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Content Space

The E-Space TV Case Study

1. Introduction: IP and the E-Space Project

The E-Space project aims to increase and enhance the creative industries' use of digital cultural content, especially content accessible via the internet portal known as Europeana. Funded by the European Commission, its purpose is to create new employment opportunities and foster innovation and economic growth based on Europe's rich cultural resources.

The E-Space consortium is a best practice network of 29 partners from the European creative industries, technology-based enterprises, the cultural heritage sector and higher education. Six thematic areas in dance, games, television, photography, museums and open and hybrid publishing have been explored through pilots, hackathons, business modelling workshops, mentoring and incubation activities. These showcased new content and applications based on digital cultural content, demonstrating how these can be commercialised for the mutual benefit of software developers and cultural institutions. The aim was to have at the end, a minimum of six competitive applications ready to be exploited on the market.

The specific business exploitation arrangements for the applications were developed during the project. However, a Consortium Agreement and Description of Work (DOW) established the following key principles:

- all contributors of their own background IP to the development of Pilot services and applications would retain full rights,
- Non-Disclosure Agreements (NDAs) could be signed by all participants in hackathons and workshops
- for products reaching the incubation stage, contracts would be designed and agreed between all relevant participants/partners.

Each partner highlighted any background IP they would have in the project for which they would retain ownership.

The Consortium Agreement contained provisions for access rights to IP in software and the commercialization of project outputs, with parties agreeing a Memorandum of Understanding (MOU) in relation to software created for the project, and cloud computing, including website hosting and any other relevant software, and including the treatment of third party open source software.

Partners agreed an open source and open data approach as outlined in the DOW. The DOW and Consortium Agreement stated that any tool or software developed during the project (including the hackathon) should be made available on an open source basis and should be open in terms of its re-use (subject to any pre-existing licence terms governing use). All project deliverables listed as 'public', dissemination material and presentations were released under Creative Commons licences and in different formats (Windows-compliant software and open source formats such as Open Office) and made accessible through the project website and other channels.

Tools were developed by the E-Space IP Team for the Content Space accessible via the project website. They were available by month twelve of the project in the deliverable Europeana Space IPR: First Report on Legal Aspects and the Content Space and trialed with the E-Space scenarios and hackathons, then refined and released under open source and open access licences. The tools include rights management, clearance and licensing guidelines, IP strategies for hackathons, guidelines on the sourcing and re-use of open and proprietary content and links to internet resources. They enable users to form optimal strategies that maximize possibilities for innovation and minimize risks of failure at the business modelling stage due to disputes over ownership, or shortfalls in the funding necessary to clear rights in the tools and content required for a prototype.

2. Creation of IP at the Pilot, Hackathon and Incubation Stages



Television

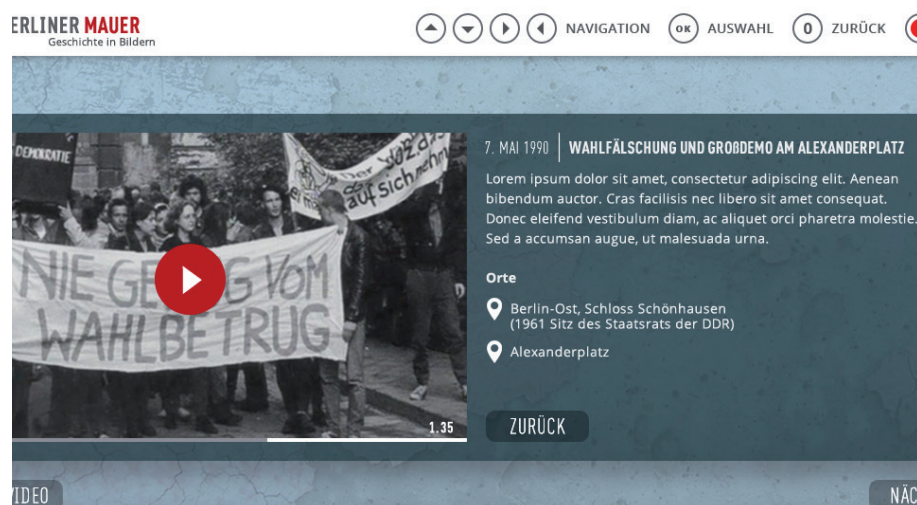
The E-Space TV pilot exploited the opportunities of re-using Europeana and other digital cultural content in SmartTV applications to create new TV experiences.

