possible additional information needed apart from (digital) original sources. This exercise resulted in a range of scenarios, from sounds of nature and street culture to industrial sounds. The three most interesting or promising scenarios for future implementation were then discussed and voted by the group; The Train Geek Challenge, Childhood Memories and Listen to the City.

Fig. 2*:* Possible scenario 'Childhood memories' presented to the group

Following the forecasting of potential developments, the participants did some rapid prototyping of screens and interactions for the three chosen scenarios. Finally, there was a business model development slot and evaluation session (see also chapter 2.6 Business Model).

All three scenarios had elements that were of value for the final scenario for the Social Networks Pilot. The workshop helped to clarify which elements could be used, given the resources, time and content available. For instance, one scenario from the co-creation workshop focused on train sounds. However, NISV and the BL did not have sufficient train sounds to make that scenario work, so they therefore adapted the scenario to use other, available content.

The detailed report on the co-creation workshop for the Social Networks Pilot summarises the most important facts.[1]

2.2 Pilot Concept

Following the co-creation workshop, the Pilot team evaluated the scenarios from the co-creation workshop and discussed how they could be adapted for the final Pilot concept. A thematic analysis of the available sounds, the key elements for interaction and desired social engagement resulted in the final Pilot concept 'Sound Connections'. The themes that were

[1] http://pro.europeana.eu/web/europeana-creative/project-documents/-/document_library_display/yP06/view/1594730/72101?_110_INSTANCE_yP06_redirect=http%3A%2F%2Fpro.europeana.eu%2Fweb%2Feuropeana-creative%2Fproject-documents%2F-%2Fdocument_library_display%2FyP06%2Fview%2F1594730, accessed January 21, 2015.

chosen for the Pilot were birdlife, city soundscapes and aviation as it was technically feasible to import these and they had associated communities of interest that the Pilot team could reach out to engage with the sounds.

The British Library and NISV collections already had geo-coordinates (eg. the UK Soundmap which collects sounds from particular places) or related strongly to locations (eg. NISV's cityscape sounds). Historypin's tools therefore offered a way for these sounds to be displayed and explored through a map. The prototype utilises Historypin's mapping and timeline tools to allow sound clips to be surfaced on a map and gallery where they can be explored by location and filtered by time. Users can browse by place or search by tag and free text search. The prototype uses the SoundCloud and Audioboo embeds to enable the sounds to be played on Historypin rather than having to visit Europeana or an institution's own site.

As it was a goal to facilitate participation and enrichment as well as exploration, commenting was incorporated and the ability for users to add links to other content that augment the sound files, for example photos, sounds, Europeana objects and reference sources like Wikipedia articles. Users are also able to add media items (photo, video or sound) and pin them to the map.

User Experience

The user interface has been built with mobile using in mind and optimised for tablet and desktop, so users are able to use the Pilot on a variety of devices. Users are invited to explore the sounds via a map and gallery. Users are also encouraged via calls to action in the introductory copy and the comment box, to enrich the sounds with links to relevant content. There are a few sources suggested that people might like to find enriching connections (e.g. Wikipedia and Europeana) but it is also interesting in what sources specific user communities draw on.

The Pilot interface

Initially, the Pilot had several individual sub-interfaces to accommodate the different themes. Following feedback from the Pilot partners, the sub-themes were combined into one landing page, https://www.historypin.org/en/explore/sound-connections/[2], which allows easier navigation between themes and gives an explorative aspect to the site. Sound Connections has also been added to Historypin's projects landing page https://www.historypin.org/projects/ to further improve discovery of the project outcomes.

[2] accessed January 21, 2015.

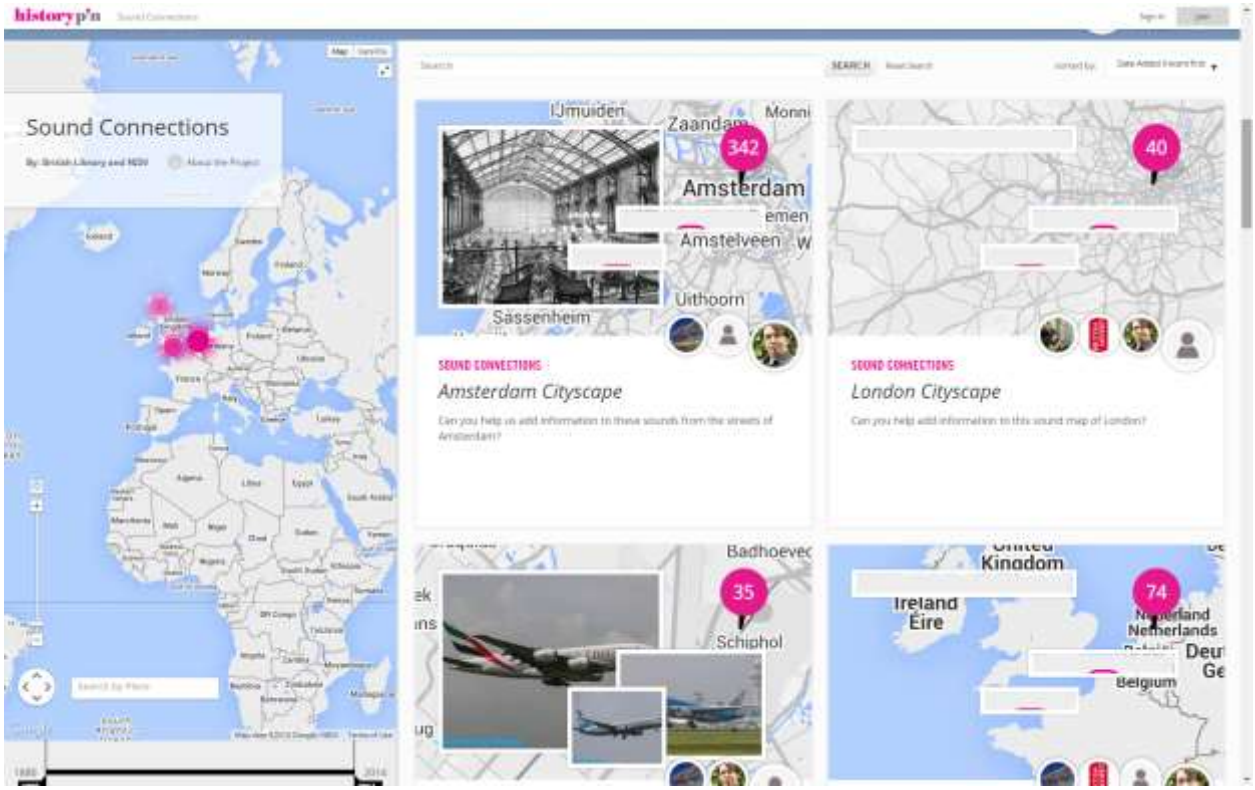

Fig. 3: Screen grab of the main landing page for 'Sound Connections' with sub-themed Pilot pages

Benefits

Specific communities of interest benefit from being able to access, explore and contribute their knowledge to a selection of sounds that they might have not known about before. Members of the general public also benefit from more accessible and browseable national sound collections in their local area via simple and user-friendly mapping tools.

NISV and the British Library gain increased exposure to their collections, and from the interesting thematic links made across collections from different countries. In addition, the Pilot offers the ability for collection metadata to be enriched and for institutions to see how communities can gain enjoyment and use from these materials. The enriched metadata could potentially be used in future related projects such as Europeana v3.0 or Europeana Sounds as sample data to test roundtripping processes.

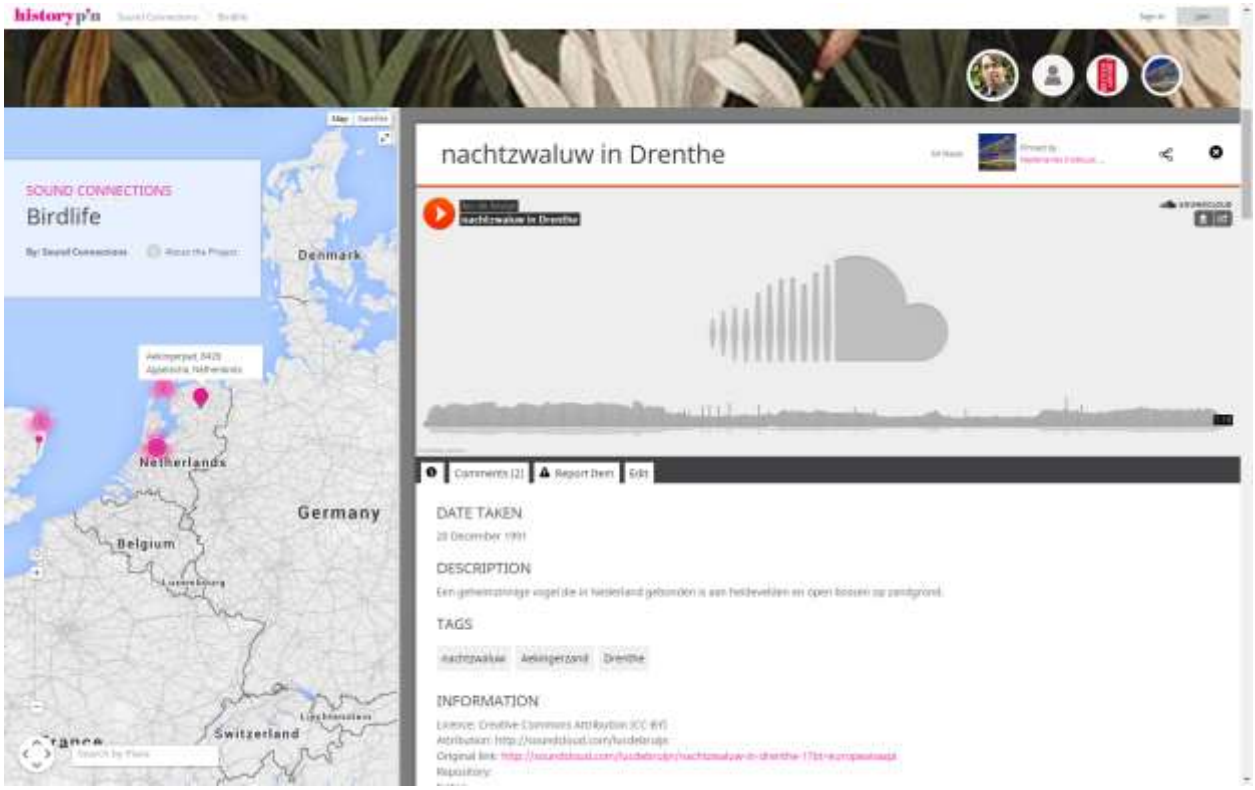

Fig. 4: Screenshot of the bird sounds Pilot page

Pilot Awareness

The Pilot was presented to the wider public and related networks on several occasions and was featured on various blogs. For instance, Tom Miles (BL) and Lizzy Komen (NISV) presented a joint paper at the British and Irish Sound Archives (BISA) conference in Dublin, May 2014. The pilot was also presented by Lizzy Komen at the Annual Conference of the International Association of Sound Archives (IASA) in September 2014. The presentation received a mentioning on the Library of Congress blog: http://blogs.loc.gov/digitalpreservation/2014/11/convergence-of-audiovisual-archivists-in-the-fairest-cape-a-report-of-the-2014-iasa-conference/[3] Finally, Lizzy Komen presented Sound Connections during the Challenge event together with Breandán Knowlton (We Are What We Do) in September 2014, Barcelona.

