

# Designing the digital experience: processes and steps for online and on-site initiatives



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# Summary

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Dive in the topic  
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# Aim & objectives

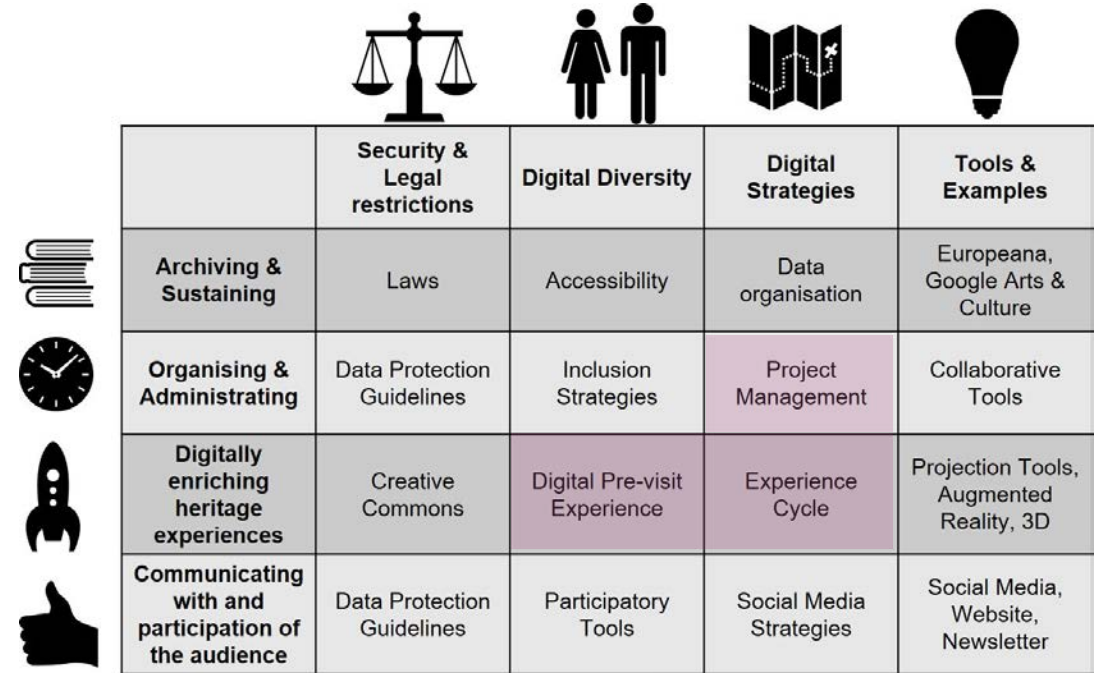
The aim of this presentation is to introduce you to several relevant aspects related to digital experiences design, building on the knowledge you accumulated in the previous units of this module.

It gives you examples of how various types of digital experiences around CH are built and used.

For the purpose of making informed digital experience designs choices, it guides you in doing evaluation of characteristics, benefits and limits of digital technologies

It informs you on the important steps of a digital project lifecycle, and presents you with various digital project management approaches.

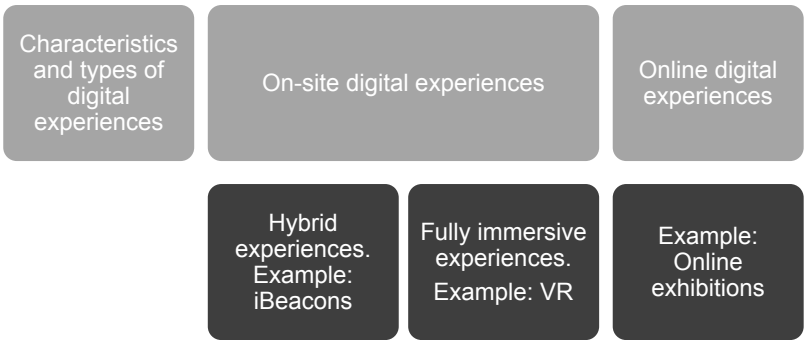
It guides your further learning on this wide topic of digital experience design.



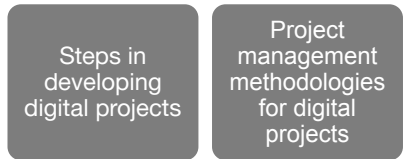
	Security & Legal restrictions	Digital Diversity	Digital Strategies	Tools & Examples
Archiving & Sustaining	Laws	Accessibility	Data organisation	Europeana, Google Arts & Culture
Organising & Administrating	Data Protection Guidelines	Inclusion Strategies	Project Management	Collaborative Tools
Digitally enriching heritage experiences	Creative Commons	Digital Pre-visit Experience	Experience Cycle	Projection Tools, Augmented Reality, 3D
Communicating with and participation of the audience	Data Protection Guidelines	Participatory Tools	Social Media Strategies	Social Media, Website, Newsletter

## Designing digital experiences

### Aspects of designing digital experiences



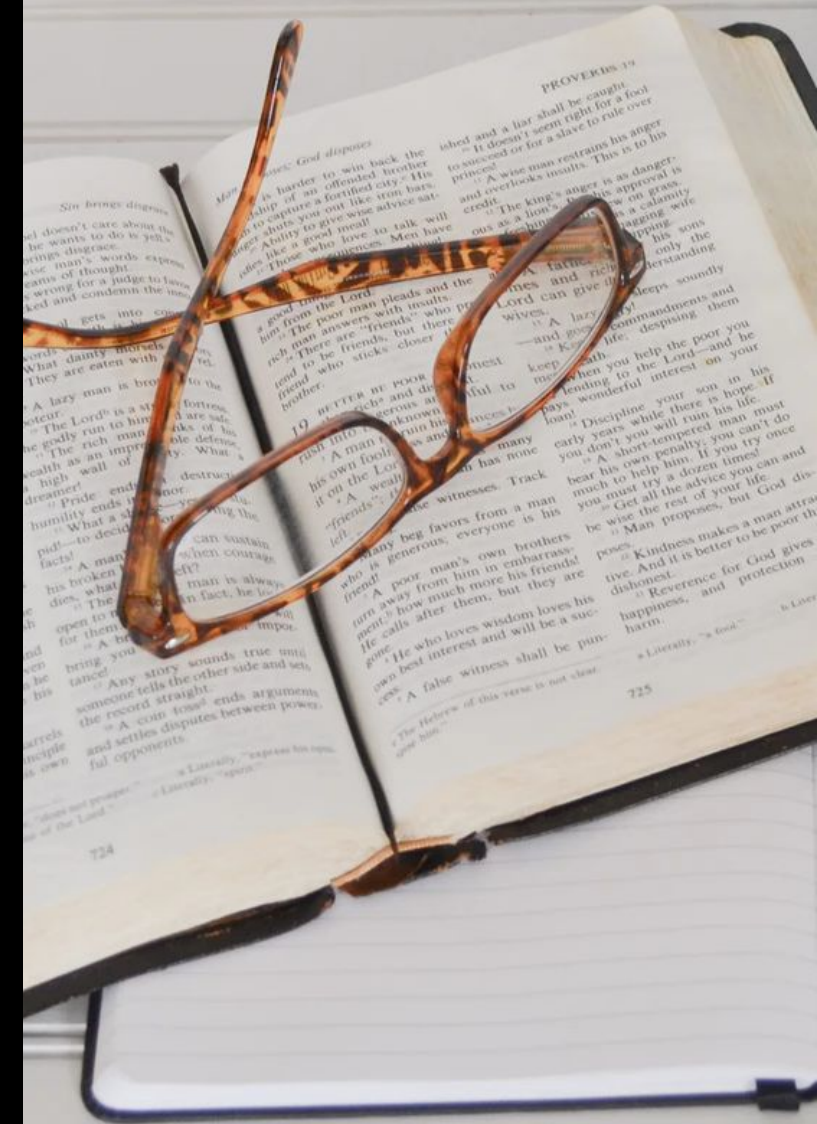
### Life cycle of a digital project



## What will you learn (Learning outcomes)

At the end of this presentation, you will be able to:

- Understand the logic behind digital experience design
- Understand how the characteristics of the CH assets determine the choice of digital technologies and their use
- Evaluate the potential of certain technologies for enhancing the context and understanding of CH assets
- Examine steps in building the life cycle of a digital project
- Recognise different models of digital project management



## Keywords & terms

**iBeacon** - a small device working on a battery (not necessarily, but usually) which you can place somewhere and it notifies an app when your smartphone is in range. (Ferens, n.d)

