Shaping Interactive, Tangible and Multisensory Cultural Heritage Encounters: the meSch project

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Presentation Outline

Introduction
• Digital technologies and the museum visiting experience
• The gap between the digital and the physical
• Back to tangible and embodied interaction

The meSch project
• Challenges
• Vision
• Co-design
• The meSch prototypes
• Evaluation
• Concluding reflections and discussion
Interactive digital technologies for cultural heritage have a long history and potential

Providing new possibilities for access and interpretation as part of a variety of heritage practices

Different platforms...

digital content formats...

different types of museum interactives...
Museums and digital technologies...

• Digital libraries and archives
• Documentation and Information Systems
• Museum web-sites & Web 2.0: Social media and networks / crowdsourcing / participatory science
• Video Games
• AR and VR applications
• Audio/multimedia guides
• Museum interactives
50% did not touch the table at all; 17% had longer than a single-click interaction 
“[Only] few educational conversations were observed at the table except for 
reading aloud”

Eva Hornecker

“I don’t understand it either but it’s cool” – Visitor interactions
Mobile audio and multimedia guides

Digital technology for cultural heritage has too often increased or created a new gap between visitors and heritage holdings, instead of bringing the visitors closer.

• dominance of information over emotion and materiality
• cognitive overload
• attentional balance issues
• visitors’ isolation
Tangible and embodied interaction can offer ways to bring the heritage back to centre stage and to link more tightly digital content and heritage artefacts. Examples from cultural heritage research and practice and technology design.
Back to Tangible and Embodied Interaction

Gallery One, Cleveland Museum of Art, Cleveland, Ohio

Jane Alexander, Gallery One at the Cleveland Museum of Art, Curator, Volume 57 (3), pp 347-362
Back to Tangible and Embodied Interaction

Crafted tangible, embedded and embodied interactions: evocative, memorable and effective

...but also: expensive, time-consuming to realize and not easily portable...

meSch wants to make these compelling visitor experiences affordable and manageable for all heritage institutions!
meSch: Challenges for tangible heritage experiences

• Bridge of the gap between heritage holdings and digital content
• Offer choices, support visit personalization
• Engage at multiple levels, not just cognitive
• Deal with group dynamics thoughtfully
• Empower cultural heritage professionals to realise such tangible heritage experiences for their visitors
Co-creation and DIY: Curators, artists and designers are working together to develop do-it-yourself technology for the creation of adaptive smart exhibits.

Tangible Interaction: The core problem underlying all digital artefacts is the loss of materiality. meSch wants to put the physical back in the centre of cultural heritage experience.

Digital artefacts and digital resources: A wealth of digital repositories is available. meSch wants to make innovative use of them by integrating them in a tool to create adaptive smart exhibits.
Museums and their visitors

Digital heritage

HCl, co-design co-evaluation

Curation, information and documentation systems

Personalization contextualisation

Embedded systems, smart objects

Art, design and public making

Material EncounterS with digital Cultural Heritage
The three museum partners
Concept Generation

Research through design

Partners collaborating with local heritage institutions and with the meSch heritage partners

Early prototypes to try out ideas and generate “templates” of interaction

Functionality just one aspect, design and look & feel equally important

Portability
Co-design Workshop 2: Netherlands
Co-design Workshop 3: Trento
Co-design Workshop 4: Limerick
Reflections: On co-design...

• Multidisciplinary team
• Cultural heritage professionals must be part of the team, fully responsible for the design
• Designers are essential to create and envision compelling experiences, thus inspiring others
• Engineers and technical skills are core but a techno-approach should not dominate the team
The meSch prototypes
Prototype: The Companion Novel
The Companion Novel (video)

https://www.youtube.com/watch?v=GP0wAPO84Qo
An exhibition of “live” display cases that are controlled by visitors through physical interaction and visitor-generated content

Designed, developed and deployed in 6 weeks
The Interactive Showcases: Museon

This cap has been acquired through a king's intermediate.
Deze muts is verworven via een koninklijke bemiddelaar.

Normally I am stored in one of these boxes.
Gewoonlijk zit ik in een van deze dozen.

Tweet me: #EcsiteCap
Aretili: #EcsiteCap @meschcases, wish i could try you on! http://t.co/MrjwK7K9Y
The Loupe, Allard Pierson Museum

http://vimeo.com/88233719
Evaluation: What about our “end-user” experience?

The meSch “end-users”...
Evaluation in meSch

WP7 Evaluation
University of Strathclyde

Museum Visitors

Single software & hardware components: interface, performance, robustness, usability

The museum visiting experience

Authoring tool & making of smart objects

Cultural Heritage Professionals

Qualitative:
Videos, observations, interviews, focus-group sessions, questionnaires

Quantitative:
Performance metrics, logs, questionnaires, behaviour tracking (eye-tracking, hand-tracking, whole-body tracking)

TOOLS AND METHODOLOGIES

Two meSch platform iterations = two evaluation phases
Evaluation challenges

• Three participating museums
• Large number of prototypes
• Comparative studies among more than one museums using the same or different prototypes?
Evaluating the meSch experience
How will the display of the interest rate influence visitors’ attitude?

Do people realize they influence the display?

How/what do people tweet?

Why are certain objects popular?

Does technology influence the learning experience?

Traditional curatorial perspective enriched or challenged?
Is the focus the Loupe or the object?*

How much guidance do people need?

How attractive is the loupe in comparison with other installations?

Active “investigation”. Does it change activity? Do visitors become more active, inquisitive?

Curator perspective: How easy is it to find content that is suitable for the Loupe?

THE LOUPE

Flow: start, move, from object to object

What do they read/remember about the object with/without the Loupe? Does the Loupe distract?

Cooperative Partners. Is the Loupe shared? How is it shared? Handovers?

Compare visitors who read labels with people who use the Loupe. What do they remember later on?

*compare Loupe and Companion
Reflections: Cultural Heritage Institutions

• From interactive exhibits for museums to interactive exhibits by museums...
• New way to envision exhibition design teams
• New issues of management & control (over content, visitor interactions, technology, etc.)
• Different use of resources
What’s next?

• First release of the meSch toolkit (end of 2014)
• Continuous development of prototypes and interaction templates ("recipes")
• Showcasing examples of tangible interaction concepts that can be appropriated by heritage institutions
• meSch experts delivering workshops on 3D printing, DIY electronics, digital fabrication, held at heritage institutions
• Continuous outreach to cultural heritage community in order to build a larger interest group (open source code, reuse and sharing of digital resources, meSch CH community)
• Upcoming case-studies: At least three long-term museum exhibitions utilising meSch technology in the hands of heritage institutions
• First evaluation studies, feed into the 2nd mesch platform
• Better comprehend and demystify interrelations between tangible & embodied interaction, affect, emotion, cognition and learning....
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