Pilot development structure

With assistance from Workpackage 1 and Workpackage 6, an adapted Agile Scrum method was used to develop the Pilot. This method provides a powerful set of principles and practices that help teams deliver products in short cycles, enabling fast feedback, continual improvement

[3] accessed January 21, 2015.

and rapid adaptation to change.[4] The Pilot team met online once a month via a Google hangout session to evaluate progress and set out new actions. For documentation purposes the software Trello[5] was used, which allows handling of tickets and assigning tasks to people. Minutes of these calls were also written and shared after the call by a representative from the evaluation workpackage.

2.3 Content

The core of the Pilot are the sound collections from the British Library and NISV on Europeana. They formed the basis for the Pilot application. The partners also looked for collections on Europeana as a source of enrichment for the sound collections (eg. links between the sounds and other audio-visual assets). The sounds that are used in this Pilot all have geo-coordinates, which was another important aspect to take into account for the development of the Pilot.

Content alignment and integration
At the early stages of the Pilot development it was clear that there was a need for a data integration strategy, to allow easy integration of the sounds from the data providers into the Pilot interface. A Data Model Workgroup was established to streamline the efforts between the partners involved, as they all dealt with different data models. We Are What We Do mapped its database to the Europeana Data Model (EDM) so that it can ingest sound records from the British Library and NISV via the Europeana API into the Historypin platform. NISV and the British Library mapped their sound collection datasets to EDM and The European Library data model, so that they could be ingested into Europeana and enriched where necessary.

Challenges during the first period
The main problem encountered during the first period was that many of the British Library sounds were on their own servers, and it was not within the scope of the Pilot to integrate with bespoke audio players. Therefore the British Library had to upload some of the interesting sounds into SoundCloud so that the records on Europeana would have a SoundCloud link. A further problem was that the UK Soundmap had been collected in partnership with Audioboo so it was not thought appropriate to provide these recordings through competitive services. Therefore We Are What We Do also embed the Audioboo player in the prototype so that the British Library Sounds can be played.

Content sub-themes
For the Social Networks Pilot, the development team was particularly interested in focusing on collections that would be of interest to particular communities and therefore the Pilot would have a clear audience to explore and enrich it. Decisions were also influenced by the sounds available from the BL and NISV, ensuring both institutions' material was represented and an

[4] https://www.scrumalliance.org/, accessed January 21, 2015.
[5] https://trello.com/, accessed January 21, 2015.

interest in comparing broad and specific themes. Therefore it was decided to focus on three sub-themes to start with – birdlife, aviation and cityscapes (Amsterdam and London) – which enabled these objectives to be met. The decision to focus on these three sub-themes evolved from a segment analysis (~500 sounds) of the existing sound collections from NISV and the British Library that were made available for the Pilot. This research looked at the existing subjects in the collections, keeping in mind a possible community as well, as user engagement is of high importance for the Pilot.

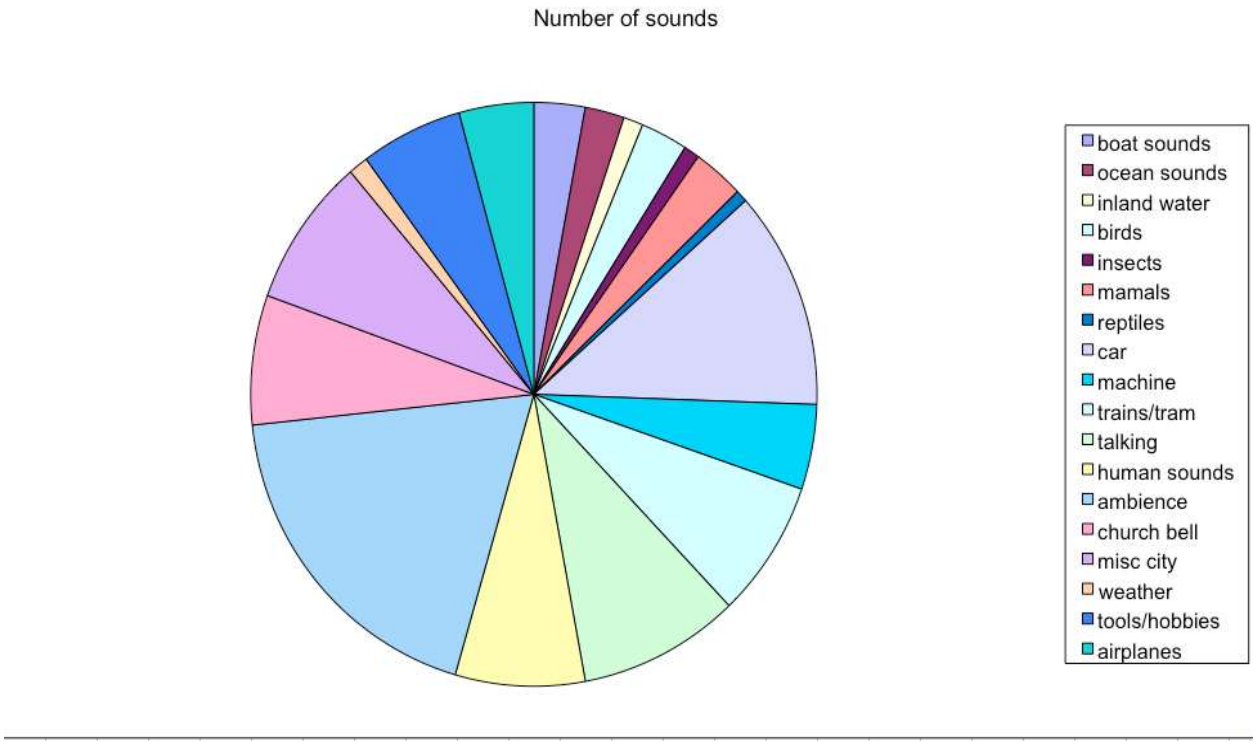

Fig. 5: Analysis of NISV sounds dataset by subject

Each theme (birdlife, aviation, cityscapes) is an individual project in the Pilot, with introductory text outlining the collection and its own interactive map visualising the sound records. The Pilot uses a total of 337 sound items for the Amsterdam city soundscapes theme, 43 sounds for the London city soundscapes theme, 29 for aviation and finally 77 sounds for birdlife.

Content from the BL and NISV has been re-used in various ways within the Pilot and project in general. The content was not only re-used within the Pilot themes, it was also used by other Pilots and in other contexts in order to demonstrate that openly licensed cultural heritage content can be of value for many different audiences and purposes.
The following provides an overview of the content developments for the BL and NISV on the following topics:

- Content used in the Sound Connections Pilot
- Content delivery to Europeana and Europeana Labs

- Content used by other Europeana Creative Pilots or in other contexts

2.3.1 The Netherlands Institute for Sound and Vision

Content used in the Sound Connections Pilot
The sounds chosen for the Pilot are for the themes birds, airplanes and Amsterdam city sounds. These were chosen due to the amount of high quality sounds with rich metadata available and the accessibility of relevant communities in The Netherlands.

The NISV sounds (2,505 items) are available for re-use either under a CC BY, CC BY-SA, or CC BY-NC-ND license. Very few problems were encountered with the content. The problems that did occur were either the language since nearly all the descriptions and titles are in Dutch making it harder for non-Dutch speakers to read the metadata, lack of some geo-tags, or improper dating. Improvement of geo-tags for the UGC records was achieved with the help of Ontotext and although NISV does have a portion of their sound collection that does not include a date, the sounds that were selected for the prototype are sounds with existing dates.

At the start of the Pilot, NISV provided audio content for all three sub-themes: 35 sounds to birdlife, 24 to Amsterdam cityscapes and 35 to aviation. The small amount of content at first was mainly as this was needed to demonstrate that the sounds could be integrated via the API into the Historypin interface.

NISV made an update of the available sounds for the Amsterdam city sounds. These were easily added utilising the Europeana API integration built in the first half of the Pilot and increased the number of sounds in the Amsterdam city sounds sub-theme from 24 sounds to 383 sounds in total.

Content delivery to Europeana and Europeana Labs
The Netherlands Institute for Sound and Vision is using sounds gathered by the Geluid van Nederland (Sound of The Netherlands) project. These sounds come from both the institution's archive as well as user generated content (UGC) and ar currently hosted on SoundCloud. NISV worked on mapping their sound data to the Europeana Data Model (EDM) and delivered this data to Europeana via the Dutch National Aggregator (Digitale Collectie) in October 2013. The Sound of the Netherlands dataset of about 2,505 records can be accessed with the following search term on Europeana: europeana_collectionName:2021613*.