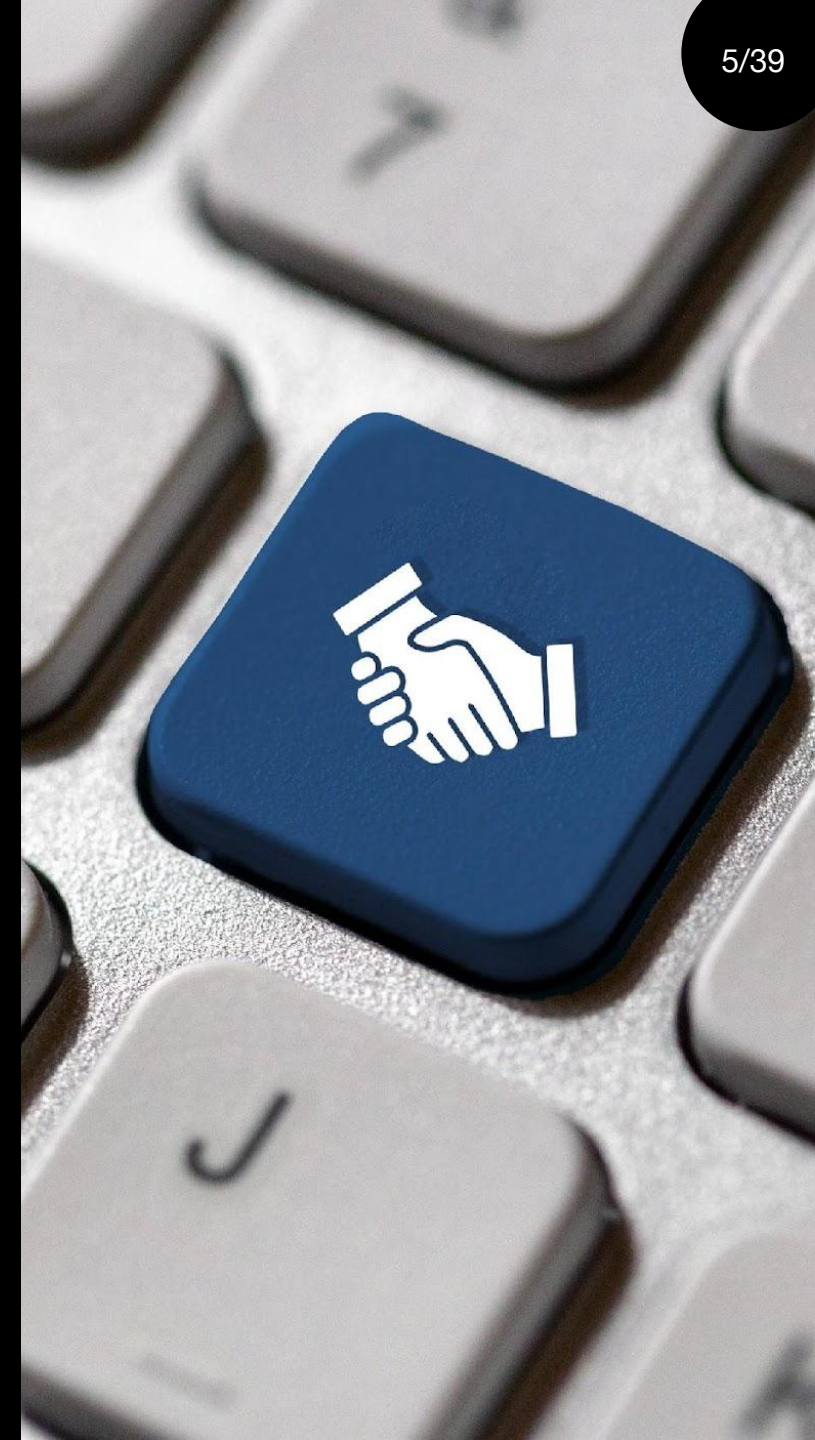
**Immersive experience** - pulls a person into a new or augmented reality, enhancing everyday life (by making it more engaging or satisfying) via technology.

(<https://clevertap.com/blog/immersive-experience/>)

**Back-end** is usually where the business logic occurs. This can be the set of rules that determine revenue for an e-commerce endeavour or something more common like a user profile. (adapted after Fayock, 2020)

**Front-end** (of an application) typically refers to the layer that represents the UI (user interface). This can include anything from a static site with HTML and CSS to a full React app that powers the UI. (Fayock, 2020)

**Agile** - a set of values and principles where work processes, methods, collaboration, and delivery are continuously improved and adapted to any changing context (www.enonic.com)



# Background

The digital technology has the potential to drastically shape and influence how cultural heritage is experienced (*Economou, 2015*)

Designing and planning specific digital experiences that are both aiming at successfully valorising cultural heritage and engaging audiences on the long term, is not an easy task. There are many **intangible aspects** that factor in and many **practical aspects** to be integrated. Ideally, the digital offer we propose to our audiences should contribute to a wholistic experience for them. We are trying to do this by combining all physical and digital channels, by taking into account pre- and post-interaction stages for our cultural heritage related products and services, by being very creative and, at the same time ethically restrictive with respect to the values of CH we promote. Delivering digital experiences related to CH is enough of a tried out path to already provide a rich pool of **observations, recommendations, research and best practices examples.**

At the same time, we have a series of project management approaches specifically calibrated for digital outcomes.

Success is supported by **carefully planned and controlled experience design & implementation.**



# SECTION 1

Aspects of  
designing digital  
experiences



## Characteristics & potential of digital in delivering experiences

Digital experiences have a great potential to enhance presentation and context of cultural heritage. When designing the digital experience we should make the best of what deepens the engagement:

- **Interactivity** which can extend to co-creation of content by users
- **Sensoriality** -a capacity to involve multi-sensorial stimuli within the same experience
- Possibility to **deliver a multi-layered content** in suggestive and easy to access ways
- They create context for **deeper engagement** with CH
- The numerous possibilities to **enhance storytelling**
- The “**cool factor**” factor which is attractive to younger audiences
- The huge potential for **experimentation**
- **Networking and collaborative potential**: the capacity to create and maintain involved communities

Where and how we make the best use of these qualities?

What approaches can help us develop experiences that benefit from the advantages of digital technologies?

How do we manage to balance the + and – of a certain technology when designing experiences?



## Types of digital experiences

**Remember, there are various types of digital experiences**, according to the way they are delivered to visitors

Each type of digital experience implies creating different types of relations with the CH objective, for the audiences.

**On-site digital experiences:** the digital setup is **organised on-site**, where the cultural heritage objective is located; the relationship with the cultural heritage is digitally mediated in various degrees - from a simple digital support for communication to fully immersive experiences.

**Online experiences:** the audiences have a fully digitally mediated experience of cultural heritage, **through www, apps or games** that could be independently and remotely accessed, using different devices.

Depending on the nature of the project and of the CH objective, the digital experience could be designed to combine the **on-site with the online experiences**, thus making the most of a carefully planned visitor journey.

Keep in mind what you've learned in the previous units:

- the visitor is most happy when being able to **navigate seamlessly between channels & devices**
- the “experience” starts before accessing the CH (before visit) and finishes after the actual visit (post-visit)
- the **Experience Cycle** could be applied to the entire experience of interaction with a CH objective or even to smaller experiences that are building up the whole experience

## On-site digital experiences: interactive support for CH valorisation

**On-site digital experiences:** using digital tools to create hybrid experiences (digital and non digital) on-site is a very common approach nowadays in CH valorisation

Digital is used as a **dynamic aid** to communicate, put in context and promote the cultural heritage asset

Ex: Digital guides, Interactive (touch) screens, Augmented Reality, QR codes, Augmented Virtuality, iBeacons

They are the preferred choice of specialists for communicating and promoting CH objectives. The digital experiences are complementing the direct interaction with the object, building or site, providing context, enhancing meaning, stimulating learning and improving perception.

The various tools that could be used to digitally enhance the CH perception and understanding, facilitate complex designs of experiences.

**Complexity, innovation and novelty are attractive to audiences, and could catalyse a deeper engagement**



## Creating hybrid on-site related experiences

- It is desirable to create hybrid environments that allow visitors to actively interact with features of both physical and digital spaces
- The technology should not be intrusive, a simple adding of “digital” properties to objects (with RFID tags, for example) could make a significant difference in experiencing a CH asset at a different level of information and perception

**The correct relationship between the real and the digital environment is one of COMPLEMENTARITY, not one of competition**

**Touchscreens, Gesture based interfaces, QR codes  
Augmented reality, Mixed Reality environments, location-based proximity technologies** are all digital tools & technologies that could be used around CH objects, buildings and sites, in a **non intrusive way**, allowing the direct experiencing of the original.



## Creating hybrid on-site related experiences - Example: iBeacons

Let's take for example the location-based proximity technology (**iBeacon and Physical Web technology**).

### How we can shape the experiencing of CH with it ?

This type of technology allows for a very useful non-invasive connection with the audiences. The information it brings could be accessed at the discretion of the visitor, which could allow being connected to it or not.

