Europeana Space – Spaces of possibility for the creative reuse of Europeana's content

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1 EXECUTIVE SUMMARY

The aim of the Dance Pilot was to create a general framework for working with dance content and the metadata accessible through Europeana. The Dance Pilot comprised three partners, IN2, Univerdidade Nova de Lisboa (UNL-FCSH) and Coventry University (COVUNI). The Pilot had an ambitious plan and was able to fully execute everything it set out to do. First the metadata model used for the Pilot was defined. For this a basic taxonomy of the categorisation of movement was created. Work was then focused on defining, in more detail, the two scenarios which would evaluate the Pilot. The content to be used in the Pilot was then selected and prepared using the outcomes of Work Package 2 which focused on the Technical Space infrastructure. IN2 and UNL-FCSH set up the tools for granular content annotation, based on the IN2 platform and the Creation-tool and Knowledge-Base platform. These tools were already developed and tested in previous projects; for the Pilot the tools were adapted and customised in order to fit the requirements of the two scenarios.

DanceSpaces is a web-based application for re-using existing audio-visual content, by creating and sharing dance collections and narratives and it focuses on the needs of the general public, dance enthusiasts and pre-professionals (e.g. dance learners and educators, those who participate in dance as a social and/or recreational activity, dance audiences/viewers and tourists, etc.) who want to share and explore content about a particular dance aspect. DanceSpaces was built under the coordination of IN2.

DancePro is an application developed as a new version of the Creation-tool software, which is a video annotator working as a digital notebook in real time for professionals during creative and compositional processes. It focuses on the needs of the researchers and dance experts (e.g dance artists and choreographers) that need a set of powerful tools for accessing dance content and creating extensive metadata. The content used was annotated using the automatic tools for video analysis, and the user interfaces for crowd-sourced tagging and content access was created.

Coordinated by UNL-FCSH, a first version of the integrated scenarios was then put together and evaluated in May 2015 in Lisbon, Portugal. Based on the feedback received a second iteration of fine-tuning each of the integrated environments of the two scenarios took place. A second evaluation of the prototypes was carried out in September 2015 in collaboration with project partner OCC in Athens, Greece. The leisure, teaching and learning scenario was evaluated by end-users (e.g. students), while the dance research scenario was evaluated by dance experts.

In preparation for the evaluation of the two scenarios COVUNI carried out exhaustive desk-research on digital technologies used within the dance community and how these relate to cultural heritage content, platforms and institutions. This information contextualized the Pilot's work and framed the usability tests. The Dance Pilot implemented qualitative approaches using interviews and observational fieldwork to frame the sessions. The usability tests supported the development of the prototypes and reaffirmed many of the challenges the Pilot faced when accessing content via Europeana. IPR issues were considered throughout the Pilot's activities and the Pilot also examined the kinds of cultural heritage content the target audience engaged with and the way which they accessed or contributed to this content or knowledge based systems.

Numerous questions were considered and the data from the evaluations not only enhanced the prototypes, but offered insight into the marketability of the tools within the target market.

The Pilot succeeded in developing two prototypes, DanceSpaces and DancePro and conducted a Dance Hackathon in Prague, Czech Republic. These outcomes depended on several factors from the various partners, platforms and partnerships. At its core, the Dance Pilot was successful in co-organizing "Hacking the [Dancing] Body" (November 2015) alongside project partner CIANT. The basic challenge facing the Dance Pilot was to find content on the Europeana database that was accessible and freely available for re-use. The Dance Pilot also considered the numerous IPR issues that surrounded the dance content. These difficulties have raised important questions and yielded learnings and educational outcomes that will be explored through the development of the Europeana Space Dance Pilot's MOOC (Massive Open Online Course). A virtual exhibition is already in its early stage of development and the E-Space Dance Day that the Pilot is planning to hold in March 2016, will hopefully generate further engagement for the project's sustainable MOOC.

In summary, this report provides a comprehensive view on the Dance Pilot's activities and the numerous tasks carried out over the course of the 24 months. This deliverable highlights the outcomes of the development of the two prototypes, key findings concerning the re-use of digital dance content and outlines future steps for the Pilot

2   INTRODUCTION

2.1   BACKGROUND

Dance is a form of art that can transcend national borders across diverse European cultures. Moreover, traditional folk dance carries a very rich cultural heritage - but is generally performed at a regional level only. However there is limited access to this type of digitized content for the general European public; and with online material there is the added technical problem that this rich cultural heritage is not easily discoverable: dance content has tended to prove resistant to re-use because of its resistance to search tools. However, the increasing availability of digital technology and myriad of platforms to view and engage with dance video should mean that more people can access and distribute dance content, leading to wider consumption, contemplation and enjoyment. However, while technology has provided new insights and opportunities for those interested in dance, technologists are still learning how to adequately capture and categorise the complexities of the human body in motion for search and discovery. Consequently, although there are novel motion tracking and motion capture methods for recording live dance (available for those with specialist expertise), most existing recordings of dance are on film, and so effectively render a 3D process into a 2D form. When video is then distributed online via a screen interface, the kinetic, temporal and spatial components of the dance disappear further. Novel research has begun to offer searches by visual similarity but these are limited by the content and text-based searching still dominates. This compounds the problem of a lack of a universally-applied and understood taxonomy of movement and complicates what is ordinarily a non-verbal art form, introducing language to the search and discovery process and preventing discovery of rich content that tends to remain buried in archival collections. The Pilot responded to this situation through its development of two prototypes, co-organising a dance hackathon and actively disseminating the project, Europeana and the Pilot's activity.

This document gives an overview of the Dance Pilot, describing in detail the two scenarios which have been developed and evaluated. It will aim to show to the wider public how cultural content and the connection through Europeana, which supported the development of the new applications and encouraged re-use of dance content, can be used by the creative industry in order to develop innovative applications; it describes the steps in the creation and integration of the two use-cases, providing best-practice advice on how to handle performing arts content both from a technical (e.g. tools and standards to use) and legal (e.g. IPR) perspective. The document will also contain the taxonomy for dance movement that has been developed in the Pilot.

The Europeana Space Dance Pilot developed adaptations of existing software, held by two partners (IN2 and FCSH-UNL), to solving the problem of search and discovery of dance content, and in so doing enabled the production of two innovative models of content re-use – one for research purposes, including explanatory, exploratory, creative and choreographical, DancePro Application and one for leisure and education, the DanceSpaces Application. DancePro is a virtual notebook which supports the work of professional dancers and choreographers, where DanceSpaces is web-based application for re-using existing audio-visual content, by creating and sharing dance collections and narratives.

The Pilot addressed two different user groups; dance artists and pre-professionals (dancers, choreographers, educators and dance leaders), tourists and dance audiences/viewers, and those who participate in dance as a social and/or recreational activity. The aim was to educate and inform EU citizens about their cultural history, providing new opportunities to share and expand the enjoyment of dance as a core component of Europe's Cultural Identity.

The Pilot has generated a much larger audience for dance, increased participation in dance, and an opportunity for professionals within the dance sector to develop products that will have wider uptake and may thus increase the marketability of dance as live and recorded content. As a by-product it generated interest in Europeana as a portal to digital cultural content- building awareness amongst communities who in the most part had not even heard of Europeana, let alone used it, while also encouraging re-use of its content.

2.2   ROLE OF THIS DELIVERABLE IN THE PROJECT

This document draws entirely on the work of the Europeana Space Dance Pilot and it owes its existence to the collective efforts of several people and institutions, including FCSH-UNL, IN2 and COVUNI. The Pilot explores cultural heritage content and the re-use of this content using the Europeana database and the potential to stimulate market development using digital technologies in relation to art, and specifically dance cultural heritage content. The Pilot has carried out numerous activities ranging from developing two prototypes, evaluating the tools, disseminating those results, sourcing cultural heritage content and co- organizing a dance hackathon held in Prague, Czech Republic. Its activities support the overarching goals of the Europeana Space Project. This deliverable provides an extensive report on the work conducted in the Europeana Space Dance Pilot carried out from M1 to M24. It illustrates the Pilot's activities, its approach to developing the prototypes, discusses its achievements and challenges, identifies Europeana and non-Europeana content, and also discusses the dance hackathon, and ends with a clear description of the Pilot's sustainability plan and future work hoping to be carried out, all in relation to Europeana Space's key goals.

2.3   STRUCTURE OF THE DOCUMENT

The structure of the document frames the Dance Pilot's activity discussing the development of the two prototypes and the numerous ways the two scenarios enhance the goals of the project.

Chapter 3 discusses the technical details and evolution of both DanceSpaces and DancePro and synthesizes the inputs and outputs, offers a deep analysis of the market for each tool, succinctly discusses the technical integration and testing activities and itemizes major milestones.

Chapter 4 reflects on the Pilot activity and presents its outcomes. In this chapter the dance hackathon "Hacking the [Dancing] Body" is framed and key findings are itemized.

Chapter 5 lists the content sourced and re-used throughout the entire project. Both Europeana and non-Europeana content is discussed and key partnerships are highlighted.

Chapter 6 provides an overview of the numerous links the Dance Pilot created with other project partners, e.g collaboration with the Games Pilot and links with the ONASSIS Foundation/OCC.

Chapter 7 presents findings from the two user testing sessions, discusses the methodology implemented, offers a detailed summary of findings and changes made to the tools, as well as includes graphs and comments from target audiences.

A thorough analysis is offered in chapter 8 of the lessons learned while chapter 9 offers an overview of educational outcomes and plans.

Chapter 10 discusses sustainability plans and impact and chapter 11 considers future plans.

Chapter 12 concludes and presents the Pilot's general findings.

3   PILOT EXECUTION

3.1   GENERAL DISCUSSION ON HOW PILOT WAS EXECUTED AND HOW IT EVOLVED

The process of knowing about dance and engaging with and re-using dance content is affected through the use of digital technologies and is always defining and re-defining areas in the field. The Pilot's tools are contributing to the intangible culture heritage sector.

The dance Pilot's approach to the project combined various elements: 1) The commitment from each partner to carry out their work objectives, including regular meetings to ensure the development of the prototypes 2) a demand for quality 3) a consistent presence in all project meetings and events 4) coordination and linkage with non-project related partners and cultural heritage institutions 5) deliver all reports in a timely fashion and finally 6) link the prototypes, the Europeana cultural heritage content with the wider project and dance field's needs.

Throughout the development of the tools there was always a focus on the user and making sure that the tools were in line with the goals and outcomes set out in the Description of Work, as well as keeping abreast of technologies affecting the dance field. It is essential to consider the user's perspective (e.g what would a student/member of the public think of such an interface or would a choreographer find this useful?) and the Pilot used this approach throughout the entire course of the project.

In the early approximation of producing the final system or App, the tools were tested and then reworked until an acceptable prototype was available. There is still work that needs to be carried out to take the tools to market, but an excellent functional model has been developed. A series of steps were followed to ensure that the best possible prototypes were developed.

Steps in the Prototyping DanceSpaces and DancePro:

- new system requirements were defined in as much detail as possible.
- a preliminary design was created for the new systems.
- first prototypes of the new systems were constructed from the preliminary design which included many of the final characteristics that the final design hoped to feature.
- initial user-testing activity was carried out in Lisbon, Portugal. The users thoroughly evaluated the first prototypes, noting their strengths and weaknesses, what needed to be added, and what should to be removed. The Pilot then collected, analysed the data and made changes where appropriate.
- the prototypes were modified, based on the conclusions from the Lisbon user tests and second prototypes constructed.
- the second prototypes were evaluated in the same manner as was the first. This user-testing activity was carried out in Athens, Greece. An analysis of strengths and weaknesses was again made and feedback was integrated.
- the final systems were constructed, based on the final prototypes.

3.2 DANCE TAXONOMY

The Dance Pilot audited the dance content that was available through Europeana, as well as created a basic dance taxonomy which was hoped would assist with the search, discovery and tagging of dance content in the digital environment. It was also envisaged that the taxonomy could build dance literacy and thereby aid understanding and appreciation which would help users to find links with other cultural/physical/artistic practices. The taxonomy was built as a way to help the viewer navigate the world of dance and all of its subgroups. The taxonomy was organized into Categories (e.g. Dance style/genre, Geographical context), Time context, Performance/performers, Choreography Constituent elements (e.g Actions, Qualities, Dancers [number/gender/age/cultural context), Design (stage/set/lighting/costume), Sound (music/natural), and Spacing/Setting. The Dance Pilot was mindful that Europeana Space is not a research project but decided to use the Digital Echoes Symposium (February 2015) event as an opportunity to gain quantitative data through formulating a questionnaire and interviewing numerous practitioners. The questionnaire is attached as an annex. Although it was intended for the taxonomy to be integrated into the DanceSpaces interface, the taxonomy was a body of work that required more time to develop and expand, and certainly relied on input from many dance professionals. Given the nature of Europeana Space project and it not being a research project, it was not possible to gather the necessary feedback needed to create a comprehensive dance taxonomy that was in line with the needs of the dance community. Further information can be found in the Lessons Learned section of this document.

