

# Co-Designing Encounters with Digital Cultural Heritage



#### Introduction

This booklet was designed to serve as a resource for cultural heritage professionals (CHPs) who wish to co-create their own interactive exhibits using co-design methods and techniques. The use of these resources will allow for getting the most benefit from the cooperation of cultural heritage professionals, designers, technical personnel and future users when planning for new exhibitions and interactive exhibits.

It presents the co-design activities that took place during the Material EncounterS with digital Cultural Heritage (meSch) project, in order to highlight the tools and methods employed, as made legible by concrete examples. By doing so, we hope to provide inspiration to other CHPs to use similar co-design methods in their practice.

This booklet was created by the meSch team at the University of Limerick in close collaboration with meSch colleagues at Sheffield Hallam University, the University of Strathclyde, Waag Society, DEN, Universidad Carlos III de Madrid, Museon, Allard Pierson Museum and Museo Storico Italiano della Guerra.

All photos are the property of the meSch project. QUESTIONS? Please refer to the meSch website mesch-project.eu







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# **Co-Designing Encounters**with Digital Cultural Heritage

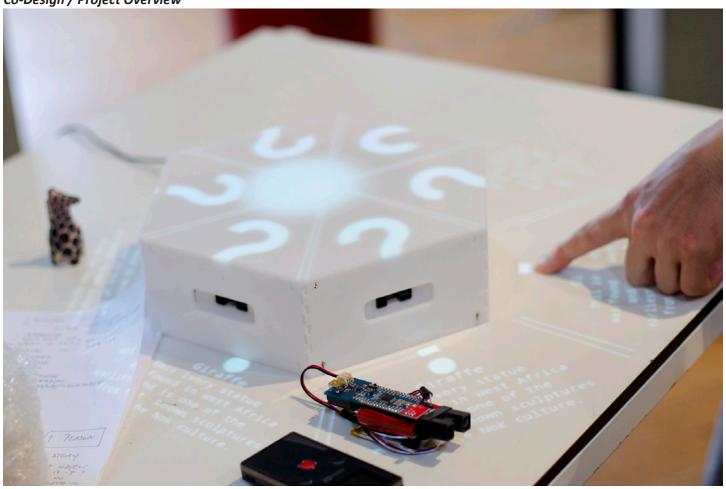
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Co-Design / Project Overview



#### The meSch project

Material EncounterS with digital Cultural Heritage (meSch) has the goal of combining the digital aspects of cultural heritage (i.e. digital content and interactions) with the physical and tangible experience of the visit. A wealth of digital cultural heritage content is currently available in online repositories and archives; this is, however, accessed only in a limited way and utilised through rather static modes of delivery. meSch aims to provide cultural heritage professionals with the tools to embed digital content in physical artefacts in a simple, intuitive way.

meSch bridges the gap between the visitors' experience of cultural heritage on-site and online, by providing a platform for the creation of tangible smart exhibits, that enables cultural heritage professionals to compose and realise physical artifacts enriched by digital content without the need for specialized technical knowledge. The platform includes an authoring environment for the composition of physical/digital narratives to be mapped to interactive artefacts, and an embedded multi-sensor digital system platform for the construction of ad-hoc physical adaptive smart objects.

Co-Design / Project Overview



#### The role of co-design in meSch

Co-design was at the core of the meSch project. It means that all our prototypes and exhibitions were developed in cooperation by cultural heritage professionals, designers, technical personnel and future users. For the meSch project, co-design meant bringing together a broad range of different stakeholders and expertise to join forces in crafting new interactive experiences for museum/heritage visitors that bridge the span between the physical and digital realm.

Throughout the project, an extensive series of co-design activities were carried out with both participating and external heritage institutions working towards the realization of meSch interactive artefacts and exhibitions.



#### Using co-design in your organisation

Why should you involve others or create multidisciplinary teams when planning for the design of technology-augmented exhibits? Simple: because the different expertises and points of view complement each other and guarantee the best possible outcome for all parties involved, and especially for your visitors.

By tapping into the knowledge and insight of cultural heritage professionals – and forming ideas into structured plans in conversation with designers, technologists and communicators – co-design can offer a more inclusive approach to the design of exhibits.

Cultural heritage professionals need to be supported to create their own technology-augmented exhibits to full effect: to manage resources, to envisage innovative uses of technology, to create and share. This requires skills, expertise and good practice being shared. This booklet is one tool to support doing this. We hope it will help innovative explorations through the use of co-design methods and techniques, and that it will be just the start of more work to support a wave of a more inclusive approach to the design of technology-augmented exhibits.

Co-Design / Project Overview



#### How to use this booklet

The collection of co-design case studies and methods featured in this booklet are based on our own experiences with running co-design workshops and exercises. We compiled the case studies and methods to capture and share a snapshot of this wealth of creative applications of co-design for cultural heritage professionals.

Featured methods are highlighted in the case studies. The resource will help you to envision and run your own co-design workshops and receive the best possible results in working to create your own interactive exhibits.



### Case Study 1 Interactive Exhibits as Part of an Exhibition



The starting point for the exhibition "The Hague and the Atlantic Wall: War in the City of Peace"

#### **Project Description**

While it is common for exhibitions to feature some interactive exhibits, they are often standalone components of the exhibition. This case study addresses the challenge of co-designing interactive components that are fully integrated into an exhibition. The design of the interactive components of the WWII-themed exhibition "The Hague and the Atlantic Wall: War in the City of Peace" at the educational museum Museon in the Hague was the result of a process of codesign that took place over several months. Designers collaborated with cultural heritage professionals (curators and technicians) to develop the interaction experience to be offered to visitors and to seamlessly integrate smart replicas with the rest of the exhibition design.



A view of the exhibition layout showing the different exhibition cases.

#### Outcome

The co-design process led to the creation of smart replicas as a means of adding an additional content layer that complements the traditional, factual information that is generally provided about objects in a museum. Visitors are asked to choose a replica object at the start of the exhibition, based on language (Dutch or English) and perspective. This object is then used to activate content, allowing the visitor to explore the exhibition from the perspective of a Dutch civilian, Dutch civil servant or from that of a German soldier. The intention is that the process of choosing a replica (and implicitly the perspective connected to it) makes visitors more curious and as a result, they have a stronger involvement with the story being told than would be the case with the use of buttons throughout the exhibition. As part of an evaluation of the exhibition, observations and interviews were carried out with visitors in order to obtain feedback on the replicas.

#### **Process**

A number of co-design sessions took place over several months in order to create the final exhibition. The process was initiated by the museum, as a result of a previously successful standalone installation at Museon, the difference in this case being that the interactive components would be fully integrated into the exhibition. The initial proposal was to include a small number of standalone interactive showcases in the larger exhibition, possibly displaying additional audio or video content related to only one or two objects in the exhibition. This was seen as an extension of the previous installation. However, the designers felt that there was an opportunity here to expand on what had been done previously, and to create a more integrated experience for the visitors. As a result of this, the scope of the interactive portion of the exhibition grew over the course of the co-design *brainstorming* sessions, until technology was embedded across the entire exhibition.