### Some of the most popular features of iBeacon based mobile apps:

- You can replace the audio- guided tours, thus allowing for a more flexible navigation (self guided tours)
- You can collect valuable data to learn about the visitor's path (analytics)
- You can deliver messages at the right time and place (broadcasting all sorts of information)
- Help indoor Museum Navigation
- Offer shopping information
- Give push-notifications

*An iBeacon is a small device working on a battery (not necessarily, but usually) which you can place somewhere and it notifies an app when your smartphone is in range.*

<https://www.ready4s.com/blog/developers-tips-blue-tooth-low-energy-in-app-development>



## Creating hybrid on-site related experiences- Example: iBeacons

### iBeacons at the Groninger Museum

The first museum in Netherlands to use beacons was the Groninger Museum. They made available the technology for the exhibition “The Collection” (2014) but continued to use it onwards.

#### How does it work?

It sends interactive content related to the exhibited artworks while the visitors are using the app.

For visitors who do not have compatible smartphones or tablets, devices could be rented at the museum so that they have access to interactive media.

#### What kind of supplementary information they provide?

- additional video and audio clips
- background information
- detailed photos of the artworks.
- a mix of interactive media

Once tried out they have been adopted for other exhibitions as well.

#### Did your organisation ever think of using such devices?

**Do you think they would be a good addition to your CH presentation online?**  
**Can you think of a particular use for your CH presentation?**

# On-site fully immersive digital experiences

**On-site fully immersive experiences:** the relationship with the CH objective is digitally mediated in the highest degree- the CH context and the objects themselves are recreated.

The CH objective is communicated and contextualised **entirely through digital means** at its location.  
Ex: Recreated environments and objects with VR, Games

Advisable for enhancing, understanding and communicating values of cultural heritage objectives that are no longer existing or are partially preserved, or when the remaining parts cannot evoke a meaningful learning or entertaining experience.

When the cultural heritage objective is available on-site it is not advisable to design digital experiences that ignore its physical presence!

**Digital & direct interactivity with the cultural heritage objective should be carefully balanced**



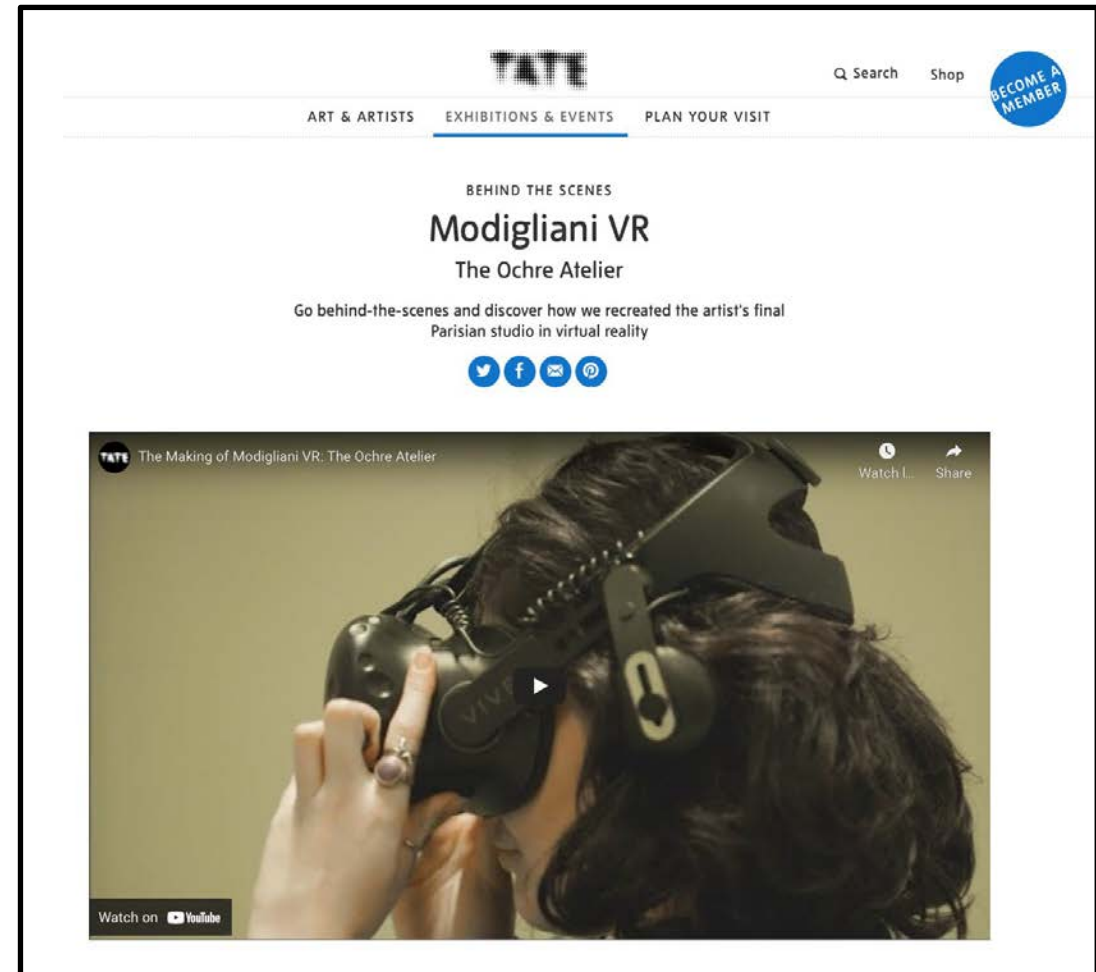
## Example: creating an on-site digital experience: Modigliani VR

Developing an on-site immersive experience is complex –**the relationship between the real and the (re)created artificial environment should be carefully balanced:**

- the digital experience must not overwhelm the audience and detract from experiencing the reality of CH
- It should enhance the context and perception of CH (complementing with cognitive and sensorial information)

A good example of an on-site immersive approach is the **Modigliani VR digital experience** accompanying the retrospective exhibition on Amedeo Modigliani (Tate Modern, 23 November 2017 – 2 April 2018)

The first VR experience developed by the museum (Tate Modern), presented the artist's **Ochre Atelier**. Recreated virtually, following a very thorough documentation, the immersive experience was made accessible to visitors **as integral part of the exhibition.**



print screen form

<https://www.tate.org.uk/whats-on/tate-modern/exhibition/modigliani/modigliani-vr-ochre-atelier>

## Example: creating an on-site digital experience: Modigliani VR

The virtual recreation of the 1919's Parisian atelier involved a collaboration of Tate with the company Preloaded.

- Many departments of the museum were involved- **cross-departmental cooperation**
- Extreme attention given to historical information -**thorough documentation for recreating an authentic environment**
- Accurate **details from reality were included in the experience** - they were priorly investigated even with the support of conservation science
- “**Audience led design**”- the profile of audiences was studied and the experience was adjusted to their needs (user experience approach)

Would you like to know more about this complex and very well done project?

Check the following links:

<https://www.youtube.com/watch?v=CdYLscE6kE0&t=1s>

<https://preloaded.com/work/modiglianivr/>



Tate Curatorial, Digital, Conservation, Installation, and AV teams together with Preloaded initially decided the core principles of this experience, which should:

- **Be low threshold, promoting comfort and accessibility to all**
- **Create empathy with Modigliani as a man we might have known**
- **Uphold authenticity, conceptually, and in detail**
- **Meet Tate's standards for intellectual rigour and accuracy**
- **Be an experience you can't get any other way**

after <https://preloaded.com/work/modiglianivr/>



## Benefits & limits of using certain digital technologies for creating digital experiences with CH

### Example: Virtual Reality

**We looked into an example of fully immersive experience on-site developed using Virtual Reality. Let's explore the pluses and minuses of this technology:**

While VR is a very attractive technology, with interesting **plus points**:

- attracts new audiences
- enhances the experience
- allows community engagement (for example for developing the storyline)
- promotes new ways of understanding art, objects and concepts
- empathy building practices (helps conveying emotions)
- is combining perfectly with the powerful techniques storytelling

CH related experiences created with VR also present several **challenges** that should be taken into consideration:

- being a fully immersive technology it could distract audiences from the original object or objective
- it favours the lack of social interaction
- it involves lots of resources: human resources, training, financial and technological infrastructure
- participants' accessibility
- practical and technical issues
- graphics quality (impacts engagement)
- interference with the exhibition flow
- distracting effect (in the case of on-site experiences)

## Virtual Reality – How should we use it?

### **Suggestions for designing and developing VR experiences for a CH organisation:**

- align the experience with the organisation mission and strategies
- offer a seamless, well blended experience, not an individual offering
- match its use with a particular need
- augment the original instead of distracting or replacing
- be concerned with reaching a fair balance between use and overuse
- match VR with other sensory stimuli and social stimuli
- use scientific and ethical criteria

(after Shehade & Stylianou-Lambert, 2020)



## Finds on how to integrate digital into CH experiencing

The benefits and limits of each digital technology application to the CH field has been investigated to a certain degree. Some technologies have more educational potential, other are simply more attractive to younger audiences.