3.3 TWO SCENARIOS-DANCESPACES AND DANCEPRO

The Pilot brought together three partners, Coventry University (COVUNI), IN2 and the Universidade Nova de Lisboa (FCSH-UNL). IN2, under the direction of Alexandru Stan, led on the development of the DanceSpaces prototype, which is an adaptation of mymeedia, using dance content scenarios. DanceSpaces focuses on the needs of the general public, dance enthusiasts and pre-professionals (e.g. dance learners and educators, those who participate in dance as a social and/or recreational activity, dance audiences/viewers and tourists, etc.) who want to share and explore content about a particular dance aspect. As such, DanceSpaces targets leisure, teaching and learning at the same time. In terms of functionality, it allows any logged in user to become a curator, and create dance collections or narratives. The user (in the curator role) can edit existing collections, or create new ones with just a few clicks, selecting a title, description, cover and display layout. The user can upload their own content via an intuitive web interface, or re-use content that is already available on DanceSpaces. From the visual interface displaying all the available content it is possible to easily assign each piece of content (e.g. image, video, text, pdf) to one or more existing collections or narratives. For users who are looking for something particular it is possible to easily find the relevant content using full text search (supporting also logical operators) and a number of facets (e.g. tags). If the aim is to create a narrative, the user can choose to organise with a visual drag and drop interface the elements that were selected for a given story. Changes made are immediately reflected in the published collection or narrative. The look and feel and even the perceived functionality of the published collections and narratives, from the perspective a non-logged in user (i.e. a DanceSpaces visitor), depends on the chosen layout. Several templates are available, and it is possible to change the aspect of an existing collection at any time. In this way, access to content is provided in a most flexible way, supportive future creative ideas.

The DancePro prototype 2.0 developed by FCSH-UNL under the direction of Carla Fernandes, was developed by programmer João Gouveia. DancePro focuses on the needs of researchers and dance experts (e.g. dance artists, choreographers) that need a set of much more powerful tools for accessing dance content and creating extensive metadata. The tool enables recording and annotation of videos in real-time or of previously recorded videos, such as Europeana content. It allows several types and modes of annotations and is designed to support the creative and compositional processes of professional choreographers and dancers; it also has an analytic and scholarly use too. DancePro can also be of use in any other domain where the performance of the human body is at stake.

Both tools were developed simultaneously over the course of the project and each partner worked diligently in ensuring that the milestones were met and that the quality of the work was upheld. Each partner developed the back-end and front-end of the prototypes creating user-friendly interfaces and evaluated each tool in months 15 (April 2015) and again in month 20 (September 2015).

3.4 **MARKET ANALYSIS**

The relationship between the Pilot's work and the overall market analysis was conducted before the project began. What was discovered through desk-research was that trends are towards wanting more tools to access cultural content and to widen public appreciation through encouraging the user to be a co-creator. The project deliverable D5.1 - *Market Analysis* - written by UNIVE confirmed that indeed there is a need for such tools. The Arts Council report "Digital Culture: How arts and cultural organisations in England use technology suggests, that "digital technologies are disrupting established practices and creating new opportunities for innovation across the creative economy" suggests that the niche market of dance enthusiasts within the larger sports, leisure and tourism market is growing. The cultural heritage market is stagnating (or even contracting due to public expenditure cuts as a result of the recent economic crisis, but is leaning more and more towards digital technologies to tackle many of the challenges the sector is facing.

In aligning this Pilot activity with the overall market analysis, the following market segment and product development was anticipated:

- Customer Segments: students, professional or pre-professional dancers, choreographers, producers, trainers and educators; dance enthusiasts, recreational and social dancers (i.e. basic to advanced level).

- Value Propositions: For DancePro- providing professional dancers and choreographers with tools to deepen their engagement with their creative process through developing and visualising choreographic strategies, through annotation and associated digital tools in order to enhance their practice and offer to the public. Analysts, students and teachers are likely to find it useful. The tool would enable dance enthusiasts to enrich their experience of dance through tools to support their learning and engagement with dance as a cultural practice. The value proposition for DanceSpaces would be engaging the target audience of dance fans through mixed-media narratives that are easily shared and accessed on all devices.

- Channels: Store (iPhone and Android), web

- Revenue Streams: freemium model: basic steps for free + premium steps at a price, native advertising and sponsored content

- Key Resources: multi-media files of dance

- Key Activities: app development; development of dance annotation tool for online access.

- Products to be developed: Two applications - DancePro and DanceSpaces (see below)

A more extensive analysis of the market addressed by the Dance Pilot can be found in Deliverable D4.2 – *Pilots coordination: information on technical planning.*

3.5 TECHNICAL INTEGRATION AND TESTING ACTIVITIES

The Dance Pilot has a combination of senior leadership, technical expertise as well as front-line management which together makes for a solid team that creates a working environment that is able to develop, design, test and implement the expected outcomes. The technical integration and testing activities are divided into three sections: **Functions, Location, and Command.**

The **function** of the application and its main target groups were identified. The Dance Pilot created a general framework for working with dance content and the related metadata accessible through Europeana.

Two applications that were built:

DancePro: to be used by **Dance Researchers and professionals** for teaching and learning dance technology.

DanceSpaces: to be used by **the General Public, students and educators** (leisure and cultural heritage market), dance clubs and those taking dance classes (sports/fitness market). The application makes it easy for user to create (personal) multimedia rich narratives around dance that engage the audience and promotes the content.

The **Location** of the materials used and the content tested was identified and located early on in the process. The technical expertise of IN2 and UNL-FCSH ensured that the technical framework was followed. The Pilot comprises a technology creator-tool (UNL-FCSH), Knowledge-Base Platform and Browser (UNL-FCSH) and the ON:meedi:a platform for content management (IN2). In addition to locating the technology, the location of possible Europeana Dance content was identified. These collections have been outlined in section 4.1 of this report.

Having a clear understanding of the market and its trends allows the Pilot to have a **Command** on the application and prototypes that were developed. There are two specific scenarios which provide a sound organizational structure that supports the freemium business model.

3.6 TECHNICAL WORK OF THE PILOT

IN2 was in charge of building the DanceSpaces prototype for the Dance Pilot and prepared an initial repository to be used for storing the selected dance content. The technical work was based on IN2's media management platform[1], which provides multiple functionalities for building media-rich web applications. This allowed the Pilot to speed up the developments for DanceSpaces and focus on the scenario specific elements rather than general software

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[1] https://in-two.com/platform

components. The back-end work included customisations of the data-model, thematic collection and narratives. Front-end work included interface design, adaptation of layouts, drag-and-drop collection curations. The user interface has a modern look that can appeal to the more technical savvy users and millennial, while it strives to achieve simplicity in order to make it usable for all. DanceSpaces works and looks good on all devices, including mobiles and tablets, and can display both photos and videos alongside textual descriptions. It allows for an easy navigation and exploration of the available dance collections and narratives. There was a fair amount of bug fixing required for the backend and creation components of the software.

The final task for this period was the creation of public API for opening the application to creatives and the dance community. The integration with the Technical Space and the Europeana API is only at a feasibility status, mainly due to timeline limitations and constraints of the technical implementation and the different roadmaps of the components. Still, DanceSpaces included Europeana content into the workflow of creating thematic collections.

A set-up of the DanceSpaces environment for the evaluation session was created and dance content was migrated from the Dance Pilot repository at IN2's servers to the DanceSpaces application, and a series of scenario constructions, self-assessment walkthroughs and the creation of several dance stories were also set up before the first user-tests. After the first evaluation session, IN2 analysed the qualitative and quantitative feedback received and prepared a comprehensive user evaluation report. The feedback received from the evaluation session in Lisbon was translated into 60 technical requirements for further development and improvement of the prototype. The different issues that were discovered during the evaluation session (bugs, observations, new requirements) were addressed and aligned its work based on the received feedback. For instance, IN2 redesigned and re-implemented some UI elements so that the application is more interactive (e.g. no more "confirm changes" button to be clicked but rather immediate changes), added better support for user profile (including avatars. In addition to the prototype, the Pilot built a taxonomy and lexicon which supported the DanceSpaces tool. An audit of existing taxonomies was conducted and the Pilot built its own taxonomy which supported the tool's Dancestories scenario. The nature of the tool lends itself to individuals who have a limited vocabulary around dance and/or are students in creativity, communication, and critical thinking programs. This very basic taxonomy was not integrated directly into the tool but fed into the development of the DanceSpaces tool.

The DancePro prototype developed by the Universidade Nova de Lisboa (FCSH-UNL) was an extension of previous work created. Rather than creating a new tool, the Dance Pilot chose to build upon already existing software, as it served the purpose of the Europeana Space Project of re-using cultural heritage content. The already available Creation Tool prototype was built to aid choreographers in their work by allowing them to record and annotate in real time what is being rehearsed on stage. The resulted video can then be reviewed and further annotations can be added, edited or removed. The Creation-Tool version in place (2.0) was developed using C++ language with QT and open frameworks. This framework contains several algorithms that aid in diminishing the programming efforts of already established tasks. For example: "grabbing" a webcam and showing the video on the screen, accessing a file on the system, etc. This version still needed further development and debugging, both tasks for which João Gouveia was hired as assistant researcher by FCSH-UNL. FCSH-UNL first started working on the video settings, making sure the video was being shown and recorded, and then adding the annotations to it. After this module was functional, work began on the exporting settings, making sure the annotations were correctly connected to the video. The "Result module", a module that stores the information (e.g. X number of videos with Y number of annotations) was edited and added to tool so that the user can see the work carried out.

After the Result module was completed, a user-friendly interface was added which includes drag and drop features and focused on the timeline and other operations of the tool. More specifically, 3 different modes were created.

The three different modes consist of:

1) Normal play: The video plays normally with no delays.

2) Suspended mode: When the user starts drawing, a frame from that moment is shown, and the user annotates only on that specific frame. Next to the frame the video is playing normally. When the annotation ends the user can select a new frame to annotate.

3) Delayed mode. The video is played with a specified delay. For example, if the user sets the delay for 1 second, the video shown on the screen is from 1 second ago. This allows the choreographer to have time to annotate any specificities he identifies while not having to miss the reality on stage.

Figure 1: An example of a mark and text annotation for DancePro tool.
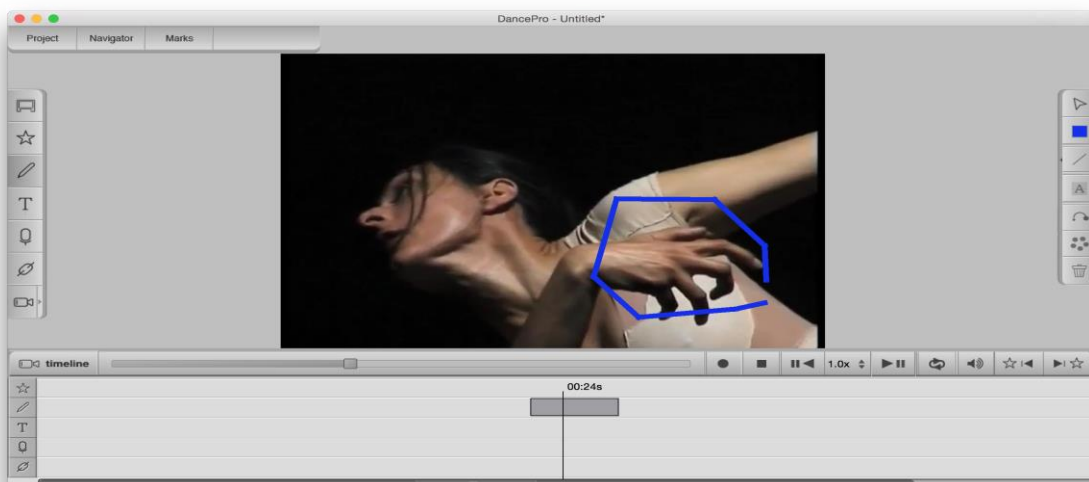
Figure 2: An example of a drawing annotation for DancePro tool.

The main focus has been on debugging the drawing annotations option, as scaling for the others is fairly trivial. Work on the exporting settings and making sure the annotations were correctly connected to the video were completed in Month 10 (November 2014) and afterwards, a more friendly user interface was added which had a more functional drag and drop feature. The timeline function of the tool was the most task intensive of the Pilot but once complete it allowed users to import their own videos and add annotations to videos generated or imported. Drawing in an imported video had few bugs which prevented the annotations from either showing up or being saved (or both) and these bugs were also solved. Storing and saving videos was also an added feature which can now be viewed and automatically updated and saved in the data stored memory- stored in a Map format instead of a List which makes them automatically ordered.

Work was redone for the video player which involved trying several different libraries, some of which were FFMPEG (very good but low level, which would result in a longer development cycle) and LibVLC (a very good library but unfortunately only seeks works by milliseconds, with a 200ms interval, which does not satisfy the tools requirements as it lacks frame access which is essential for this project. FCSH-UNL created a more robust timeline. When recording, the drawn annotations are now drawn in real time, as time passes and are adjusted when necessary and redesigned a bit of the annotations screen. The addition of the suspended mode and delayed mode, which can now be triggered from its respective button, was included. A Wi-Fi communication link with any other program that uses OSC to send messages (e.g. a mobile app) was added and the material design of the tool works and looks according to Google's new UI guidelines. The possibility of inserting an IP address on the app was added which allows it to send messages. Consideration for operating systems was also considered by the technical team. Porting the tool to a Mac version, encountered many bugs while recording in mp4 files but eventually the problems were solved and is now functional on both PC and MAC computers.