The 6 smart replicas used in the exhibition

"I feel like working with the meSch designers, listening to them, discussing and being around them has really helped me think about issues and come up with my own creative ideas because that's really a skill that we are not trained in. It feels like sometimes it's expected of us but as a cultural heritage professional, we write text labels! But we need to get to that stage where we can come up with our own ideas, and think of different types of content."

meSch Cultural Heritage Professional

#### **Process (continued)**

In order to realise this, the curators chose a selection of key museum objects from the exhibition to be augmented with digital content that could be triggered by visitors. Each of these objects had a story that could be told from multiple perspectives. For this exhibition, the curators chose three perspectives representative of those people that were living in The Hague at the time: Dutch civilians, Dutch civil servants, and the occupying German soldiers. The idea was to allow visitors to explore these objects, and thus the exhibition itself, from the perspective of three different categories. The objects would be used as a starting point for an additional storyline throughout the exhibition. These related stories were created on the basis of original sources such as interviews, documents from archives and periodic newspapers that had been transcribed and recorded in a studio with professional voice actors. The sound clips were combined with photographs and videos from different archives to be displayed from inside the exhibition cases, adding another layer to the story. The most obvious solution for allowing visitors to choose a particular perspective would have been to use buttons to activate the stories throughout the exhibition, i.e. one button for each of the three perspectives. However, rather than use this mechanism it was decided to create a more immersive experience, by offering smart replicas of real historical objects to trigger the stories.

## Case Study 2 Addressing the Key Challenges of a Museum



Using the Loupe at Museon.

#### **Project Description**

There are often challenges for cultural heritage professionals in engaging visitors effectively in exhibitions. Technology can be an aid in addressing these challenges; however, it is often more resourceful to start with the specific challenges of a given museum context and to see how technology can be used to address them in a meaningful way. This case study outlines a co-design process which took place over several months and focuses specifically on the wayfinding challenges of a science museum. It details the collaboration between the museums' cultural heritage professionals and designers within the meSch project in devising and testing a technological solution.



Sketching the compass prototype.

#### **Outcomes**

Detailed discussion between the designers and cultural heritage professionals led to the identification of defined challenges, namely wayfinding and connecting the exhibits with one another. Testing the concept solution of a compass through low-fidelity prototyping raised further questions and led to the technical realisation of the Loupe prototype. The Loupe prototype is a magnifying glass that is visually augmenting objects or locations in the exhibition space, and provides clues to visitors for moving to the next point of a recommended route through the museum. An in-situ evaluation of the Loupe with museum visitors was jointly conducted by the design team and museum professionals, concluding that wayfinding with the use of virtual reality was fun, but the focus should remain on the museum artefacts.

#### **Process**

During April 2013, designers from Waag Society, a design institute in Amsterdam who have a lot of experience of co-designing within the cultural heritage sector, visited the educational museum Museon in the Hague and held an initial session with two of the cultural heritage professionals there to discuss the key challenges that the museum had been encountering. As a science museum, it already included a large number of interactive installations as part of exhibits, and the ambition of the cultural heritage professionals was not to add yet another exhibit, but to interconnect the existing exhibits in personalized thematic tours that would further engage visitors — mainly schools and families with children - and contribute to the overall museum experience. One of the challenges identified was making way-finding in the museum easier, and providing some guidance to visitors interested in specific themes, as the space occupied is vast and densely populated with artefacts and exhibits. The idea of an augmented compass as a tool for wayfinding emerged from this discussion, and all the participants agreed that it should be turned into a physical prototype for further creative exploration.

"It's been really interesting to work with narratives and stories because it makes me consider what type of content I could work with and the different ways to work."

meSch Cultural Heritage Professional



Bodystorming with the compass prototype.

#### **Process (continued)**

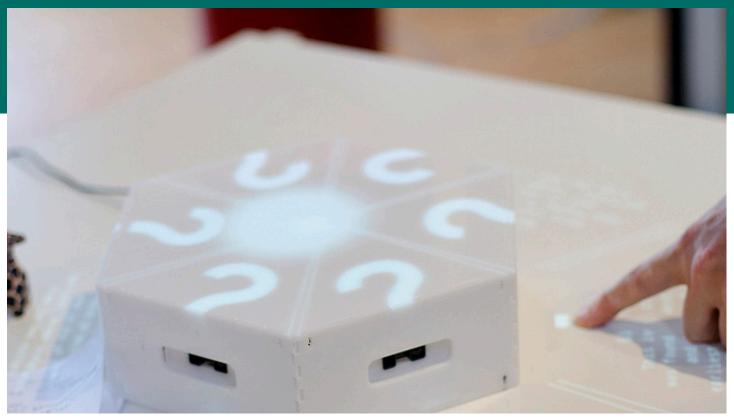
At a follow-up co-design session in May 2013, the design team presented the cultural heritage professionals with a low-fidelity prototype of the compass for discussion and elaboration. As part of the co-design session, three subgroups were formed, each including at least a designer and a cultural heritage professional. Each subgroup then moved through the museum, **bodystorming** with the compass and **brainstorming** about its possible functionalities in the physical context of the exhibits. The designers acted as facilitators, stepping back and allowing the cultural heritage professionals to explore and apply the concept according to their own vision, museum mission, content and audiences, and to make contributions and suggestions as to how the concept could be further developed into a functional prototype.

The cultural heritage professionals came up with an array of ideas that were further investigated by the whole group through *narrative scenarios*. The most well developed scenario was based on the idea for a self-guided tour. The cultural heritage professionals, working together with the designers, suggested that each visitor would receive an augmented compass when entering the museum, getting the chance to configure it according to their preferences. Visitors could link their compass to those of co-visitors, allowing for shared experiences. As the visitor approached an exhibit on his route (chosen based on his profile and the type of guiding selected), the compass needle would indicate it and the compass would vibrate slightly. When in front of the exhibit, the compass would be used for projecting an extra layer of information on the closest available white surface. Another idea emerged was that of visitors being able to choose between a guided tour, an assignment mode (for school visits) or a game mode. In the scenario evaluation discussion, the compass was valued for tackling the wayfinding challenges, providing a way to adapt to the visitor's preferences and to store the visit's footprint. When it came to developing a functional compass prototype, the design team discussed building it: identifying a suitable round screen, embedding required processing power, battery needed and so on. Ensuring that visitor attention would remain on the museum objects rather than the device, the decision was made to add Augmented Reality content on a screen, and to adopt a shape that would put visitors in an active position. The chosen form factor was that of a loupe. As time was an issue, they decided that the quickest way to offer the required functionalities would be to encase a smartphone into a round wooden frame, as it offered all was needed in terms of functionality.

meSch Cultural Heritage Professional

<sup>&</sup>quot;I think it was good for us to see so this is what's possible because we wouldn't have found that out for ourselves."

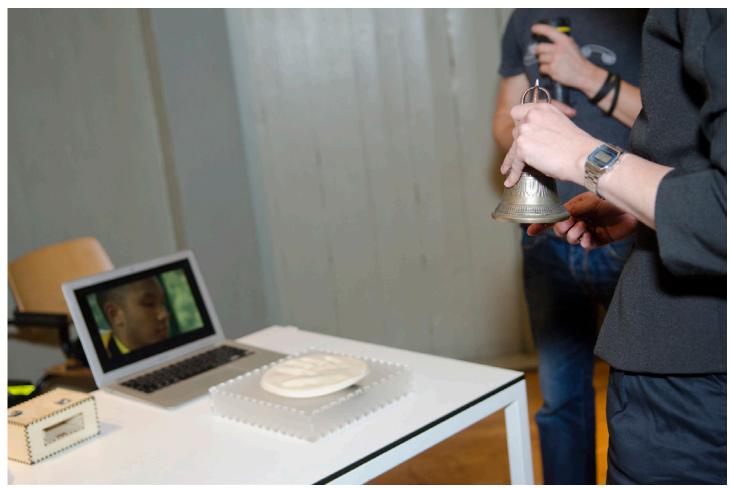
### **Case Study 3 Repurposing Smart Objects or Existing Equipment**



Demonstrating the functionality of the meSch prototypes.