A technical framework provided an environment to analyse, personalize and present this content. The pilot supported and evaluated two scenarios in which video material was brought out of the archive and onto the viewer's screen.

- The broadcast scenario developed an HbbTV (Hybrid Broadcast Broadband TV) application based on the Berlin Wall. The SmartTV application, targeted a social community, and was based on archive videos about the building of the Berlin Wall in 1961 up to German re-unification in 1990.
- The local community scenario focused on applications for an immersive user experience in the living or class room. It investigated use cases such as the elderly re-living personal memories through TV content or pupils learning about historic events. The content included different themes such as: Arts and Culture, Education, Politics, Religion, Society, Sport and History.
- A Multi-Screen Toolkit with tools, workshop methods and proof of concepts was developed by the pilot, and made available for the hackathon in April 2015.

3. The TV Pilot and Approaches to IP

The TV Pilot used archive video material to develop an HbbTV application based on the Berlin Wall and a Multi-Screen Toolkit for immersive user experiences in the living or classroom. Three technical partners focused on customized and bespoke developments were responsible for the successful delivery of the pilot: Noterik, an Amsterdam based company with over ten years of experience in developing video applications, focused on back-end services and the multi-screen framework, Proton Labs on the front end SmartTV applications and 2nd screen applications with HbbTV compatibility, and NTUA (the National Technical University of Athens) managed the content and metadata connection between the Apps and the Europeana API.



Courtesy of RBB

The TV pilot leaders decided to use as much ‘open’ content for the pilot and hackathon as possible to avoid intellectual property (IP) issues arising, or at least to minimize the risk of copyright infringement, disputes over ownership, and a lack of funding to clear rights at the business modelling stage. The pilot decided to develop only the tools so that the content would be inter-changeable. Therefore, specific content would not be crucial in achieving the ultimate aim of the pilot, that is, to showcase how digital cultural content sourced from Europeana and other repositories can be re-used and exploited by the creative industries. Content could always be replaced should IP issues arise without undermining this overall objective. IP was, however, generated in the development of the tools during the pilot. In line

with the provisions in the CA and DOW, the TV Pilot retained ownership of copyright in the HbbTV application as this was their background IP. It was agreed that this would then be used only for demonstration purposes during the hackathon. By contrast, the multiscreen toolkit was developed during the course of the pilot and, in accordance with the CA, made available on an open source basis.

4. The TV Hackathon and Approaches to IP

IP is generated in hackathons through additions, enhancements and remixing of content and/or tools. Given the collaborative nature of work undertaken at hackathons it can be unclear as to who owns IP that is generated during the process. In the case of the TV pilot developments of the tools generated IP and as a result the need to identify ownership. The E-Space IP Team have created tools to help hackathon owners think about how IP that arises during a hackathon might be managed and these can be found in the E-Space Content Space IPR Toolkit.

TV pilot leaders organised two pre-hackathon social events for participants to meet and plan the event. The E-Space IP Team advised that it would be important to highlight to the hackathon participants that IP would arise during the course of the event. Using the hackathon tools, decisions could be taken as to how the IP arising during the hackathon should be managed. The IP team also advised that it would be important to point out to the hackathon attendees that ideas could not be protected. So if ideas were shared during the event, then, in the absence of a non-disclosure agreement, anyone could take those ideas and re-use them without permission. The IP Team also pointed out that it would be important for ownership of IP to be clear for those projects going on to the business modelling stage and then incubation as any third party investor would want to be clear where ownership of the IP lay. The IP team highlighted that disputes over ownership often arose when IP became valuable and started to generate money: the dispute concerning Facebook was given as an example.

Ultimately it was agreed by the IP Team and hackathon organisers prior to the event, that the more the 'IP policy' could be claimed as an organic, 'bottom up' policy the more likely it was to work. The hackathon organisers decided only to highlight the risks at the hackathon, leaving the participants to come to decisions among themselves about what content and tools they would use and about who would own what. The hackathon organisers reasoned that this would preserve the

‘open’ and ‘free’ approach that makes hackathons so successful at innovation. Being prescriptive regarding the strategies and decisions that should be made around IP or providing written information on the restrictions associated with re-use of tools and content was considered by hackathon leaders to be off-putting for participants and risked stifling creativity and taking up precious time for sharing ideas and building new tools.