3.7 OBJECTIVES

The aim of the Europeana Dance Pilot was to create a general framework for working with dance content and the metadata accessible through Europeana. The Pilot certainly learned more about the challenges of working with Europeana content and linking this with the two prototypes being developed. A deeper discussion of these challenges will be outlined later in the challenges section. However, it is important to identify that in a very basic sense, the Pilot encountered difficulties in accessing the dance content via Europeana but this did not keep the Pilot from meeting its goals. Mining the high-volume data stream of content was tricky but these objectives have been met through the development of two prototypes. DanceSpaces allows for content to be accessed, linked with other online content and organised into new relations, offering a way for users to engage more closely with Europeana. DancePro offers innovative opportunities for the analysis and examination of movement. Together the tools propose new ways to consider dance content, and therefore cultivate a broad framework, concerned with the analysis, organisation and interrogation of dance online. Objectives have been met and were achieved through the three-way partnership of COVUNI, IN2 and FCSH-UNL.

Have any changes been made during the execution?

The Pilot moved at a steady pace and the milestones that were outlined in the description of work have all been met. The original scope of the project and its initial commitment to develop two scenarios that would engage with, and re-use digital dance content has not deviated from its original timeframe.

Major Milestones

Within the life of the project there were various milestones that were set out. Major milestones were clearly outlined and each was implemented and completed.

- Pilot methodology and validation criteria was agreed in M1
- Content sourcing was agreed and the various collections, both through Europeana and non-Europeana sources were gathered. This was agreed and the task was completed by M8
- Technology compatibility and development of the tools was completed by M23
- Pilot prototypes testing, updates and fixes occurred during the months of M15- M23 which included its first iteration in M15 and saw its second iteration in M21
- The final release of the Pilot's tools will continue and take place after M24 but will see its final version by M30

3.8 CHALLENGES WITHIN THE PILOT

The Pilot met a number of challenges along the way, both from a technical and content sourcing, and re-using perspective. This section identifies the difficulties of working with Europeana Dance content and the IPR issues that were encountered, including those of accessing cultural heritage dance content that is considered open source, on the Europeana platform. The Dance Pilot activities have highlighted the varied needs of the dance community and the project foregrounded the need to address these issues around open content and the IPR issues that surround dance material.

It is clear in the case of engaging with several of the Europeana collections that there were many difficulties in accessing open content. Many times the content made available via Europeana was simply a case of metadata rather than actual, accessible content. This often left the user somewhat bewildered by the plethora of information that was simply unable to be unlocked due to restrictions on the content via the actual content providers. Such a setup lends itself to creating a situation where a first-time user might lack confidence in returning to Europeana or finding and/or further exploring other content and collections. Rather than seeing this as a negative, the Pilot was proactive upon observing such situations and contacted Europeana directly to discuss the difficulties. Initially, no help or advice was offered but eventually the inquiry was picked up by James Morley (of Europeana Labs) who identified areas which needed expert assistance and offered great guidance. Increasing the amount of help available through Europeana would have certainly helped make Europeana more user-friendly.

Developing software on basis of the work of a single person was a highly challenging and sometimes risky enterprise. Due to its innovative character and the fact that the DancePro tool has been developed from scratch, based on a concept by Carla Fernandes and on an interface design created in collaboration with 2 choreographers, the software programming in itself has been extremely demanding for João Gouveia. Moreover, FCSH-UNL is a University-based partner and not a private company, who could have probably involved other members of their staff in such a process.

The Pilot was able to gather an important understanding of the complexity behind creative re-use of dance content, and more generally - cultural heritage. A great deal was learned, not only about the technical challenges, but also the legal and business issues. Through the two end-user evaluation sessions and the hackathon, a much better understanding of the user needs and expectations of digital services in the dance domain was reached. In doing so, the prototypes' design and create a tool could be improved to better fit the needs of the market.

4   OUTCOMES

4.1   DESCRIPTION OF THE OUTCOMES OF THE PILOT:

Over the course of the project the Dance Pilot set out to achieve five goals:

1) The development of two scenarios- DanceSpaces and DancePro
2) Understand the market viability for each of the tools
3) Disseminate project materials and gather target group feedback
4) Re-use Europeana content
5) Prepare the tools for the Dance hackathon for creative re-use

These five goals were achieved by a variety of approaches and each was completed by the agreed date set out in the description of work. The prototypes were not only designed but tested in two different European countries and evaluated by its key stakeholders. User testing and project dissemination revealed that there are many potential uses and markets for both DanceSpaces and DancePro. More specifically, a surprise finding that was discovered during the evaluations, was in regards to the DancePro tool- whilst it was initially intended for use by choreographers in the studio, it could also be used in educational and research contexts in dance, sport and media contexts, offering broad market reach. Its strengths partly lie in the potential to communicate information across disciplines, meaning that it could be a useful tool in numerous collaborative artistic and research processes.

The Dance Pilot regularly disseminated its activities and engaged with key stakeholders in numerous settings. The Pilot ardently participated in peer-reviewed conferences and travelled to numerous European and international venues to share its progress and interim activity. In addition to attending other academically rigorous events, COVUNI framed its annual Digital Echoes Symposium (February 2015) around intangible cultural heritage, in particular Europeana Space and Europeana. In addition to carrying out numerous tasks, the Pilot engaged with Europeana. Numerous Europeana collections were re-used either through the development of the tools, its evaluation sessions and the hackathons. Chapter 4 offers a more detailed analysis of those collections. Moreover, to satisfy the changing needs of the market, the Dance Pilot co-organized and participated in the execution of the Dance Hackathon, which took place in Prague, Czech Republic. A detailed summary of this outcome follows below.

4.2   DANCE HACKATHON- "HACKING THE [DANCING] BODY"

The Dance hackathon "Hacking the [Dancing] Body", planned with CIANT, took place in Prague, Czech Republic 20 and 21 November 2015. As part of the event the DanceSpaces and Dance-Pro tools were shared with participants. The project's Technical Space, based upon the WITH platform developed by NTUA, was featured during the hackathon, enabling participants to search and discover cultural content from Europeana and elsewhere. They were encouraged to register and browse.

 http://with.image.ntua.gr/assets/index.html.

The API was also available:

http://with.image.ntua.gr/assets/developers.html#!/Search/post_api_search

4.2.1   Key stakeholders- Dance Hackathon

Identifying and analysing key stakeholders' interests is a key component of the Dance Pilot's activities. The Dance Hackathon was an important opportunity to identify a community that could potentially be interested in the prototypes.

The participatory process that a hackathon instigates involves many key stakeholders and allows those who have an interest in or are affected by the work, to offer feedback, offer ideas which can ultimately better the Pilot's work. In order to carry out a successful event, the Dance Hackathon organisers identified key stakeholders.

- Chosen API Sponsors and Providers

- Business Sponsors: Local and National Theatres, Dance and Business Companies in the region.

- Participants: Freelance Dance artists, Researchers, Educators, Film makers, Computer Programmers and Engineers and Book Publishers.

- Entrepreneurial Community

In summary, the hackathon was a way to link dance artists, researchers, scientists, investors and sponsors while also promoting the cultural heritage sector and Europeana's content. It is hoped that participants gained new skills, learned from others, networked, and had a space to create while also gaining exposure to other companies and potential investors. The hackathon reused Europeana Dance content to come up with progressive and innovative applications while also deploying software that empowers and connects artists, creatives, technologists and educators. The hackathon demonstrated that there is great potential for creative engagement in dance content through the development of digital tools. Creative processes demonstrated that the interaction between dance and technology is not straightforward. Furthermore it was evident that Europeana content has the potential to feed into creative 'remixing' artistic activities. Both tools were introduced and DancePro, in particular, sparked interest for use in a variety of ways, inside and outside the dance/artist's studio.

5 CONTENT SOURCES

5.1 LIST OF CONTENT USED

Access leads to value creation and has an economic and social benefit. The widespread availability of cultural heritage content holds an important place within society and has the potential to positively affect the cultural heritage sector, educators, consumers and creative industries. Europeana is a repository that offers the cultural heritage sector a wealth of information. Its richness unlocks a potential within the dance community that enhances the field. The Dance Pilot envisaged re-using the digital dance content available through Europeana in a number of ways:

1) to upload content to the Pilot set-up by IN2 platform
2) to re-use content for the testing of the mock-ups
3) to use content at later stages e.g usability tests
4) to create content collections located on the Europeana Space protected space platform (WITH) and use during the hackathon
5) audit of dance content located on Europeana. With these varying goals in mind different dance collections were located and re-used.

Users hope to request, retrieve and reuse content and want immediacy in that process. Europeana gets close to following this way of working but still encounters some glitches in its operation system. The sourcing of content was an exciting one given the variety of content housed via Europeana but also came with its challenges. The Dance Pilot located various single collections that often were "protected" and other times were available. Some of the difficulty when reusing the dance collections from Europeana came when metadata was listed and no actual access to the content was possible. In such cases, the Dance Pilot worked in one of two ways, either contacting the content provider or Europeana directly, or noting the content and listing it as an identified source with the potential to be re-used but not actually re-using any content. In one particular case, a Europeana collection titled ECLAP was identified which had a variety of still and moving images available, and in this instance, Technical Coordinator PROMOTER moved forward with securing an agreement with the collection custodians. Yet, most of the collections were still protected or only offered metadata. In such situations, the Dance Pilot contacted collection coordinators or Europeana directly to see if they could assist. James Morley from Europeana Labs offered some assistance and guidance and directed the Pilot towards open-access content or other dance collections. This proved to be helpful as the Pilot was interested in re-using dance collections in a number of ways.

The sourced material dictated the Pilot's activity. As noted above, there were many Europeana collections which carried many restrictions or were simply listed as metadata. In those worrying conditions, the Pilot chose to find non-Europeana content to work with which would allow the developers to begin testing their mock ups. Without content to re-use the development and testing of the prototypes was difficult. In addition to trying to secure content that was readily available, it was considered that inviting artists to collaborate with the Pilot could serve two purposes: 1) to disseminate the project and Pilot's activity and create partnerships with key stakeholders 2) identify artists who could potentially offer and contribute to Europeana, thus enhancing the dance cultural heritage sector.

To summarize, the Pilot used Europeana dance content both still and moving images as well as sourced non-Europeana content. A detailed description of the content is itemized below. The combined hours of content found through Europeana amounts to 65% and the combined hours from non-Europeana material is 35%. Another important point is to highlight is that content is listed in terms of 'hours'. Unlike other Pilots whose content is static, within the Dance Pilot there is a difference between still and movement content- e.g. There might be a video of 30 seconds or another of two minutes long as well as still images or still frames from videos. For this reason, it was decided that content usage should be recorded in in hours rather than items.

5.2 EUROPEANA CONTENT SOURCED

EUROPEANA SOURCED CONTENT

Name of the content provider	Name of the selected collection/s	Type of content	Approximate amount of the sourced content	Copyright status	Status of the copyright agreement (if needed)*
EU Screen	Beta and Project	Images and Video	Ca. 3 hours	IPR is owned by INA	Free Access but no re-use.
Siobhan Davies Replay		Images and Video	Ca. 10+ Hours	IPR is owned by third party: Siobhan Davies	Not public domain. An agreement exists to allow usage for research purposes only NOT public domain.
DE Film Institute		Images and Video	Ca. 2+ Hours	Restricted Access- Rights Reserved by: DE Film Institute	NOT public domain. Restrictions with content.
INA. France		Images and Video	Ca. 1+ hours	Restricted Access- Rights Reserved by: Institut National de l'Audiovisuel	NOT public domain. Restrictions with content.

The European Film Gateway		Video Recordings	Ca. 3+ hours	Restricted Access- Rights Reserved by:The European Film Gateway	Not public domain. Restrictions with content.
The Swiss National Library	The European Library	Images and videos	Ca. 3+ hours	Restricted Access- Rights Reserved by:The Swiss National Library	NOT public domain. Restrictions with content.
ECLAP		Images and Video Recording	Ca. 5+ Hours	Restricted Access- Rights Reserved by: ECLAP	NOT public domain. Restrictions with content..
Memory of the Netherlands	"150 Years of Advertising in the Netherlands" Reclame Arsennal Collection	Images	Ca. 2+ hours	Restricted Access- Rights Reserved by: Memory of the Netherlands	NOT public domain. Restrictions with content.
OFS Records		Music for dance	Ca.1.5 hours	Restricted Access- Rights Reserved by: OFS Records	NOT public domain. Restrictions with content.
Int'l Institute of Social History Netherlands		Images, Video Recordings	Ca. 2 hours	Restricted Access- Rights Reserved by:Int'l Institute of Social History Netherlands	NOT public domain. Restrictions with content.

Table 1: Europeana Content Sourced

5.3 **NON-EUROPEANA CONTENT SOURCED**

The sourcing of content facilitated powerful partnerships that supported the Pilot's objectives of identifying potential individuals who could possibly contribute to Europeana. Among those, COVUNI identified local artists and other dance practitioners who could offer non-Europeana dance content to the Pilot. These individuals and groups were generous with the material they offered and the amount of content shared with the Pilot. This content was used in addition to the Europeana content and facilitated the development of the Pilot's prototypes.

These partnerships were not without challenges and required the advice of the Project's WP3 Content Space Leader, UNEXE, who offered advice on IPR issues and license agreements. The Pilot drafted License Agreement contracts, an example of which is available as an appendix to D3.6, to ensure that the non-Europeana content was protected and that usage was clearly outlined. The Pilot completed this process by October 2014. The Dance Pilot focused on finding content from various sources and the non-Europeana content pulled in international dance artists, companies and organizations from England, Greece and Australia. A list of those artists follows.

5.3.1   Decoda (UK)

Decoda, is an artist led dance organisation that creates spaces for conversation, practice and community, offers residencies and curates workshop series, festivals and performance events. As well as supporting students and graduates through volunteering opportunities, graduate intensives and mentoring schemes. It grew from the Summer Dancing festivals, initiated in 2007 at Coventry University by Katye Coe. . Decoda is based in the West Midlands and has an

international reach.