When choosing a technology or another, build on the experience of other organisations. There are numerous examples and studies that could inform your decision.

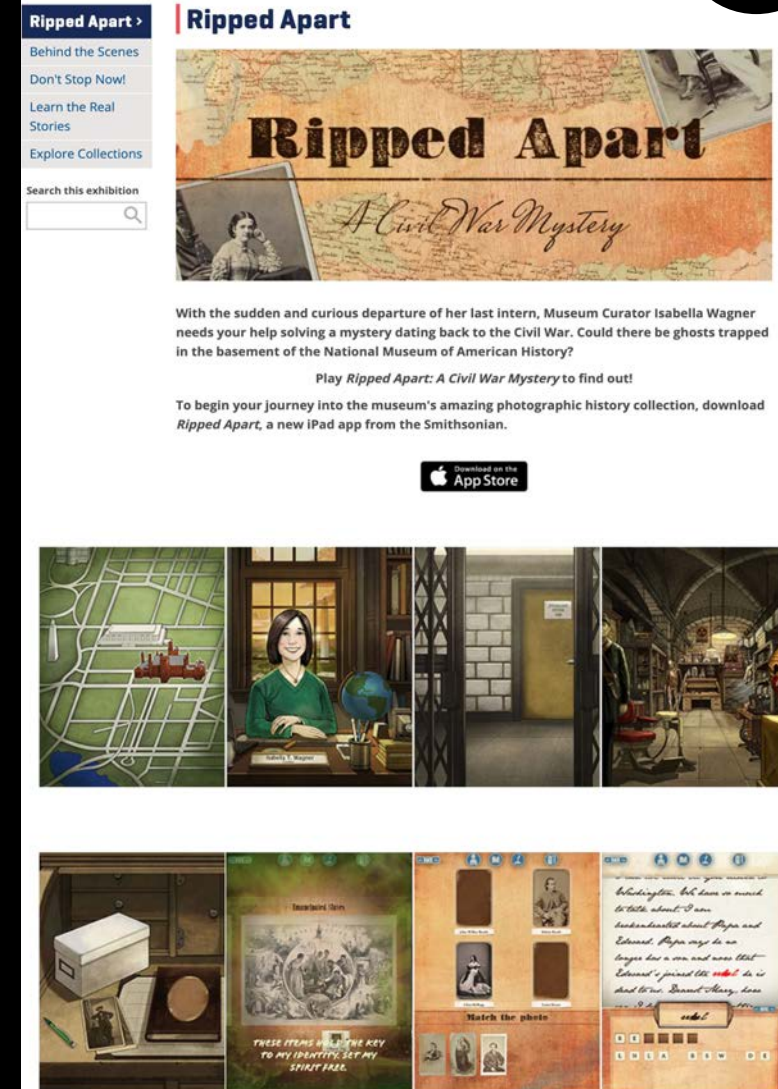
An observational study of visitors interacting with artefacts in a museum, conducted by Luigina Ciolfi & Liam J. Bannon, concludes that:

- people prefer to focus on the displayed objects, not on computer interfaces that separate the visitor from the actual artifact
- the technology should assist the exhibition, rather than stand out from it
- generating hybrid public environments that enable visitors to actively interact with features of the physical, and of the digital, space should be the main focus
- encouraging the active involvement of children; they should be able to take notes or sketches around the digitally augmented exhibits
- finding ways to encourage collaborative exchange with and around the exhibition, provided by clues, triggers and adequate affordances of the technologically augmented exhibit.

(after Ciolfi & Banno, 2002)

# Online experiences

- purely online experiences have obvious limits: the contact experience with the cultural heritage and its relevant features ( size, texture, real colour, ambiance) are more difficult to convey
- the degree of ethical responsibility when mediating such experiences is higher, as they presume a greater degree of hypothesis
- many of such online experiences have been developed with a marked educational purpose as they have great potential for interactivity and for complexity
- they allow a greater creativity and unique associations of ideas
- **the serious games, for example, allow great user interactivity: and allow provide space for many layers of information and interpretation; they are also engaging and rewarding, thus making the learning easier**
- the final products should be very **competitive**, as there are always more entertaining alternatives for the audiences



Web page presenting the serious game developed by the Smithsonian

**Ripped Apart**

Print screens from :  
<https://americanhistory.si.edu/ripped-apart>

## Example – online virtual exhibitions

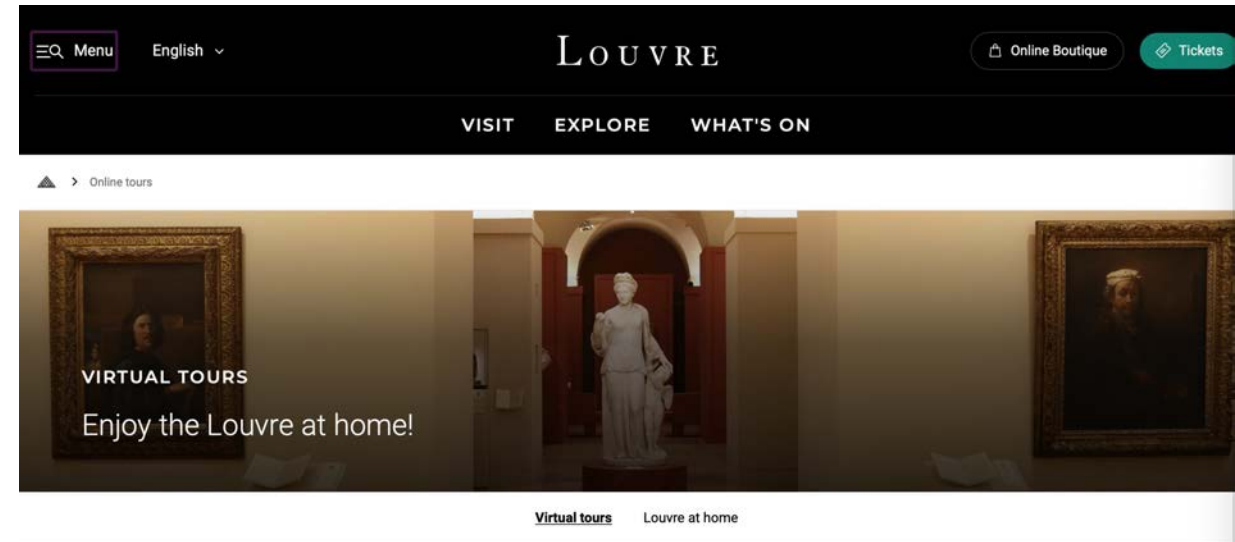
“An **online digital exhibition** is a hypermedia collection made up of digital items which are:

- linked together by a common thread, an interdisciplinary topic, a concept, an idea, an anniversary, a special event, or a physical person;
- displayed in 2D and/or 3D;
- occasionally stored in distributed networks;
- made accessible through the potential provided by modern technologies, thanks to a system architecture designed to provide user-centered, absorbing experiences;
- dynamic products that can offer additional services and be updated periodically. “

### MOVIO KIT

<https://athenaplus.wordpress.com/2014/07/31/movio-brochure-available-for-download-on-the-athenaplus-website/>

print screen from <https://www.louvre.fr/en/online-tours>



- Online experiences have been the focus of CH related experiences consumption during 2020, due to pandemic restrictions
- Virtual museums or exhibitions made available online were a practical opportunity to keep audiences engaged with the CH

## Example – online virtual exhibitions

**You can go big or small:** the amount of information (images, text) freely available online can help you contextualize your exhibits at another level; You can think of an exhibition around the CH you manage, or you can build on a topic and allow contributions from various entities (even from audience) - you can even develop a platform for co-creation of such content (see Europeana, Google Arts & Culture).

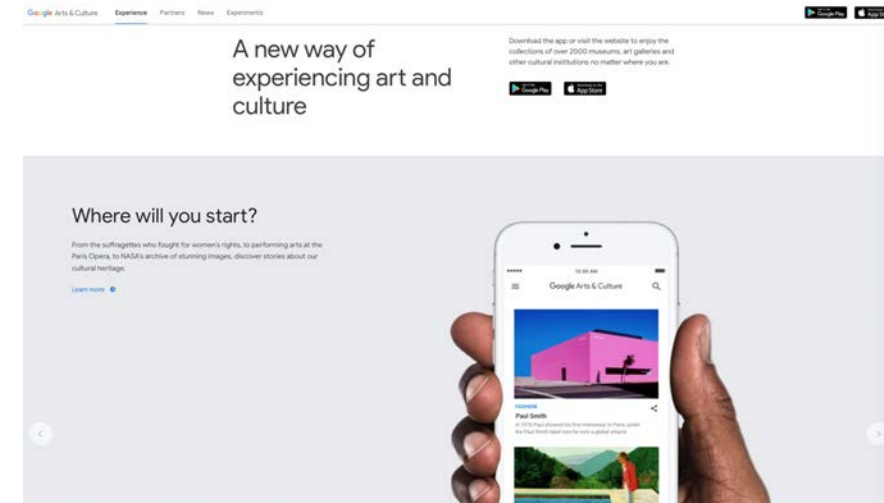
**You can enhance classical curatorship:** the multiple layers of meaning and connections, the correlation between objects could be done in multiple ways, using a combination of supports: image, video, text, virtual reconstructions, immersive techniques : **Be ambitious!**

**Show hidden things:** an online exhibition could have an unencumbered focus on normally unavailable information related to CH - you can "open up" a storage area, you can show complex but interesting conservation information etc.