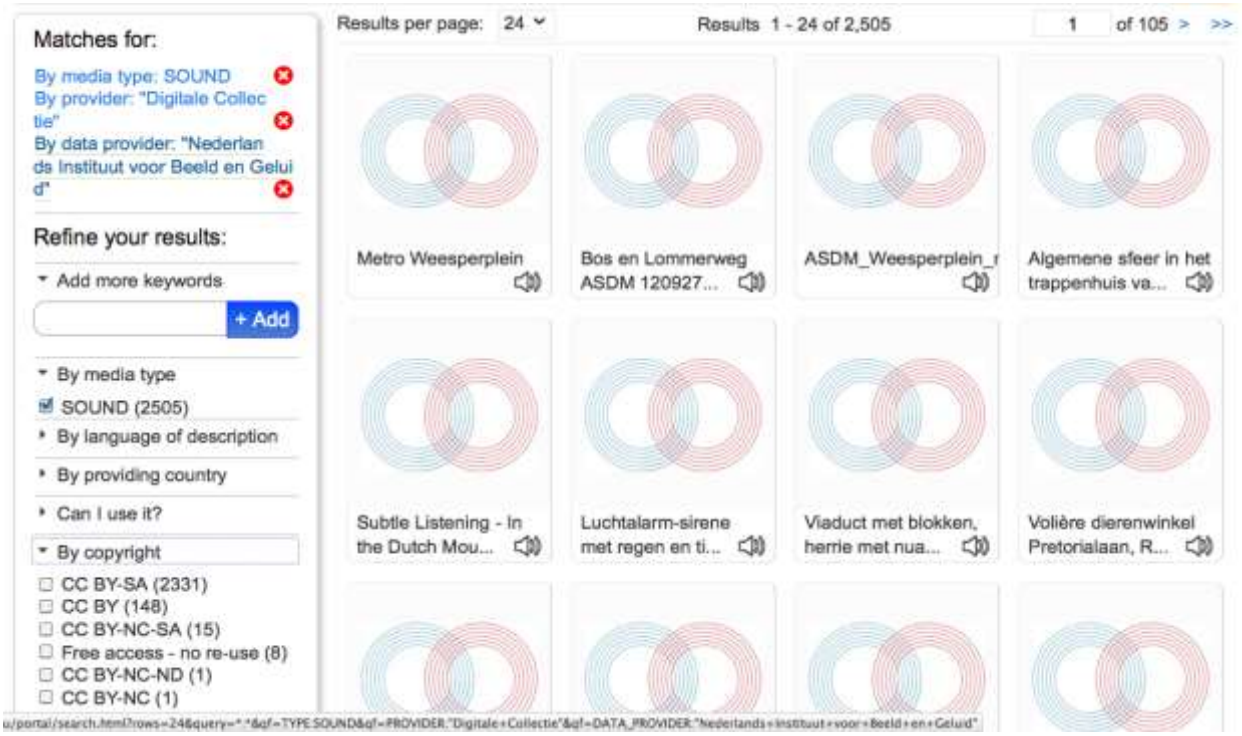

Fig. 6: *Screenshot of the NISV sounds dataset on Europeana*

Content used by other Pilots or in other contexts

Bird sounds video

During summer 2014 NISV established a collaboration with media artist Andy Thomas who produced a video using some of the sounds available via the Pilot. For this video two bird sounds from NISV were used and visualised with a computer programme. The video was produced to inspire creative industries to take part in the Europeana Creative Challenge and increase the profile of the project and the Pilot and on the other hand to have another example of creative re-use of cultural heritage materials. The video called 'Nightingale & Canary' was released mid-August 2014 on Vimeo: http://vimeo.com/103364847[6] and YouTube: https://www.youtube.com/watch?v=NtIHJSRQvvk&list=UU_Z8vHTU2qx4_qBIy9f_u0A[7]
The video was also added to the Open Images platform of NISV: http://www.openbeelden.nl/media/739047/Nachtegaal__Kanarie.en[8] , as the video is openly licensed (CC-BY-SA).

[6] accessed January 21, 2015.
[7] accessed January 21, 2015.
[8] accessed January 21, 2015.

Fig. 7: Still from Nightingale & Canary video

The video received enormous attention on social media and the platforms that it is featured on. On Vimeo the views to date (December 2014) are 339,000 and 3,350 likes and on YouTube a total of 36,880 views and 513 likes. The high amount of views can be explained, as the video was an Editor pick on Vimeo and on YouTube it was added to YouTube's Google+ channel. The artist had interviews with Wired Magazine and reviews on several major blog sites such as Vice and Colossal[9]. He also received offers from several large studios about producing concept art and video content for projection mapping projects. The video will also be featured on the French National TV channel Canal+ in "l'Oeil de Links"[10], which is a weekly program that highlights every aspect of the internet used as a creative and social tool.
The responses on Facebook and Twitter were also very good, but more difficult to trace as the video went viral.

[9] accessed January 21, 2015.
[10] accessed January 21, 2015.

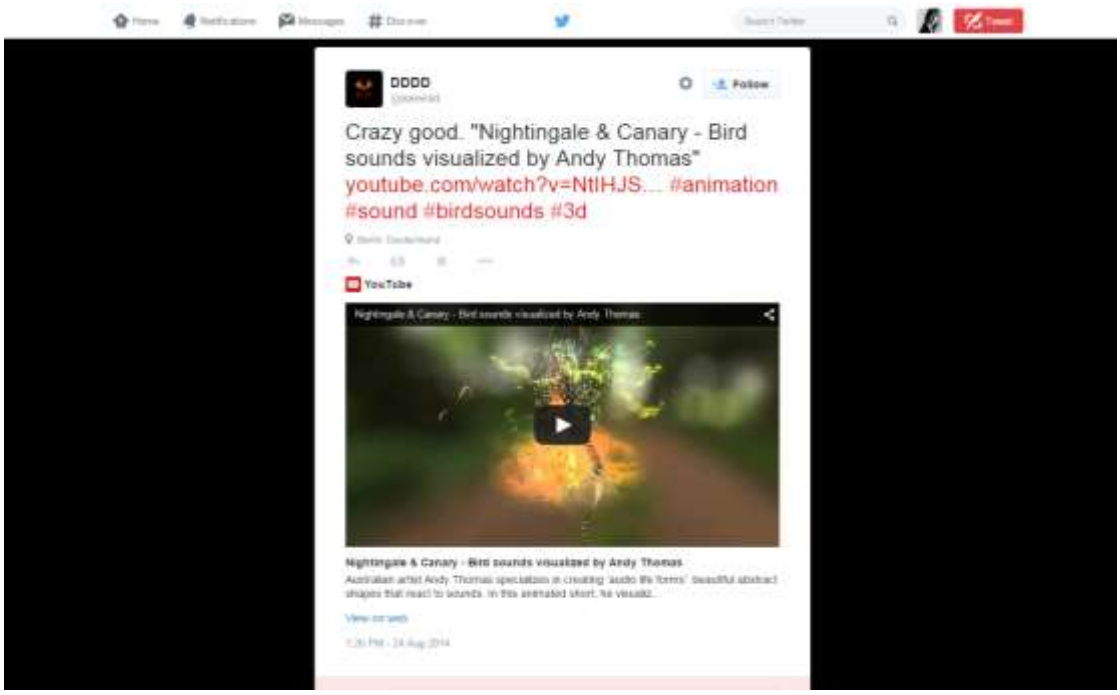

Fig. 8: Twitter comment on the Nightingale and Canary video

A Twitter search on the video shows some nice comments though: https://twitter.com/search?f=realtime&q=%22Nightingale%20%26%20Canary%22%20since%3A2014-08-13%20until%3A2014-11-17&src=typd[11] The video was also shown during the Challenge event in Barcelona (see chapter 3.1).
More information about the video and an interview with the artist is featured in this blogpost[12].

[11] accessed January 21, 2015.
[12] http://www.beeldengeluid.nl/en/blogs/research-amp-development-en/201409/creating-inspirational-video-archival-bird-songs, accessed January 21, 2015.

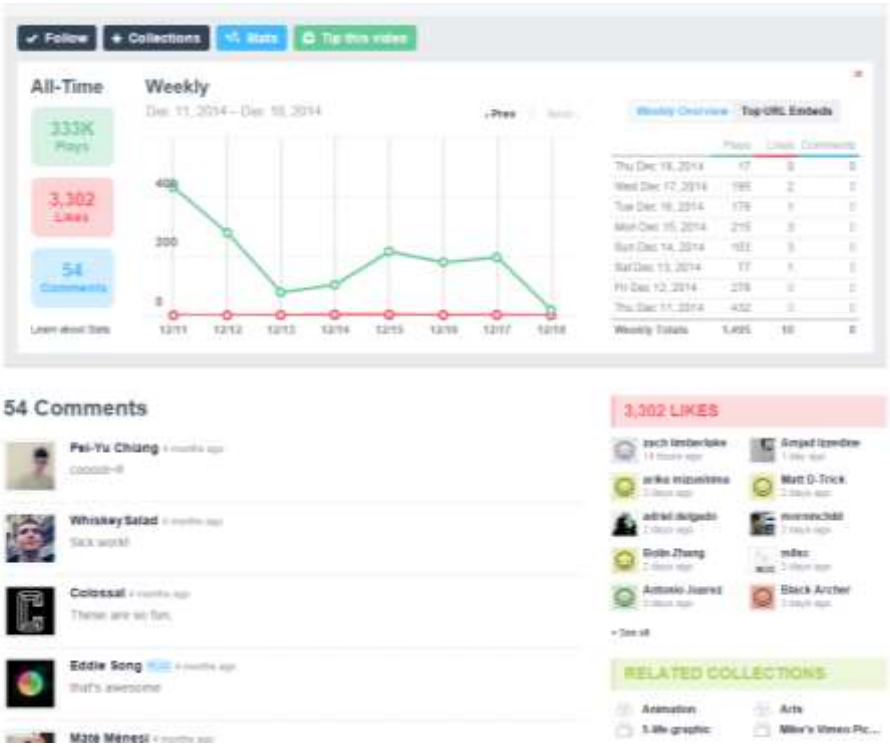

Fig. 9: Screengrab of statistics from Vimeo for 'Nightingale & Canary' (December 2014)

Mozilla Fest workshop

A selection of NISV Public Domain audio content was used for the "Downsampling Masterpieces Workshop" held at the Mozilla Festival[13] in October 2014. The session, organised by partners from the Design Pilot and Europeana Foundation, was one of the activities under the "Art and Culture of the Web" track and explored how open cultural content can be used in creative ways, by playing with image resolution and audio conversion. Participants were able to make their own 8-bit style melody cards with images from the Rijksmuseum and audio content from NISV. More information about the workshop is featured in a blogpost[14].

2.3.2 The British Library

Content used in the Pilot

From the British Library, 49 sounds were selected for birdlife and 40 for London cityscape. These sounds were selected from the 3,000 sounds uploaded to Europeana by the BL. As these sounds needed to be directly downloadable from the Pilot, all the 49 birdlife sounds were selected from the British Wildlife Recordings, which were supplied to Europeana under the

[13] accessed January 21, 2015.
[14] http://www.beeldengeluid.nl/en/blogs/research-amp-development-en/201412/sound-and-vision-collection-used-workshop-create-8-bit , accessed January 21, 2015.

licence CC-BY. The Birdlife recordings were selected to show the wide variety of birds found across the British Isles; therefore, the selection needed to be spatially varied to ensure an even spread of recordings across the map. The 40 London cityscape recordings were selected from the UK Soundmap collection. Again, these were selected not just to demonstrate the variety of recordings available, but also to ensure an even geographical coverage across London. These recordings ranged from football matches to tube journeys and from spinning wheels to pigs grunting on Mudchute Farm.