Figure 3: Summer Dancing Festival photo credits: Christian Kipp and Summer Dancing/Decoda

Decoda supported the Europeana Space Dance Pilot since Summer 2014 by including the Pilot in the Summer Dancing Festival 2014. They were instrumental in connecting the Pilot partners with various freelance artists, practitioners, teachers, learners and researchers. Decoda played a crucial role in finding a range of content which the Pilot used to test its applications. Among those artists that have contributed to the Pilot are Gaby Agis, Faye Green, Detta Howe, Fiona Millward, Bettina Neuhaus, Florence Peake, Mary Pearson, Cai Tomos and Amy Voris. Their official website: http://www.decoda-uk.org/

Figure 4: Summer Dancing Festival photo credits: Christian Kipp and Summer Dancing/Decoda

5.3.2   Remnant Dance (Australia)

Among the dance-related content that was used for experimenting within the framework of the Europeana Space Dance Pilot, very valuable material was provided by Remnant Dance, a Perth-based collective of performing artists with a vision to "create, make, connect" (www.remnantdance.com.au) through creative practice and professional arts performance. Established in 2011, the collective has generated innovative contemporary dance works; including dance films, site-specific installation works, as well as short and full length contemporary dance pieces. The core members of the collective have professional backgrounds in ballet and contemporary dance and enjoy collaborating with artists from other creative disciplines, including visual art, fashion design, music, photography and film. Remnant Dance has toured extensively throughout Australia as well as internationally to Vietnam, China and Myanmar. They offered us a variety of content from numerous of their Perth based artists. Official website: www.remnantdance.com.au

Figure 5: Image taken by Alix Hamilton of performers Ellen Avery, Lucinda Coleman, Andrew Haycroft & Charity NGO in rehearsal for the Adelaide Fringe Festival (2013).

5.3.3   Levantes Dance (Greece/UK)

Levantes Dance Theatre is a Greek/UK company that has supported the Dance E-Space Pilot. Award winning Levantes Dance Theatre consists of key practitioners Bethanie Harrison and Eleni Edipidi. Since April 2012 Levantes Dance Theatre are Associate Artists of Greenwich Dance based in London, UK. The company works primarily with Dance Theatre, with a constant enthusiasm for fusing artistic disciplines and indulging in vibrant aesthetics. The content they provided the Dance Pilot was unique, rare and delightful.

Figure 6: Image taken by Levantes Dance Theatre for LDT.

5.3.4   Jennifer Essex and J Squared Dance Company (UK)

Artistic Director of J Squared Dance Company, Jennifer Essex contributed to the E-Space Dance Pilot. Jennifer has supplied the Dance Pilot with content to test the Pilot's applications and has been incredibly generous and supportive. Jennifer says "In my work I try to break open the richness of human relationships through an exploration of language and metaphor. Drawing on contemporary iconography – video, film, fashion – my work is informed by a strong visual and theatrical sensibility. My current project, Distance Duet, uses the digital interactions of real couples   as   the   source   material   to   imagine   new   dance   duets."   The   official website: www.jenniferessex.com

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Figure 7:Jennifer Essex and J Squared Dance Company

6 PROJECT INTEGRATION

6.1 LINKS WITH OTHER PILOTS/PROJECTS

The Dance Pilot made an effort to link with other activities within the Europeana Space project and with non-Europeana Space partners. The Dance Pilot worked closely with the Games Pilot in an effort to collaborate and create an educational game that re-used dance content, whose dance videos were provided by the TV Pilot partner NISV. Some of this collaboration took place as a result of the monthly WP4 Skype meeting for Pilots, as well as through one to one discussions.

Within the previous section, details were provided of how the Dance Pilot worked closely with the WP3 Content Space team to agree a specific use licence with the content owner, where open access was not available. This will be written up into a Pilot IP case study over the coming months and experience of the Pilot will also be shared via the project's MOOC that is discussed further within section 9.

6.2 USE OF TECHNICAL SPACE APIS, CONTENT/PROTECTED SPACE

The Dance Pilot contributed towards the requirements elicitation of the Technical Space and the WITH platform. However, due to development timelines that could not be synchronised between the Pilot activities and the Technical Space, no integration with the two dance Pilot applications has taken place yet. Nevertheless, the WITH platform and Technical Space have been made available and used during the Hackathon. Moreover, the Protected Space has been used for the event as well. The Pilot created three separate repositories that are housed in the Protected Space and could be accessed by the hackathonees via a login. The collections are featured online and were a major part of the Dance hackathon. Each collection contains approximately 100 still or moving digital dance images. There are plans for DanceSpaces to integrate some of the WITH Platform APIs in order to more easily import content from Europeana and other open repositories

For the current version of the WITH application, the project was unable to integrate the APIs into the digital tools created. Due to the schedule of the WITH platform development, it was not possible to integrate the backend requirements before the hackathon and user tests; work is currently being carried out and in the final months of the Pilot. The WITH platform was a successful part of the Dance hackathon which took place in M22 (November 2015). For that event, the platform was successful and NTUA was instrumental in that collaboration. In regards to the Content Space, the Pilot created three separate repositories that are housed in the Protected Space and could be accessed by the hackathonees via a login. The collections are featured online and were a major part of the Dance Hackathon. Each collection contains approximately 100 still or moving digital dance images.

6.3 COLLABORATION WITH GAMES PILOT

The Dance Pilot had the potential to interact with other Pilots, specifically the Games Pilot. From the onset of the project both Pilots committed to seeing a collaboration take place. The Games Pilot developed three games each of which had very different target audiences and key stakeholders. Through discussion and various brainstorming meetings, the partners agreed that the Dance Pilot could support the goals of the Games Pilot more so than the Games Pilot could support the prototypes being developed in dance. Upon agreeing to this way of working, the Dance Pilot moved forward and offered dance content sourced through Europeana and the Games Pilot integrated the material into its Creative game.

The Creative game asks a player to create a video collage of dancers using the provided footage from the archive. Each player can manipulate, collage and juxtapose imagery. The Game could be used in an educational setting, allowing a user to create new shapes with the intention of visualizing new dance scores and engages the pupil in an interactive way. The tool might test their knowledge of dance steps or other dance related content (i.e geographical location, genre, era, etc...) This game served as a terrific model for partner collaboration and fostered another way of reusing cultural digital dance content. By working together each Pilot gained insight into the other's work and utilized this knowledge to enhance the outcomes of each.

6.4 LINKS WITH PARTNER OCC

The Dance Pilot also collaborated with the OCC under the guidance of Christos Carras. For the Pilot's second user-testing session, the team worked with the Greek partners to arrange a session in Athens, Greece. In September 2015, the Pilot held a three-day evaluation session at The Onassis Cultural Centre-Athens, a new cultural site accessible to many in the cultural heritage sector. Its mission is the promotion of modern cultural expression, the support of new Greek artists, the cultivation of international collaborations, the education and lifelong learning, as well as the co-existence and interaction of sciences, innovation and arts. With the support of the OCC, the Pilot carried out a successful event and was able to gather valuable information which positively influenced the development of the prototypes and future work carried out. Apart from gaining insight on the technological end of the tools the collaboration connected the dance team worked with participants from a range of backgrounds including dancers, choreographers, researchers and educators to consider the usability and potential uses of the tools for dance practice, analysis, teaching and documentation The findings were very interesting and really highlighted the multitude of ways in which such tools might inform and facilitate engagement with dance, both in and out of the studio.

7   EVALUATION

7.1   INTRODUCTION

Digital technologies are changing the way that dance is made, performed and consumed. The viewer is now more active than ever in how the work is encountered and created. Immersive and interactive environments are asking audiences to take a more active role in the work; no longer becomes a passive viewer, the audience implicated in the performance itself. In tandem with new intermedial environments in which dance is produced, new digital tools are encouraging viewers to reuse dance content in different ways, to encourage more engagement and transformation of dance content. By working with artists, researchers and other cultural industry experts across the European community, the Dance Pilot explored the impact of the DanceSpaces and DancePro digital technologies on dance. Research has involved two usability tests carried out in two European countries. The first session was held in Lisbon, Portugal in May 2015 and the second was implemented in September 2015 in Athens, Greece. The evaluations considered quantitative and qualitative perspectives as well as commercial potential and a collaborative approach with key stakeholders and other project partners. Fieldwork including interviews, questionnaires, prototype development and the creation of virtual performances to investigate the methodologies of making performances, of how the work is received, and how it is documented and enters (or not) the records of cultural heritage, was all considered during the evaluation period of the Pilot's activities.

The evaluation sessions sought to identify pros and cons of the tools and led to changes in the tool's interfaces and other additions to the tools. These evaluations supported the Pilot's objective to create tools that are market-ready and that fill a void that currently exists in the field. The usability tests identified that indeed there is a need for such tools and the interest to reuse cultural heritage dance content exists through the use of digital technologies. The evaluations were rigorous and comprehensive and an important part of the Pilot's activity.

7.2   USABILITY TEST IN LISBON, PORTUGAL (MAY 2015)

A two-day session was organized by FCSH-UNL under the coordination of team members Carla Fernandes and João Gouveia but included all members of the Pilot, Sarah Whatley, Alexandru Stan and Rosamaria Kostic Cisneros. COVUNI, IN2, and FCSH met at the RE.AL Studios, a company led by contemporary choreographer João Fiadeiro, to evaluate the DanceSpaces tool and the DancePro tool.

The testing allowed the developers to gain insight into what its target audience thinks of the two applications using a "think aloud" method. In this methodology, users receive minimal input from the organiser of the experiment, and are encouraged to explore the software tool while verbally expressing their thoughts. All partners were pleased with the results and gained valuable insight while validating critical assumptions made at the start of the project. There is a real need for such tools and the data supported this claim.

The session was captured by freelance photographer José Ramos and included local choreographers, dancers and members of the general public. Together with João Fiadeiro, other Portuguese choreographers such as Rui Lopes Graça, Ana Trincão and Sylvia Rijmer had a chance to try the DancePro tool, having offered valuable feedback on additional functionalities they would like to see added to the tool in the future. The first usability tests in Lisbon offered the E-Space Dance Pilot valuable information. The designers implemented the feedback and prepared for the second testing session.

Figure 8: "DanceSpaces" tool testing session with member of general public Mr. Gouveia. Photo credit: José Ramos

Figure 9: "DancePro" tool being tested by João Fiadeiro. Photo credit: José Ramos

7.3 USABILITY TEST IN ATHENS, GREECE (SEPTEMBER 2015)

The second round of user testing and evaluation took place on the 27th and 28th September 2015, at the Onassis Cultural Centre in Athens, and was organised by Sarah Whatley, Hetty Blades, Rosemary Cisneros and Vassilis Panagiotakopoulos, alongside the rest of the Dance Pilot team. Over two days George Ioannidis (IN2) and Hetty Blades (COVUNI) worked with participants from a range of backgrounds including dancers, choreographers, researchers and educators to consider the usability and potential uses of the tools for dance practice, analysis, teaching and documentation. The findings highlighted the multitude of ways in which such tools might inform and facilitate engagement with dance, both in and out of the studio.

The re-worked DanceSpaces tool offered a number of improvements over the previous versions. Apart from the many behind-the-scenes improvements that the technical team made to the gears that power DanceSpaces, what caught the eye was a friendlier and more polished interface. The people testing the tool found it very easy to re-use existing content around dance and create their own fascinating collections based on specific topics of interest.

Figure 10: "DanceSpaces" testing in Athens, Greece September 2015. Photo Credit: Hetty Blades

Figure 11: "DancePro" testing in Athens, Greece September 2015. Photo Credit: Hetty Blades

Generally speaking, participants seemed very interested in the potentials of the tools, demonstrating the relevance and importance of this research. There is an appetite for thinking about how digital technology can interact with dance practice and documentation in innovative ways.

For the updated version of DancePro menu improvements, annotation improvements and structure upgrades were all made. In addition to the backend and frontend improvements, the tool was supported by a MAC computer, a feature that was not possible in the first round of testing.

7.4 EVALUATION PROCEDURE FOR DANCEPRO

7.4.1   Introduction

A brief introduction to the Europeana Space project and the context of the testing was conducted at the very beginning of both the morning and afternoon session for each evaluation session. In this way the end-users got a context understanding of the activity they were about to take part in as well as have an opportunity to ask questions. Before the individual user trials the observer gave a short description and re-cap of the two tasks to be done during the testing session. The printed evaluation protocol, project fact sheet and brochure were also made available. This information was also received by the testers prior to the evaluation session. A consent form was signed by each user before the start of the evaluation in order to analyse DancePro, dancers and choreographers, were recorded performing improvised and set material from a range of styles, including hip-hop and contemporary dance. The participants then used the tool to analyse themselves dancing, inscribing through drawing and language to draw attention to features of the movement.

The use of the 'think aloud' methodology, discussion and questionnaires allowed us to gather extensive informative data to contribute to the next stage of development. The usability test was an evaluation of the DancePro application and not the individual using it. As such, there was very little guidance given during the evaluation. Only a minimum of help was offered so that the users could familiarize themselves with the tool and navigate their way around the interface.

They were encouraged to comment liberally on their actions, intentions, thoughts and frustrations, as they were using the system. It was their perception of the software that interested the Pilot team and so the 'think aloud' methodology was used.