### **Make it interactive and interesting**

Use storytelling, use complementary digital experiences (such as gamification), do not forget about the role of co-creation in engagement: aim at developing communities around the experiences you facilitate .

**How do you proceed?  
What are the limits & possibilities?**



Visit:  
<https://about.artsandculture.google.com/experience/>

## Example – online virtual exhibitions

**Chose a meaningful and impactful title** and **display quality images:**

visitors are drawn to catchy phrases and images - in online this first encounter with your digital product will make a huge difference in attracting audiences!

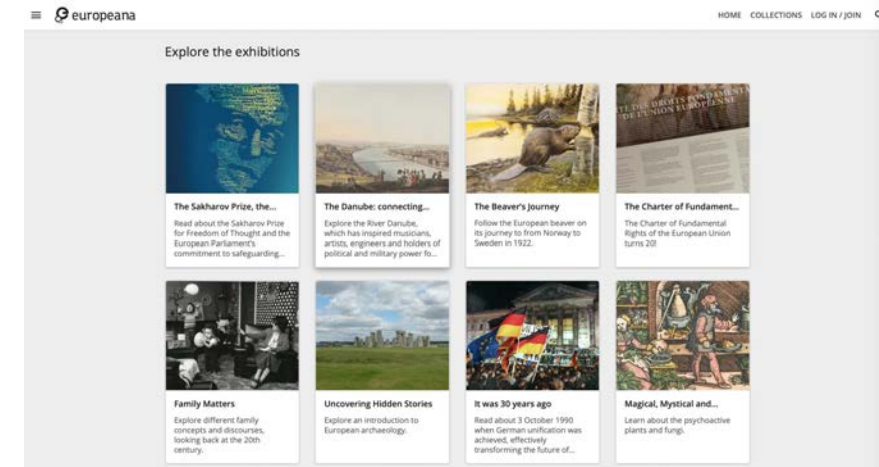
**Do not overwhelm your audiences with information:** sort information (text, visual, audio); do not be tempted to give all, only because the medium allows it: if it is not essential to your project do not use it: do not simplify, though, your project should not be similar to an illustrated blogpost.

**Target audiences:** proceed with online exhibitions as you would with a physical one: investigate audiences and use appropriate means to engage them.

You can also **collect data on audience reach, engagement and satisfaction** in real time; numerous metrics and tools to collect them are already available for the digital realm.

**Market** your digital product wisely, on the right channels and at the right frequency (remember how you can do that from the previous Unit)

**How do you proceed?  
What are the limits &  
possibilities?**



Visit

<https://www.europeana.eu/en/exhibitions>

## Keep in mind!

Whether you develop online or off-line experiences, independent digital products or complementary ones, **start from your CH asset.**

**The characteristics** you want to emphasize (content and aspect wise), the context you want to bring to attention, the educational aspects you want to promote etc. - those are the underlying factors for your choice of digital means.

The digital experience is **simply an experience delivered with digital help** - a consistent and full of possibilities one. **It should not overwhelm the main purpose of CH presentation. It should, also, not overwhelm the audience.**

Whatever tool you chose to use, whatever product you want to deliver, **make sure it works.** A bad user experience in the case of digital products tends to be rapidly visible and sanctioned by your audiences.

Start from **core principles**, set -up **clear objectives**, related to what makes sense to emphasize in relationship with the CH asset.

**Don't** necessarily **go after the hype technologies** but rather connect to your audiences and deliver an experience that could be accessible and satisfactory.



# SECTION 2

## Life cycle of a digital project



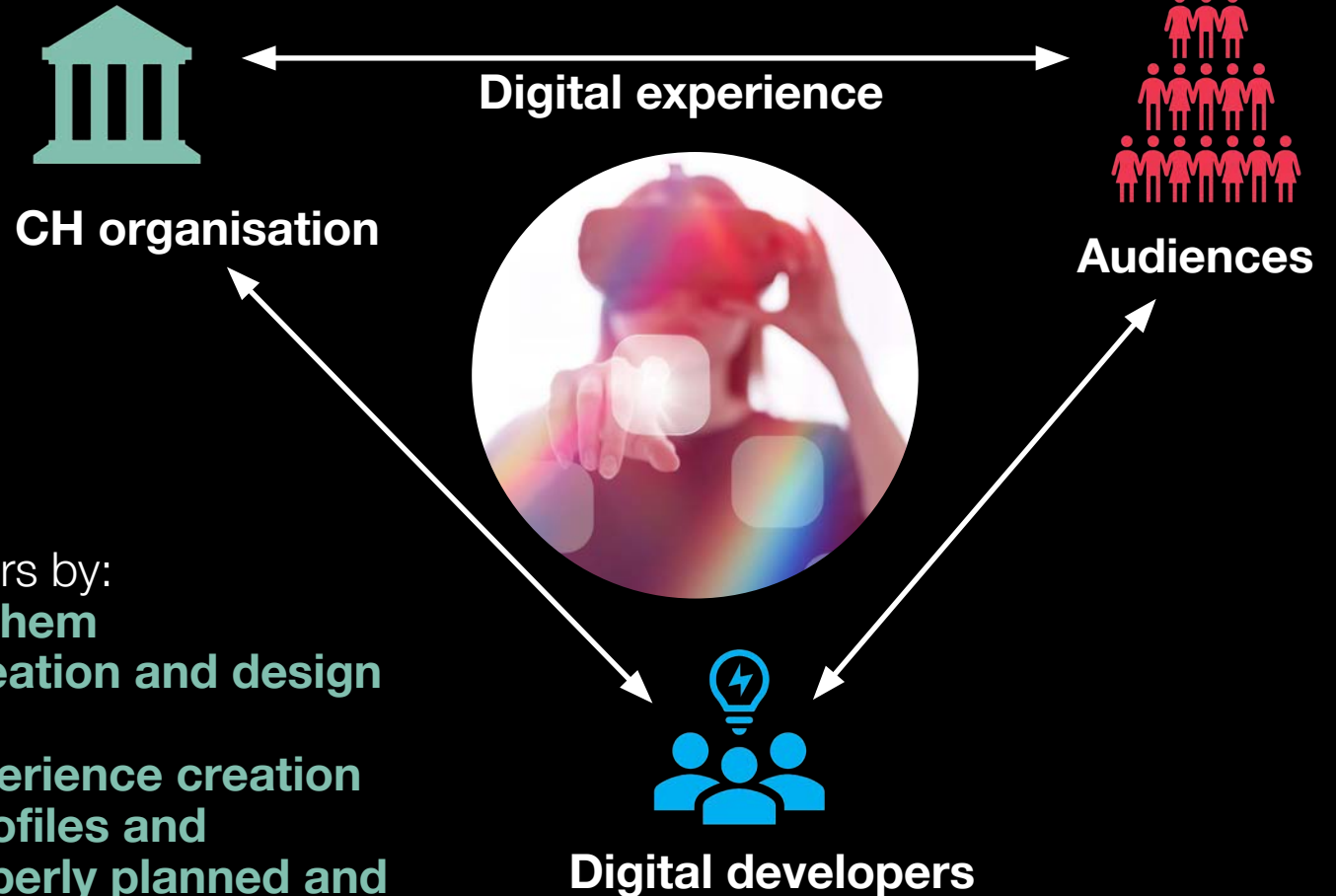
# Developing a digital project

Many of the digital projects and experiences we are creating demand **the involvement of very specialised staff** or require **the externalisation of digital related services**: software development, platform setup, maintenance etc.

This means that the digital experience creation is influenced by a third party, that needs to be **perfectly aligned with our objectives**.