Once the selections for both themes were made, they needed to be uploaded to external platforms, as HistoryPin was not able to host the audio content. The London cityscape recordings were already on Audioboo. However, for birdlife, the recordings were initially only streamable from the British Library sounds website. Therefore these recordings needed to be uploaded to SoundCloud, along with accompanying metadata. As it was the SoundCloud files, rather than the SoundCloud web pages, that needed to be embedded into the Pilot, the SoundCloud URNs for each recording needed to be extracted and then added to the recordings' respective "europeana:isShownBy" fields. The metadata for the British Wildlife Recordings was then re-exported to Europeana via The European Library and, as a result, the recordings could be played directly from Europeana via the SoundCloud widget. The recordings could be embedded on the Pilot platform as well.

Content delivery to Europeana

The 3,000 audio recordings supplied by the British Library to Europeana came from a number of different sources. Around 1,000 recordings came from the UK Soundmap project, comprising crowd-sourced recordings which were uploaded onto Audioboo. The remainder came from various environmental and wildlife recordings, including the British Wildlife Recordings (640 recordings) and the A.R. Gregory recordings (around 700 recordings of birdsong from Kenya). Where possible, the content was made available under the CC-BY license. For the UK Soundmap, Water and Weather recordings, the content was made available under the CC-BY-NC licence.

All the content needed to be mapped to Europeana Semantic Elements (ESE) in order to be ingested by The European Library (TEL) in November 2013. TEL then exported the records to Europeana, in EDM format, in December 2013.

The content for UK Soundmap is downloadable from the Audioboo platform. The remainder of the content can be streamed from the British Library "Sounds" website – http://sounds.bl.uk[15] – but for the purpose of the Social Networks Pilot the content will be downloadable as mp3 files, either from the SoundCloud platform or from the British Library website. The British Library's

[15] accessed January 21, 2015.

content can be found on Europeana by searching for sounds and the British Library as a data provider[16].

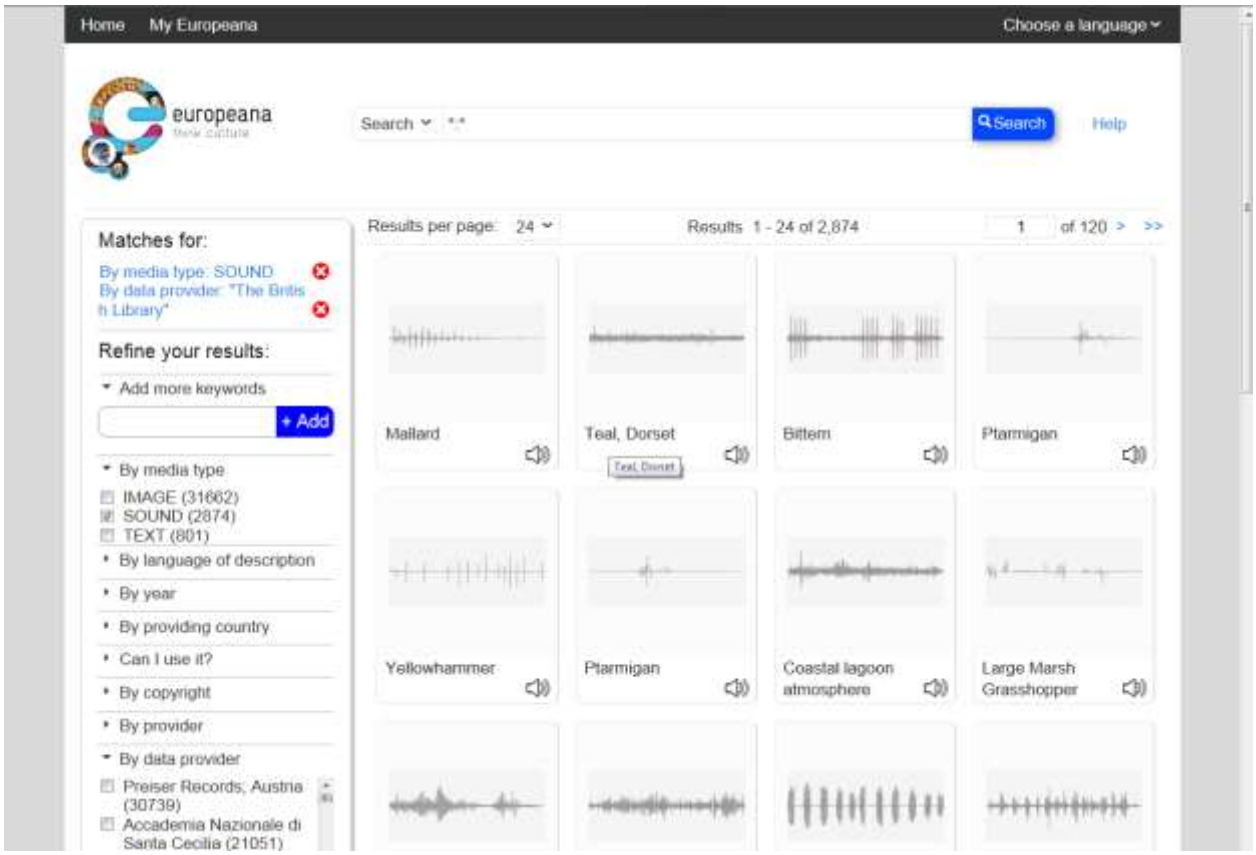

Fig. 10: Screengrab of the BL dataset on Europeana

It would be possible for any British Library content that is on Europeana and which matches the requirements, to be delivered to Europeana Labs as well - such as the British Wildlife Recordings, the A.R. Gregory recordings, the tagged Flickr images and the Catalogue of Illuminated Manuscripts (the latter two collections are described below). The content for Europeana Labs should at least be licensed under PD, CC0, CC-BY or CC-BY-SA and include direct links to the digital object online.

Content used by other Pilots or in other contexts
In addition to the Social Networks Pilot, the British Library is supplying further content to Europeana which could be used for other Pilots, particularly the Design Pilot. An earlier project to digitise 25,000 out of print books belonging to the British Library has resulted in 1 million

[16] http://www.europeana.eu/portal/search.html?query=*%3A*&rows=24&qf=TYPE%3ASOUND&qf=DATA_PROVIDER%3A%22The+British+Library%22, accessed January 21, 2015.

images being available on the British Library's Flickr photostream. In November 2014, the British Library exported to The European Library 62,000 of these images - all the images that have been tagged by Flickr users - and these images will be published on Europeana in January 2015. The images are in the public domain, of high resolution and, therefore, have high re-use potential. The set can currently be browsed on The European Library.[17]
A large number of these images are of maps, wildlife, portraits and other depictions which could provide material that would enhance the audio recordings currently on Sound Connections:

Fig. 11: fauna from "The Ornithology of Formosa, or Taiwan. [From the Ibis, April 1863]" (Public Domain)

The British Library's Catalogue of Illuminated Manuscripts contains 37,000 high resolution images from its medieval manuscript collection, also in the public domain. These include diagrams from Leonardo Da Vinci's notebook:

[17] http://www.theeuropeanlibrary.org/tel4/search?query=a1225, accessed January 21, 2015

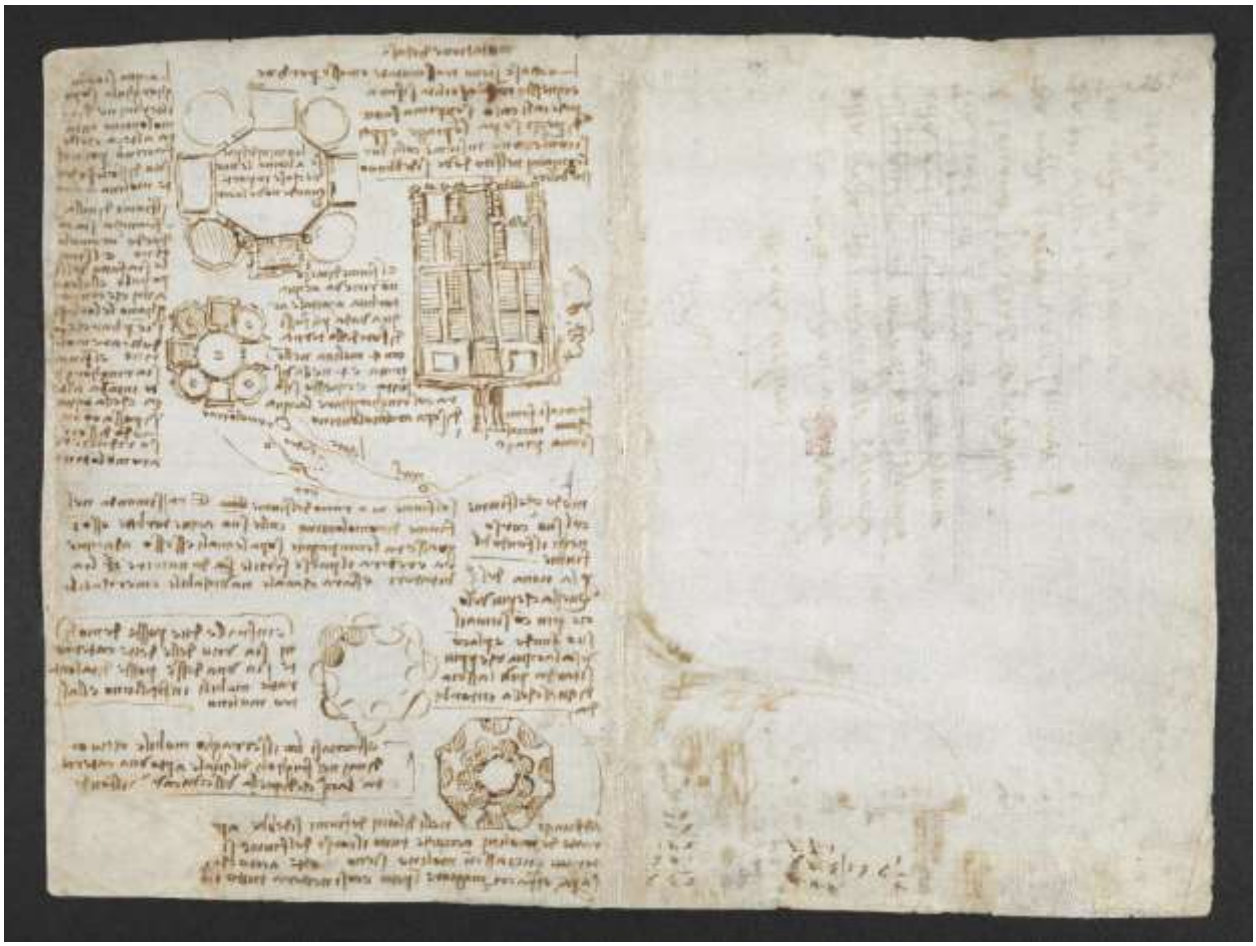

Fig. 12: Leonardo Da Vinci: f.263 from BL Arundel 263 (Public Domain)

Some or all of these 37,000 images could also be made available. Again, these images could enhance both the Social Networks Pilot and the Design Pilot.