The IP team reminded the TV hackathon organisers of the Risk Management Tool available in the content space and that the IP generated during the hackathon needed to be owned and that both this IP, and IP arising during the incubation phase where tools would be further built upon and developed, needed to be managed. The Description of Work (DOW) had stated that non-disclosure agreements could be entered into by attendees at hackathons and workshops. A sample of a non-disclosure agreement (confidentiality agreement) is available in the E-Space Content Space IPR Toolkit in both the Frequently Asked Questions for Hackathon Organisers tool and the Frequently Asked Questions for Hackathon Participants tool.

The TV pilot Hacking Culture Bootcamp took place on 8-10 May 2015 in Amsterdam. It was held at Waag Society, and organized by the E-Space TV Pilot as part of the E-Space project. The Hacking Culture Bootcamp was a 3-day hackathon event for creatives, entrepreneurs, designers, directors and developers, who had the opportunity to develop innovative ideas in teams of creative thinkers and coders. Organisers from Waag Society, Sound and Vision and Amsterdam based company Noterik, challenged participants to develop prototypes of SmartTV applications, in particular to create new multi-screen experiences with a focus on digitised historical footage and to experiment with Smart Audio/Video formats, in order to come up with inspiring applications that create new TV experiences for the public or private domain, using cultural heritage content available via Europeana and other portals. Participants on the day included game developers, storytellers, interactive designers, and app developers.

Daniel Ockeloen of Noterik made it clear in his introductory remarks at a pre-hackathon event, that all hackathon outputs would be assumed to be open for further development with a view to commercial re-use, and that if anyone had an idea for something they planned to build and commercialise independently they should not bring it to the hackathon. The thinking was that anything built in the hackathon would be at an early stage of development and that it would not be a finished prototype that was ready for the market. The hackathon organisers put together documents with information about licensing regarding the content and

tools provided to the hackathon in a Google Drive created for the event and made this available for attendees.

4.1. Content used for Hackathon

Concerns were expressed by the organisers prior to the hackathon that participants would make use of proprietary content or content which was only available to be used in the protected space. The official E-Space protected space with both legal and technical protection measures was not operational at the time of the TV hackathon, so the outcome would be that E-Space partner Remix, in conversation with winning hackathon teams, would have to spend time clearing rights rather than focusing on the further development and the market-readiness of the prototypes. In response the hackathon organisers aimed to make use of openly licensed and public domain content to avoid issues arising around IP. This was because their main focus was on the tools and their ability to showcase how they could make use of digital cultural content rather than on the content. It was noted that any use of specific irreplaceable content might have made the incubation process lengthy and complicated. Furthermore, it had been noted that what the jury would be looking for from the winning teams would be tools rather than content, and specifically tools that could be used with a range of content.

The TV hackathon's focus on this inter-changeable content rather than on specific content may prove a useful example to some of the later pilots, such as the Games pilot. However, this approach would not be suitable for some of the pilots, notably the dance and photography pilots, which would be likely to use at least a small amount of specific and restricted content from third party providers such as independent dance artists and photographic agencies, since this kind of content had proved necessary for the pilots.

Several content sources were made known by organisers for re-use by the TV hackathon participants. These were Europeana, the open data sets on Europeana Labs, Open Cultuur Data, Open Beelden, and EUscreen. Participants of the hackathon were also informed that they had access to content from 3 partners in the project, Netherlands Institute for Sound and Vision (Sound and Vision) – NL, Rundfunk Berlin-Brandenburg (RBB) – DE and Istituto Luce Cinecittà (Luce) – IT. All hackathon participants were given access to an online google drive containing guidelines for what content and tools to use during the event. This information included descriptions of what kind and quality of content is in the archives, which