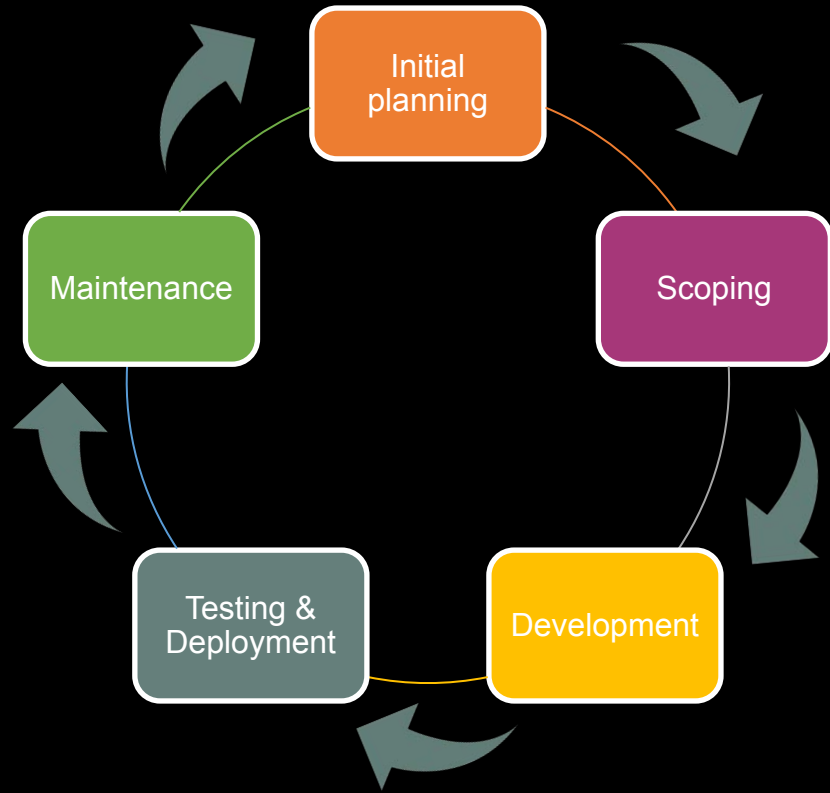
Manage the relationship with the digital developers by:

- **developing a good communication with them**
- **involving them early in the process of creation and design of experiences**
- **integrating their perspective into the experience creation**
- **making them aware of the audiences' profiles and expectations, insuring that the UX is properly planned and developed with this supplementary insight**



**Try not to underestimate the need for external specialised help. The competitiveness of your product is key to your success!**

# The life cycle of a digital project



## Five steps of development for a digital project

Digital projects are problematic to manage, as they involve certain unfamiliar processes for a CH organisation.

It is useful to dive into the various project management models before embarking into digital experience design, and make an informed decision on how to proceed, taking into account the complexity of your final product

Initial planning

- Identifying and evaluating ideas (brainstorming)
- Broad definition of the project
- Estimation of time, resources & costs
- Project proposal

Scoping

- Detailed planning, functionality, requirements, road map and key milestones established
- Customer/user experience designed
- Costs and requirements for the beneficiaries

Development

- Development of the digital product using the requirements and the rough specifications from the previous phases (development teams)
- The digital product is created from back-end to front-end

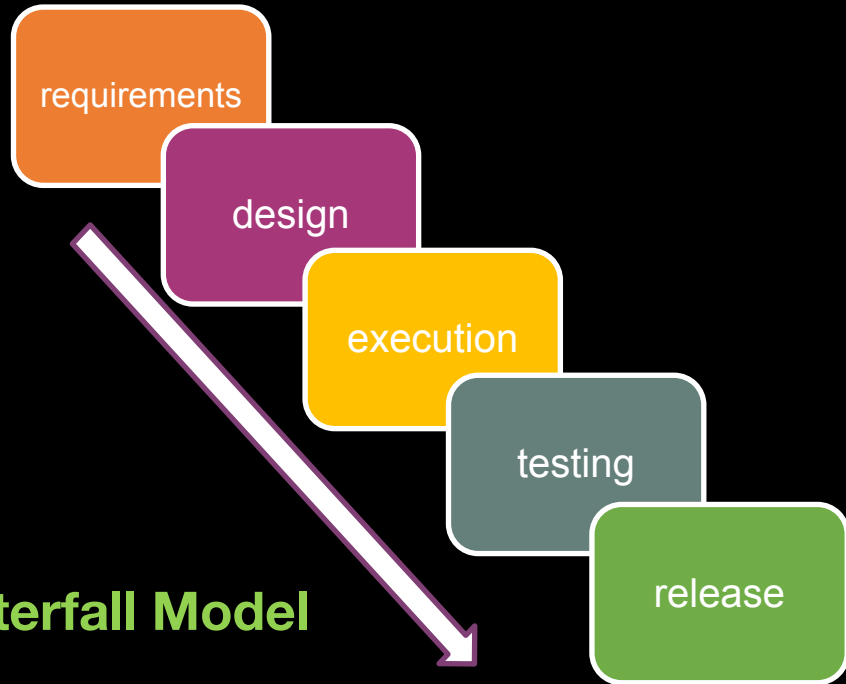
Testing & Deployment

- Implementation phase- the digital product is tested
- Quality assurance is performed
- The product reaches users

Maintenance

- Improving functionality, stability,
- Offering support for the product users
- Fixing problems

# Project management methodologies for digital projects

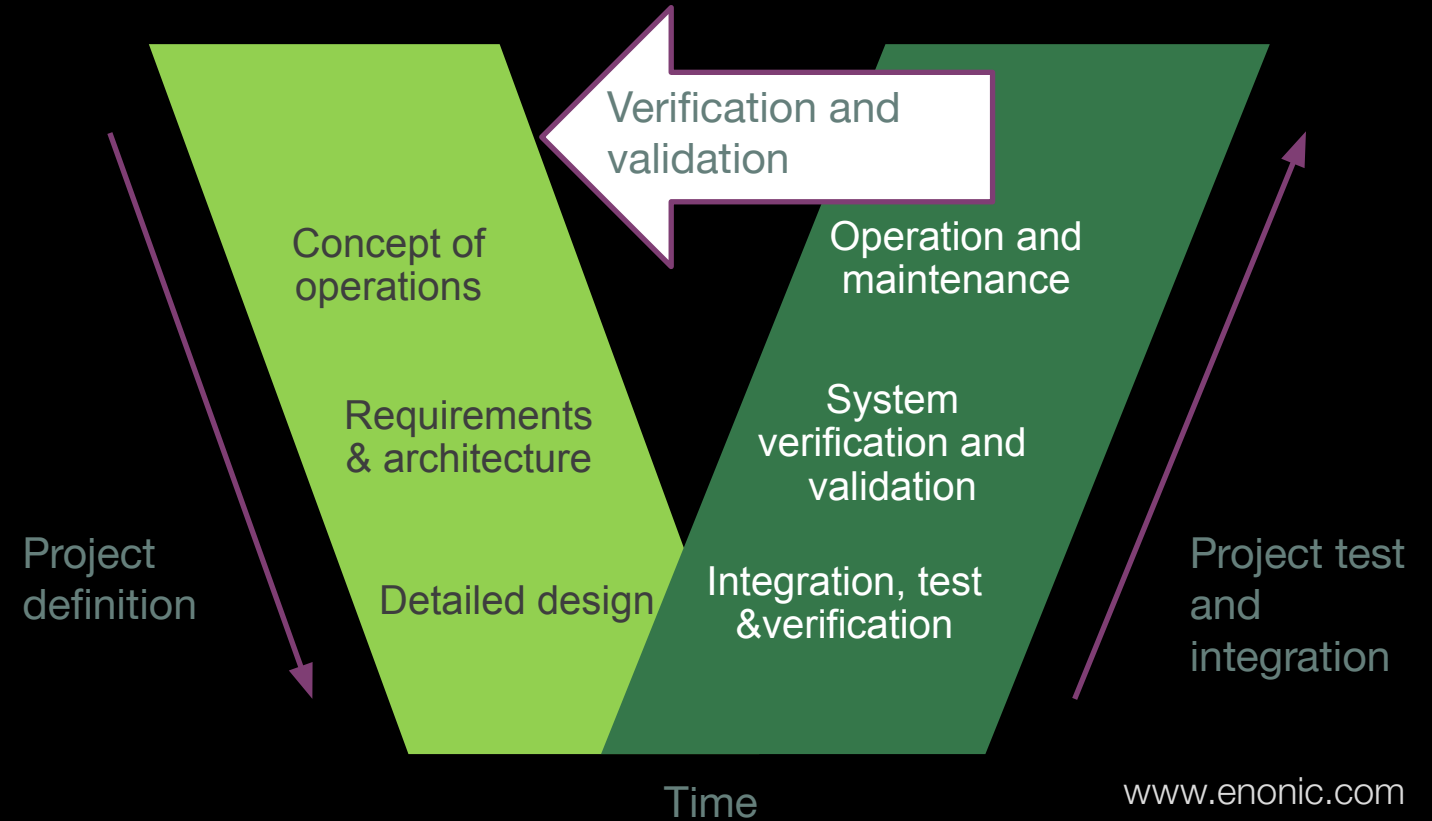


## Waterfall Model

The activities of a project happen into a sequential order, each phase depending on the deliverables of the previous phase