2.4 Community Engagement

As one of the key elements of the Pilot is to engage with specific communities, the Pilot partners discussed and agreed upon an approach during a meeting in May 2014. The content partners BL and NISV divided the community engagement as follows:

- NISV: Amsterdam city sounds, birds, aviation
- BL: London city sounds, birds

As the metadata, and in most cases also the content, from each provider is in the native language, i.e. Dutch and English, the proposed existing communities to engage with came from the Netherlands and UK. A list was created with existing communities to be contacted by the partners. This was mainly done via direct email, blogpost or social media. Live events were also used to collect feedback.

Community engagement: NISV
NISV started by contacting communities and individual contacts for the bird sounds theme, such as the Dutch Society for Bird Watching and Naturalis. The response was mainly via email and these suggestions were fed back to the Pilot development team for further improvements. For the aviation theme, the focus was on engagement via social media to see if there was a difference in response. The main conclusion from this experiment was that there is a need for very clear calls for action via Twitter and Facebook. For instance, asking for feedback on a specific sound, rather than sharing the link to the prototype homepage.
For engagement with people that might be interested in Amsterdam city sounds, NISV collaborated with the Amsterdam Museum. This museum has an existing community platform, where citizens in different areas of the city can communicate and share stories about the city. A blogpost about the Pilot was shared on this platform[18] and was additionally shared via social media (Facebook, Twitter). Quite little response came from this call for action via the blogpost, which could be explained due to the fact that the community website has a focus on visual representation of Amsterdam neighborhoods and storytelling aspects, rather than sound related topics.

Community Engagement: The British Library
The British Library engaged with various communities including the archaeological community, giving a demonstration of the Pilot at the Centre for Digital Heritage conference at York University in July 2014. The conference placed a great deal of emphasis on bringing digital material to physical space. The Pilot received a lot of interest and attendees remarked upon the potential archaeological application that the Pilot could have.

The British Library also engaged with contacts in the fields of local libraries, natural history and ornithology (such as the Horniman Museum and Royal Society for the Protection of Birds (RSPB) and, also sound recordings and composers. The BL drew on these groups when inviting volunteers to the evaluation day (outlined in Chapter 2.7).

From the community engagement activities there were some lessons learned. They can be summarised as follows:
Communities are interested in sharing their knowledge

- There is a need to explain the nature of the project to community members that are invited to make enrichments (i.e. Pilot which will be improved with feedback over time).
- Some communities wished to see more sounds for enrichments, before sharing with others.
- Provide users with examples of enriched sounds to get things started.
- Be prepared to be surprised by who is interested and explore this area further (e.g. archaeology community).
- Users want to see other types as well such as audiovisual.

[18] http://hart.amsterdammuseum.nl/91262/nl/hoe-klinkt-amsterdam, accessed January 21, 2015.

- Explore ways to better 'visualise' sounds, or different entry points rather than browse by map.

2.5 Technical Developments

After the co-creation workshop We Are What We Do began to experiment with user interface and user interaction design with regards to sounds, consideration of data back-ends and API integration with commercial entities SoundCloud and Audioboo. WAWWD incorporated some of the feedback and lessons from that co-creation workshop into early UI design discussions and work, as well as technical implications and database design questions.

Implementation of Europeana API
WAWWD used the documentation created on Europeana Labs to connect to the Europeana Search API. Datasets were selected based on query parameters supplied by the data providers (BL and NISV). The team extracted the record set in JSON format and for each record performed an API call to retrieve a JSON record. Historypin processed these JSON records using python, checking against internal synchronisation service to determine if it was a new record or should overwrite an existing one. For each "pin" (display of a record on Historypin) a python/Django object was created. The persistent pin objects were held in a distributed data store and uploaded the media object to Google BlobStore repository. Finally proxies for the media at needed resolutions to display on WAWWD's Historypin were created.
There is a demo video for the EDM and SoundCloud integration available[19].

Data Model Workgroup
All Pilot partners participated in the Data Model Workgroup, which was set up to help the data providers (NISV and BL) and data consumer (HP) with defining the mapping of metadata to EDM. The mapping was necessary to define which metadata fields are needed and supported by the different data models for the purpose of the Pilot, and the appropriate mapping. The workgroup has also defined a metadata workflow from the different data providers through NL's DigitaleCollectie (aggregator for NISV) and The European Library (aggregator for BL) to Europeana and ultimately WAWWD. The workflow also defines where data enrichments should take place, e.g. for geo-locations. Novelties in the mapping include:

- edm:Place with geo: URL[20], e.g. geo:37.786971,-122.399677
- Audio embeddings using an URN scheme (e.g. <urn:soundcloud:123456>) allowing not only WAWWD but also Europeana to recognize them confidently

Geo-referencing
Ontotext started preparatory work during the first quarters of the project on services for geo-referencing of data based on entity extraction (also related to Workpackage 2 Subtask 2.2.2 – Geographic Mapping and Transformation Algorithms). Ontotext gathered information on the

[19] https://www.youtube.com/watch?v=Vgkw_2JBVxA, accessed January 21, 2015
[20] https://en.wikipedia.org/wiki/Geo_URI, accessed January 21, 2015.

geo-referencer currently deployed in the Europeana enrichment process (AnnoCultor) and the one developed by Europeana Connect (GeoParser and Gazetteer), especially relating to their precision.

Ontotext built an entity recognition pipeline for NISV and BL data and the results were evaluated against manual annotations. They performed the geo-referencing of NISV data as part of Workpackage 4 subtask “Services for Geo-Referencing of Data Based on Entity Extraction”, using records with manually provided coordinates for evaluation (baseline to compare against). Ontotext used mostly GeoNames data for the geo-referencing.

Strong results with the NISV data were achieved:

- 82% of enrichments are within 3 km of manual coordinates.
- 87% of enrichments are within 6 km of manual coordinates.

As an example of specific processing, consider "Westerschelde". Fig.13 shows the coordinates as assigned manually, as known to Google Maps, and in GeoNames. One can see that the GeoNames coordinates are most accurate. In this case the automatic geo-referencing is more accurate than the manual coordinates. In addition, some wrong manual coordinates were discovered by examining very large distance differences.

Fig. 13: Westerschelde coordinates: manual (tag), Google, GeoNames

Ontotext thoroughly analysed BL data. Due to varying characteristics of the different BL collections (se *BL Data Enrichments* below), the BL geo-location pipeline is very specific.

Ontotext also continued support for the Europeana semantic repository (EDM RDF storage and SPARQL endpoint) and worked together with Pilot partners to make clear what possibilities for data discovery and exploration it provides in addition to the Europeana API.

Ontotext participated in the Europeana Task Force on Multilingual Enrichment Strategy, which gave them excellent insights into the current state of Europeana enrichment, the difficulties of developing general enrichment algorithms for all of Europeana content. Ontotext joined the newly formed Europeana Task Force on Enrichment and Evaluation in January 2015. As part of Task 2.4 Linking to External Web Resources in Workpackage 2, Ontotext established a semantic name data service. As follow-on work outside of Workpackage 2, work on enrichment will be continued together with Europeana and external partners. Possible additional tasks are:

- Integrate geo-referencing enrichments as plug-in to the Europeana Unified Ingestion Manager (UIM).
- Expand this work to include a significant subset of all Europeana records.
- Use the geo-referencer developed by Europeana Connect (GeoParser and Gazetteer) for evaluation.

NISV data enrichments

Because the Sound of the Netherlands dataset has been described using the Gemeenschappelijke Thesaurus for Audiovisual Archives (GTAA), a thesaurus to describe audiovisual collections, it was possible to enrich the dataset with SKOS concepts (specifically for subjects and geo-locations), as served by Open SKOS. This enrichment has been achieved with the help of an external company (Seecr) in April 2014 and the dataset was re-harvested by Europeana. This provides new opportunities in the future with regards to Linked Open Data.

Because the UGC sounds in the dataset are not described using a specific thesaurus, it was decided to enrich these records with additional geodata where possible. This task was performed by Ontotext.

After a first publication of NISV's Sound of the Netherlands dataset on Europeana, the Pilot team found that the user experience would be improved by having a player embed within the Europeana interface that supports external audio platforms such as SoundCloud. Europeana did a first successful test to support this player on the portal. After this test, the Sound of the Netherlands dataset was updated to include URN’s, which allows the player to work with a new harvest of the audio content from NISV on Europeana. Users will now be able to listen to these sounds on Europeana without having to leave the portal. A player embed on Europeana for Audioboo has also been realised to support Audioboo sounds coming from the BL.

Fig. 14: SoundCloud embed player on the Europeana portal

BL data enrichments

The data from the British Library varied from collection to collection. The UK Soundmap had accurate geographical coordinates but information on the recordings could be rather sparse, depending on the information and tags supplied by the uploading members of the public. Other collections, as mentioned above, needed geo-referenced data enrichment but had very rich data in other areas, such as scientific names of species and, in the case of the British Wildlife Recordings, very full descriptions about the habitat and behaviour of species.

The data within each collection was consistent, but each collection dataset differed from the others. Therefore Ontotext had to use different techniques for the different collections:

- UK Soundmap: has explicit coordinates in the WGS84 datum that needed to be recombined with place names into structured edm:Place records.
- British Wildlife Recordings: has explicit coordinates in the Ordnance Survey National Grid datum that needed to be converted to WGS84 (using openly available formulas and software and recombined with place names into structured edm:Place records.
- Listen To Nature: a mix of place names and coordinates, spelled in all kinds of ways. Some internal inconsistencies as to place name spelling, e.g., "Woodchester PFC, Gloucestershire" vs. "Woodchester Park, Gloucestershire" (one is a football club, the other is its stadium).
- Gregory Recordings: no coordinates. The place names are from Kenya and a subset of GeoNames was used.
- Sounds and Nature, Water, Weather: no coordinates but place names are described in detail, GeoNames records are used.

