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INTERACTIVE WORKBOOK

How to innovate your business model
using immersive technologies to delight
visitors and make business better

WELCOME TO THE TRANSFORMATION

CONGRATULATIONS, YOU ARE IN POSSESSION OF A WORKBOOK DEDICATED TO BUSINESS MODEL INNOVATION FOR CULTURAL HERITAGE SITES USING IMMERSIVE TECHNOLOGY

- » Do you want to increase visitor numbers?
- » Do you want to increase your site's visibility?
- » Do you want to make its image as appealing as possible to your target audience?
- » Do you want to improve overall revenue?

If you've answered yes to any of these questions then you can use this guide and workbook to take your visitor attraction to the next level and improve the long-term viability of the business.

The workbook will guide you through ways to enhance the visitor experience making cost-effective use of newly-available technology. Formulated by experts in business modelling and the use of technology to help businesses face the future, this workbook will help you work out what you need to do to transform your visitor experience using virtual reality and augmented reality systems.

So, if you're ready, let's dive in.



HOW TO USE THIS WORKBOOK

The workbook has an introduction where the key terms and concepts around business modelling are explained. You will be introduced to the Business Model Wheel, pictured below, and see how it can help you evaluate the current, 'as is', state of the business and help you design to future, 'to be' state that you will work towards. The main workbook is then

divided into three phases of the work to be done: analysis, design and then evaluation.

There are interactive worksheets throughout the book to help you to record your thoughts and plans.

Phase 1 Analysis

In this phase we define the “as is” model or your business to provide a starting point for innovation

Phase 2 Design

In this phase we envisage the “to be” state, including the new elements of immersive technology.

Phase 3 Evaluation

In this phase we test the new business model and consider adjustments to maximise impact.

Introduction

TRANSFORMING YOUR BUSINESS MODEL

What is a business model?

Your business model is a description of the mechanism that raises and communicates value to customers and then captures that value in terms of income. For heritage sites with a need to introduce immersive technologies to their visitor experience considering the business model allows us to piece together about how the heritage site:

- Creates value for visitors
- Organises itself to produce this value
- Benefits from the value it creates

Having an overview of the business model and understanding its component parts means you will be best-placed to understand the transformations necessary and will be able to maximise your chances of successfully introducing immersive technology to the visitor experience.

What if I have several business models?

Where a heritage site serves a variety of target visitor groups it's likely that several business models are working side-by-side under one overarching business model.

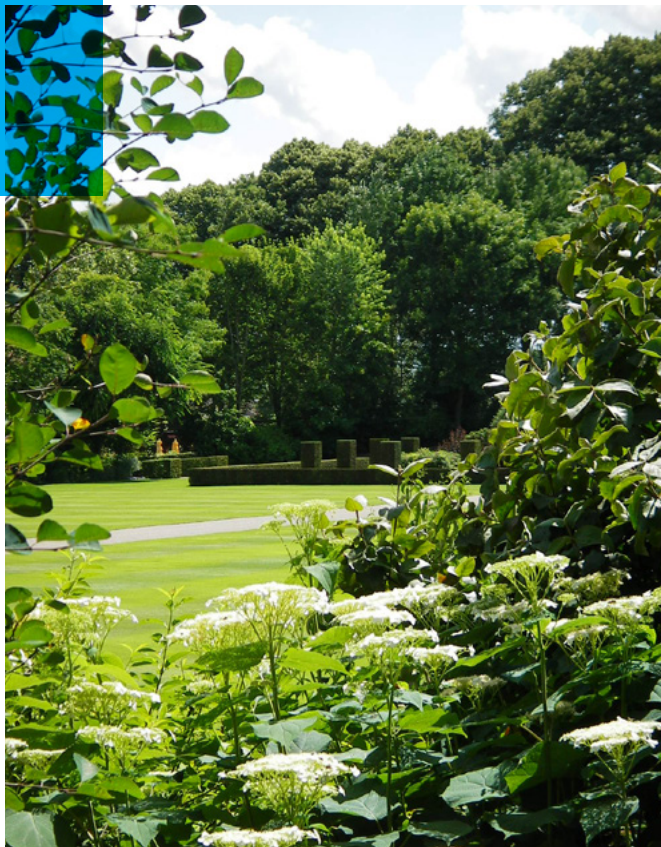
Once you have used this workbook to analyse the models separately you will have to decide on what to do with these business models in a practical way.



Safeguarding existing business models

While introducing immersive technology to your cultural heritage site will bring innovation you will also have to change the way the site operates and probably its strategy. Introducing technology will have knock-on effects and it's important that you understand the wider business model, or models, before you dive in. As well as developing the technologies and introducing them to visitors, you will also have to think about:

- What services the technology will be providing
- What kinds of visitor you are targeting
- The story the technology will tell
- The organisation (activities and resources) required for the site to offer this service
- The mechanisms by which the site will benefit from the service



Understanding 'value'

In order to innovate your business model you will need to understand what value the visitors to your cultural heritage site currently perceive that they get from a visit. You will also need to analyse how that value is delivered and, of course, how the business will capture that value in terms of making money. These three elements are critical to any business model:

- » Value creation
- » Value delivery
- » Value capture

In this workbook we will help you identify how the site currently raises, delivers and captures value and how it could do that with an innovated business model.

The Business Model Wheel

The first phase of the work will help you to analyse your current models by breaking them down into five sections using the Business Model Wheel which is explained deeper on the next page.

The wheel has five sections which represent the core elements of the business model of most cultural heritage sites. It's a model we like to use as it helps us to ensure we've considered the important elements in our business model innovation.

While the sections of the Business Model Wheel are numbered 1 to 5, it is likely you will move between sections as you progress and you may choose to start with any part you feel is most appropriate for you.

5

5 *The most common definition of the concept of the business model is: "design or architecture of the value creation, delivery, and capture mechanisms" (Teece, 2010, p. 172).*

THE BUSINESS MODEL WHEEL

The Business Model Wheel is comprised of five sections that show the critical elements that make-up the business model of a cultural heritage site. We can use it to analyse and plan.

Section 5: Value Capture

What mechanisms will be required for the heritage site to capture the desired value (financial, political, reputation, visitor satisfaction, etc)?

Section 4: Delivery

What activities and procedures will be necessary to provide the service? What resources will be necessary to implement these activities and procedures?



Section: 1 Value Proposition

The value that the heritage site promises its visitors. What service are you offering? What value proposition are you making to visitors with this service? Who are your current visitors? What is the profile of the visitors you hope to reach?

Section 2: Storytelling

What heritage features will the technology illustrate? What story will you be telling the target audience?

Section 3: Digital Equipment

What digital facilitation tools does the cultural heritage site use to tell its story?

EXAMPLE 1: MEDIEVAL CASTLE

The Business Model Wheel can be very useful when planning innovation. Imagine, for example, a medieval castle where the pathways are uneven in places and therefore the site is difficult to access for those with reduced mobility and for families with pushchairs.

The site's manager has chosen to provide virtual tours of several parts of the site including the parts that are difficult to access.