#### **Project Description**

It is often the case that a museum has access to technology (for example, from a previous exhibition or student project) that they would like to repurpose. Adjusting the technology or matching it with appropriate content often presents a challenge. In this case, there were several technological prototypes but that could have been re-used for other contexts. This case study details a day-long co-design session which brought a group of Dutch cultural heritage professionals together with meSch designers to explore how previously developed meSch prototypes could be re-appropriated to support other museum experiences. Although the initial goal was to re-purpose the technological prototypes, the session ultimately revolved around linking the cultural heritage professionals' needs to the different interactive possibilities of the prototypes.



Demonstrating the functionality of the meSch prototypes.

#### **Outcomes**

During the workshop, six use cases for the digitally-enhanced prototypes were developed for different purposes including: creating personalised museum experiences; generating guided and wayfinding experiences; and augmenting physical museum artefacts with digital information.

#### **Process**

In November 2013, a day-long co-design workshop, hosted by the facilitators, Waag Society, was held with meSch designers and cultural heritage professionals from various Dutch museums including the Dordrecht Museum, Museon, Allard Pierson Museum and the Maritime Museum. Prior to the workshop, each of the cultural heritage professionals was asked to bring with them a museum artefact (either replica or authentic) and content associated with the artefact from their own institution. At the beginning of the workshop, 5 prototypes that meSch had built were introduced and demonstrated to the cultural heritage professionals. The cultural heritage professionals were then asked to choose whichever prototype they felt could best communicate their content. On choosing a prototype, each cultural heritage professional collaborated with one of the designers of the prototype that he/she had chosen.

"The exploratory lab at WAAG was very important, because it meant we could be involved in the process of thinking about what is needed and it allowed us to think about all of the different ways that you could use technology. It was also really great to see the perspective of the other museums."

meSch Cultural Heritage Professional



Collaborative work on repurposing the prototypes.

#### Process (continued)

The mixed cultural heritage professional / designer groups worked together to consider how these prototypes could be repurposed for their own exhibits and museums. While discussing ideas, each of the groups used different co-design methods including *Card Metaphors* and *Narrative Scenarios* to tease out how the content could be portrayed through the prototypes. They described how they would like to portray content to a visitor through the use of the prototype (i.e. through what forms of outputs: projections, audio-visual content) and why they felt certain outputs would best portray certain content. The cultural heritage professionals were encouraged to build on their knowledge of the museum artefacts and on their ideas for visitor engagement in their museums so as to envision new interactive experiences for visitors.

They were also asked to think about how the prototypes could be physically re-designed in terms of form factor and material to suit their needs. To this end, *Low Fidelity Prototyping* helped the groups imagine the physical capabilities of the objects in linking the content to the interaction possibilities. This combination was then tested and refined and at the end of the workshop each of the repurposed prototypes was demonstrated to the other participants.

### **Case Study 4 Interactive Exhibits for Outdoors Heritage Sites**



Working at Sheffield General Cemetery.

#### **Project Description**

Designing exhibits for outdoor heritage sites presents a particular set of complex challenges including visitor interpretation, visitor access and variable environmental conditions. This case study describes collaborative work with volunteers at the Sheffield General Cemetery on how novel technological installations could support the activities of visitors. Following a co-design approach, designers and volunteers worked closely in both documenting and reflecting on the complexities of the site, and in exploring design ideas and rapid prototypes of tangible interaction concepts to be discussed and evaluated on site.



The Companion Novel.

#### **Outcomes**

Co-design between the volunteers at Sheffield General Cemetery and meSch designers resulted in the development of the Companion Novel prototype, a multipoint auditory narrative system for amplifying the emotional and interpretative dimension of the visit of outdoor heritage sites with particular historical and emotive values. The Companion Novel prototype was subsequently tested for a second outdoor site - at the WWI trenches of Nagià Grom, under the tutelage of the Museo Storico Italiano Della Guerra in Italy.

#### "Cultural heritage institutions and museums are very good at improving on the thing that they are already

doing, they have a certain way of working but helping them to work and think in a different way, it's a huge challenge."

meSch Cultural Heritage Professional

#### **Process**

Throughout 2013, meSch designers at Sheffield Hallam University worked with volunteers from Sheffield General Cemetery to discuss and explore novel interaction strategies for visitors. The Sheffield General Cemetery is a conservation area of rich historical, social and natural heritage located in Sheffield, England. As well as a historical park displaying significant works of art and architecture, the cemetery is also a local nature reserve. The cemetery is managed by a community group that organizes volunteer work for conservation, guided tours and other community initiatives.



Working with volunteers at the cemetery.

#### **Process (continued)**

The initial co-design phase involved the meSch team carrying out observations at the site. Following this, the meSch team undertook *Field Walks* around the Cemetery. The volunteers were also shown sketches of the design concepts as created by the meSch design team, with the idea to inspire the volunteers to join in co-design activities and propose novel interaction concepts of their own. The range of ideas covered by the concepts included "portable" artefacts that visitors could take with them around the cemetery, as well as standalone installations for particular areas of the site. Subsequently, a creative workshop around the design concepts was organized by the meSch team at Sheffield Hallam University in order to encourage the volunteers to give feedback and to suggest their own ideas for tangible interactive artefacts, or modifications and add-ons to the concepts the team had shown them. Other design constraints were discussed at length: for example how to design technology that would work as effectively in different environmental conditions, how to overcome power issues, wear and tear and possible anti-social behaviour.

Following on from this, an initial set of prototypes was developed by meSch as an attempt to transform design ideas into working installations. One of these was the Companion Novel prototype which the team developed into a fully working prototype for testing at the cemetery. Based on an interactive book-like device that visitors carry with them while walking the ground, the book is complemented by a set of Bluetooth speakers located at points of interest (hotspots) and used to play relevant content. The content is location-dependent and is organized into different thematic threads that the visitor can select by changing the position of a bookmark in between the pages of the book.



#### **BEFORE YOU BEGIN**

### **IMPORTANT CONSIDERATIONS**

DESIGN IS ITERATIVE

Designs may go through several rounds of review and revision to ensure that all these needs are met.

BE ADAPTABLE

Working with technology can sometimes mean having technical glitches, be open to low-tech alternatives.

BE CREATIVE

Remember the purpose is to drive new ideas, don't dismiss ideas at an early stage, on technical grounds.



Try to get people with different skills and interests involved, for example, if it's a large organisation, ask people from across different sectors to collaborate or if it's a smaller organisation, try collaborate with a local computer group or Fablab.



Be flexible with the time you take for every co-design method. Adapt it to the workflow of the participants and the energy in the group.

#### **METHODS OVERVIEW**

## OVERVIEW OF THE CO-DESIGN METHODS (AS USED IN MESCH)



Inspiration methods will help you to come up with new ideas. They include appreciative inquiry, field walks and brainstorming.



Ideation methods are used to help further develop a concept. They include personas, narrative scenarios, bodystorming and card metaphors.



Prototyping methods help to make concepts physical. They include sketching in hardware and low fidelity prototyping.



Reflection methods can be used at the beginning and the end of the co-design process to allow stakeholders to think about and evaluate the design. They include interviews and focus groups.

#### **APPRECIATIVE INQUIRY**

Appreciative Inquiry is a collaborative approach to appreciating the value of the present situation in order to suggest positive directions for the future. This approach is in contrast to more conventional methods that start with a problem that needs to be fixed.







Discussing positive museum experiences in small groups.

#### Why did we use this method?

We used appreciative inquiry at the beginning of the project as an icebreaker and inspiration exercise in order to uncover information about the values, practices, hopes and goals of the different individual participants. We discussed personal encounters and experiences with heritage from visiting museums and exhibitions. The prompting question was: "What was your best experience with cultural heritage and what factors led to that experience?

#### How did we use this method?

The entire group was briefed orally about the task: participants were encouraged to form pairs and share what they felt were remarkable experiences of cultural heritage. After exchanging information, they were asked to write down on postits five keywords around these experiences. The pairs were given 10 - 15 minutes to discuss and form the keywords. At the end, the post-its were placed on a wall. Similar keywords were then grouped together trying to find commonalities between the experiences and the factors that led to them. The outcomes were discussed in a plenary.