Extra work was required to ensure consistency throughout the 3,000 recordings. The data for each collection therefore needed to be exported from the British Library Sounds database to Excel, globally edited and then converted to XML files before being sent to The European Library, the domain aggregator for national and research libraries.

It was necessary to deduce the URLs of the British Library's web pages from the edm:IsShownAt fields from the dc:identifier fields and globally edit accordingly. This led to the realisation that data for the edm:object fields – providing the thumbnails on Europeana – could be provided from the BL's audiowaveform .png that had been constructed for each BL Sounds webpage. For example, the audio waveform for a recording of a hedgehog[21] can be seen here:

Fig. 15. Thumbnail of BL audiowaveform on Europeana

As a result, the thumbnails of the BL's audio content on Europeana look unique rather than generic and, generally, more visually appealing.

UI and UX Improvements
Through the usability testing sessions run at the BL in July 2014, a range of usability issues and feature requests was gathered. From these a prioritised list was composed and it was possible to implement the following improvements:

1. **SoundCloud embeds in Gallery View:** Initially sounds had been represented by an icon. This was changed so that the SoundCloud player was embedded and the user is able to play clips directly in the Gallery view. This addressed the problem of too much white space, reduced the number of clicks to play media, enabled users to stay on the explore page if they wished, and helped increase immediate understanding that this was a project focused on sound.

[21] accessed January 21, 2015.

2. **Improved UI:** The Pilot team did a series of incremental UI improvements which included adding next/previous buttons so you can scroll through content, clickable tags so they can be used as browsing tools, clearer presentation of data (eg. comments given more priority than metadata).

New commenting feature

One common piece of feedback from Pilot partners and usability testers was that it would be useful to be able to have links added in the comment visualised - ie. for them to be parsed. Therefore the team worked to enable Europeana, Wikipedia and SoundCloud links to be parsed so that a thumbnail and intro text or SoundCloud embed player was embedded. The focus was on development on these, but other weblinks will also render with title, text and image although they may not be perfectly styled as the source cannot be guaranteed.

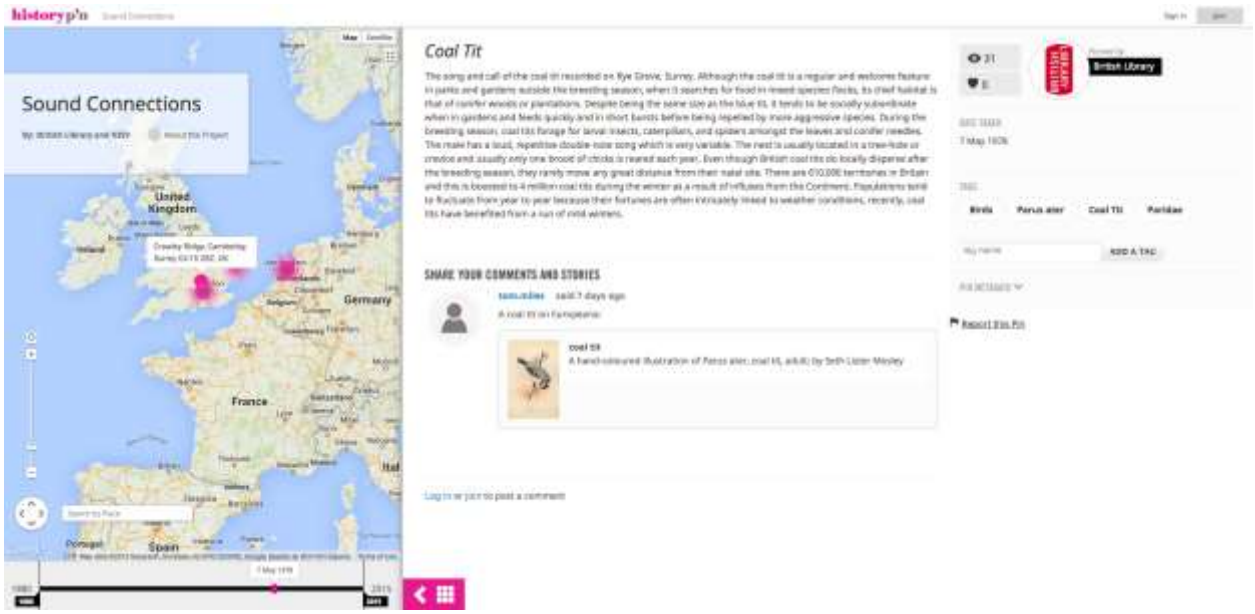

Fig. 16: Link to Europeana object embedded in the comments field

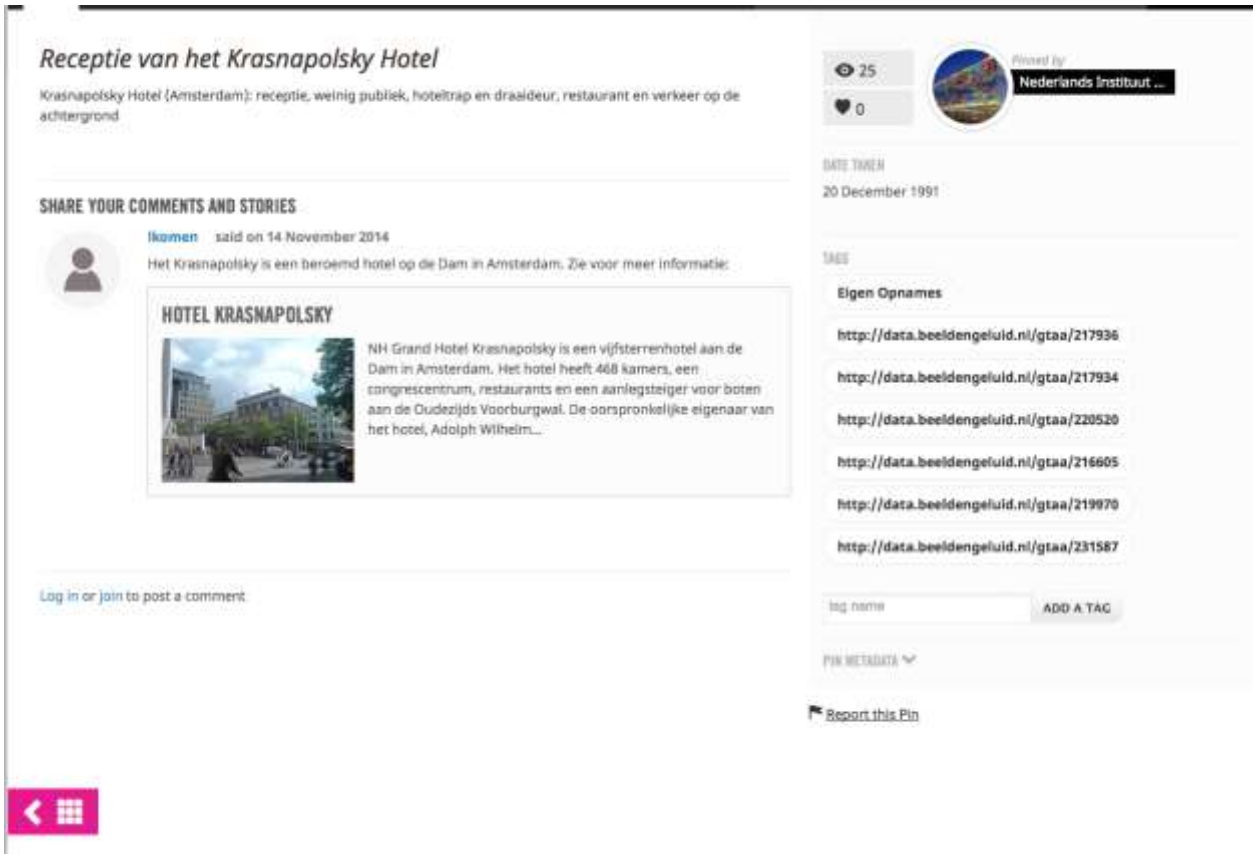

Fig. 17 Link to Wikipedia article embedded in the comments field

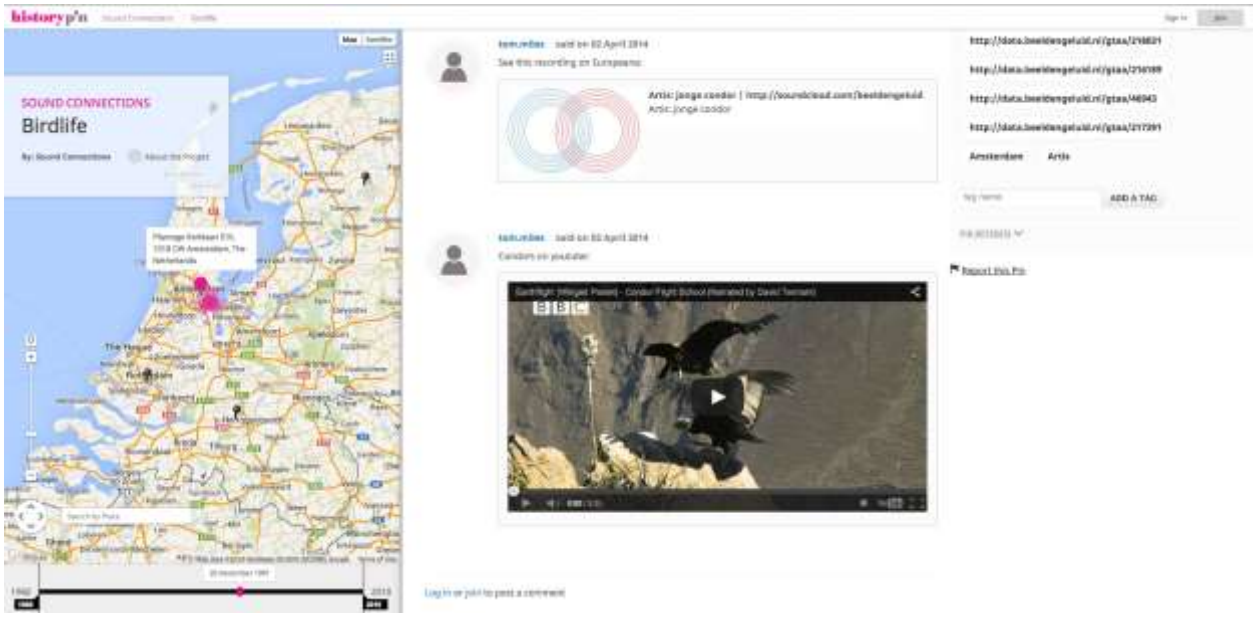

Fig. 18: Link to Youtube video embedded in the comment field

To do this embedding and transform a link into an embedded image/video/sound, https://code.google.com/p/jquery-oembed/ library was used. This library takes the content and html element, checks for link and then tries to embed these links. With YouTube, Vimeo, SoundCloud and Wikipedia, they use oEmbed and their player is provided by each site's library so it is possible to embed that. jQueryoEmbed also provides a rich embed (general embed) and Europeana is compatible with it. So with Europeana links a similar thing was done, using an HTML jquery.oembed to retrieve the object and embed it in the comment box. Some example code:

```
$('.container').oembed()
```

Once the object was retrieved, CSS was used to style it. The main challenge here was that with rich/general embeds one cannot be sure of the content of the embed, so it can be difficult to know how to style it best.