The objective is to make the heritage visit available to as many people as possible. This is important because part of the castle's value proposition is that it is an accessible experience and it has earned a label for which this is a key objective.

The idea is to install virtual reality headsets in a room on the ground floor of the castle, providing an aerial tour showing the whole of the heritage site and then a tour of the rooms that are difficult to access on foot.

However, this room is located some distance from the castle entrance where the staff work. It will be necessary to arrange for an additional person to staff the VR room to provide visitors with headsets and assistance during opening

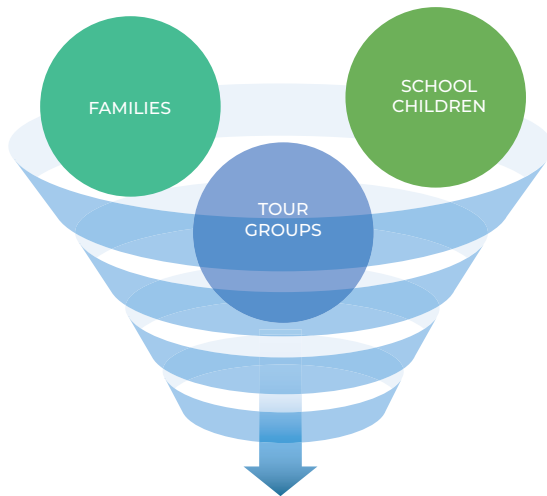


hours. The components of the business model wheel are interdependent. Each decision taken in one of the segment areas affects the others. It is crucial to take into account the constraints of the heritage site and ensure the coherence of the model when considering changes to the visit.

EXAMPLE 2

Business models working together

Imagine a cultural heritage site with three groups of target customer: families, schoolchildren and tour groups. Since each target group has its own business model the heritage site has an overarching business model comprising three



OVERARCHING HERITAGE SITE MODEL

target-group models (see diagram). For the overarching business model to work the models for each target group of customers must be coherent. The site must align the models as much as possible to ensure available resources aren't stretched too far and advantage can be taken of any overlaps between them.

For instance; a garden where the majority of visitors are adults looking for tranquility has a manager who notices a few families with teenage children visit and would like to reach this segment of families with teenagers using immersive technologies and wants to install a treasure hunt using a tablet with augmented reality content.

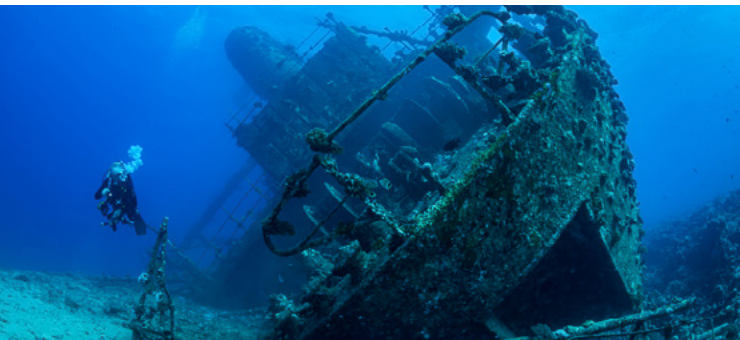
When considering this innovation, it is critical to consider that attracting the new audience could have a negative effect on traditional visitors as children running around the garden could destroy the peace and quiet that the core visitor segment is looking for.

Business models do not necessarily have to compete with each other though. It is possible to develop synergies between two.

For instance, a maritime museum that has developed a digital library of shipwrecks could use that as a key resource for two business models.

One aims to offer individual visitors an enhanced experience through digital equipment they can interact with while the other supports school projects where museum staff can use the digital models to teach historically significant shipwreck stories such as the role of U-Boats in World War II.

If you are targeting a single visitor segment with your immersive technology solution but you host other segments at the same time, you can use the business model wheel to ensure the changes you make have as little impact as possible on the other business models of your site.



IN SUMMARY

Technology is only one of many aspects that ensure the business model operates successfully.

The components must be combined logically to ensure that innovation is successful, in the sense that:

1. It provides value to visitors
2. The organisation facilitates the value provision
3. It generates value for the heritage site, depending on its objectives
4. The visitor experience is the main barometer for assessing the success of the innovation

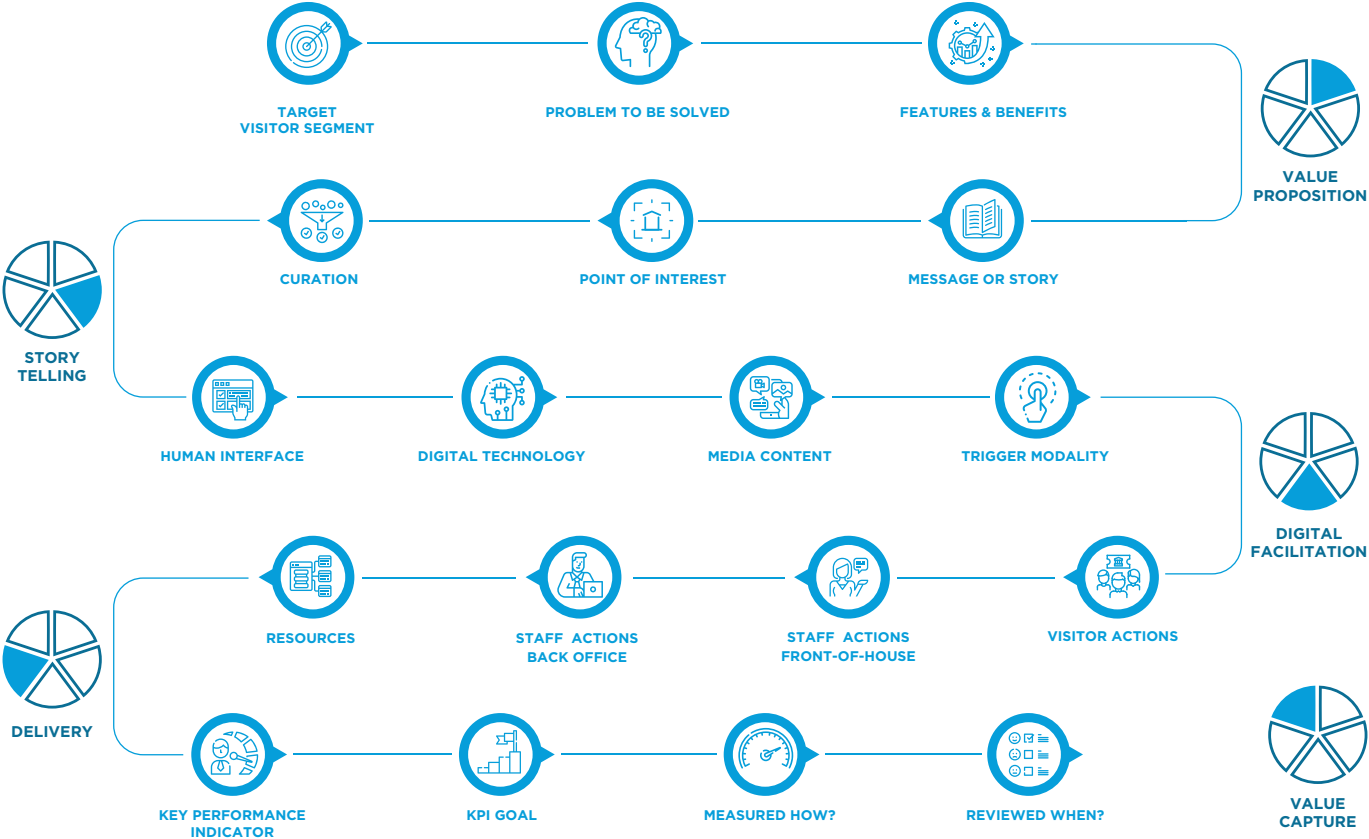
DEEPER DIVE INTO THE BUSINESS MODEL WHEEL

The Business Model Wheel reminds us of the important relationship between sections of the business model of a cultural heritage site.