#### What were some of the example outcomes of this method?

The results of the Appreciative Inquiry were used as inputs into the design requirements of future prototypes and experiences.

#### **Further details**

This activity took place at the first consortium meeting at the beginning of the project and took an hour to complete. It involved 25 participants and 1 facilitator. The participants included a mix of cultural heritage professionals, designers, technologists and researchers. The facilitator was from Waag Society. All the people involved were part of the meSch project. The activity took place at Sheffield Hallam University.

#### **FIELD WALKS**

Field walks involve the use of walking as a way to gather insights on the embodied experience of a place. They entail conversations while moving along a path, which are documented as instances that are connected to a particular place. While walking and talking, creative ideas are exchanged and discussed.







Undertaking the field walk at Sheffield General Cemetery

#### Why did we use this method?

Field walks were undertaken with a local community of cultural heritage volunteers at the historic Sheffield General Cemetery in order to inform, inspire and realise concepts for interactive installations that would support the volunteers in engaging visitors and communicating the history of the place to the public.

#### How did we use this method?

Each volunteer participating was asked by the facilitator to lead a walk around the Cemetery following whatever path he or she preferred. During the walk, the volunteer guides were asked to describe their involvement with the cemetery, their opinions on how the local community and visitors benefit from the site and to show their favourite places around the cemetery. A second facilitator documented the walks visually using video recordings and maps, in order to link the conversation to the physical location.

#### What were some of the example outcomes of this method?

Following the field walks, a number of interaction concepts that addressed the concerns and needs of the participants were developed as part of further co-design workshops and brainstorming sessions.

#### **Further details**

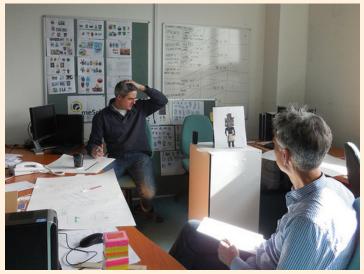
The field walks took place at Sheffield General Cemetery in 2013. They involved 8 cultural heritage volunteers and number of meSch researchers. The walks lasted between 70 and 90 minutes.

#### **BRAINSTORMING**

Brainstorming is the rapid co-creation of ideas. It is used to tap into a collective body of knowledge and creativity and to foster innovation.







Brainstorming ideas for the ECSITE showcases

#### Why did we use this method?

In addition to case studies 1 and 2 described in detail above, brainstorming was used to generate ideas that lead to the creation of the interactive showcases at the European network of science centres and museums annual conference (ECSITE) that was organised and hosted by Museon, one of the meSch partner museums. This was a collaboration between a cultural heritage professional and interaction designers to design and develop a novel exhibition concept for visitor interaction as part of a temporary museum display. Realising the exhibit in a short space of time was one of the main challenges and so it was decided to have an intensive two-day co-creation session involving partners from the Sheffield Hallam University and Museon to focus on the design.

#### How did we use this method?

The co-design session began by brainstorming concepts. The participants used a large whiteboard to write down and share their ideas. They were encouraged to generate as many ideas as possible. Each person described the idea to the group as they placed it on the wall or board. The others were encouraged to share their thoughts on the ideas and to build on them.

#### What were some of the outcomes of this method?

From this brainstorming session, the group arrived at the idea of augmented showcases that would allow the crowdsourcing of a museum exhibition. According to this, Museon was going to use crowdsourcing as a way of selecting artefacts from storage for a temporary museum exhibition. The popularity of the artefacts on display was to be measured through sensors, while part of the information that was displayed was visitor generated via Twitter. Visitors were going to add their comments to the text displayed by the artefacts. The design also included an easy way for the exhibition curators to update the interactive behaviour of the showcases when changing artefacts in response to their popularity. The showcases were subsequently build by the team at the Sheffield Hallam University and exhibited during the ECSITE conference from 22nd – 24th of May 2014 at the Museon in Den Haag.

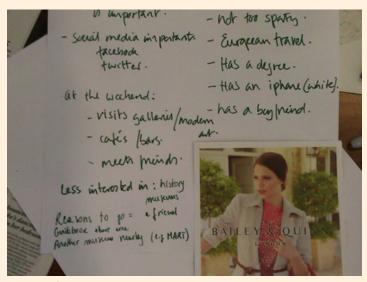
#### **Further details**

The session took place in Sheffield in April 2014 and involved a cultural heritage professional from Museon, a specialist in novel interfaces, an interaction designer, several content specialists and students.

#### **PERSONAS**

Personas are fictional characters created to represent different user types of a product or service. They are used to shape the design focus and to identify opportunities and challenges in designing for different user groups. They are usually devised and refined from information collected from real users.







Details of a constructed persona and presenting the persona to the group.

#### Why did we use this method?

We used personas to identify what experiences particular visitor groups would like to have in a museum. As part of the first meSch consortium meeting, we wanted to initiate discussions surrounding the potential visitor groups interacting with meSch technologies and their motivations for visiting museums.

#### How did we use this method?

The entire group was subdivided into smaller groups of 4 - 5 people. Each group was given a brief on a visitor persona to work with; examples included a grandmother, a grandfather, a father and a child. Each group formed a story relating to what may motivate their persona to visit a museum and what they would like to experience as part of a museum visit. Each group was given materials (paper, magazine cut -outs, markers, etc.) for the purpose of visualising their given persona. Each group had to create a story or scenario of what kind of experience they would like in a particular kind of museum.

#### What were the outcomes of this method?

At the end of the session, each group presented their given persona in poster format. Developing the personas motivated the entire group to build understandings of the potential visitor groups and how they would potentially interact with meSch technologies.

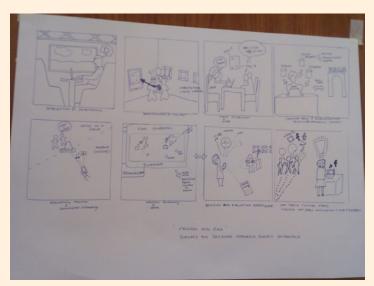
#### **Further details**

This activity took place at the beginning of the project and took approximately 2 hours to complete. It involved 25 participants and 1 facilitator. The participants included a mix of cultural heritage professionals, designers, technologists and researchers. The facilitator was from Waag Society. All the people involved were part of the meSch project. The activity took place at Sheffield Hallam University.

#### **NARRATIVE SCENARIOS**

Narrative scenarios are used to establish the details of how the proposed design is likely to be used. They challenge the participants to carefully map out how an intended design would be used and in doing so, the completed narrative scenarios can help envision how the product/service might be used in real life situations.







The completed narrative scenario presented as a storyboard and presenting the narrative scenario to the group.

#### Why did we use this method?

As part of meSch, the narrative scenario method was used for the production of detailed storyboards depicting different use cases for the authoring tool, an important future output of the meSch project to be used as an on-line resource for cultural heritage professionals. In this situation, we wanted to imagine how the yet-to-be developed authoring tool might be used by 3 different user groups of cultural heritage professionals: those who have never used technology before in exhibitions (beginner); those who have more experience using technology (expert); and those who intended to re-use a technology they already had (technology-push).

#### How did we use this method?

The activity began with a short presentation by the facilitator who gave a clear outline of the 3 different user groups (beginner, expert, tech-push). Following the presentation, the brief asked that each group of 3-5 participants collectively formulate a narrative scenario for how they would imagine one of the assigned user groups (beginner, expert, tech-push) would use the authoring tool. Four groups were formed: two groups developed a storyboard for the beginner scenario; one group developed a storyboard for the expert scenario; and one group developed a storyboard for the tech-push scenario. With the aid of storyboard templates, each group was asked to visualise the use of the tool across eight scenes. On completion, each group presented their storyboards.