New tagging feature

The other core feature request was the ability to add a tag to an item to help enrich it with relevant descriptive words, so this was implemented on the item view of a pin. Any user can add a tag, it immediately appears on the item and the content owner (in this case the BL or NISV) receive an email notification detailing the tag, item and user who has added it. The tag searches, matches and autocompletes against tags already in the databases.

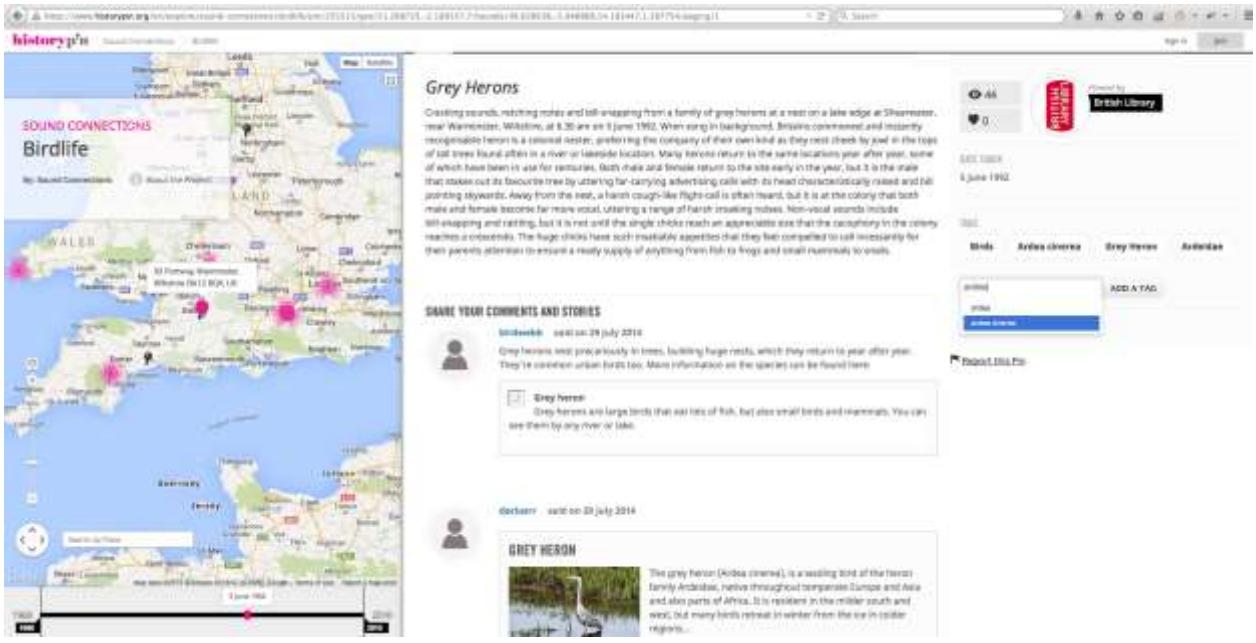

Fig. 19: Ability to add a tag, text enters autocompletes against other tags in the database

Final improvements

Following the improvements in the final quarter of the project, WP6 has run a final round of online user testing in January 2015. HP will evaluate this feedback and where there are small usability issues will add them to the product backlog to be addressed as the platform is iterated.

Sound Connections on Europeana Labs
The outcomes and results from this Pilot will also be featured on Europeana Labs, with information about the Pilot concept as well as a link to Open Source code elements in the Pilot that are available, so that others are able to benefit from the efforts in this project. For the HP code elements, these will be published on https://github.com/Historypin.

2.6 Business Model

2.6.1 Introduction

The conversation about business models started at the business model workshop that was organised on November 13, 2013 with representatives from cultural institutions, tourism organisations and representatives from the business sector. At the end of the co-creation workshop, the application ideas with the best potential were chosen to be further explored in the business model workshop to assess their business potential. The co-creation workshop thus provided the basis for the business model workshop.

The objectives of the business model workshop were:

1. To support the Social Networks Theme with identifying, implementing and analyzing one or more business models via interactive activities and discussions.
2. Start sketching and discussing business/sustainability model elements by using the Business Model Canvas by Osterwalder & Pigneur
3. Imagining propositions, infrastructure, customers, finances

As the sustainability of the Pilot application was thought to be closely aligned with the (business model) of Historypin and how the tool or service fits into their general offer, the team developed the business models from the workshops with HP / WeAreWhatWeDo as the main partner in the organisation behind the application.

Three business models were collaboratively drafted for three different prototype scenarios developed during the co-creation workshop: The Train Geek Challenge, Childhood Memories, and Listen to the City. The ideas and concepts derived during the brainstorming sessions all informed and assisted with the conception of the final Social Networks Pilot. After the co-creation workshop, the Pilot partners chose to develop the Pilot around three subthemes and according social communities: birdlife, aviation and cityscapes.

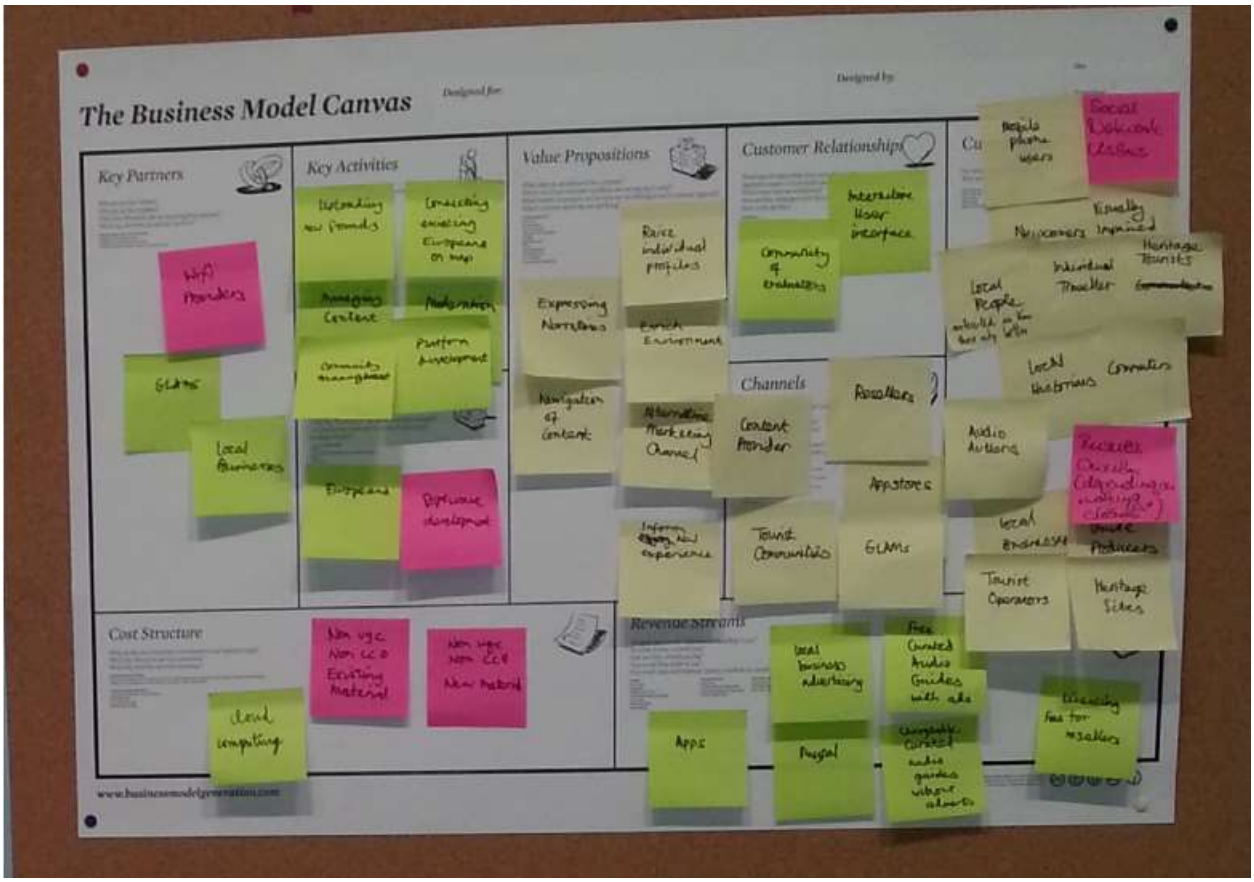

Fig. 20: Input for the business model during the business model workshop, November 2013, Palma

2.6.2 Business Model for the Social Networks Pilot

Following the outcomes of the co-creation and business model workshops in November 2013, the Pilot team continued to work on the business model for the chosen concept for the Social Networks Pilot with support from Workpackage 3. The results of these findings are presented in the White Paper Business Models for Social Networks, released in July 2014[22]. The report also includes a summary of the business model workshop for Social Networks.

The Business Model for the Social Networks Pilot mainly focused on a business to business (B2B) approach, rather than Business to Consumer (B2C). The Main Value Proposition for the Pilot is as follows: 'The product compiles already existing and new content in a uniquely and easily navigable platform, encouraging at the same time community engagement, outreach,

22 http://pro.europeana.eu/documents/1538974/1594727/eCreative_WP3_White_Paper_Business_Models_Social_Networks_v1.0, accessed January 21, 2015.

interaction and enrichment.' The Value Proposition has a special focus on the following main identified stakeholders:

- Memory institutions, like museums (the Pilot delivers a template that could be used by other memory organisations, for different themes, types of content or community engagement activities)
- Commercial and social organisations (e.g. cities, schools, aviation companies)
- Specialist communities (e.g. bird/aviation/cityscapes enthusiasts)

Because of the B2B focus, revenue streams will probably not be generated by advertising, but brand marketing or sponsorship by a company could for instance be a reason. Furthermore, the Business Model looked at at the conditions for content re-use and also on the business model taxonomy and the success indicators.