Each of the three innovation phases in this workbook can be connected by a series of elements that give rise to tasks of questioning, planning and evaluation.

These elements have been put into a 'snake' diagram showing how the dots are connected along the journey through the Business Model Wheel.





THE IMPORTANCE OF VISITOR EXPERIENCE

The visitor experience describes the visitors' actual perceptions of their visit. The satisfaction that visitors gain from their experience substantially affects their future behaviour such as their intention to revisit the site or recommend it to others.

This means that the reputation and appeal of a site depend on positive visitor experiences and understanding the visitor experience is a powerful and essential part of your strategy.

Visitor satisfaction is generally measured in an overall score given by the visitor. However, this does not give precise information about the experience and does not inform the heritage site about whether it has achieved any other objectives it may have.

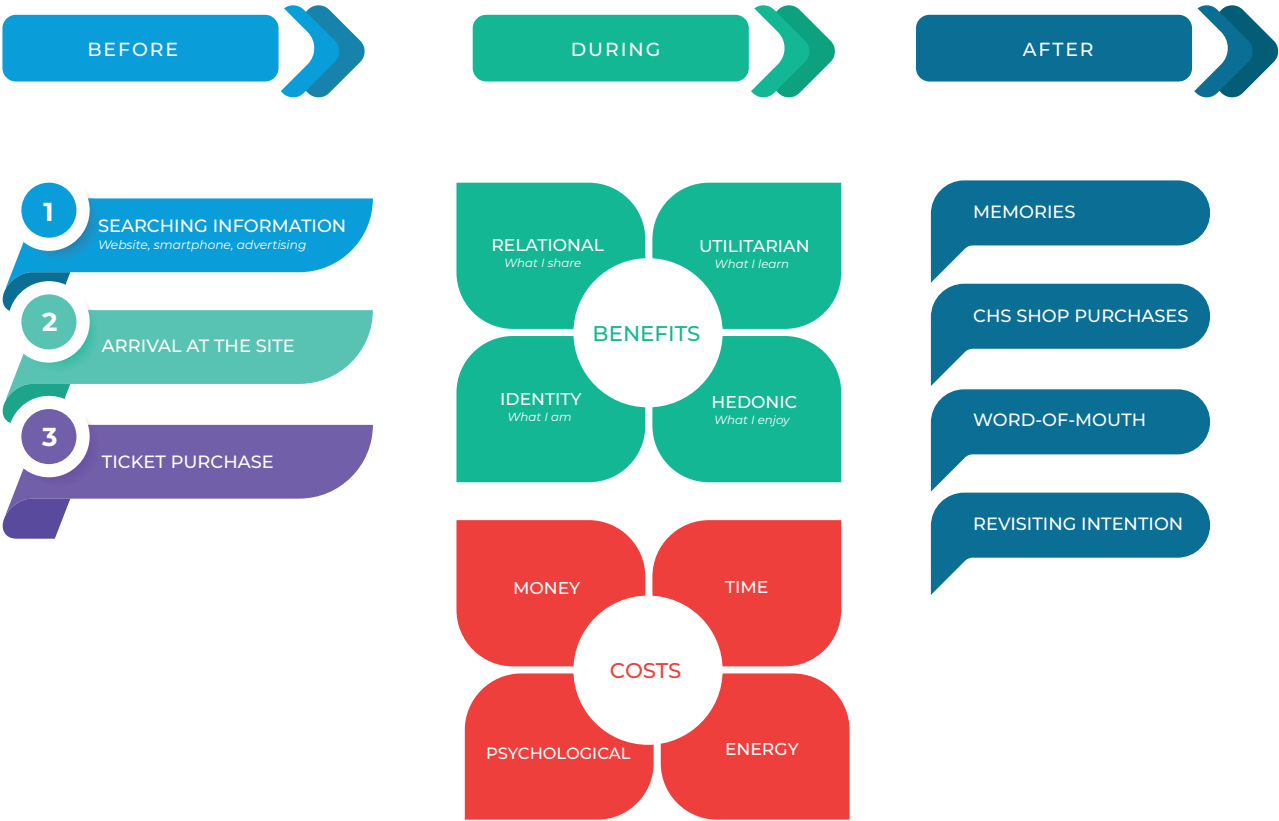
It is important to understand the visitor experience as well as possible in order to act effectively to meet the heritage site's performance criteria.

In order to understand the visitor experience we can break it down into phases and dimensions. The first phase of the visitor experience is before the visit as the visitor tries to find out about the site.

During this phase the visitor develops expectations which, if the heritage site does not fulfil, will lead to disappointment. The visitor experience continues after the visit through memories, recommendations to others and a possible intention to return.

At the heart of the visitor experience, during the visit, we can think of eight useful dimensions. Four of them make up "the benefits of the experience", while the other four are "the costs of the experience". These can be seen on the table on the following page.

VISITOR EXPERIENCE



Why consider visitor experience?

While examining the visitor experience, it's critical to spot anything visitors experience as irritating because these aspects will eradicate the benefits of the visit or increase the costs disproportionately.

A successful heritage site will always be looking for ways to increase the value raised for the visitor. For instance, it would be possible to increase the value by including interactive games in a presentation or by adding more educational content.

Since the experience is different for each type of visitor it is also important to identify the irritants and increase the value for each audience.

For instance, teenagers are known to seek stimulation, which we would characterise as hedonic benefit, and tend to enjoy a less verbal approach which we would see as a psychological cost to that target segment. It is essential to understand the experience sought by each type of visitor if the site is to develop an appropriate value proposition.

Tools serving innovation at heritage sites

A wide range of immersive digital technology is now available to cultural heritage sites and with much of it, comes additional help in terms of evaluation of data on the visitor experience.

A range of tools also exists to capture visitor data. Data collected with these, typically-online, tools can be used to gain a multi-dimensional picture of visitors, identify and segment target groups, design immersive experiences, and explore new business models to capture additional and increased revenue streams.

This kind of information guarantees that tourist sites seeking to transform their offer can do so on the basis of relevant information, which will help them respond to key questions about which aspects of the experience should be improved through technology, what visitor segment should the digital experience be designed for, or which business models can be improved upon.