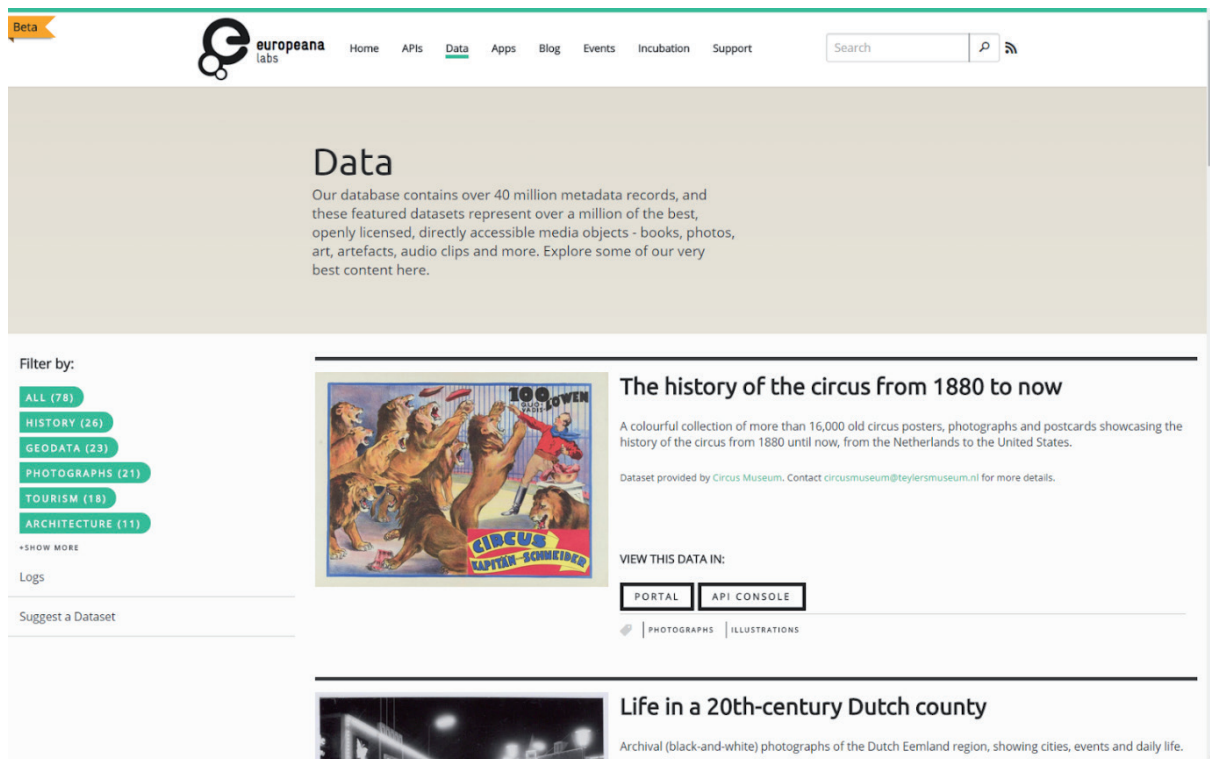
licenses are attached to it, and links to example topic collections and metadata. This information was also presented to participants at a pre-hackathon event.

The google drive directed participants first to Sound and Vision (NISV) open video content provided via the Open Images platform. Open Images gives access to over 4000 videos from NISV and others under a Public Domain or Creative Commons BY-SA license. Also recommended were Sound of the Netherlands which gives access to a collection of about 2,500 historical sound recordings, all available under either a Creative Commons – Attribution-ShareAlike license (CC BY-SA) or a Creative Commons – Attribution license (CC BY), and Open Culture Data Search, a search engine built by the Open State Foundation used to search through all the data in the Open Cultuur Data API. Content (images, sounds, videos) from various Dutch cultural institutions were included under an open licence.