#### **Further details**

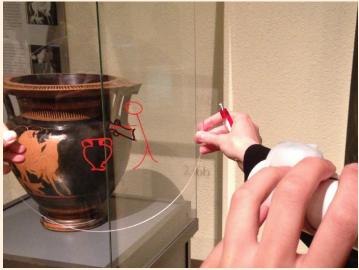
This activity took approximately 1/2 a day to complete. It took place at approximately 1 year into the project. It involved 16 participants and 1 facilitator. The participants included a mix of cultural heritage professionals, designers, technologists and researchers. The facilitator was from the Waag Society. All the participants involved were members of the meSch project team.

#### **BODYSTORMING**

Bodystorming is a method of physically testing new ideas. It requires the physical setting up of a situation with objects and people. The most important aspect of bodystorming is the manner in which people act and interact in the physical environment.







Physically testing interaction concepts in the actual museum context.

#### Why did we use this method?

Bodystorming was used as a method to explore new interaction concepts in gallery at Allard Pierson Museum and Museon. In this case, bodystorming was used alongside low-fidelity prototypes for the generation of unexpected ideas that might not be realized by talking or sketching. Bodystorming in the context of the actual museum setting helped the meSch team further develop the prototype concepts.

#### How did we use this method?

Following an investigation by the designers into the specific needs of the 2 museums, a number of concepts were developed as low fidelity prototypes. In order to test these concepts out in the real museum setting, bodystorming was employed as a technique. Small groups were formed, each including at least a designer and a cultural heritage professional. Each group walked through the museum with either one of the low fidelity prototypes (the Compass or the Monocular). As the participants moved through the spaces, the facilitator (designer) allowed the participants (cultural heritage professionals) to freely explore the concept and how it could be relevant for them. The facilitator asked them to verbalize what they are experiencing (challenges, surprises, other interesting discoveries). The facilitator made notes on what they were saying.

#### What were some of the example outcomes of this method?

By simply moving around and becoming aware of the physical spaces, the participants could make more detailed assessments and suggest further developments of the prototypes based on the physical experience of using them in the museum context. The Loupe was finally developed as an extension of the Compass and Monocular concepts. (For more details, please see the method 'Low Fidelity Prototyping'.)

#### **Further details**

This activity took place over a number of weeks at a local level between three partner institutions based in the Netherlands. The participants were a mix of cultural heritage professionals and designers. The facilitator was from Waag Society. All the people involved were part of the meSch project.

#### CARD METAPHORS

Card metaphors are used to physically and easily demonstrate how complex design ideas can be re-purposed and organised.







Using card metaphors and demonstrating the Loupe prototype.

#### Why did we use this method?

Many of the meSch prototypes are very complex and it can be difficult for beginners in the design process (like the cultural heritage professionals involved in our workshops) to visualise exactly how prototypes and design concepts can be created, modified and re-purposed for their museums. By using card metaphors with the Loupe prototype, previously developed by the project, we were able to show to the cultural heritage professionals what kind of media, gestures and designs the prototype supported to get them started.

#### How did we use this method?

We analysed the Loupe prototype in terms of its functionality and capabilities. We wrote down the kinds of content and interaction that the Loupe offered. Common headings were then used to describe these: content, presentation, target, and gesture. This information was prepared on colour-coded cards before the workshop commenced.

#### What were some of the example outcomes of this method?

There were two Loupe prototypes at the workshop. We used the cards to demonstrate to the cultural heritage professionals what could be modified before re-purposing the prototype to fit the scenario. However, we emphasised that they were not limited to those kinds of content, presentations, targets and gestures. They helped guide the formation of the scenarios.

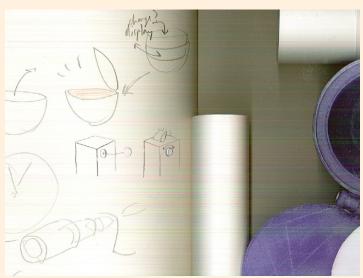
#### **Further details**

This activity took approximately 1/2 a day to complete. It involved 15 participants and 1 facilitator. The participants included a mixture of cultural heritage professionals, designers, technologists and researchers. The facilitator was from Waag Society. It involved cultural heritage professionals, designers and technologists from meSch and a group of external cultural heritage professionals.

#### LOW FIDELITY PROTOTYPING

Low Fidelity Prototyping is a simple way to make ideas tangible, to learn through making, and to quickly get key feedback on design concepts.







Original sketch of the compass and using the compass lo-fidelity prototype at the museum.

#### Why did we use this method?

Low Fidelity Prototyping was used when exploring concept solutions to address the needs of Museon and Allard Pierson Museum. It allowed the cultural heritage professionals to express specific needs for their museums and to explore creative ideas.

#### How did we use this method?

During the early stages of the meSch project, a number of workshops between Waag Society and the museums Allard Pierson Museum and Museon resulted in the concept development and testing of low-fidelity prototypes in order to match the challenges of the two museums. Following consultation with the two museums, designers from Waag society produced physical prototypes demonstrating the concepts that they wish to test. The goal here was to make something tangible that is good enough to get the idea across. With the finished low-fidelity prototypes, the designers tested them in the context of the museum, putting the prototypes in the hands of the cultural heritage professionals and asking them what they made of it, making sure to get feedback to allow for the possibility of a second round of iteration of the prototype.

#### What were some of the example outcomes of this method?

One of these low fidelity prototypes was the Compass, which was designed to provide a solution to navigation issues at Museon. The idea behind the Compass was to create routes through the museum following the different interests and profiles of the visitors. The Monocular was another low-fidelity prototype created to provide a means of layering information at Allard Pierson Museum so that visitors could explore the different perspectives and layers of one single artefact. The Loupe was finally developed as an extension of the Compass and Monocular concepts as it allowed for dual functionality - to act as a wayfinding device and to explore the different perspectives/layers of a single artefact.

#### **Further details**

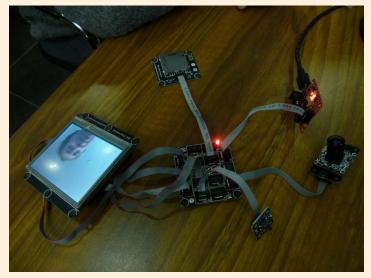
This activity took place over a number of weeks at a local level between three partner institutions based in the Netherlands. The participants were a mix of cultural heritage professionals and designers. The facilitator was from Waag Society. All the people involved were part of the meSch project.

#### SKETCHING IN HARDWARE

Sketching in hardware is commonly used to test ideas quickly as it allows non-technical users to experience what can be created with technology within a limited amount of time. Sketching in hardware activities are usually facilitated by a designer and/or a technical expert.







Building with .NET Gadgeteer

#### Why did we use this method?

As part of the first meSch consortium meeting, we wanted the different partners (cultural heritage professionals, designers, technologists etc.) to experience what interactive exhibits could be created by non-technical users with existing off the shelf hardware prototyping and DIY technology within a very limited amount of time.

#### How did we use this method?

First of all, the modular rapid prototyping platform .NET Gadgeteer was demonstrated to the entire group. The project members were divided in groups of 4-5 participants, each group consisting of a mix of cultural heritage professionals, designers and technologists (there were at least one cultural heritage professional and one technologist in each group). The groups were given the challenge to devise an interactive experience for a museum. Collaborative work then took place in teams - discussing concepts, sketching on paper, sketching in hardware (with the aid of .NET Gadgeteer experts) in order to develop prototypes. Finally each group presented their idea and prototype to the other groups.