Phase 1: Analysis

1.1 VALUE PROPOSITION

Our first job is to define the value proposition you currently offer to each visitor segment.

Once you know who your visitors are you can examine what it is they gain from their visit.

The value proposition explains to the visitor why they may want to take the time to visit the heritage site and usually takes the form of a clear and concise statement.

To write your value proposition you can focus on the benefits visitors are looking to gain when they visit the site and connect it with what the site has to offer.

It's common practice to visualise visitors in groups known as segments. We think of visitors in segments so that we can make efficiencies in communicating with them and easily refer to them.

If visitors can be reached through the same channel or will respond to the same value proposition, then it helps us to see them as belonging to a segment. For example, we could see parents of school-aged children as a segment and write a value proposition that we put to them via a bus-shelter advertising campaign at only bus shelters near school gates.

The value proposition may well be different for each visitor segment. For instance, a person whose ancestors worked in the mining industry may be keen to take a virtual reality tour for a glimpse of what their ancestors experienced while working at the mine in its heyday.

Such an experience could highlight their sense of identity and help them forge a connection with the mining heritage and would be a very emotional motivation.

Meanwhile someone else who is simply interested in industrial history may have an interest in trying the same VR experience, albeit because they're interested in a better understanding of social aspects of the mining communities of the nineteenth century. This would be seen as an educational motivation.

In both cases the experience, the VR exhibit, is the same but visitors in each segment would derive different value from it.

Our job is to understand the value propositions and the segments of visitors to which they appeal by thinking in terms of the benefits that the visitors in each segment will gain from the experience.

In order to establish the value proposition we need to

examine a few aspects of our target visitor segments.

We need to know:

- » **Who is the target customer?**
- » **What is the problem they face?**
- » **How does a site visit solve that problem for them?**
- » **What are the competing value propositions?**

Target customer

We've already looked at putting visitors into segments, but we also need to know who the customers are. There is a small but critical difference between customers and visitors. The visitor is the consumer of the experience while the customer is the person who pays for the ticket. They may, of course, be the same person but they may not.

The challenge for you here is to think of your target visitor segment and think who is likely to be the person who buys the ticket or membership, etc, for them.

Key 'problem' faced

Next, we need to ask what 'problem' is the visit going to solve for the target visitor. How does it help them to achieve whatever job they are trying to get done?
For instance, Anne lives near the cultural heritage site and

has been several times. She buys a ticket so that she can entertain visitors who are staying with her. This is different from Will who is buying a ticket because he is studying history and wants to better understand his studies.

How can the visit solve the 'problem'?

Next we need to understand what the features and benefits of a visit to the heritage site are that will solve the 'problem' facing the customer.

For example, Anne's visit will fill a day of entertainment for her guests and she's confident they will be happy as a result. This is a key outcome for Anne. Will needs to make the most of the knowledge and understanding he is going to gain during his visit and he is focused on getting as much information as possible to take home to enable further study.

What part of the experience is key?

Then we need to describe the part of the experience that will solve the problem in words that any visitor will be able to understand.

For instance, Anne would not want to come back to the site if she had to pay for the full ticket price each time.
She has regular visitors and loves that the site gives a ticket

that's valid for a year so she only pays once and her guests buy their own tickets on each visit.

Will loves that there is an AR guide that will bring the site to life and that he can get an interactive PDF of the guide emailed after the visit to help him with his studies.

What makes this different from the competition?

Consider direct competition (eg other cultural heritage sites) and indirect competition (any other experience that is competing with you for your visitor's money).

If Anne had two choices and only one of them offered the annual pass option, she would likely choose that one each time. If Will thought he would only have the notes he took during the visit for reference he might be a little overwhelmed and look for another site that has better learning support facilities.

- Time to work on your own site. Use the questions opposite to dig into who your key visitor segments are and understand more about the context of their visit.

Who is the visitor?

.....

.....

Who is the customer?

.....

.....

What is the key problem that the customer wants to solve?

.....

.....

How can the visit solve the problem (name the elements of the experience)?

.....

.....

What competing offers are there?

.....

.....

1.2 STORYTELLING

Before planning new digital experiences, it is important to have a clear understanding of the heritage content of the site and the overall story it can tell.

The story will be experienced by a visitor through his or her journey and points of interest along the way need to be highlighted to enable the telling of that story.

Some key storytelling elements to consider are:

- » What compelling content does this cultural heritage site have to offer?
- » What stories does the cultural heritage site currently tell using that content?
- » How is this content currently delivered?
- » Is the way it is delivered currently a good fit for your target visitors?



1.2.1 Identify the cultural heritage site's current story and points of interest

A cultural heritage site tells a general story, a message it conveys to its visitors. Then different journeys are available for visitors to explore specific aspects and themes of the site. Each of these journeys anchors its narrative on a selected range, a sub-set, of the site's points of interest.

When we look at the storytelling aspects of a site we need to consider three main aspects: the message we want to convey, the journey a visitor goes on and the points of interest at which they will want to stop and experience.

The message is the core understanding the site can convey to visitors. We use the term visitor journey to describe the way visitors experience the site. A site can have a range of journeys available to visitors. They can be independent of each other and they could also cross paths. They can be organised by theme or by visitor segment such as thematic tours, audio-guided tours or family activity tours. Each of these would be seen as visitor journeys.

We also talk about points of interest which refer to any element of the site with its own story to tell. It can be an artefact, architectural feature, thematic room, gallery or viewpoint or anything that can be used to convey the story to the visitor.

Having understood these terms, our first job is to create an inventory of the site's points of interest. We can begin by analysing the content in all the journeys currently offered to visitors.

For example these might be: family packages, children's activities, audio-guides, leaflets, guide books, guided tours, themed tours such as night-time tours or roof-top tours, etc.

We need to examine each of these journeys closely and take note of their content. Ask the questions:

- What story does each journey tell?
- What points of interest are mentioned in each journey?
- What characters or historical figures are mentioned and how?

We can use the Visitor Journey Table (p25) to build our understanding of all the points of interest that the site has available. With it, we can list their cultural significance, their storytelling potential and which journey they are linked to. This list might be long so it can sometimes help to organise the points in categories such as historical, religious, natural, etc.

EXAMPLE: NATURE RESERVE

A nature reserve comprises several landscape and other features including a beach, cliffs, a wide range of biodiversity, etc. Each of these features is a point of interest.

An environmental organisation operating in the area wants to create a visitor journey to deliver a message about how climate change is affecting the landscape.

To create the new visitor journey, the first step is to make an inventory of all the points of interest in the area and assess the potential of each point to support storytelling related to climate change and its several topics.

They design the experience offering a single visitor journey relying on a set of points of interest, each telling a specific story about glaciers melting, the rise of sea level, local biodiversity narrowing, etc.

Although independent from each other, all these points of interest can be brought together by the climate change storyline.

1.2.2 Listing your visitor journeys

In addition to points of interest, the journeys should also be listed because the new experience will enhance the collection of journeys currently offered by the site.

We can use the Visitor Journey Table on p25 to break down visitor journeys according to their storytelling components such as message, points of interest and curation. We recommend using one table for each journey.