The evaluation was followed by an online questionnaire asking for feedback and measuring how user-friendly and attractive the product is to others. The Dance Pilot used the AttrakDiff online questionnaire software system to measure the attractiveness of interactive products. With the help of pairs of opposite adjectives, user (or potential users) could indicate their perceptions of the product. The adjective-pairs make a collation of the evaluation dimensions possible.

The FCSH-UNL partner set out two tasks for the user clearly described below.

Evaluation Tasks:

- Task 1 – Choreographer freely explores the application. Work with a live dancer(s) and capture the movement and make comments using the 'think aloud" method.

- Task 2 – Complete an online questionnaire

Task 2 was supported by the AttrakDiff software. The product dimensions evaluated comprised of four different fields:

- Pragmatic Quality (PQ): Describes the usability of a product and indicates how successfully users are in achieving their goals using the product.

- Hedonic Quality-Stimulation (HQ-S): This dimension indicates to what extent the product can support those needs in terms of novel, interesting and stimulating functions, contents and interaction-presentation styles.

- Hedonic Quality-Identity (HQ-I): Indicates to what extent the product allows the user to identify with it.

- Attractiveness (ATT): Describes a global value of the product based on the quality perception.

Hedonic and pragmatic qualities are independent of one another and contribute equally to the rating of attractiveness.

7.4.2 Target Audience

DancePro is an annotator working as a digital notebook in real time for professionals during creative and compositional processes. It focuses on the needs of researchers and dance experts (e.g. dance artists, choreographers) that need a set of powerful tools for accessing dance content and creating extensive metadata. During the usability tests key stakeholders were invited and the participant's demographics varied. Classification of test participants in the first session included people from 20-60 years old, a mix of male and females who had university qualifications and identified as choreographers, dancers, performers and stage art freelancers. In the second round of testing participants ranged from the ages of 20-40 years old and were also male and females who identified as dancers and choreographers.

7.4.3 Questionnaires (please see annexe)

Link to online questionnaire:
https://docs.google.com/forms/d/1AgNSf4x5azL_Eux0BpkTLIoSAu0G4QO-ppK6AfbmSv0/viewform

7.4.4 Evaluation Results

The AttrakDiff online questionnaire analysed the information and the data reveals that the products interface was rated as "rather desired". This result was achieved comparing the hedonic quality and the pragmatic quality of the product. The "pragmatic" result states that "consequently there is room for improvement in terms of usability". In terms of hedonic quality, the user is stimulated by this product however the value is only average. The "hedonic" result states that there is room for improvement. In addition to the interface being assessed the attractiveness of the tool was measured. Stimulation and identity of the product was analysed and the identity of the product is desirable but should the Pilot "wish to bind the user more strongly to the product, it should aim to improve certain sections. When it comes to the hedonic quality-stimulation, the product is located in the above-average region and meets ordinary standards. The results state that if the Pilot wishes motivate, enthral and stimulate users even more intensely, it must make some improvements. In summary, the attractiveness value of the tool is located in the above-average region and so the data states that the overall impression of the product is very attractive.

7.4.5 Overview of improvements made

Generally speaking, there were three key areas that were focused on and improved. Menu and annotation improvements were carried out and structural changes were also made to the interface. Below is a detailed discussion of each improvement.

Menu improvements: Some manual adjustments which were confusing for the user were carried out. Some tabs were not clear which hindered the user's ability to easily navigate the system. The initial design did not include this option so FSCH-UNL changed the menu design of the tool. The new menu works for both Mac and PC and uses a systems menu that is now using an operating menu- which is what users expect when using digital tools/Apps. The designer changed this functionality after the Lisbon usability test which was noticed in the second round of testing.

Annotation Improvements: After the first round of testing it was noted that the drawing function was not working properly. When a user drew an annotation within the line everything was grouped together, which was confusing for the user. The system also treated each movement as an independent annotation which was also incorrect. When a user draws they lift their pen and the system interpreted this as three different movements but the user only saw it as one. This function was changed to reflect the actual annotation and intention of the user. Another important change made was to ensure that annotations were no longer automatically grouped together. The user now has the option to separate annotations made within the timeline.

Structure: The structure and app was developed which allows the user to create an interface with buttons and communicate with the tool. This is a rare feature as many other apps on the market do not use a drawing screen and those that do, are quite expensive. During the testing it was noted that this function was useful so the team decided to develop these functionalities further.

7.5 EVALUATION PROCEDURE FOR DANCESPACES

7.5.1 Introduction

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

The first end-user evaluation for the DanceSpaces tool took place in Lisbon on the12th May 2015. In total 10 end-users have tested and evaluated the tool (5 users during the morning and 5 users in the afternoon). Each user spent on average about 30 minutes testing the software. It should be noted though that some users took more time (45minutes) while others finished faster (15minutes). The 2nd end-user evaluation for the DanceSpaces tool took place in Athens on 27-28 September 2015. In total 6 end-users have tested and evaluated the tool. Each user spent on average about 30 minutes testing the software. It should be noted though that some users took more time (45minutes) while others finished faster (15minutes).

The same brief introduction to the Europeana Space project and the context of the testing which was conducted for DancePro, the same protocol was followed. Please note that the printed evaluation protocol, project fact sheet and brochure were also made available. This information was also received by the testers prior to the evaluation session. A consent form was signed by each user before the start of the evaluation.

After the end users completed the two assigned tasks, they were asked to complete two online questionnaires in an adjacent room. The physical set-up, scenario and contents was similar to that of the 1st evaluation session (in Lisbon). The only difference in the set-up was that the users were not recorded (either via cam or screen capture software). For the testing scenario it should be noted that the focus was on the activity of creating new dance stories from the existing content (rather than on visualising these stories). Again the "think-aloud" methodology was employed.

Background:

As part of the EU-funded Europeana Space project a tool was developed which allows people to create, share and access stories about dance. In the version that participants used they could select which content items to use in a story either by selecting from an already existing database of content or by uploading something new. It is up to the story creator to specify the order of the content items in the story and the textual transition narrative between them.

7.5.2 Evaluation Procedure

The evaluation was recorded using screen capture software to allow us to identify where the interface may be improved. Users were strongly encouraged to comment liberally on their actions, intentions, thoughts and frustrations, as they were using the system.

The evaluation was followed by an online questionnaire asking for feedback and measuring how user-friendly and attractive the product is to others. The same "think aloud" method was used for Dance Pro.

Evaluation TASKS:

Task 1 - Freely explore the existing stories

Task 2 - Create a new story. Hint: There are already content items to make a story on the system. If you need more items, upload them from the hard disk folders or the internet.

Scenario and contents

For the evaluation session, a new account was created on the DanceSpaces tool. Content from the Dance Pilot repository was important to the new DanceSpaces account such that the end-users could have a good pool of already existing content when asked to create a new dance story. It should be noted that an additional browser tab containing the homepage of Europeana was open (as part of the set-up), and the users were encouraged to use that as a resource for further content (should they choose to add content which was not already available in their DanceSpaces account).

Prior to the evaluation session, several dance stories were already created by IN2 in order to provide a good starting basis for the first evaluation task (that of exploring existing dance stories).
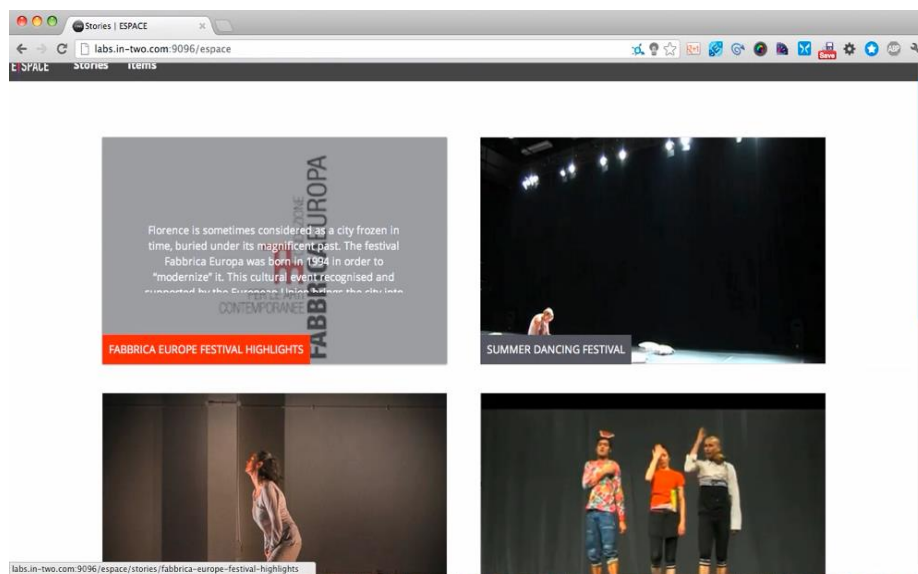

Figure 12: Screengrab from the Dance Stories created for the testing

7.5.3   Target Audience

Socio-demographical information about the users

In Lisbon, there were 10 participants in total (5 female and 5 male) who were recruited to take part in the evaluation session of DanceSpaces. Of these there were: 1 software developer, 2 students, 2 researchers, 1 teacher, 1 PhD fellow, 1 PhD student, 1 post-doc and 1 project assistant. They all seemed to be familiar with using new technologies (6 users reported that they are very confident and use new technologies and gadgets on a daily basis, while the remaining 4 users were only confident.) For the second user-tests in Athens, Greece a total of 6 participants in (4 female and 2 male) were recruited to take part in the evaluation session. Of these there were: 4 dance artist-performers, one actress and one performance writer. The participants were less familiar with the use of digital technologies than those of the Lisbon testing. This time around the majority, 4 users, were only "confident" ("I am confident using new technologies and gadgets, but I am usually not an early adopter"), while one user admitted to "use digital technologies only sporadically" and only one user was very confident of and familiar with the use of new technologies and gadgets.

Since DanceSpaces was very focused on the user interface during this evaluation session, it was important to capture not only quantitative feedback (through the questionnaires administered at the end of the test run), but also qualitative feedback.

The organiser acted as an observer, taking notes, encouraging the user to "think aloud", giving help if needed (without biasing the user). Before starting the evaluation session, the end-users received only a short introduction to what they were about to do (ANNEX I). No formal training or tour of the features was given to them (in accordance to the "think-aloud" methodology).

### 7.5.4   Evaluation Results

All the participants understood what they could do with the DanceSpaces tool, while only one participant was not sure about the process. The same user was also the only one who did not understand well the tasks of the evaluation exercises. The AttrakDiff online questionnaire analysed the information and the data reveals that the products interface was rated as "neutral". This result was achieved comparing the hedonic quality and the pragmatic quality of the product. The "pragmatic" result states that "consequently there is room for improvement in terms of usability". In terms of hedonic quality, the user is stimulated by this product however the value is only average. The "hedonic" result states that there is room for improvement. In addition to the interface being assessed the attractiveness of the tool was measured.   Stimulation and identity of the product was analysed and the identity of the product is desirable but should we "wish to bind the user more strongly to the product, we should aim to improve certain sections. When it comes to the hedonic quality-stimulation, the product is located in the above-average region and meets ordinary standards. The results state that if the intention is to motivate, enthrall and stimulate users even more intensely, some improvements need to be made. In summary, the attractiveness value of the tool is located in the above-average region and so the data states that the overall impression of the product is very attractive.

7.5.5   Extended Results (charts and comments)

After the second round of user-testing it was concluded that all the participants understood what they could do with the DanceSpaces tool. Below are the results to the remaining questions.
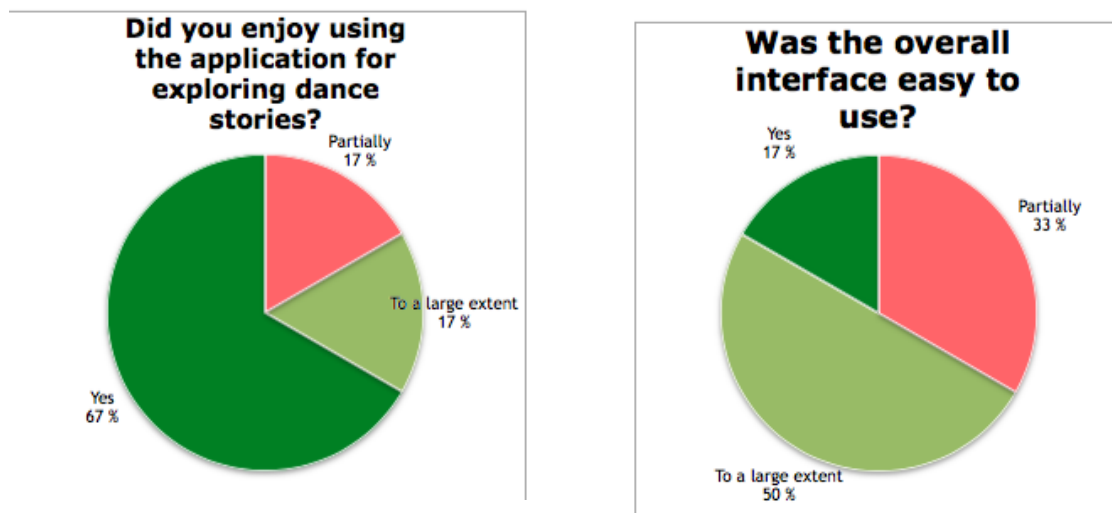
Did the buttons and options you chose work as you expected?