#### What were some of the example outcomes of this method?

Based on the ideas shared by the curator, the technologists and designers, one group produced a prototype for a soldier's bag using the .NET Gadgeteer modules, based on one of the project partner museums collection - Museo Storico Italiano della Guerra. The concept envisaged a quest designed for young visitors throughout the museum in search for a set of replica objects related to the World War I. A small display showed the list of objects to be found. As the objects were retrieved and put in the bag, they disappeared of the list. The quest was complete when the list contained no more items. Another important outcome was to engage non-technical participants in exploring technology and learn about the possibilities it can offer.

#### **Further details**

This activity took place at the first consortium meeting at the beginning of the project and took half a day to complete. It involved 18 participants and 1 facilitator. The participants included a mixture of cultural heritage professionals, designers, technologists and researchers. The facilitator was from the University of Stuttgart. All the people involved were part of the meSch project. The activity took place at Sheffield Hallam University.

#### **INTERVIEWS**

Interviews are used to develop a deeper understanding of a given situation through well thought out questioning and follow up.







Interviewing co-design participants

#### Why did we use this method?

As part of the co-design process, we wanted to reflect upon the co-design activities we had held. Our goal was to identify the experience of the cultural heritage professionals, designers and technologists in the project of the co-design activities we had used.

#### How did we use this method?

We approached cultural heritage professionals and designers within the project who had participated in at least one of the co-design activities throughout the meSch project. The interviews were semi-structured: we prepared a number of questions to ask them beforehand as a guide. However, we let the interviewee guide the conversation so long as the topic was relevant, particularly if they had interesting opinions and insights on the co-design activities. All of the the interviews were recorded using an audio recorder.

#### What were some of the example outcomes of this method?

The audio recordings of the interviews were transcribed. The transcriptions were then analysed and themes were formulated. These themes were subsequently used as input to a focus group. (For more details, please see the method 'Focus Groups'.)

#### **Further details**

The interviews were facilitated by researchers from the University of Limerick. There were 7 participants interviewed. Each interview lasted between 30 and 70 minutes. All the people involved were part of the meSch project.

#### **FOCUS GROUPS**

A focus group involves bringing together a group of people to share their opinions, concerns and perceptions toward ideas, concepts, services, plans, goals etc..







Participation in discussion during the focus group.

#### Why did we use this method?

As part of the co-design process, we needed to reflect upon the co-design activities we had held. Our goal was to identify the opinions of a broad range of participants (designers, technologists, cultural heritage professionals) on the co-design methods in order to better support the cultural heritage professionals, designers and technologists in working together.

#### How did we use this method?

In preparation for the focus group, we analysed the reflection interviews we had with the cultural heritage professionals and designers in the project relating to the co-design activities we held. From this analysis, we identified key themes to discuss at the focus group including bringing museum needs into design and design collaboration. Within each of the themes, we identified key questions to ask to the group - these questions had a narrow focus as we were looking for specific details relating to interesting outcomes from the interviews. In doing so, we tried to formulate questions that would generate discussion amongst the group. We ensured to invite those we had interviewed, but also other participants so they could share their opinions. The focus group began with a presentation by the facilitators. It outlined the co-design activities held so far (as a reminder for the participants) and the discussion themes. Following this, an open discussion was initiated to allow for the input of the participants. The focus group was video and audio recorded.

#### What were some of the example outcomes of this method?

Following the focus group, the opinions of the participants was analysed. The output of the focus group has been used as input to the planning of subsequent meSch co-design activities.

#### **Further details**

This activity took place at a meSch consortium meeting at the University of Stuttgart in July 2014 and took 2 hours to complete. It involved 15 participants and 2 facilitators. The participants included a mixture of cultural heritage professionals, designers, technologists and researchers. The facilitators were from the University of Limerick. All the people involved were part of the meSch project.





# APPRECIATIVE INQUIRY

Appreciative Inquiry is a collaborative approach to appreciating the value of the present situation in order to suggest positive directions for the future. This approach is in contrast to more conventional methods that start with a problem that needs to be fixed.



Estimated Timescale: 1 Hour

Materials: Pens, Post-Its

#### Who should be involved?

Different partners of mixed skillsets (cultural heritage professionals, designers, technologists etc.)

### Why should you use this method?

As an icebreaker and inspiration exercise in order to uncover information about the values, practices, hopes and goals of the different participants.

#### STEP 1

- Divide larger groups into pairs.
- Have the facilitator deliver a clear outline of brief. For example, ask that each person describe a story about a memorable encounter with cultural heritage to their working partner.
- Provide each group with materials pens and Post-Its

### STEP 2

Each partner to jot down on Post-Its the characteristics mentioned by the other while they are sharing the stories.

### STEP 3

- Using a wall or flat surface, take turns to arrange the Post-Its according to observed patterns.
- Based on the observed patterns, create a list of factors that help make a cultural heritage site experience memorable.

# STEP 4

- Each of the groups present the findings to the other groups, discussing the importance of the personal experience at cultural heritage sites.
- Allow others to contribute constructive feedback and to ask questions.

### WHAT NEXT?

 The results of the Appreciative Inquiry can be used as inputs into the design of future products, services or experiences.

- Make sure that the brief is clear and that the facilitator is present to reinforce the objectives of the brief as the exercise progresses
- Ideally, the facilitator is not part of any pair, so the ideas are not influenced by the facilitator and each pair is supervised and supported uniformly.



# FIELD WALKS

Field walks involve the use of walking as a way to gather insights on the embodied experience of a place. They entail conversations while moving along a path, which are documented as instances that are connected to a particular place. While walking and talking, creative ideas are exchanged and discussed.



Estimated Timescale: 1-2 Hours (depending on the length of the walk)

Materials: Audio / Video Recorder, Pens & Paper

#### Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

Field walks are a good way to learn about the people and environment that you are designing for. Doing a field walk will reveal not just the physical details of the participant's environment, but also the values, routines and habits that are connected to it.

### STEP 1 (ADVANCE PREPARATION)

- Arrange with the person that you're designing for to do a field walk of the specific environment that you are interested in learning about. This could be the museum galleries or their workplace.
- When organising the field walk, allow for one participant and two facilitators, (one to ask questions and the other to record / take notes.)
- Survey the space where the walk will take place to familiarise yourself with it. Prepare the conversation guide and/or
  questions to be followed during the walk. In the case of having a pre-determined path, prepare the trajectory of the
  walk to be followed.

## STEP 2

• Have the facilitator ask the participant to lead a walk around the chosen environment, following whatever path he or she prefers. Or in the case of having decided that all participants should follow the same trajectory, gently guide them along the pre-determined route.

### STEP 3

- During the walk, have the facilitator structure the conversation along the conversation guide, or (if a more structured approach is preferred) ask the participant a range of questions relating to the environment, for example, asking them to describe their working routines in the environment, their opinions on visitors and what their favourite places are.
- Have a second facilitator document the walk using video or audio recordings in order to link the conversation to the physical location. Alternatively, they could also take notes and sketch out the locations on a map.

## WHAT NEXT?

- Following the field walks, review the notes and recordings in order to gain an understanding of the concerns and needs of the participant. This can be used as input into the user requirements of the intended design.
- In the weeks after using the method, give feedback to the participants to show how input has been used (so the dialogue continues.)

- This method works best in a one-on-one situation i.e. with one participant and one facilitator. Ideally a second facilitator will be available to document the walk using note takings and video/audio recordings.
- Ensure to get permission to take photos / video recordings, before the field walk begins.
- As a facilitator, pay close attention to the environment as you walk through it, the behaviours you see there, what's on the walls, who uses it, and where it's located. All are key pieces of information.



# **BRAINSTORMING**

Brainstorming is the rapid co-creation of ideas. It is used to tap into a collective body of knowledge and creativity and to foster innovation.