To deeper analyse particular journeys you may also choose to make a table breaking down a single visitor journey into episodes, such as an audio tour, listing all of its episodes and points of interest covered.



Visitor Journey Table

VISITOR JOURNEY				STORYTELLING		
EPISODE	EPISODE NAME	LOCATION	DURATION (EST.)	MESSAGE/STORY	POINT OF INTEREST	CURATION
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						

1.3 FACILITATION EQUIPMENT

Before designing your new immersive facilitation tools in Phase 2 it is important to understand and list your current facilitation equipment which includes all the things used to deliver the story to the visitor.

These come in two parts:

01

The interface where content is presented to the visitor which could be a member of staff, a sign, a tablet computer or even an audio guide.

02

The type of content that is delivered via the interface, such as images, audio, films, virtual reality, augmented reality, etc.

For each of the tools currently used in your visitor journeys we can use the workbook to describe the mix of interface and content type such as in the table below.

It will also be necessary to add a few lines describing the content that is highlighted by each tool. Of course, not all of your facilitation tools may involve technology – they can be human as in the case of facilitation by tour guides. You should simply indicate when the facilitation does not use technology.

Example of points where the interface and technology meet

INTERFACE	TECHNOLOGY	HERITAGE	STORYTELLING
Audioguide	Sound	In a ruined building: you can hear the sound of the past daily life and someone tells you what was the use of each place	Push the button corresponding to the point of interest number
Interactive Terminal	2D + Sound	Video showing the construction of the building	Click on the screen

We also need to include any additional factors that come into play because of your current facilitation tools. For example any staffing requirements necessary for their operation.

We need to note down any information we have about how visitors currently enjoy a particular part of the facilitation. Do we get feedback that some parts are hard to use or understand?

We also need to consider what triggers the interface. Does it happen automatically when a visitor enters? Do they have to push a button, etc?

For example, you may have feedback on the quality of the experience or that the content provided by a certain facilitation device is appreciated by visitors and this also reduces their need for staff assistance.

Perhaps the facilitation tool is located in a place where there is a risk of falling or of congestion. In areas prone to congestion device usage conflicts may emerge where, for example, the sound generated by one device interferes with the experience of another facilitation tool.

Based on this initial description of your facilitation tools and

on your analysis in section 1.2 Analysis: Storytelling, we can model the visitor journey in the worksheet below.

Our job is to deconstruct the current visitor journey to show all the tools, human as well as technological, that deliver the content to the visitor, using the Facilitation columns in the Visitor Journey Worksheet below.

VISITOR JOURNEY				STORYTELLING	FACILITATION EQUIPMENT			
EPISODE	EPISODE NAME	LOCATION	DURATION (EST.)		INTERFACE	TECHNOLOGY	MEDIA CONTENT	TRIGGER MODALITY
#1								
#2								
#3								
#4								
#5								
#6								
#7								
#8								

1.4 DELIVERY

We need to understand the resources required to give our visitors the experience they have paid for and our aim in this section is to identify and note down the key activities and resources we currently use for this.

For example, the welcoming of visitors and selling of tickets may require members of staff while the story at any given point of interest may be delivered by an audio guide. The audio guide is automated but requires frequent maintenance which is carried out by a member of staff or, perhaps, by an external contractor.

We should be able to identify the required elements based on the tangible features that we identified in the Storytelling section. It will help us to break it down into these sections:

- What does the visitor do? (These are 'visitor actions' in the worksheet)
- What does the front-of-house staff do? (if applicable)
- What does the back-office staff do (including management of external staff)?
- What resources do we have to have in order for all this to happen?



Ultimately, establishing the answers to these questions will enable us to identify the key components of our current organisation for each of our business models.

This will provide a useful basis on which to anticipate the organisational changes that may be required for our new business models.

We can use the workbook and fill in the columns on delivery for each Visitor Journey Table currently offered.

Visitor Journey Table

VISITOR JOURNEY		STORYTELLING	FACILITATION	DELIVERY			
EPISODE				VISITOR ACTIONS (IF ANY)	STAFF ACTIONS (FRONT-OF-HOUSE)	STAFF ACTIONS (BACK OFFICE)	RESOURCES
#1							
#2							
#3							
#4							
#5							
#6							
#7							
#8							
#9							

1.5 VALUE CAPTURE

You may have a rich supply of visitors and a value proposition that delights them but you also need to ensure that your business model works commercially.

While the value proposition describes the value offered by a business model to a visitor segment, value capture is about the value your cultural heritage site gains from that delivery. It's all about financial viability.

Of course, what constitutes value in cultural heritage is not simply financial. The work done by cultural heritage sites is often not driven by market forces but by social, societal and cultural purposes. In these cases tickets are often free or, where entrance fees are charged, they are nominal and do not relate to the true cost of providing the service or maintenance of buildings and assets.

Business models that include virtual and augmented reality technologies require substantial investment and so information regarding financial and commercial viability is an important part of the planning process. In order to assess the model's financial viability we need to look at two key elements – income and costs.

1.5.1 Analysing current income streams

Every value proposition will have an associated income stream. The first stage in analysing value capture is to identify what income is associated with each value proposition.

Cultural heritage sites tend to have fixed pricing. Whether this is a pay-per-use price or a recurring membership price, fixed pricing is where the price is set at a flat rate based on a set of predefined variables. These variables may include:

- **Site features** Where you charge dependent on the number or quality of features accessed, eg charging for access to various parts of the site)
- **Segment** Where you charge dependent on characteristics of a customer group, eg charging different rates for children or pensioners
- **Volume** Where you charge dependent on the quantity purchased, eg offering discounts for coach parties or guesthouse owners)

In reality several of these mechanisms may come into play at the same time and, just as the same value proposition can benefit several customer segments, this can be the case for income streams. The same income stream can apply to more than one value proposition.

EXAMPLE 1: PAY-PER-USE, SEGMENT-DEPENDENT PRICING

A medieval cathedral charges visitors on a pay-per-visit basis. The price of entry varies by customer group with adults paying £7.50, seniors and students paying £6.00 and under 18s being free of charge. Tickets sold through this fixed price strategy are the income stream for the business model and the number sold in each category determines the revenue generated.

EXAMPLE 2: RECURRING, VOLUME-DEPENDENT PRICING

A mine heritage site uses a combination of pay-per-visit and membership payment options where membership pricing varies by volume; individual (£72), joint (£120), family group (£126) and life (£1730)

1.5.2 Analysing current cost drivers

Just as for every business model there is an income stream, for every business model there are associated costs. Clearly cost structures used for financial reporting may make it difficult to allocate costs, particularly indirect costs, to a specific business model or customer group. However, identifying these costs will enable you to determine business model earnings.

For example, when analysing the costs of their tourism business model, a medieval cathedral might have identified the following cost categories:

Direct

01

Marketing and communications

02

Staff salaries

03

Booking system fees

04

Printed materials

Indirect

01

Heritage

02

Music

In the worksheet, we need to identify the income streams and cost drivers for every value proposition. Where it is possible to allocate financial figures, (beyond just categories of revenue and cost) this can lead to calculation of earnings per business model.⁵

⁵ There are methods for allocating costs in this way. See for example, Kaplan, R. S., & Anderson, S. R. (2007). *Time-driven activity-based costing: a simpler and more powerful path to higher profits*. Harvard Business Press.