Yes 17 %
Partially 33 %
To a large extent 50 %
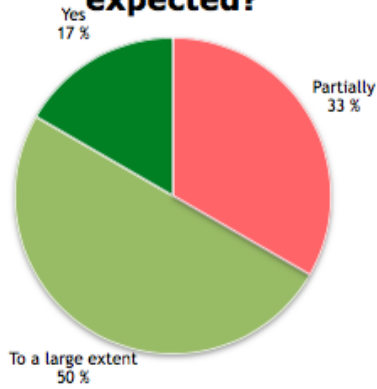
Did the application respond quickly enough to your actions?

Yes 33 %
Partially 33 %
To a large extent 33 %
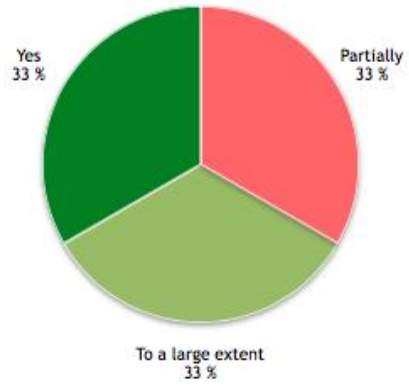
It was easy to find the story I wanted to edit

Partially 33 %
Yes 50 %
To a large extent 17 %
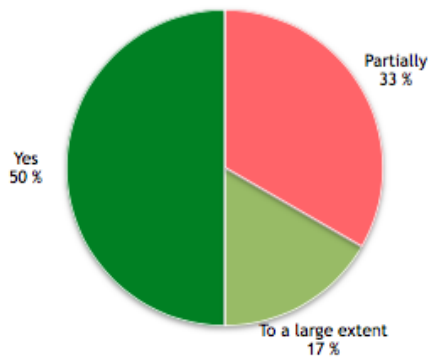
The relationship between items and stories was clear (after using the tool for a little while)

Partially 17 %
To a large extent 17 %
Yes 67 %
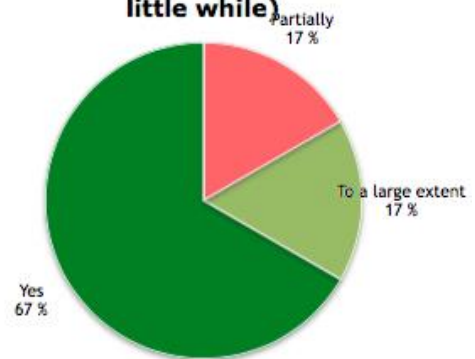
It was easy to compose the story narrative.

Yes 50 %
To a large extent 50 %
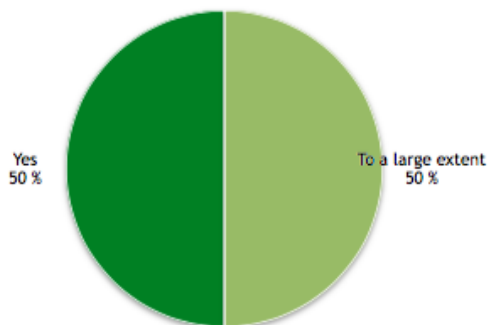
It is important for me to be able to edit the properties of a story

To a large extent
17 %

Yes
83 %
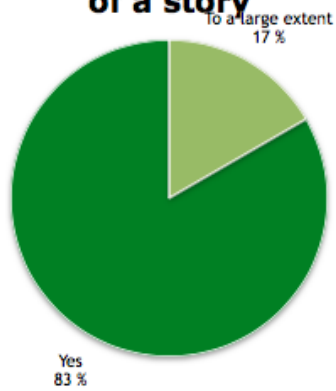
It was easy to edit (i.e. change the properties of) an existing story

Partially
17 %

Yes
33 %

To a large extent
50 %
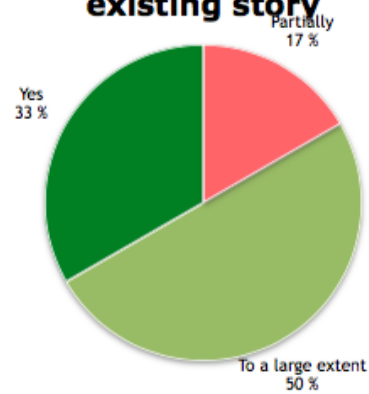
It is important for me to be able to edit a content item

To a large extent
17 %

Yes
83 %
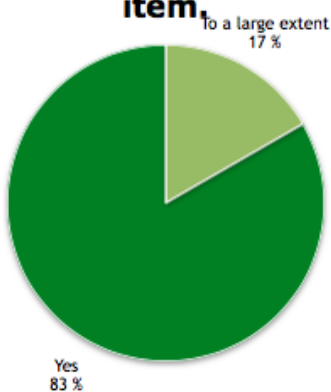
It was easy to add new items to a story.

Yes
50 %

To a large extent
50 %
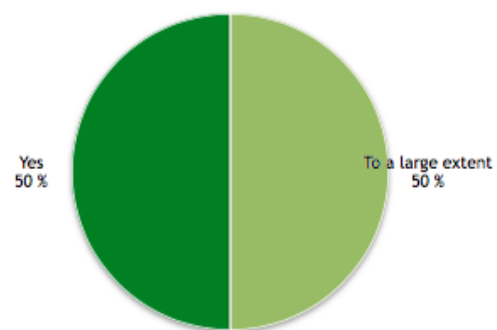
Some of the questions of the evaluation form were open ended. Below is an analysis of the answers received.

The tool was reliable during the time you used it.

To a large extent
17 %

Yes
83 %
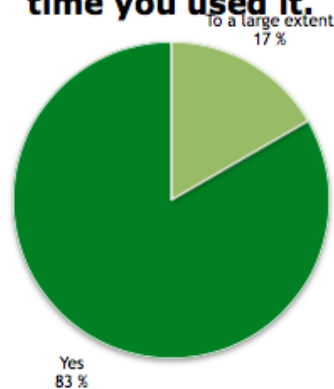
1 Would you use the DanceSpaces tool to create dance stories? Why or why not?

Apart from one respondent who did not understand the question, the others were positive towards using the tool in various scenarios. Some concerns were raised about the accessibility of the tool.

"Yes cause I feel I can create a specific list with my own order and choose my personal presentation by explaining in the same time why I upload this material and what i want the user to perceive from that."

"Yes I would like to use it in order to archive files and not having too much information spread out in the internet."

"It is interesting to create a story for type of dance that it isn't so popular like butho."

"Stories is a term I find inspiring for some uses but mainly a bit confusing and potentially misleading. Bearing in mind potential editing of different scenes in a piece, yes. Putting together examples of work for a lecture, quite so. Me playing around ideas for whatever reason – sure. The possibility of editing stuff according to my needs would be very helpful for all the above, while keeping the citation reference, both for ethical and academic reasons. Then I would definitely use and let others know about it."

"I would if the final product would be more accessible to my standards of creating a profile and invest time to it. it is a great platform but it needs work on the mapping accessibility."

2 Would you check DanceSpaces regularly to explore new dance stories or would you rather receive notifications when new stories are added?

-Users preferred notifications to the one user who would check regularly. The rest of the respondents were happy to get both.

3 What do you think would be necessary to ensure that DanceSpaces is used by dance enthusiasts and the general public at large?

Although there was no clear pattern for the answers to these questions it is important to mention that the users found content quality relevant (both from a technical and curational perspective).

"To have always new material for the general public and keeping an easy navigation system in a general way and also many dancers and choreographers are very interested in old creations, so they would really appreciate it if they could find old material."

"Something important is not allow the website to become chaotic in terms of information and repetition. It is important to be as clear and as simple to navigate and get information as possible."

"The stories quality have to be high..no found amateur videos"

"Applicability in their own separate evereyday needs i.e. academics, choreographers, journalists, other professionals related to the dance field or like a dance video channel like YouTube for dance. Tags help a lot. A little about the qualitative characteristics of the videos added next to the more practical (festival, excerpt)"

"Reliability to the users / HD videos / social networksYES characteristics"

4 Would you be OK with seeing from time to time promoted stories on DanceSpaces (e.g. related to an upcoming performance that is about to open)

All respondents answered with "Yes".

5 **Would you** be willing to pay a fee to promote certain stories on DanceSpaces. If yes, what amount?

While two respondents answered with "No", two others answered with "maybe" and two with "yes" (mentioning a small fee, eg. 1 Euro, as possible)

6 Is there any particular function you would like to see implemented?
"Maybe a more creative choice for the regular users, so they rearrange or compose some stuff themselves, just in their personal account, something like making their own folder."
"Maybe a category of the artists that are involved in this platform in an alphabetical order with a photo, country of origin/residence, profession"
"Interaction between profiles. Online editing of videos maintaining reference/citation of original works and source."
"Final aesthetic image of the website platform."

7 Were there any difficulties or unclear things you feel are important but were not asked in this questionnaire?
"The navigation system is a bit confusing in the beginning, but after a while you realise that you just have many options to explore."

8 **Is there anything else you would like to share with us?**
"I feel this is a great move cause there are not many libraries or sites with dance material, open to people."
"A network for dance is needed .when you looking for something specific not to lose time*"*
"keep on doing it and let us know about it"
"It would be nice for me, if I want to search something, to have the chance to put a key-word and have as a result not only the specific word but also similar meanings or contents to the key-word. Because in dance meanings are more abstract, so there is not a specific word for everything."

Link to online questionnaire:
https://docs.google.com/forms/d/1l1MYceD-tj2YXrk83KhOm777Ae_mjXIu8iLl5Srnmsg/viewform

7.5.6   Improvements after evaluation

First and foremost, the application was much more positively evaluated with respect to the user friendliness of the interface (the percentage of unsatisfied users was cut in half in comparison to the first version of the tool). Overall a 6 fold increase over the previously tested version was recorded to the general question of whether the users enjoyed the application. Pain points identified during the previous user testing, such as interaction through buttons and menus, were no longer identified as an issue during the second evaluation. For some interface components there was only positive feedback. Finally the tool was perfectly reliable (and no software bugs were detected).

7.5.7 Conclusions from the evaluations

Throughout the development period, the Pilot's work has been shared with dancers, teachers, choreographers and dance enthusiasts. In broad terms, the DancePro prototype was enthusiastically received by choreographers even though it is quite a complex tool. One choreographer noted how it would support her making process, commenting on how it would allow her to plan, create and prepare her work in advance of working with the dancers, which would be more efficient, saving her money on renting studios and dancer time. Whilst supporting artists in being more efficient in their work is a goal, the flip side is that the dancers who depend on work could find that they are hired for less time as digital tools take over the time traditionally spent working body-to-body in the studio.

In conclusion, the findings from the usability test proved to be very helpful in identifying usability issues. The Dance Pilot re-created natural environments that the users may most likely find themselves in, and the Pilot team was able to observe them with the prototypes. After each session, the data was collected and analysed and offers an accurate picture of the potential of the prototype. The sessions allowed us to interact directly with the potential users and proved that the market analysis and assumptions made during the desk-research phase was correct.

8 LESSONS LEARNED

Europeana is described as a 'trusted source of cultural heritage' and the main claim is that it connects the user to the original source of the material to ensure its authenticity. However, one of the lessons learned for the Dance Pilot is that Europeana, although giving visibility to a mass of digital cultural content does not often suffice in accessing it, and it often requires the user to go back to the original source. As described in the challenges section of this document, accessing content through Europeana was not straightforward and a bit confusing. Although it is a tool to grant authenticity to a source, the re-use of that source is not always possible. This was surprising to the Pilot and forced the team to act quickly to find other content from non-Europeana sources. This taught the Dance Pilot to not fully rely on existing digital platforms and to gather material from diverse sources.

The Dance Pilot found it difficult in getting many members from the dance community involved in the project. Many were apprehensive and uneasy about releasing their dance content to the Pilot and even more reluctant to share and offer images to Europeana. Contacts of the Pilot team members and previous working relationships were needed to ensure that there was material to use for the testing of the prototypes. The naïve thought that many freelance artists and other professionals would want to make publicly available their work on an international portal, was misguided. The Dance Pilot was also surprised to learn that information on how to contribute to Europeana was not straightforward and that contact with the library was often limited. Perhaps more user-friendly instructions and support would allow more members from the dance community to engage with the library as well encourage artists to contribute. Another lesson, which was also identified by the TV Pilot and documented in D4.4, video content on Europeana are handled similarly to photo content, offering one thumbnail and one description of the material. There needs to be more metadata available for the current image and more attention as to how certain types of content are represented on the portal. The Pilot, as well as potential users, would have benefited from having more detailed metadata allowing for more efficient searches and retrieval of content. In the future, digital platforms should not treat moving images as still images, as the outcome could have a negative effect on the re-use of that content. Various digital services could be developed further and treat metadata appropriately.

Europeana Foundation has actively supported the development of many applications which enhances the cultural heritage sector and the Dance Pilot was eager to collaborate with Europeana and tried to re-use Apps from the Europeana Lab service. The following list highlights applications that the Pilot considered re-using in the early stages of the Pilot's work.

Europeana Lab Services:

1.   Europeana's Culture Collage developed by Monique Szpak: http://labs.europeana.eu/apps/culture-collage/

2.   Europeana Culture Collage is developed by Monique

3.   The Twitter EuropeanaBot: http://labs.europeana.eu/apps/twitter-europeanabot/

4.   The Europeana for Education (E4E) set of two widget: http://labs.europeana.eu/apps/europeana4education-e4e/

5. Europeana GeoSearch: http://labs.europeana.eu/apps/europeana-geo-search/ Europeana Geo Search app for Android

6. Cultured Canvas: http://labs.europeana.eu/apps/cultured-canvas/ UK Cultured Canvas is an easy way to promote culture to a user's Twitter followers. Based on user's preferences/selected criteria, the prototype generates backgrounds of Europeana content for a user's Twitter account.