Estimated Timescale: 1 Hour

Materials: Pens, Post-Its, a large sheet of paper or whiteboard

### Who should be involved?

Anyone - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

If you are willing to explore creative ideas and to come up with novel ideas.

## **STEP 1 (ADVANCE PREPARATION)**

Prepare a large piece of paper, wall or whiteboard on which to collect all the Post-its post-exercise.

### STEP 2

- Provide everyone with materials pens and Post-Its
- Have the facilitator pose the question or prompt the group what to answer.

### STEP 3

• Each person jots down on post-its their ideas. Encourage the participants to generate as many ideas as possible.

### STEP 4

- Have each person describe to the group the idea as they place it on the wall or board.
- Encourage the others to share their thoughts on the ideas and to build on the ideas.

### WHAT NEXT?

• The results of the brainstorming can be used as inputs into the design of future products, services or experiences.

- If the means to do so are available, write down the question (on a whiteboard, for example) so that it is visible to everyone throughout the exercise.
- The best approach when brainstorming is to promote openness, lots of ideas, and creativity over immediate feasibility.
- Brainstorms work best when the group is positive, optimistic, and focused on generating as many ideas as possible.





# **PERSONAS**

Personas are fictional characters created to represent different user types of a product or service. They are used to shape the design focus and to identify opportunities and challenges in designing for different user groups.



Estimated Timescale: 1-2 Hours

Materials: Cardboard, Pens & Paper, Image Material (Old Magazines, etc)

### Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

Personas are a way of representing potential future users (for example, museum visitors) in the design process. Using personas helps to build understandings of their values and thought processes.

### STEP 1 (ADVANCE PREPARATION)

Write a brief - defining a set of personas.

### STEP 2

- Divide larger groups into small groups of 3-5 people (ideally people of different profiles).
- Have the facilitator designate each group with a single persona on which to work with. For example, in the case of
  museum visitors, the personas might include a grandmother, a grandfather, a father and a child.
- Ask each group to form and visualise a story relating to what may motivate their persona to visit a museum and what they would like to experience as part of a museum visit.

### STEP 3

- Provide each group with materials (paper, magazine cut-outs, markers, etc.) for the purpose of visualising their given persona.
- Each group had to create a story or scenario of what kind of experience they would like in a particular kind of museum.

### STEP 4

- Ask each group to present their given persona in poster format to the other groups.
- Allow others to contribute constructive feedback and to ask questions.

# WHAT NEXT?

• Use the personas as formed by the groups as a springboard to further conversation or to explore new areas in the design process.

- Encourage the groups to make the personas as visual as possible.
- Consider that not all visitor groups will fit into the given set of personas. Encourage the cultural heritage professionals in the group to talk about their typical visitor groups.



# NARRATIVE SCENARIOS

Narrative scenarios are used to establish the details of how the proposed design is likely to be used. They challenge the participants to carefully map out how an intended design would be used and in doing so, the completed narrative scenarios can help envision how the product/service might be used in real life situations.



Estimated Timescale: 4 Hours

Materials: Storyboard Templates, Pens & Paper

### Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

If you are willing to explore creative ideas and to come up with novel ideas.

If you wish to emphasise ownership, the method doesn't require any specific skills and so is open to all.

### **STEP 1 (ADVANCE PREPARATION)**

Write a brief - defining who the intended user(s) of the product might be and prepare storyboard templates.

#### STEP 2

- Divide larger groups into small groups of 3-5 people (ideally people of different profiles).
- Have the facilitator deliver a clear outline of the intended user(s)/persona for whom they must devise a scenario. Ask
  that each group collectively formulate a scenario for how they would imagine the future use of the product/service
  over a given number of scenes, as per template. Encourage the groups to draw comic book style scenes. Scenes could
  contain specific locations, objects, interactions, speech and thought bubbles, etc.
- Provide each group with materials a storyboard template and pens and paper

### STEP 3

- Each group works collaboratively discussing the sequence of events and narrating the scenario with sketches and text for each of the scenes on the template.
- While they are working, remind the groups to identify the pros/cons/limitations/constraints of the scenario, as a way of testing out what is relevant to the design outcome.

### STEP 4

- Each of the groups present the storyboards to the other groups
- Allow others to contribute constructive feedback and to ask questions.

# WHAT NEXT?

- Allow the possibility of a second round of adaptation so as to be able to include things that you may have missed out on, in the discussion.
- In the weeks after using the method, give feedback to the participants to show how input has been used (so the dialogue continues.)
- The completed narrative scenarios can be analysed and used as input into the user / system requirements of the product/service.

- Make sure that the brief is clear and that the facilitator is present to reinforce the objectives of the brief as the exercise progresses
- Ideally, the facilitator is not part of any group, so the ideas are not influenced by the facilitator and each group is supervised and supported uniformly.
- Ensure good timekeeping so that the groups move on from scene to scene and complete the task on time.
- Ensure that the mix of people in the groups is well balanced.



# **BODYSTORMING**

Bodystorming is a method of physically testing new ideas. It requires the physical setting up of a situation with objects and people. The most important aspect of bodystorming is the manner in which people act and interact in the physical environment.



Estimated Timescale: 30 - 60 minutes

Materials: Audio / Video Recorder, Pens & Paper

#### Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

Bodystorming can be used as a quick and tangible way to explore a new idea or experience. By physically experiencing a situation, the intention is to generate unexpected ideas that might not be realized by talking or sketching.

### STEP 1 (ADVANCE PREPARATION)

- Decide on what context you wish to bodystorming in. For example, if you are trying to come up with new ideas in the
  context of a museum gallery, try walking through the museum, to come up with new ideas. If you are designing a new
  experience for an outdoor heritage site, trek through the site.
- Determine what it is that you're looking to test. For example, a type of interaction, a response to an object, etc.
- Devise a rough list of tasks that you want the bodystorming participant to do in that specific context.

### STEP 2

 Form small groups of 2- 4 people, ideally each group should include at least a designer and a cultural heritage professional.

## STEP 3

- Ask the participant to walk through the space and go through the list of tasks, physically acting them out one at a time. As they are going through the tasks, ask them to verbalize what they are experiencing (challenges, surprises, other interesting discoveries).
- Have a second facilitator document what the participants are saying whilst going through the tasks.

### STEP 4

• After the participant has completed the run through of tasks, debrief the process by asking them questions on their experience, for example, What did you learn from the process?, What surprised you about going through the process? Can you suggest any further ideas based on the physical experience?

### WHAT NEXT?

- Following the bodystorming exercise, review the notes and recordings in order to gain an understanding of the physical experience of the participants. This information can be used as input into the user requirements of the intended design.
- In the weeks after using the method, give feedback to the participants to show how input has been used (so the dialogue continues.)

- Don't be afraid to get physical! Bodystorm by moving around and becoming aware of the physical spaces and experiences.
- Pay close attention to decision-making directly related to your environment and related emotional reactions.
- The use of props (for example, low fidelity prototypes) can be highly effective tools in bodystorming.



# CARD METAPHORS

Card metaphors are used to physically and easily demonstrate how complex design ideas can be re-purposed and organised.

Estimated Timescale: 1-2 Hours

Materials: Pre-prepared Cards

# Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

Design concepts can be complex and it can be difficult for beginners in the design process to visualise exactly how they can be created, modified and re-purposed. By using card metaphors, you can break down the components of a design object and demonstrate what kind of media, gestures and functionality can be supported by the design object.

### STEP 1 (ADVANCE PREPARATION)

- In order to prepare the cards, decide on a design object and analyse it in terms of its functionality and capabilities.
- Take note of the kinds of content and interaction that the design object can offer. Use common headings to describe these, for example, content, presentation, target, and gesture.
- Prepare the cards using the headings to map out the different functionalities.