Together with the project partners involved in the Pilot development it was possible to sketch out some next steps during the business model workshop and long term actions for the further development and implementation of the identified business models in the Europeana Creative project and for the product.

- **Further develop and test a product that can be adapted by many communities**: One general tool containing different topics - allowing institutions to interact with communities and vice versa via the platform and creating a user value by allowing users to become active
- **Develop further partnerships**:
  The collaboration of memory institutions and service providers should be extended allowing further partnerships. One thinkable and interesting third party can be found in commercial partners. This partnership triangle would not only enhance the public-private partnership but also push up the importance of corporate sponsorship as a revenue model.
- **Create a public-private model:**
  The development of a public-private partnership as explained above could also lead to the creation of a public-private business model. This hybrid model would combine the financial and the social aspect: corporate sponsorship and the consulting model for memory institutions. All this depends again on reaching and engaging the community.
- In the first phase of the Pilot the main target is to build a growing network of memory institutions that are interested in this product and the consultancy of the service provider. The next step would be to **engage the community** around these institutions as well as those interested in the different topics of the product. Without the support of the community the sustainability of this product cannot be assured.

Fig. 21: Participants at the co-creation workshop, November 2013, Palma

2.7 Pilot Evaluation

The final and detailed evaluation results of the Pilot will be delivered within Workpackage 6 at a later stage in D6.3 "Pilot and Infrastructure Evaluation Report". This chapter summarises the core findings until now and the approach. Since the adapted agile Scrum development framework has shown its functionality after some adjustments in year one, one of the main focus of activity has been to keep on participating in regular feedback calls during the development of the prototypes, on the one hand, and on the other hand to organise UX testing sessions like in the case of the previous Pilots (History Education and Natural History Education[23]).

The UX testing of the Social Networks Pilot took place in the British Library in July 2014, where several stakeholders that are engaged and working with sound files were invited. This comprised composers, sound producers and representatives from sound communities. Participants were asked to split in groups, which allowed the creation of two working stations. They had to solve a specific task with the product on their own, summarising them on cards related to the usability indicators (see table below). Specifically, they had to enrich three sound files from a theme or map of their choice with additional information related to the selected sound (e.g. Wikipedia, Wikimedia, Google Search etc.).

After solving the tasks the group discussed their experience and enriched the written feedback when needed. After the prototypes were tested the results from the working stations were discussed in a focus group with the participants of the workshop. Among the main areas of improvement identified, the most relevant ones were:

[23] See Evaluation chapter of D4.2 and D4.3 for more details about usability indicators criteria.

- Related to starting screen: indications for improving map position, introduce more information about the prototype, color-coding for the diverse projects and mentioning the value of users input in the beginning.
- Related to accessibility: indications for improving login requirements using social media accounts, the information boxes on pins cover, external links, size of the Audioboo widget and the search function using tags.
- Related to navigation: indications for improving the search and filter options, behaviour with different browsers and operating systems, as well as coherence on the audio player and widgets (for example in relation to volume control).
- Related to design and layout: indications for improving visualisation of sounds, how information should be enriched and shown together with the waver in one place, and categorizing the comment area, picture on the starting screen.
- Related to efficiency: indications for improving the distinction between what kind of content belongs to what theme, the allowance for users to tag content to improve the search quality, editing the 'comment' function, and an easy mechanism to upload photos.
- Related to help options: indications for improving the integration of FAQs, integrating a help option for the registration procedure and the option to request a new password.

Table 1: Usability Indicator[24]

Criteria	Explanation
• *Starting screen*	The test person has a positive first impression and is willing to start using the product. It is clearly visible what kind of actions can be initiated. The screen displays the purpose of the application and raises awareness on the value proposition.
• *Accessibility*	The applications pricing is transparent. The test person can easily access the content. The user control and navigation matches the requirements of the application and its hardware. Important fields to fill in are labelled with terms that match the real world.

[24] See http://www.nngroup.com/articles/ten-usability-heuristics/ and http://userium.com/, accessed October 20, 2013.

• *Navigation*	The status within the application is visible and test persons are aware of it. The navigation is consistent and standardized. Test persons can recognize easily how to navigate to a desired destination. Links and buttons are described in a manner that allows test persons to identify the purpose clearly.
• *Design & Layout*	The design follows aesthetic criteria, addresses the target audience and is consistent through the whole application. Relevant content is identifiable and displayed accordingly.
• *Efficiency*	The application can be used by a broader audience than the target group. Expected objectives can be reached by the application.
• *Help options*	During the use of the application the test person is provided with hints (e.g. error prevention), search and help options

The execution of the testing was planned in two steps, offline and online, since the combination of both methods allows getting a broad feedback on the products. The offline testing was realised as described above and detailed in MS21, while the online testing is about to be conducted when writing this report, following the same procedure as described for previous Pilots and the same range of questions described above for this Pilot. This second testing will be compiled by asking the same participants to test the final prototype online by applying the same principles, like in the offline UX testing workshop, and indicating their feedback through an online survey.

Both the regular calls following the Scrum framework and the UX testing sessions outcomes have resulted in a continuous shared feedback and discussion process with the Pilot development team, in order to enable improvements to the prototype at different stages.

3. Challenge for Social Networks Theme

3.1 Challenge Event

The Challenge Event for the Tourism and Social Networks themes, the Apps&Cultura Demo Party, took place on Tuesday September 23, 2014 in Barcelona, Spain. It was hosted at the World Mobile Centre and showcased the best of the creative industries from the Europeana Creative Project but also the local Barcelona based initiative, Apps&Cultura "Hack at Home"[25], creating a celebration of cultural and digital entrepreneurial projects from all over Europe.

In addition to the applicant pitches from the Challenges, the Pilot applications from the Tourism and Social Networks categories were showcased during the event ensuring exposure for the Pilot prototypes and to engage in an open dialogue with the audience on what happened during their development. Lizzy Komen and Breándan Knowlton from the Social Networks Pilot presented the concept prototype, how they built a prototype for a specific community of experts and why the Social Networks Pilot decided to target bird watchers/spotters, the community engagement strategy and specifically the social network engagement strategy of the prototype to enrich sounds used.

Lizzy Komen also showcased the inspiring film "Nightingale and Canary," a visualisation of bird sounds from Europeana.eu commissioned by the Netherlands Institute of Sound and Vision and created by Australian visual artist Andy Thomas (http://bit.ly/1Anc95Q) which received a great response from the audience (see 2.3.1 for further details about the video). Participants at the event were invited to demo the Sound Connection tool during the networking break in order to play interactively with the tool developed and realise its user potential. All presentations at the event were recorded and are available for viewing on the Europeana Vimeo Channel. The Social Network Pilot presentation is available here: https://vimeo.com/108244366[26]

As the Pilots were used as examples of creative re-use of cultural heritage materials as well as an inspiration for creative industries to take part in the Challenge Event, the Pilots were promoted via a video prior and during the Challenge application process. The video for the Social Networks theme can be found here: http://vimeo.com/103115798[27]. In addition, NISV promoted the Challenge Event in the Netherlands through networks such as Click.nl, the Dutch Creative Industries knowledge and innovation network - See more at: http://www.clicknl.nl/?lang=en#sthash.0N16tXVZ.dpuf[28] The promotion via these networks and through the Nightingale and Canary video resulted in a considerable amount of applications

[25] http://appscultura.hackathome.com/es/anuncios/europeana-creative-challenge/ accessed January 21, 2015.
[26] accessed January 21, 2015.
[27] accessed January 21 ,2015.
[28] accessed January 21, 2015.

from the Netherlands for this Challenge. The two winners of the Challenge were: Buitenplaats Mobiel (Netherlands) and Timepatch (Estonia).[29]

Further details about the Challenge Process, Challenge Results and Challenge event will be reported in D5.4 “Challenge and Incubation Support Final Reviews”.

[29] http://pro.europeana.eu/web/europeana-creative/news/-/blogs/and-the-2nd-challenge-winners-are-timepatch-and-buitenplaats-mobiel?_33_redirect=http%3A%2F%2Fpro.europeana.eu%2Fweb%2Feuropeana-creative%2Fnews%3Fp_p_id%3D33%26p_p_lifecycle%3D0%26p_p_state%3Dnormal%26p_p_mode%3Dview%26p_p_col_id%3Dcolumn-2%26p_p_col_count%3D1

4. Conclusion

The main task of the Pilot was to demonstrate the effective collaboration between memory institutions and creative industries. Sound Connections (https://www.historypin.org/en/explore/sound-connections/) created simple and flexible tools and experiences that allowed the project to learn as much as possible about the relationship between social networks and Europeana content.

We Are What We Do integrated Europeana content from BL and NISV into their existing community engagement platform Historypin via the Europeana API; communities of interest were asked to enrich this content with different websources such as Wikipedia and Europeana.

One lesson learned from the community engagement activities in the Pilot was that communities are interested in sharing their knowledge and expertise on a specific topic. You do however need to clearly explain the nature of the project when asking for feedback, i.e. that this is a pilot which will be improved over time. Some individuals wished to have more sounds for enrichments before they would share it with their community. It helps to provide users with examples of enriched sounds to get things started. However, also be prepared to be surprised by who is interested and explore this area further. Besides sound assets, users were also keen to see other types of content such as video.

Sound Connections demonstrates that there is value in re-using Europeana materials in a website with social elements. The Pilot was used to inspire creative industries (Challenge Event), and specifically suppliers of websites with social elements, to embed Europeana content into their services. The Business Model has a focus on a Business to Business approach, for which a first example has been provided with the collaboration for the *First World War Centenary Hub,* which involves the Heritage Lottery Fund in the UK and Historypin.

Similar to the previous Pilots, Sound Connections made use of several innovative methods and strategies which were not used in similar EU funded projects before. The Pilot therefore functioned as a prototype and testing environment for this new approach. The co-creation elements and the adapted Agile Scrum methodology proved to be very helpful in the creation of the Pilot concept and ongoing development process.

The Pilot results will be featured on Europeana Labs. The Business Model Whitepaper on Social Networks identifies business models for the re-use of cultural objects for social networks, which is useful for creative industries when exploring new ideas or collaborations. Finally, Sound Connections has also been added to Historypin's projects landing page https://www.historypin.org/projects/ to further improve discovery of the project outcomes.