7. Art Color Bits: http://labs.europeana.eu/apps/art-color-bits/

8. Art Color Bits introduces an innovative way of browsing painters' works by colours. The software gets all the paintings of an author available in the Europeana database and extracts the main colors from each artwork. After that, the whole collection is arranged chronologically with special attention to the main colors.

9. ArtSpace: http://labs.europeana.eu/apps/artspace/

10. ArtSpace promotes access to art in everyday situations i.e. Europeana collections can be made available in public places such as coffee shops, libraries, schools and hotels.

With varying levels of engagement with the Europeana digital dance content and a careful analysis of the Europeana Lab Apps readily available, the Pilot was unsuccessful in technically integrating the services to the prototypes being developed. Although it was thoroughly discussed and actively pursued, it was not possible to re-use these Apps. The Dance Hackathon in Prague provided a great opportunity for members of the Europeana Labs to see the DanceSpaces and DancePro applications in action. This started the process for bringing the two applications into the Europeana Labs family, thus making them available to the wider public through http://labs.europeana.eu/apps.

It should be noted that the Pilot built a Dance Taxonomy for use within the Pilot. During the Digital Echoes Symposium (February 2015), which was dedicated to Intangible Cultural Heritage, dance and Europeana Space, the Pilot carved out time within the programme to allow its delegates time to discuss and critically analyse the Pilot's dance taxonomy. Surprisingly, very few individuals engaged in the conversation and those that did were reluctant to categorize dance and compartmentalize their practices. In numerous other conversations with professionals, despite the usefulness of organizing the wealth of information and genres, it became clear that professional practitioners were not keen to think of their work in this way. Development of a proper taxonomy requires qualitative and quantitative data and more time would be needed to explore this area rigorously.

The Dance Pilot has actively used social media platforms to help disseminate its interim activities. After the initial sourcing of Europeana content for use with the development of the two prototypes, an "E-Space Dance Tweet of the Day" was initiated using the Twitter social media platform. The idea was to tweet an image daily and dedicate the tweet to a contact in the cultural heritage sector. This initiative served two purposes: to re-use Europeana digital dance content on a continual basis and to identify other key stakeholders and creatives. At the outset, the inventive plan was enthusiastically received earning numerous retweets and engaging with various contacts in the cultural heritage, digital and dance sector, but after 6 months the social media project began to lose its momentum and slowly fizzled out.

Perhaps the lack of interesting content to retweet, the few numbers of project and Pilot members who used Twitter and retweeted the information, and the difficulty of regularly tweeting, all led to a lacklustre ending. In the future, Pilots might consider building in a social media element to their workflow and dedicate time and resources to such a plan. Also, all members of the team must commit to supporting the social media components of the project, as regular activity adds to the overall composition and success of such initiatives.

Before FCSH-UNL had joined E-Space, it had already started with a process of patent registration for the tools' concept in the USA. During the first half of the E-Space project, it still thought that registering the patent would be a valuable and rewarding action. However, the increasing costs with an American specialised lawyer were getting prohibitively expensive for FCSH, and its Dean has recently decided that the process should be interrupted. More than a deception, this has actually turned into a useful lesson and positive fact, as they are now free from the restrictions imposed by the patent registration process, during which they were not allowed to share the tool with any external users. Instead, they have then been able to offer access to the tool for the participants in the Dance Hackathon in Prague. Advice to others interested in pursuing patents for their digital tools, would be to consider any time constraints as well as the financial and legal aspects of such a process.

In summary, thanks to the work of the Dance Pilot partners were able to gather an important understanding of the complexities behind the creative re-use of dance content, and more generally, cultural heritage. The Pilot learned that the technical challenges but also the legal and business aspects, all need to be considered when working with cultural heritage content, especially digital dance content.

9 EDUCATIONAL USE

9.1 OVERVIEW OF EDUCATIONAL OUTCOMES

COVUNI has access to the target groups as well as houses a technology lab set up within the university. This will allow for ease of testing and allow the users to spend a substantial amount of time with the prototypes. While the target group is using the applications, their use of the prototype will be observed and problems noted where they arise or instructions are not clear. Questionnaires and 1:1 interviews will also be a mode of evaluation. The "ESpace Dance Day" in March 2016 is aimed at dance students and professionals, it will introduce participants to the tools and offer activities to explore the various ways they can be used. It is hoped that it will inspire participants to think about creative engagement with online dance content, and modes of analysis.

There will be two main workshops offered, one in the morning and one in the afternoon. Participants can attend one or both sessions. The two workshops offered will consist of:

- 'remixing' workshop, during which participants will learn small sections of movement from online clips on Dance Spaces and develop their own versions in response to these, which will then be uploaded and collated alongside related content.

-real-time annotation workshop, looking at how Dance Pro can be used in improvisational and creative studio practices.

The day will support the "ESpace Dance Pilot Virtual Exhibition", which is a competition that allows participants to record and upload their own choreographic work, competing for a chance to be included in the exhibition. Participants will be encouraged to develop and submit the outcomes of the various workshop tasks.

The day will be split into two sessions and will include people from outside the university as well as any interested PhD students and members of staff. . With this more direct contact with the target group, evaluation will take place as to whether the applications satisfy, not only practical and technical goals, but assess whether the prototypes had or could have an impact on their own work and practice. There will also be the chance to gain insight into how these applications might influence their teaching or research.

In summary, the Dance Pilot will be working on developing educational resources drawn from and arising out of the Pilot to support learning through accessing and using digital dance resources. The educational resources will form material for a MOOC, which will be designed to provide online access to learning materials designed for independent learners and students within tertiary and higher education.

10 SUSTAINABILITY AND IMPACT

10.1 SUSTAINABILITY

The Dance Pilot has a clear understanding of its users and the market and through its ongoing engagement with a range of potential user groups across Europe is gaining a clear idea of the likely uptake of the tools after the project. This is important because it is through direct engagement with the user community that the tools will most likely be used, adapted and have a direct influence on how stakeholders engage with and adapt their working models by incorporating the tools in their work. In other words, although there is discussion about where the tools will be hosted, which might extend beyond IN2 and FCSH-UNL, the developers of the prototypes, simply providing access to the tools online is no guarantee that they will be found or used or be sustained with any value to the broader community. It is envisaged that the Europeana Space Virtual Exhibitions could be a strategic, innovative and creative way to sustain the Pilot's work for the wider dance community and creating further visibility for the tools. Each partner's website could link directly to the Virtual Exhibitions allowing the information to reach a wider audience. Another possibility would be to ask Europeana to feature the Pilot's work on their blog and to allow users who engage with the tools and Europeana content to blog about their experiences, thus spreading further the way in which the tools are adopted and put to use in different areas of the creative industries.

The Pilot has carried out desk-based research, looking at previous Dance Apps and tools that have been developed and tried to assess the best strategy for the E-Space Dance Pilot. The literature highlights that many organizations such as the Dance Heritage Coalition, Merce Cunningham Company and the New York Public Library have the funds and infrastructures needed to sustain the tools and digital technologies they develop. However, most artists and smaller organizations rely on social media services to help with the sustainability of tools and repositories of dance content. This background information is useful as it allows the Pilot to be strategic with its sustainability plan and find a solution that will satisfy the varied needs. Understanding that social media platforms play a huge role in the way information and trends are shared within the dance community, it is important to highlight that the Pilot has had an active presence on social media platforms and has built a following within the cultural heritage, dance and digital tools sector. This will prove useful in the dissemination and sustainability of the Pilot's tools.

What is important is that sustainable features of the Pilot activity will be based as much on the networks created through the Pilot and the Hackathon, supported by clear and robust IPR, as the tools themselves. In terms of each tool: for DanceSpaces, IN2, as an SME is commercially active and will drive the launch, development and sale of the tool. For DancePro, the New University Lisbon will drive and support its exploitation and distribution as part of its wider agenda for impact beyond the academic community.

As a Pilot therefore plans to build on what it has been doing thus far to:

- engage outside expertise to ensure the Pilot is moving in the right direction in regards to sustainability of the tools

- open discussions with all stakeholders and end users
- disseminate the tools to target audiences
- involve the tools in any activities the Pilot is currently involved in
- build a sustainability plan that has both a short-term and long-term perspective
- set realistic goals and outcomes in the sustainability plan
- continue to analyse the industry and its needs as it develops its strategy
- build a community of practice through the Pilot development to ensure that sustainability is secured through the wide uptake of the tools.

As an SME, IN2 is highly interested in commercially exploiting the results of the Dance Pilot, and in particular DanceSpaces. A clear exploitation avenue is already in place for the technology modules developed and the know-how acquired through the two user-evaluation sessions and the hackathon, by integrating these results into IN2's technology platform (http://in-two.com/platform) and the commercial service MyMeedia (http://mymeedia.com) which is offered as a SaaS to customers across the world. In fact, already during the last year a number of DanceSpaces software modules have started to be deployed into the commercial service. In this way the results of the Pilot related to the re-use of cultural heritage are being brought to the market, albeit as an added-value component that is part of a larger offering. Furthermore, the Pilot is currently evaluating the possibility of exploiting the entire DanceSpaces application as a whole, offering it to the target market segment of dance enthusiasts. This avenue has some dependencies with the re-use of content from the Content Space since in order for it to be easily picked up, it needs to ensure that new users have already a broad range of content to choose from for their stories before they start new one from Europeana (and other sources) or uploading their own. The DanceSpaces web application could be offered under a freemium model, with the business goals to funnel users towards subscribing to the more general service of MyMeedia. From the user evaluation questionnaire it became apparent that a business model based on content advertising and promoted content could also be an option for DanceSpaces (All respondents agreed that they would be happy to see promoted stories on DanceSpaces). Finally, initial conversations have identified a potential for the use of DanceSpaces in educational scenarios. In some of these cases a custom installation of the application would be needed, and this would be provided by IN2 as an added value service.

At this stage, the developer (João Gouveia) has the objective of stabilizing the prototype into a bug-free Beta version. The instructions manual is also being completed, which will be finalized and published very soon. Further reflection is needed inside the Pilot and even at the global project's level, as to whether and how the Beta version should be developed into a final marketing product or simply offered as open source. The feeling is that both would have advantages and disadvantages, but the marketing option would naturally involve more investment and negotiations with any possibly interested company. More real usability tests are still needed, as well as the follow-up of the monitoring process through regular contact and feed-back from other choreographers to whom the tool is being offered for testing in real life settings.

10.2 **IMPACT**

Despite Pilot anxieties about being able to easily access and re-use dance content in Europeana, talking with dance artists has raised interest in the question of how or whether dance should be preserved and freely shared, and has led some to want to contribute their content to Europeana and make it freely available. IPR was a major part of the Pilot's work as a Dance Pilot and throughout the project the focus on IPR issues definitely positively impacted the dance community. Asking professionals and researchers to engage with key questions about cultural heritage and the monetization process are critical for the dance community to consider, as digital platforms become ever more a part of the art community.

Europeana Space and the Dance Pilot are bringing these matters to the attention of the dance workforce to explore the different ways in which dance can be valued, through the ways in which artists can disseminate and distribute their work in imaginative ways, generate new audiences, rethink working processes and find partners in industry who may be able to support growth.

11 FUTURE WORK

This deliverable is due M24 while the work on the Pilot continues until month 30 (July 2016). The planned activity for the Pilot consists of further developing the tools and creating user manuals for each. For the DancePro tool the following features will be added:

- create a playlist that has a user-friendly interface which requires a bit of backhand work but the prototype as is, already supports this function.

- add a feature which allows users to cut/edit videos.

- adding filters to the annotations e.g. viewing annotations within a certain category or only seeing the marks or drawings.

- ability to export video with annotations- e.g. user wants to share video with someone either sending the project file through an App or a similar platform.

For the remaining duration of the Pilot, the DanceSpaces application will develop more ways of visualising the dance collections and exploring the existing content. Furthermore, there will be examination of how Europeana content and the APIs of WITH can be used within the tool.

In addition to the further development of the tools, the Pilot will work with project partners to create a MOOC which supports many of the Pilot findings. It is anticipated that the MOOC will require a lot of time to properly create and execute. COVUNI will host the Europeana Space Dance Day which will feed directly into the Educational components of the project. An online virtual dance exhibition will be curated which has an educational, creative and informational element to it. The Pilot will draw dance content from Europeana and WITH and collate the images to attract various members of the dance community, from the novice to the professional. Lastly, it is of course important to intensify the dissemination activities and prepare concrete actions towards ensuring a sustainable outcome for the results of the Pilot.

12 FINDINGS AND CONCLUSIONS

There is a need for the dance community to adapt digital technologies and the Europeana Space Dance Pilot highlighted this need. Through the re-use of dance content, primarily taken from Europeana, the Dance Pilot developed two tools that served the needs of researchers, academics and creatives as well as the general public and educators. In the past months the Dance Pilot worked tirelessly on the creation of two tools which focused on improving the dance community's engagement with digital cultural content, while also having economic growth and the development of new business models at its core. The Pilot's own findings have concluded that there is not only a need for rethinking how it engages and re-uses digital technologies, but consider the manner in which they support the cultural heritage sector. The process of knowing about dance and engaging with and re-using dance content is affected through digital technologies and is always defining and re-defining areas in the field. The Pilot's tools support this shift.