## V-Shaped Model

A derivate of the waterfall model, the process illustrates the relationship between the phases of the life cycle and emphasises the connection with the testing phases



# Project management methodologies for digital projects

## Spiral method

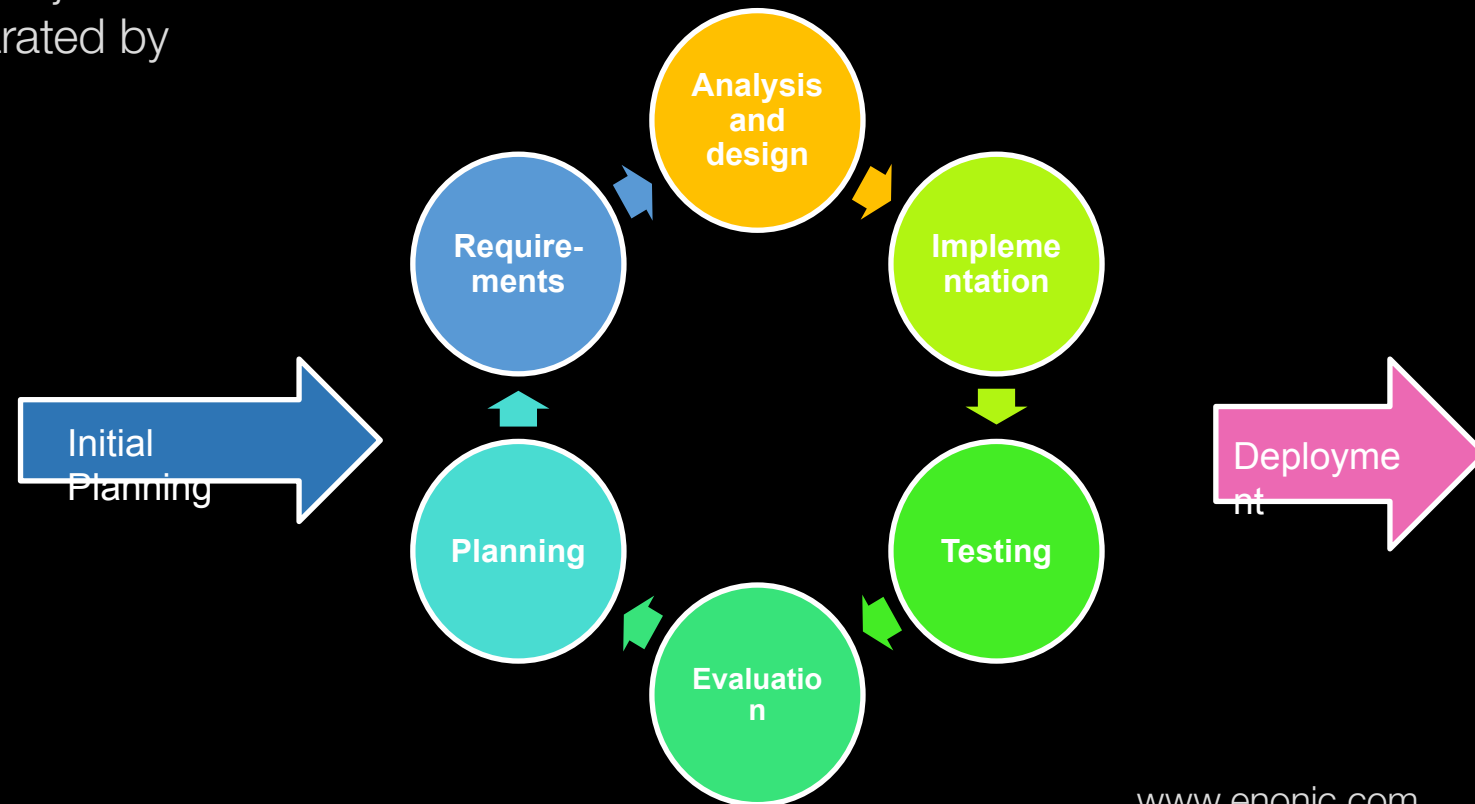
- based on the risk patterns of a particular project, combines design and prototyping-in-stages approaches
- suitable for large, expensive, and complicated projects
- uses phases from other models (waterfall) separated by planning, risk assessment, and the building of prototypes and simulations.

After Sami, 2012



## Iterative and incremental

starts with planning, and continues with repeated, iterative cycles—before ending with deployment.



# Project management methodologies for digital projects

“**Agile** is a widespread and popular approach to digital project management, and as a result, many teams around the globe employ the Agile approach when initiating a digital project.

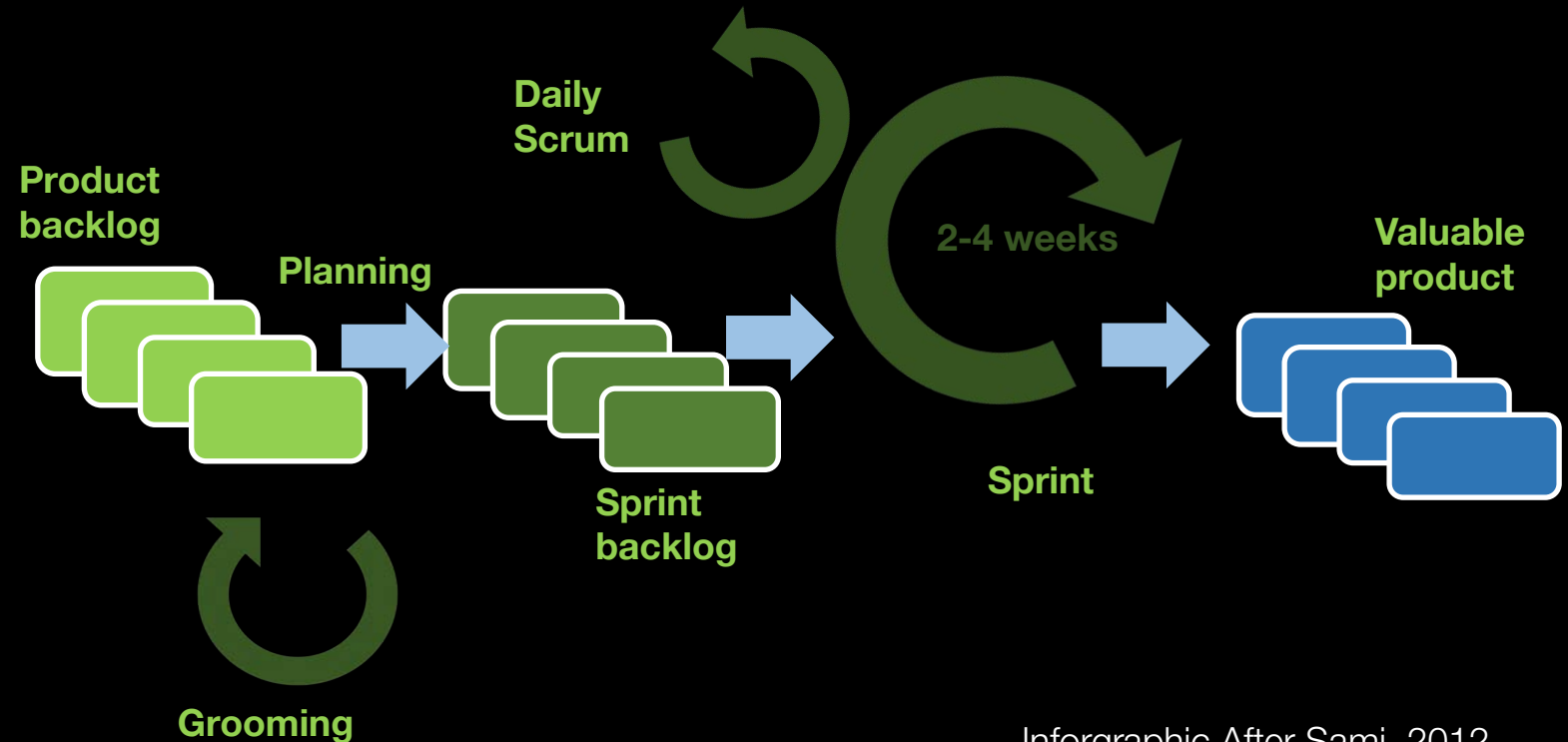
**Agile** can be defined as a set of values and principles where work processes, methods, collaboration, and delivery are continuously improved and adapted to any changing context.”

Methods such as **SCRUM**, **Kanban**, **Adaptive project framework**, **Extreme project management** reflect the Agile approach

## Agile - SCRUM model

“print-based approach where a small team meets regularly with e.g. stand-ups to discuss current tasks and obstacles”

www.enonic.com



Infographic After Sami, 2012

# SECTION 3

Open questions  
& hints



## Open questions & reflections

What principles you chose for your digital experience?

How do you identify the most suitable characteristics of CH to promote through digital?