Phase 2: Designing Augmented Reality and Virtual Reality Experiences

2.1 VALUE PROPOSITION

As we saw in Phase 1, a value proposition comes into play when it meets the needs and wants of your target audience. This means, one way of improving your customers' experience is by figuring out who your target audience is and what they want and need.

Then you can develop a value proposition that includes immersive technologies that will suit your visitors. A few key questions are:

- » **What is the target visitor segment of each of the digital experiences?**
- » **What value will the digital experience offer visitors in the target segment?**

One useful way of using visitor intelligence you have collected is to create a set of personas. A persona is a description of a single person who represents a customer or visitor segment. Well-developed personas can give you a good sense of what the target audience looks like, wants and how that audience behaves. The persona is intentionally simple making it easy to understand and communicate but also firmly based on data and insights gathered from real visitors.

For example, think about the visitor's reasons for visiting a cultural heritage site. Since the site holds different meanings to each person, they have alternative motivations for wanting to visit it. Because of this we can break down the visitors into six groups:

- 01 Explorers:** Curiosity-driven with generic interest in the site and its contents. They expect to find something that will grab their attention and help their learning.
- 02 Facilitators:** Socially motivated. Their visit is mainly focused on making sure their accompanying social group have a pleasant experience and learn.
- 03 Experience Seekers:** They are motivated to visit because they believe the site is an important destination. Their satisfaction mostly comes from the mere fact of having 'been there done that'. They want to gain experiences.
- 04 Rechargers:** They use the site as a refuge from the work-a-day world. Mainly seeking a contemplative, spiritual and/or restorative experience.

05 **Hobbyists:** Feel a close tie between the site's content and their professional or hobbyist passions. Their visits are usually motivated by a desire to satisfy a specific content related subject.

06 **Community Seekers:** These people have a strong sense of heritage and/or self identity. They view the site as an important part of their heritage and personal identity.

These motivations can be weighed against other visitor data such as age, size of visiting party or spatial behaviour.

For example, a woman in her 40s may have an interest in religious art and spend most of her cathedral visit learning about much of the artwork on display.

Her partner, also in his 40s might partake in the visit to give her a chance to enjoy her hobby while he spends time watching over their 5-year-old child. They spend most of their visit in the cloister where the art is, the garden where the child has space to roam and in the cafe where they all enjoy refreshments.

They also have a 14-year-old daughter who spends most of her time looking for the best spot to take a selfie to share on Instagram, finally deciding on a view of sunlight shining through the stained glass windows. She catches up with her family when they get to the cafe. This example scenario above shows us three different personas:

Table showing example of motives and needs

NAME	DEMO-GEOGRAPHIC (Age; Gender; Nationality; Education; Employment)	VISIT CONTEXT (Holiday type; Party size)	MOTIVATIONS (Learning; Socialising, Relaxing; Heritage; Entertainment)	SPECIFIC NEEDS
Hobbyist	40s Female British High-income job Higher education	Taking a short break over the weekend Family group (adults and children)	To learn something about a subject I am passionate about	Specialised assistance and detailed interpretation
Facilitator	40s Male British Self-employed Higher education	Taking a short break over the weekend Family group (adults and children)	To bring a friend or family member	Requires facilities to enable socialisation, e.g. play area
Experience Seeker	14 year old Female British Student	Taking a short break over the weekend Family group (adults and children)	To see a famous attraction	Indication of and most popular point of interest of the site

The above example shows how a variety of characteristics and features combine to explain visitor behaviour. Using the visitor intelligence toolbox provided in Phase 1 we should be able to reach a set of visitor segments for our site. Each of these visitor segments has different characteristics, visiting behaviours and reasons for visiting. Having this level of understanding of your visitors is fundamental to designing meaningful experiences that meet visitor expectations and desires.

2.1.2 Incorporating immersive technologies into your value proposition

In order to increase the overall value of the visit the new digital experience should be tailored to meet the characteristics and needs of the target persona. Consider the persona created in the previous step and think of ways the site's features and story relate to the persona's traits. Our aim is to create a bespoke experience for this persona in a way that will meet their motivations and needs.

For example, if the target audience is mostly looking to gain knowledge about the history of the site, the digital experience could highlight historical aspects in its storytelling or highlight points of interest with the most historical value. If they are visiting to spend time with friends or family, their experience could include a social feature that allows the group to come together.

If they tend to navigate the site erratically, you could consider creating a modular style visitor journey, in which each of your points of interest can be experienced on their own, rather than creating a linear narrative.

If you are able, we recommend holding a brainstorming workshop with key members of your team to discuss the site's offerings and the characteristics of the target audience. This can help develop a set of value proposition statements for each persona.

VALUE PROPOSITION STATEMENT	
Journey title	VR of mine tunnel
Target audience (Persona)	Explorer families
Value proposition statement	Immersive experience providing the thrill of walking down an underground mine tunnel and discovering what the atmosphere was like during the height of production

2.1.3 Safeguarding your core audience

While your digital experiences are aimed at attracting new audiences, it is very important that the new experience and people don't affect the current visiting experience of the main audience.

For example, the main visitor segment visiting a cathedral perceives the site as a place of spirituality and people in this segment visit to escape from the busy grind of daily life and to experience some peace of mind.

In order to attract the new visitor segment of families with children, a new VR experience has been developed. In the process, the cathedral management thought of ways this could affect the experience of the primary segment. To minimise the potential for noise and increased activity to impact upon the primary segment's peaceful experience, it is decided to place the VR room well away from the areas used by those looking for peace and quiet.⁵

⁵ Falk, J. (2009). *Identity and the Museum Visitor Experience*. Walnut Creek, CA: Left Coast Press.



2.2 STORYTELLING

An engaging story is key to a memorable experience for your visitor and choosing what type of technology to employ will depend on the story you wish to tell, how you want to tell it and who the target visitor segment of the new digital experience is. Key questions for us to consider are:

» What story will the new journey and digital experiences tell?

» What curation is necessary?

2.2.1 Integrating new stories into your overall message

When creating a new digital experience for your cultural heritage site, you need to determine what story you want the experience to tell and what messages you want to communicate with your visitors. Your site will have already-existing messages and journeys so you will need to consider how the message in the digital experience will integrate with these.

The work we did in Phase 1 establishing current visitor journeys puts us in good stead to be able to consider how digital technologies can be used to enhance or add

to the journeys available. Whatever we choose to do, the experience will need to fit with the broader theme of the site and its other journeys.

2.2.2 How to select points of interest for a new journey

When planning your new visitor journey, it is best to select the specific point of interest that will be the focal point of the experience. One way to select such points is to organise an interpretation workshop with the site's team to examine all points of interest and determine which ones offer best value to include in the new visitor journey.