DancePro offers the professional dance sector a tool that enhances the development of dance making and choreographic works. It allows the choreographer to work in a more efficient manner and facilitates a participatory inclusive way of working together through supporting the creative process. DanceSpaces allows the student and members of the general public to re-use, create and manipulate dance content to create Dance stories that can be shared on a number of platforms. These tools allow people across countries and cultures to engage within the expressive qualities of dance. Through these technology systems users can both re-use, learn, listen, and think critically of the dance content they create and/or engage with in their professional and leisure environments. The tools associated and developed in the Dance Pilot offer a unique method of engagement and a type of informational platform for the cultural heritage sector, creatives, technologists and members of the general public.

Engagement is generally not straightforward and it becomes especially challenging when it comes to the dance content of cultural heritage. The Dance Pilot's development of two innovative models of content re-use – one for research purposes and one for leisure and education: DancePro and DanceSpaces, have supported the overarching goals of the Europeana Space project. It is important to build initial engagement with all key players who will be either directly or indirectly involved. Two user evaluations, with two diverse groups of users, were carried out in two European cities to analyse various aspects of the engagement between users and cultural heritage digital content via the above models. Although multiple sources exist that encourage cultural heritage re-use, the digital platforms and tools created by the Dance Pilot are a great example of Best practice as they consider the varying needs of key stakeholders and make an offering to the wider dance and cultural heritage community.

In summary the Pilot explored the way that digital cultural heritage can maximize value creation and support new business models. The Dance Pilot was successful in promoting Europeana, encouraging user participation as well as experimenting with making tools available for the general public.

13 ANNEXE

13.1 DANCE TAXONOMY QUESTIONNAIRE

Europeana Space Dance Pilot Questionnaire

The DANCE PILOT is aiming to create a general framework for working with dance content to produce innovative models of content re-use, one primarily for research purposes and one for the general user. The aim is to enrich users' experience of dance content, which will embrace a wide range of dance forms and practices, drawn from regional, national and private archival collections of partners within the project and from Europeana.

This questionnaire aims to gain insight into how dance practitioners, learners, experts, specialists and other key stakeholders would organize a Dance Taxonomy.

Taxonomy Definition: (noun) A scheme of classification; The branch of science concerned with classification, especially of organisms; systematics. (Oxford Dictionary 2015)

1. Do you currently use a dance taxonomy, either for work or leisure?
YES/NO

If your answer is YES:

Can you tell us which one/s?

What do you use the taxonomy for?

Are you happy that the taxonomy is sufficient for your needs?

Please continue to question 2

If your answer is NO:

Do you feel that you need a dance taxonomy?

How might you use a dance taxonomy?

2. If you use a dance taxonomy, or if you would like access to one, which of the following is important to you?

☐ To be able to assist with search, discovery and tagging dance content in a digital environment.

☐ To help build dance literacy and thereby aid understanding and appreciation of dance.

☐ To find links with other cultural/physical/artistic practices.

13.2 DANCEPRO EVALUATION QUESTIONNAIRE

Europeana Space, Best Practice Network

Spaces of possibility for the creative re-use of digital cultural content

Europeana Space has received funding from the European Union's ICT Policy Support Programme as part of the Competitiveness and Innovation Framework Programme, under GA n° 621037

DancePro Tool Evaluation

Consider two types of scenarios, during a rehearsal (in video capture) and after a rehearsal (after video capture). Please, compare and classify how often are you willing to use the DancePro Tool, in each scenario:

	Rarely				Frequently
During a rehearsal	1	2	3	4	5
After a rehearsal	1	2	3	4	5

Consider the different annotation types of the DancePro Tool. Please, compare and classify how often are you willing to use each type, during a rehearsal.

	Rarely				Frequently
Sketch	1	2	3	4	5
Text	1	2	3	4	5
Audio	1	2	3	4	5
Marks	1	2	3	4	5
Hyperlinks	1	2	3	4	5

Consider the different annotation types of the DancePro Tool. Please, compare and classify how often are you willing to use each type, after a rehearsal.

	Rarely				Frequently
Sketch	1	2	3	4	5
Text	1	2	3	4	5
Audio	1	2	3	4	5
Marks	1	2	3	4	5

13.3 **LIST OF DISSEMINATION ACTIVITY**

13.3.1 Venice Conference organized by Ca¹ Foscari University in Venice (Venice, Italy)

13.3.2 EuroMed Conference (Cyprus)

The Dance Pilot travelled to the 5th International Euro-Mediterranean Conference (EuroMed 2014) which was located in the ancient city of Amathus, by Limassol. From 3rd to 8th of November 2014 Pilot and project coordinator, Sarah Whatley gathered and exchanged expert information and experiences of the cultural heritage field, in particular that focusing on the intangible cultural heritage sector like dance. The conference provided a unique opportunity to present and review results, and to draw new inspiration from other leading projects in the sector. As stated on the conference website, "We are expecting policy makers, professionals, students and delegates from more than 60 countries of the world to attend this special Euro-Mediterranean conference which is dedicated to the protection, preservation and e-documentation of the Cultural Heritage. The ultimate aim of the 5th EuroMed conference will be to bring together as many stakeholders as possible from different backgrounds in order to achieve a high level of mutual understanding of the needs, the requirements and the technical means of meeting them. Therefore, the common goal is to focus on interdisciplinary and multi-disciplinary research on tangible and intangible Cultural Heritage, the use of cutting edge technologies for the protection, preservation, conservation, massive digitalisation and visualization/presentation of the Cultural Heritage content (archaeological sites, artefacts, monuments, libraries, archives, museums, etc)." (http://www.culturalheritage2014.eu/index.php/welcome/)

13.3.3 Creative Enterprise PIE Conference (Coventry, UK)

Sarah Whatley and Rosamaria Cisneros presented the Europeana Space Project and the Dance Pilot at the Creative Enterprise PIE Conference 2014 held at Belgrade Theatre Conference Venue in Coventry on the 12th November 2014. The objectives were to: (a) disseminate Dance Pilot information and tools (b) encourage people to learn more about E-Space and visit the project website c) encourage others to follow the project on twitter and other social media outlets (d) identify local test-users (e) gather feedback on the E-Space Dance Pilot ideas.

Coordinator Sarah Whatley and SRA Rosamaria Cisneros talked in a pop-up discussion dedicated to E-Space and the Dance Pilot, about dance annotation and digital technologies; there also was an informal discussion during the PIE Conference which gathered information on Digital Technologies as well as disseminating E-Space.

The audience comprised of creative enterprise business leaders, entrepreneurs, artists, graduate students, academics and other cultural heritage entities of varying nationalities: English, Romanian, American, and Irish. Contacts were made with individuals in the creative enterprise sector, cultural heritage sector, freelance artists and university students studying Performing Arts.

Attendees were interested and eager to learn more. The dialogue generated was constructive and useful for us as a Pilot and for them as participants. Information was gathered on the digital technologies they are familiar with or currently using and also shared a general timeline of the Pilot's activities

13.3.4   Yildiz University and Dakam PerformArt Conference

The Dance Pilot travelled to Istanbul, Turkey to present the Dance Pilot's prototypes at the DAKAM PerformART conference. The Pilot was part of the poster session and spoke on the Pilot's activities and future goals within the framework of the Europeana Space Project objectives. The conference was held at Bilgi University's central campus December 19 & 20, 2014. In addition to presenting and networking at the conference the Dance Pilot guest lectured at Yildiz University Campus in Istanbul, Turkey December 21 & 22. Rosamaria Cisneros met a group of second and third year Performing Arts students and introduced the Europeana Space Project, Europeana and the Dance Pilot's objectives. The prototypes were discussed and a lecture/demonstration on Cultural heritage and the re-use of dance content within the Pilot and in other platforms was thoroughly analysed. In particular, the Pilot focused on professional dance research and educational expertise in relation to digital tools and allowed the students to explore Europeana encouraging them to source their own digital dance content.

13.3.5   Digital Echoes Symposium 2015: Intangible and Performance-based Cultural Heritage (Coventry, UK)

Coventry University Centre for Dance Research (C-DaRE, http://c-dare.co.uk/) held the 5th edition of the Digital Echoes Symposium on the **13th of February 2015** at the Institute for Creative Enterprise, Coventry University Convened by Sarah Whatley, Rosamaria Cisneros and Amalia Sabiescu, Digital Echoes 2015 brought together artists, researchers and practitioners interested in exploring how digital environments intervene in the creation, documentation, circulation and reception of culture. The focus was on the potential and limits of digital technology for affording new ways to engage with traditional forms of cultural heritage as audience, user, artist, author, researcher and co-creator. Antonella Fresa, Promoter's Director, delivered a presentation on **Citizen science in the research on cultural heritage and humanities** during the afternoon panel. She talked about the experience of the Civic Epistemologies project. She is the project's technical coordinator. **Keynotes for the event were** Charlotte Waelde, Chair in Intellectual Property Law, University of Exeter and Matthew Causey, Associate Professor in Drama and Director of the Arts Technology Research Laboratory, Trinity College Dublin.

Figure 2: Sarah Whatley, Europeana Space Coordinator introducing DES and the project. Photo By: Koko Zin

Figure 2: Charlotte Waelde, Keynote-Chair in Intellectual Property Law, University of Exeter and E-Space partner Photo By: Koko Zin

13.3.6   SDHS & CORD Cut and Paste conference (Athens, Greece)

The E-Space Dance Pilot travelled to Athens, Greece early June 2015 to attend the Society of Dance History Scholars and Congress of Research in Dance conference. The title of the conference Cut & Paste: Dance Advocacy in the Age of Austerity, took place at the Hellenic Centre of International Theatre Institute and worked closely with the Association for Greek Choreographers. The theme of the 2015 joint SDHS/CORD conference in Athens aimed to address the issues surrounding dance advocacy both locally and internationally, but also to actually put that idea into practice by supporting a dance community hit especially hard by the global financial crisis. SDHS and CORD members are actively helping colleagues in Greece to affirm dance as scholarly endeavour as well as a professional occupation.

From June 4th to June 7th, the Dance Pilot engaged with the international dance community and disseminated the Europeana Space Project and its Pilot activities. The Pilot also presented a paper titled "Cultural Value and the transactable nature of dance" where the Europeana Space Project was discussed and the ways in which it accesses and transmits dance to the wider dance community, was explored. A fruitful discussion around imaginative things that dance content might suggest and the alternative modes for ascribing value to dance, was debated. Other dance practitioners, scholars and artists not only received the Pilot's work well, but were excited to learn more about the tools being developed.

Figure 1: Conference materials. Photo by: Rosamaria Cisneros

13.3.7   10th International Conference Arts in Society (London, UK)

Europeana Space and RICHES projects were presented at the Tenth International Conference on the Arts in Society which took place at Imperial College London from the 22nd- 24th of July. Each year, the International Conference on the Arts in Society draws a diverse group of participants from all over the world to craft a rich and distinctive conference experience, including plenary speakers, paper presentations, workshops sessions, exhibits, and social events. The conference program groups together presentations along similar themes to facilitate knowledge sharing and community building.

Europeana Space Dance Pilot and RICHES presented a paper Dancing the Real and the Virtual: The Production, Preservation and Reuse of Intangible Cultural Heritage' which looked at the role that dance content plays within the records of digital cultural heritage across Europe and how these new tools encourage reimagination and reuse. The presentation drew upon the work within two European Commission funded projects (RICHES and Europeana Space) that are concerned with the role of dance within European society. By working with artists, researchers and other cultural industry experts across the European community, both projects are exploring the impact of digital technologies on dance. Overall, the presentation was well received and supported the reflexive thinking about the role of the arts in society.

Figure 1: Banner from Conference website http://artsinsociety.com/

13.3.8 SOIMA Conference (Brussels) – September

The Dance Pilot activity was presented by Sarah Whatley and project partner Charlotte Waelde at the SOIMA 2015 International conference in Brussels in September, The focus of the presentation: 'Challenges at the Europeana Space Project; Copyright Law and Implications for Dance as Cultural Heritage' was on the work that has been done in relation to copyright and reuse of digital dance content. The theme of this year's conference, 'Unlocking sound and image heritage' was an excellent opportunity to disseminate the project, network with other cultural heritage professionals and raise awareness of the project. This contribution was very well received and generated a lot of interest on the theme.

13.3.9 Digital Heritage (Granada) – September

Europeana Space was presented at the Digital Heritage conference in Granada, Spain. The Dance Pilot was discussed within a general presentation, by Sarah Whatley, on Europeana Space in a panel where a number of other EU projects were presented, on the theme of From Digitization to Preservation, Creative Re-Use of Cultural Content, and Citizen Participation The panel drew a very large number of delegates and garnered a lot of attention and interest in the themes of the project.

13.3.10 Digital Cultures Communities (Manchester) – October

Europeana Space was presented at the DCDC conference in Manchester as part of a conference that focuses very much on professional processes of archiving digital cultural content. The Dance Pilot was discussed within a general presentation, by Sarah Whatley, on Europeana Space in a panel where a number of other EU projects were presented. The panel attracted a lot of interest and feedback and once again was a valuable opportunity for dissemination.

13.3.11 Intangible Cultural Heritage and Innovation: 2D and 3D Documentation and Visualisation of Performing Arts, Folklore and Rituals through the example of: Dance – (Berlin) – November

The Dance Pilot was presented at this Symposium, specifically to discuss the tools and the dance hackathon. Sarah Whatley presented an invited paper: 'Europeana Space Dance Pilot: Achievements and Latest Developments'. It was a very valuable opportunity to share the project with other dance archivists, professionals, artists, creative practitioners and scholars. The networking and dissemination opportunity was very valuable.