### STEP 2

- To begin the group session, spread the cards out so that they are accessible to all group members.
- Have the facilitator ask the participants to choose a card that represents an answer to a specific question, for
  example, what is your expectation of the design object? Remember to pose a question that relates specifically to the
  group's purpose for coming together.

### STEP 3

• Ask the participants to describe to the rest of the group how the card answers the question, as represented from their own unique perspective.

### STEP 4

Allow others to contribute constructive feedback and to ask questions.

### WHAT NEXT?

- The results of the Card Metaphors exercise can be used as inputs into the design of scenarios.
- In the weeks after using the method, give feedback to the participants to show how input has been used (so the dialogue continues.)

- Have the cards available as an entry activity, so that they can spark conversations, helping the participants get to know each other and setting the tone for the workshop.
- Emphasise that they are not limited to the kinds of content, presentations, targets and gestures on display and encourage the participants to suggest other functionalities.





# LOW FIDELITY PROTOTYPING

Low Fidelity Prototyping is a simple way to make ideas tangible, to learn through making, and to quickly get key feedback on design concepts.

Estimated Timescale: 1-2 Hours (depending on kinds of ideas being prototyped)

Materials: Cardboard, Pens & Paper, Glue, Physical Artefacts

### Who should be involved?

Different partners of mixed skillsets (cultural heritage professionals, designers, technologists etc.)

### Why should you use this method?

To allow participants to express specific needs for their museums and to explore creative ideas through the building of quick and easy physical prototypes.

### STEP 1

- Form groups of 2- 3 people.
- Provide participants with materials.

### STEP 2

- Ask the groups to identify a challenge that the museum faces, e.g. navigation between galleries, physical interaction
  with exhibits, etc. Based on the challenge, ask them to come up with an idea for a prototype that will address this
  challenge.
- Encourage the groups to collectively make a physical prototype that demonstrates the idea. The goal here is to make something tangible that conveys the idea - no need to make it perfect, it just needs to be good enough to get the idea across.

## STEP 3

- Each group works collaboratively first discussing different concepts.
- Ask each group to decide on one concept and to build an initial prototype for the concept. Allow a short amount of time for this.

### STEP 4

- All of the groups come back together and each of the groups present the low fidelity prototypes to the other groups.
- Allow others to contribute constructive feedback and to ask questions.

# WHAT NEXT?

- Test out the low fidelity prototypes in the actual physical museum setting with bodystorming and make observations on how the concept could be extended.
- Allow the possibility of a second round of adaptation so that groups can iterate on their ideas.

### Tips for successfully carrying out this method

 Allow only a short time for building the initial prototype so that the groups build something quickly but do not spend too much time on the details.





# SKETCHING IN HARDWARE

Sketching in hardware is commonly used to test ideas quickly as it allows non-technical users to experience what can be created with technology within a limited amount of time.

Sketching in hardware activities are usually facilitated by a designer and/or a technical expert.



Estimated Timescale: 4 Hours

Materials: Hardware Modules\*, Laptops, Physical Artefacts, Pens & Paper

\* There is a variety of hardware module kits that can be used, e.g. .NET Gadgeteer, Littlebits, Arduino.

### Who should be involved?

Different partners of mixed skillsets (cultural heritage professionals, designers, technologists etc.)

### Why should you use this method?

If you want to experience what interactive exhibits could be created by non-technical users with existing off the shelf hardware prototyping and DIY technology within a very limited amount of time.

#### STEP 1

Have one of the hardware experts present a demonstration of the hardware modules to the entire group.

#### STEP 2

- Form teams with mixed skillsets. You will need at least three team members per group. Each team member will need paper and pens, hardware modules and a laptop.
- Have the facilitator deliver a clear outline of the brief. Ask that each group collectively devise an interactive
  experience for a museum.

### STEP 3

- Each group works collaboratively discussing concepts, sketching on paper.
- With the aid of the hardware experts, the groups work towards transforming their paper sketches into hardware sketches.

### STEP 4

- All of the groups come back together and each of the groups present the functioning prototypes to the other groups.
- Allow others to contribute constructive feedback and to ask questions.

### WHAT NEXT?

- Allow the possibility of a second round of adaptation so that groups can iterate on their ideas.
- The basis functioning prototypes could be altered so as to test multiple possible applications with the same technology.

- Having groups of mixed skillsets is key for this type of co-design exercise.
- Listen carefully to the needs and ideas of the cultural heritage professionals and be cautious not to allow the technology to dominate the development of the prototypes.
- Be adaptable working with technology can sometimes mean having technical glitches, be open to low-tech alternatives.



# **INTERVIEWS**

Interviews are used to develop a deeper understanding of a given situation through well thought out questioning and follow up.

Estimated Timescale: 60 - 90 minutes

Materials: Audio / Video Recorder, Pens & Paper

### Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

Use interviews to understand the hopes, values, motivations and experiences of those you're designing with.

### **STEP 1 (ADVANCE PREPARATION)**

- Identify who you want to interview and arrange the interviews.
- Prepare a set of questions that you would like to ask the participants as a guide for the interview. Questions can be
  open, semi-structured, structured or a mixture of all three.

### STEP 2

- Start by asking broad questions about the participant's life, values, and habits, before asking more specific questions
  that relate directly to the specific topic.
- Allow the participants (interviewees) to guide the conversation so long as the topic is relevant, particularly if they had interesting opinions and insights.
- Record all of the the interviews using an audio recorder.

### STEP 3

• Following the Interviews, review the recordings in order to gain an understanding of the concerns and needs of the participant. This can be used as input into the user requirements of the intended design.

# WHAT NEXT?

• In the weeks after using the method, give feedback to the participants to show how input has been used (so the dialogue continues.)

- Make sure to write down exactly what the person says, not what you think they might mean. This process is all about hearing exactly what people are saying.
- Whenever possible, conduct your interviews in the interviewee's space. You can learn so much about a person's mindset, behavior, and lifestyle by talking with them where they live or work.





# **FOCUS GROUPS**

A focus group involves bringing together a group of people to share their opinions, concerns and perceptions toward ideas, concepts, services, plans, goals etc..

Estimated Timescale: 1-2 Hours

Materials: Audio / Video Recorder, Pens & Paper

### Who should be involved?

Anyone who you're designing with / for - cultural heritage professionals, designers, technologists etc.

### Why should you use this method?

You should use focus groups if you want to come to a quick understanding of a community's life, dynamics and needs. Focus groups can give you a compelling look at how a larger set of the people you're designing for operates.

## **STEP 1 (ADVANCE PREPARATION)**

- Identify the members of the group that you want to be part of the Focus Group. If you're trying to learn something specific, organize the group so that you have the best chance at hearing it.
- Identify key themes that you wish to discuss at the focus group. Within each of the themes, identify key questions that you might wish to ask to the group. In doing so, try to formulate questions that will generate discussion amongst the group.

### STEP 2

• Begin the focus group with a presentation by the facilitator, outlining any relevant background information and the discussion themes.

### STEP 3

- Following this, initiate an open discussion to allow for the input of the participants.
- Have one facilitator ask the questions and another facilitator take notes and capturing what the group is saying. The focus group could also be video / audio recorded.

## WHAT NEXT?

- Following the focus group, review the notes and recordings in order to gain an understanding of the insights of the
  participants. This can be used as input into the user requirements of the intended design. The output of the focus
  group could also be used as input to subsequent co-design activities.
- In the weeks after using the method, give feedback to the participants to show how input has been used (so the dialogue continues.)

- The best focus groups seek to hear everyone's voice, get diverse opinions, and are strategic about group makeup.
- Convene the focus group on neutral ground, perhaps a shared space that everyone will have access to.
- Come prepared with a strategy to engage the quieter members of the group. This can mean asking them questions directly or finding ways to make the more vocal members of the group recede for the moment.





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