To select our key points of interest we will have to consider three main pieces of information:

- 01** The list of the site's points of interest we identified in Phase 1 - Storytelling.
- 02** Any visitor intelligence we have, namely your current visitors and the target audience (personas).
- 03** Resources available, including existing digital tools, facilities, staff and budget available.

Generally, a visitor journey should not be longer than 60 minutes to keep visitors interested. Stops at each point of interest should be planned to last approximately 5 minutes with a total of 8-12 points on any visitor journey.

Use the Visitor Journey Table to create a new visitor journey, starting with the value proposition and target audience. Plan your points of interest as episodes and complete the Storytelling columns with your intended content.

VISITOR JOURNEY				STORYTELLING		
EPISODE	EPISODE NAME	LOCATION	DURATION (EST.)	MESSAGE/STORY	POINT OF INTEREST	CURATION
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						

Journey title: Target audience: Value proposition:

2.2.3 How to choose which points of interest to digitally enhance

While digitally enhancing every point of interest on your visitor journey would be possible, it can be costly. At this point in your planning, it is worth considering which points should use a more low-tech interpretation such as text or images and which points will be best-suited to digital technology.

Examining every aspect of the site will help you to decide where to apply digital technologies. You will need to take into account your intended audience, current journeys and available resources.

When considering if a point of interest might be suitable for digital interpretation it is helpful to identify the supporting storytelling content that will be necessary such as historical records or imagery. We need to consider what content is available and what content would need to be produced.

EXAMPLE: A medieval cathedral is studying options to generate more interest to attract potential visitors to the site. They decide to develop an experience that digitally augments the façade of the building to represent the original colours of the statues and figures as they were when they were made centuries ago.

One of the main reasons behind the decision to create digital interpretation for this particular point of interest is because the cathedral has new information from research on the original colours of the figures. AR technology has been identified as a great tool to capitalise on this research and create a new experience for visitors.

Some practical issues should be kept in mind.

- Bottlenecks
- Queueing
- Hindering of enjoyment of other visitor segments
- Hindering the use of other equipment.

Consider the location of the digital experience, visitor flows and site restrictions that may cause any of the problems above or others. The link and proximity between digital experiences needs to be managed to make sure each visitor gets a positive immersive experience.

It's good practice to reuse as much of the existing interpretation as possible. Visitor journeys can make effective use of digital and analogue interpretation at the same time. For example, a painting might be digitally enhanced to present information about the composition or evidence of the method of painting while physical signage offers basic information such as artist, date and commissioner.

However, it is important to keep the story coherent when planning a visitor experience that is both a digital and an analogue interpretation. Imagine a visitor who has access to only one of the interpretation mechanisms and consider how they will experience the journey. Bear in mind also that combining digital technology with out-of-date scenography will create a jarring experience so some updating of existing curation may be necessary.

2.2.4 Script writing and storyboarding

Once we've figured out the stories that each point of interest will tell we need to decide how will it be narrated. We will need a script to get the message across and some curation to make sure the experience has an impact and is meaningful. It's important to note that a single point of interest can tell multiple stories perhaps from a variety of perspectives. For example, visitors can listen to a fictional or historical character narrate his or her role and relationship with a certain point of interest and then listen to an academic speak about the historical interest of the same point.

We can create a storyboard as a description of the scenes that will make up the digital experience including notes and observations for the technical production. A storyboard helps us to keep track of the storyline that the digital experience will tell.

It also illustrates how and what your visitors will experience at each point of interest. The storyboard also helps identify problems before going into the production stage of the new experience and this can help to reduce costs. We will need to have a detailed understanding of the contents of the story and how it should be presented to visitors in order to create any kind of digital experience.



2.3 DIGITAL TOOLS

In this section we explore the benefits and suggested uses of four digital tools based on two types of immersive technology: augmented reality AR and virtual reality VR.

Virtual reality completely immerses the user in a digitally-created environment. This has the effect of changing sensory perceptions namely sight and hearing and immerses the visitor into a virtual world. This VR experience is normally delivered through a headset or a smartphone equipped with VR services. You could use this technology, for example, to feel immersed below the ocean's surface or transported to ancient Egypt.

Augmented reality doesn't have this level of immersion. Rather it enriches reality by overlaying virtual elements normally making use of the camera and screen of a smartphone, tablet computer or similar device. The AR user is fully aware of what is going on around them, they remain aware of the real world rather than being fully immersed in a digital creation.

The challenges we face are choosing the most appropriate technology for the story we wish to tell, the visitor segment who will be using it and the points of interest that are involved. Here are some examples of uses of the four tools and the technology that they can deliver.

IMMERSIVE EQUIPMENT	TECHNOLOGY TYPE	EXAMPLES
Tablet	Virtual and/or Augmented Reality	In augmented reality AR: in gardens, a GPS tablet can display animated characters in strategic locations for a treasure hunt. In virtual reality VR: 3D panoramas of an open space, such as a garden, in different seasons.
Model	Augmented Reality	Based on a physical model, a tablet can display a digital augmentation of what the heritage site looked like in different eras.
Immersive room	Virtual Reality	Immerse the visitor in ocean flora and fauna using 360° screens.
Headset	Virtual Reality	In a cathedral a VR headset can simulate crossing the roof of the cathedral on a plank.

2.3.2 A series of questions to consider

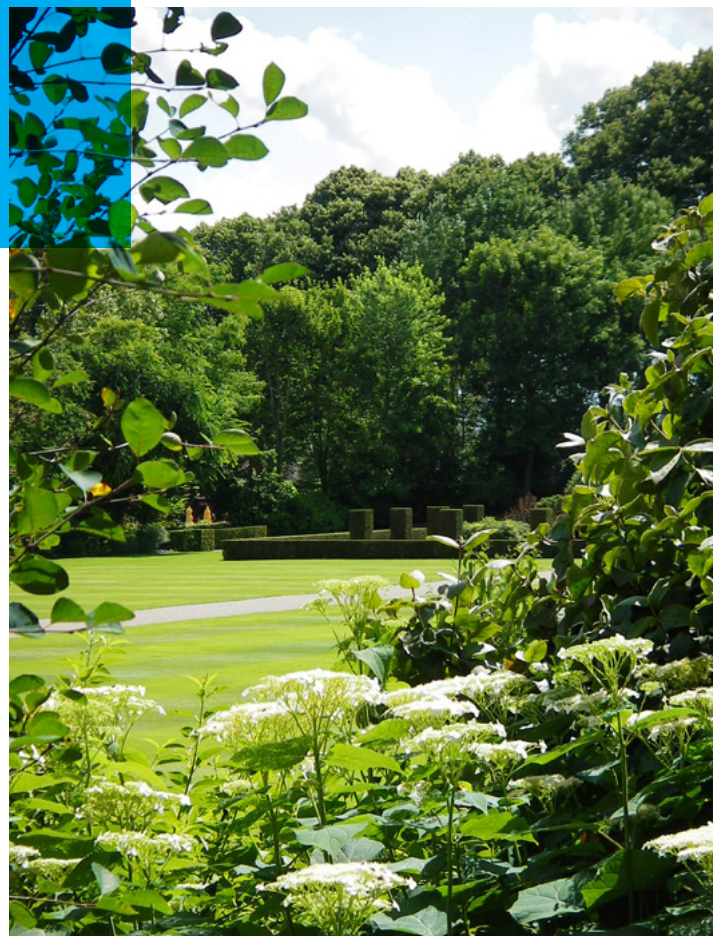
Remember that the purpose of these digital tools is to enhance the visitor's experience of the storytelling content for a target audience and to achieve the performance objectives you have set for the cultural heritage site. For this reason, it is necessary to ask several questions before selecting the right tools.