RBB provided 500 videos from the German broadcast archive and the former East Germany state TV spanning a timeline from the beginnings of the Cold War in the 1960s till the reunification of Germany in 1990. The videos were available via Noterik's Springfield platform for tests and demonstration purposes only, both at the TV Hackathon and the pre-event on 9th April 2015. They had no licence for use at the hackathon events and it was taken on trust that they would not be used outside these events which would be an infringement of the proprietary licences attached to the videos. If these were to be used at the business modelling stage, rights would need to be cleared. Cine Luce provided access to EUscreen, a collection made up of 2800 video items (to be extended in the next 12 months to about 4000 items) and a uniform set of metadata, with all the videos hosted on the Noterik's Springfield platform. They also provided the collections available on their Cine Luce YouTube channel. Both collections were accessible and usable for both pre-Hackathon and Hackathon days only. It was agreed verbally, that the images used would be deleted at the end of the hackathon, and Marco Rendina of Cine Luce was on hand to make sure this was done as far as was possible. Cine Luce did not provide any openly licensed content but took advantage of the safe space of the hackathon. They made the content they provided to participants free to use in any way they liked but only within the context of the hackathon. This was by verbal agreement during the hackathon discussions which led to the decision that the content would not be used outside this event and RBB was on hand to supervise, making sure as far as was possible that this agreement was honoured. Again it should be noted that the official E-Space protected space was not operational at the time of the TV hackathon so these agreements had to be verbal agreements based on trust.

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Participants were pointed to the Europeana database where they could access cultural heritage collections from across Europe, either via the Europeana API, or by browsing open datasets on Europeana Labs. They were also able to do searches on the Europeana portal itself. The google drive provided a quick guide on how to do searches on Europeana: advising participants to filter options to narrow down their searches, e.g. by content type (video, image, sound, text) or licence. It stated that the datasets available via Europeana Labs are either under a Public Domain, CC0, CC-BY or CC-BY-SA licence and that the datasets have been tagged with topic information to make it easier to search. The TV hackathon google drive provided this link to a short screencast introducing the Europeana Labs and the Europeana API.



The screenshot shows the Europeana Labs website interface. At the top, there is a navigation bar with the Europeana Labs logo, a search bar, and links for Home, APIs, Data, Apps, Blog, Events, Incubation, and Support. The main heading is "Data", with a sub-heading stating: "Our database contains over 40 million metadata records, and these featured datasets represent over a million of the best, openly licensed, directly accessible media objects - books, photos, art, artefacts, audio clips and more. Explore some of our very best content here."

On the left side, there is a "Filter by:" section with several categories: ALL (78), HISTORY (26), GEODATA (23), PHOTOGRAPHS (21), TOURISM (18), and ARCHITECTURE (11). Below this is a "Suggest a Dataset" form.

The main content area features two dataset cards. The first card is titled "The history of the circus from 1880 to now" and includes a colorful illustration of a circus scene. The description reads: "A colourful collection of more than 16,000 old circus posters, photographs and postcards showcasing the history of the circus from 1880 until now, from the Netherlands to the United States." Below the description, it says "Dataset provided by Circus Museum. Contact circusmuseum@teylermuseum.nl for more details." There are buttons for "PORTAL" and "API CONSOLE", and a link for "PHOTOGRAPHS | ILLUSTRATIONS".

The second card is titled "Life in a 20th-century Dutch county" and includes a black-and-white photograph of a street scene. The description reads: "Archival (black-and-white) photographs of the Dutch Eemland region, showing cities, events and daily life."

Europeana Labs - Datasets

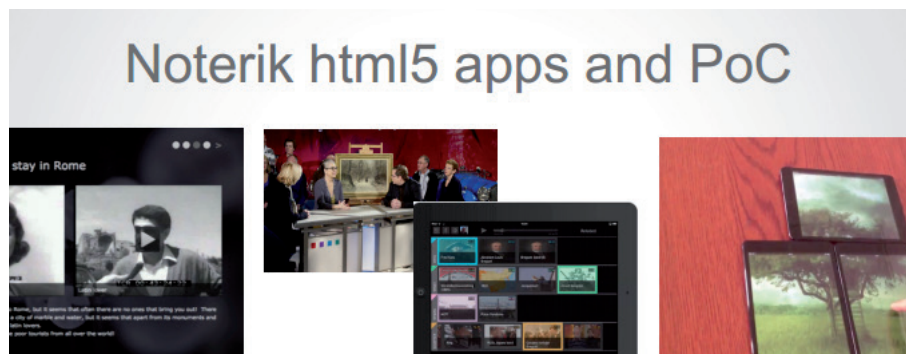
For those new to creative commons licences the link to the Creative Commons website was also provided via the google drive, and an article on how to use them. However, more detailed information was also available in the in the Content Space on the E-Space website, in the CC License Chooser.