How do you identify the best digital tools to enhance CH valorisation ?

How prepared is your organisation to manage and insure maintenance of a complex digital project?

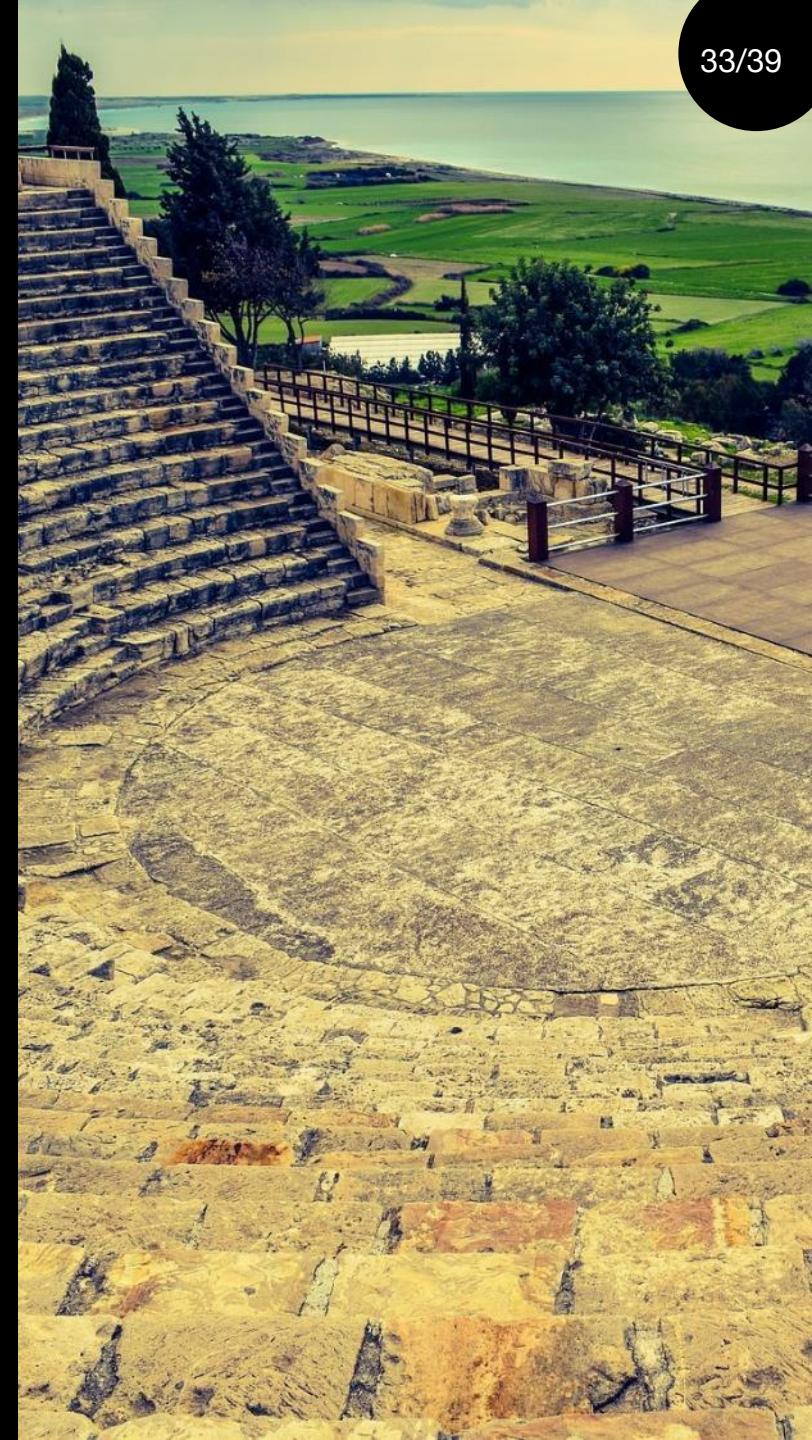
Have you ever implemented a digital project? What were the main setbacks that you encountered?





## Tips

- Identify **the most suitable features to be used and emphasised in building a digital experience** framework for a particular cultural heritage objective or intangible heritage expression
- Be aware of, and integrate the **target groups** characteristics in terms of **preferred or most likely accessed type of digital experience**
- Identify **the best narratives** for the envisaged target groups and **the most appropriate digital tools** to illustrate them
- Designing **digital experiences criteria that could be clearly and readily communicated to the experts from the digital field** that would actually configure the digital experience from a technical point of view
- Articulate the designed digital experience in the **Experience Cycle**, using project management approaches and digital marketing insights
- Do not forget about measuring experiences: **try to identify the most suitable metrics for monitoring and evaluating the digital experience** for visitors/tourists

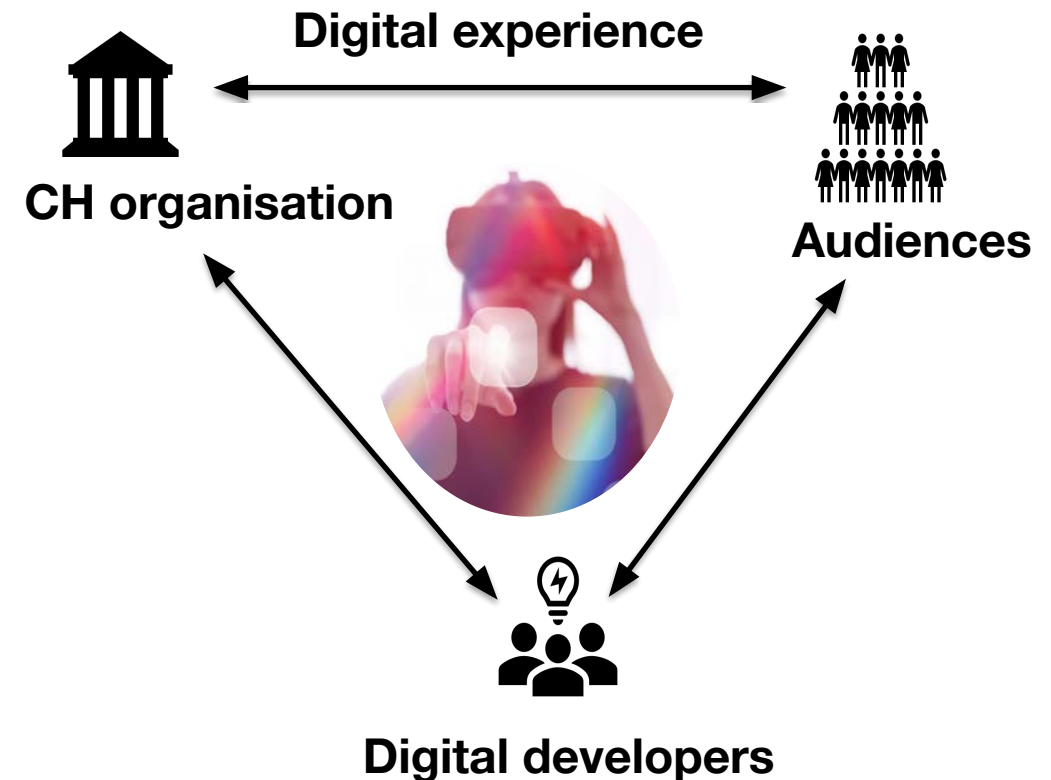


## Key takeaways

This presentation was about designing digital experiences.

Now that you finished watching it, you should be able to:

- Understand what leads to an informed choice of digital experience design for CH
- Identify pluses and minuses of certain digital technologies for designing CH digital experiences
- Understand what contributes to a good user experience design
- Remember that there are several models of digital project management that could be used according to the complexity of your project





**Closing section**

## To continue your learning

You could learn very useful things on how to design digital experiences using immersive technologies by following the NEMO Webinar **Museum of the future: Digital transformation & immersive technologies:** <https://www.youtube.com/watch?v=svD2FfHyzSs> (Olaf Sperwer)

A rich source of information that could help you design digital experiences taking into account your audiences is the material developed within RICHES project framework

**D6.1 Access, Participation, Learning: Digital strategies for audience engagement with cultural heritage in museums and libraries**, available as OER on the course platform.

More on virtual exhibitions is synthesised in the **MOVIO brochure**, available for download on the AthenaPlus website AthenaPlus.

<https://athenaplus.wordpress.com/2014/07/31/movio-brochure-available-for-download-on-the-athenaplus-website/>

A very informative article, containing a synthesis of museum professionals opinion on using VR for promoting CH is the article of Shehade, M. & Stylianou-Lambert, T., **Virtual Reality in Museums: Exploring the Experiences of Museum Professionals** available as OER on the course platform or on the following link

<https://www.mdpi.com/2076-3417/10/11/4031/htm>

You could also deepen your knowledge on this topic of digital experience design by exploring other material from the bibliography and sitography used as reference for this presentation.

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