A representative of the World Press Photo Archive (WPPA) was present and participated in the hackathon. The World Press Photo Archive contains only

proprietary content unavailable for re-use. However, since a partner was there on hand, one team made use of it for a prototype, verbally agreeing to use the WPPA content only within the hackathon. This was not the team that was chosen to go through incubation but nonetheless the team's discussions are ongoing with regard to a prototype and should they wish to use the WPPA materials for a commercial product that will be sold on the open market, they will have to negotiate with those representatives within their team who are members of the WPPA. However, the content required to showcase the tool in this case is inter-changeable. There is, therefore, little likelihood that the use of restricted content will be chosen to showcase it.

4.2. Tools used for the Hackathon

As noted above, the TV Pilot made an open source platform for multiscreen applications available at the hackathon. A broadcast scenario led by Rundfunk Berlin-Brandenburg (RBB) and the local community scenario led by Netherlands Institute for Sound and Vision (also known as Sound and Vision or NISV) were presented as inspirational best practices. The aim was for participants to develop prototypes of SmartTV applications which create new TV experiences.



Tools to be provided in the TV hackathon by E-Space partner Noterik

Noterik provided the main software developed as part of the TV pilot as a multiscreen toolkit for the TV hackathon under an open source licence for participants to use. In the event it was mostly the Noterik multiscreen toolkit that was used. While no one was making new content in the TV hackathon, the software being developed had the potential to become proprietary as developers and other participants built upon, remixed, enhanced and otherwise altered the tools provided.

However, not all participants made use of the multiscreen toolkit¹. It was provided on an optional basis, which meant the hackathon participants could choose to use their own systems if preferred. Links were provided by Noterik to access their tools such as Github.

The VBOT platform from Proton Labs, which is not open source, was also made available although ultimately it was not used in the hackathon.

4.3. Post-Hackathon Reflection

Project partners were keen to share the winners' ideas in blog posts and video. Hackathon organizers quickly tried to contain this, since in contrast to a normal hackathon, the winning ideas were intended to be commercialisable. It was thought that if too much information was given publicly, then third parties might use these ideas ultimately to the prejudice of the winner – ideas are not protectable unless it is agreed that they are not to be used or shared by way of a non-disclosure (confidentiality) agreement. Consequently, there was discussion about whether a non-disclosure agreement amongst hackathon organisers and project partners should be used in future E-Space hackathons to make sure everyone attending is aware that ideas should not be disclosed outside of their hackathon teams. It was also noted that what was developed could be the subject of a patent. Disclosing information about the invention before a patent was applied for would destroy novelty meaning that a patent would be unobtainable.

It was noted that if there was no intention of applying for a patent, then blogging in general about ideas (rather than the specific detail of what is proposed) such that anyone reading it would not be able to recreate the substance of the idea is fine. As with an emphasis on IP before the hackathon, the challenge with introducing a non-disclosure agreement (NDA) between hackathon organisers and project partners is that it brings a formality to the proceedings. This in turn can make people guarded and less willing to share ideas.

1. The Multiscreen Toolkit is based on HTML5 and Java, and provides a foundation for building and prototyping of a wide range of video applications. Among other things, the toolkit enables advanced remote control options, co-viewing and collaboration around videos. In addition to offering reusable software components, the toolkit aims to facilitate easy and quick prototyping of multiscreen application ideas and proof of concepts. Examples of applications built using the toolkit include a second screen application for watching enriched TV programs and a spatial spotting application for pinpointing objects in a co-viewer setup.

Ultimately it was agreed that simple tools with guidelines for engaging in the hackathon would be most appropriate for future project hackathons. The tool *Valuing Your IP, for Entrepreneurs* explains that if there is the possibility of a patentable invention, this should not be disclosed. Where there is no possibility of a patent, or no intention of applying for one, then general ideas can be shared on social media, but care should be taken that not too much is disclosed that would enable others to recreate the ideas, most particularly in advance of the business modeling workshop and incubation for the successful ideas. It would be essential that the winning teams have the time and space to develop their ideas unworried by competition. This other hackathon tools, the *Frequently Asked Questions for Hackathon Organisers* tool and the *Frequently Asked Questions for Hackathon Participants* tool, are also available in the toolkit in the Content Space and include a simple statement that any information made available after the hackathon and before the business modelling workshops should be 'approved' by the hackathon judges who will advise regarding whether there is a patentable invention there or not.

Another IP question was raised in a team which, much like the platform *VanGoYourself*, focussed on one art work at a time. If they wished to use certain paintings that were closed then IPR would become a problem. However, adding a non-visible layer of tagged audio to the paintings via their application created uncertainty in their minds as to whether or not this would be considered augmenting the original and would therefore prevent them from using anything that had a CC ND (Creative Commons, Non-Derivatives) clause.

The ND part of the CC licence states that Licensed Material is translated, altered, arranged, transformed, or otherwise modified in a manner requiring permission under the Copyright and Similar Rights held by the Licensor. For purposes of this Public Licence, where the Licensed Material is a musical work, performance, or sound recording, Adapted Material is always produced where the Licensed Material is synched in timed relation with a moving image. So, the question for this team was what would be the licensed material? Was this the painting? If so, did they 'translate, alter, arrange, transform or otherwise modify' the painting by adding tagged audio? If not, then it may not be a derivative.

5. Business Modelling and Incubation

The business modelling workshop, organised by REMIX, took place in London on 26th June.

Three winning teams from the hackathon attended.

We Make Known: Offer an online platform and physical installation that allows museum and archive visitors to serendipitously explore large collections by using a special algorithm and exhibition management system.

Bosch: Bosch is an application inspired by the old theater method of lighting single performers on stage. Bosch applies this method to art allowing users to add their voice to individual characters which can be layered played back to bringing a new method of exploration, conceptualization and engagement to paintings.

Art(f)inder: Art(f)inder is a mobile application that empowers users via a swiping left (no) right (yes) action to save their art preferences. With each swipe the Art(f)inder algorithm generates recommendations for museums, galleries, archives and libraries for users to visit in new cities. Art(f)inder offers a second social layer matching users with others who “liked” similar works facilitating social interaction and meet-ups.

Much of the business modelling workshop focussed on the value that could be extracted from the ideas presented by the participants and for whom. The business modelling was broadly based on an exploration of the Business Model Canvas. The objective of the workshop was to focus on and critically evaluate the in depth discussions emerging from this for each team, especially in the context of creative businesses, rather than designing a new framework for business models.

On IP, discussion focused at one point on ownership: were they individual employees, or working for themselves? This mattered because it would have an impact on who owned the IP in their work. All members of We Make Known and Bosch were students, and Art(f)inder was an employee working for the digital department in a broadcaster. When questioned he was happy that the employer would own (or have a licence of depending on the jurisdiction) the IP in what he was developing.

As regards the IP in the software being developed, there was discussion around proprietary and open strategies. While each participant almost by default had opted for an open approach to what was they were developing, they were questioned as to

whether they might consider making it proprietary. While value could, for instance, be extracted from licensing information from the use of the 'products' in the GLAM sector, value could also be extracted from licensing the software. Relatedly, a proprietary approach could prevent third parties from using the software/apps for the same purpose and thus competing in the same market with the same product.

Ultimately no decisions were made about IP – as that was not the purpose of the business modelling workshop.

In deciding which project should go through to Incubation, the judges were drawn to We Make Known because it had several different components, and was well placed to capitalise upon several consumer and industry trends. Among other things, it offered an innovative user interface for online catalogues; an algorithm for serendipitous browsing across different disciplines, and a hardware installation for physical environments. One of the most attractive aspects of this proposition were the multiple revenue models and markets available to them, which were explored with the help of REMIX as part of the Incubation process.

Our tool Valuing your IP, for Entrepreneurs has been provided as a simple handout for hackathon teams to use in thinking about how to manage and exploit the IP created in the process of developing their ideas, plans and prototypes should they wish to pursue commercialisation. It will be especially useful for the winning teams as they move into the business modelling and incubation stages. For a detailed guide for entrepreneurs and start-ups in presenting the security and financial worth of their IP when seeking finance and to help banks recognise the value of IP in such businesses go to: <https://www.gov.uk/government/publications/banking-on-intellectual-property-ipfinance-toolkit>



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