It's important to pay careful attention to the simultaneous use of different equipment by different visitors. For example, if the audio is launched on several tablet applications at different times this may create a confusing hubbub.

An architectural element must be viewed from a distance to make sense of some AR content but this distance results in the user obstructing the visibility of another point of interest for others.

A garden manager wants to attract families with teenagers by adding digitally immersive experiences in the visit offering. The core audience of the site is adults over 50 years old so the manager has to be cautious about conflicts between the needs of both visitor segments.

After answering the questions overleaf you will be able to design your digital tools.



QUESTIONS TO ASK WHEN SELECTING DIGITAL FACILITATION TOOLS		CASE
What are the characteristics of the target audience?	<ul style="list-style-type: none"> • Age • Social acceptance of technology for the heritage concerned. 	<ul style="list-style-type: none"> • Some heritage sites have forbidden the use of tablets below a certain age to avoid the risk of falling. The headset is not recommended to visitors below the age of 12. • The uses of the digital equipment need to be anticipated, to avoid conflicts of use between visitors, bottlenecks, or damage to the site or the equipment itself.
How do you want the visitor to use it?	<ul style="list-style-type: none"> • Individual or collective 	<ul style="list-style-type: none"> • Some sites aim for the tools to be used by families (tablet), other propose a tablet for each visitor. The content needs to be adapted depending on this choice.
What are the features of the heritage content to enhance?	<ul style="list-style-type: none"> • Tangible or intangible • Uses of the location by visitors 	<ul style="list-style-type: none"> • AR is ideal for reconstituting architectural sites. However, intangible content, such as the atmosphere of a location in a particular period, is more realistic in VR. • In the case of a ruined building, visitors may need immersion, using VR, to see how the site looked previously. However, in a garden, evoking peace and calm, immersion (if this effect is desired) can be encouraged using resources other than digital tools.
What are the resources and media assets available to support the storytelling-tools?	<ul style="list-style-type: none"> • Access to historical records, e.g., pictures, videos • Quality of these assets to provide the necessary accuracy and authenticity 	<ul style="list-style-type: none"> • Following the inscription on the World Heritage List, a heritage site has a lot of historical content it wants to show to the public. It needs to detail the different kinds of contents available.
In what environment will the tool be installed?	<ul style="list-style-type: none"> • Indoor or outdoor • Steep or safe • Light or dark • Spacious or cramped • Empty or full • Possibility of installing electric equipment and/or wireless communication (Wi-Fi, beacons, etc.) 	<ul style="list-style-type: none"> • The choice of interface will depend on whether there is a risk of bad weather or conditions are controlled. • The space available to install a digital tool will also limit the choice of tool. During immersion via a VR headset, the location must be spacious enough to install the equipment and guarantee the safety of the user. In addition, take care if tablets are used in steep, rocky, or dark locations to avoid the risk of falls.

VISITOR JOURNEY TABLE

VISITOR JOURNEY				STORYTELLING	DIGITAL FACILITATION			
EPISODE	EPISODE NAME	LOCATION	DURATION (EST.)		HUMAN INTERFACE	DIGITAL TECHNOLOGY	MEDIA CONTENT	TRIGGER MODALITY
#1								
#2								
#3								
#4								
#5								
#6								
#7								
#8								

2.3.3 Points requiring special care

At some sites incorporating these immersive technologies in the visitor journey requires an overall redesign of the visitor journey and curation. Where this is the case it will be necessary to review the digital delivery tools all along the journey, including the choice of points of interest, what the guides highlight and all signs and labels.

At other sites immersive tools will be used to complete an existing visitor journey. Where this is the case it will be necessary to consider the way the digital tools work together to tell the story both to satisfy the visitors and for successful operation of the site.

The tools must also be coherent with the types of technology already present in the site's visitor journeys. It is important, for example, not to accidentally make existing technology feel obsolete by an awkward juxtaposition with new technology.

Protected heritage sites

Protected heritage sites may be subject to restrictions to the extent to which they may modify the site to install technological equipment. In France, work carried out on protected sites may require the approval of the national architectural review board. Workarounds may be possible

such as operating a wireless network from another area on the site but sometimes natural or architectural constraints make wireless communication difficult. Solutions can normally be found but it is important to plan ahead.

Some protected sites will have to call on a scientific committee of experts in the type of heritage in question to approve the historical hypotheses made by AR or VR interpretation. For example, in the case of historical remains, scientific approval of AR or VR installations may be mandatory, depending on the type of protection the site benefits from, or requested by the site, so that it can communicate about the accuracy of the installations proposed by the site's digital tools.



2.3.4 Device testing

The technical development of digital interpretation devices is complex and consists of several stages. While most work is completed by software developers and animation experts, some on-site testing is necessary to ensure that the devices, triggers, software and content are tweaked for an optimal experience. Often developers will produce a prototype of the device to be tested on-site after which an improved version is implemented.

Some testing on practical aspects of the device use is required. For instance, the sunlight in a room may have a detrimental impact on how the AR image triggers on a physical model. Also, the height and distance required to trigger an AR image may also restrict the location of the physical model within the heritage site.

With VR experiences it is necessary to find space to accommodate the hardware eg server computer, long cables and headsets while leaving uncluttered space for visitors to explore the VR environment comfortably and safely.

Quality tests can be run with a small sample of visitors. Give them a chance to try out the device and explore the interpretation. Following their experience they can fill out a short survey to provide feedback. It is important that the survey contains open questions because visitors' impressions and notes taken from the experience will prove

invaluable in revealing issues for improvement in the final version. Aspects such as visual and sound quality, quality of content and easiness-of-use are essential to know about. You can also include a question about how satisfying the prototype experience was.

What tools will you use?

Use the Visitor Journey Table on [p44](#) to identify the assets and constraints you have at each point of interest.



2.4 DELIVERY

Why should you consider your activities and resources when introducing digital tools?

Bringing new digital tools to your site could well lead to a need for changes in your site management. Yet there is a common misconception that adding digital tools is just a question of technology.

Having such a limited view could prevent the site from achieving its objectives. Technological innovation is closely linked to the site's organisational structure and it is likely that changes to the site's activities, including its resources, will be essential.

Considering these changes ensures a successful introduction of the new digital tools and does not endanger the successful operation of the site.

Once we have a visitor journey equipped with new digital tools we can plan for the activities and resources needed for the new journey to operate correctly. For each point of interest we need to identify associated impacts on other parts of the business, namely:

01 Physical Resources

02 Visitor actions

03 Staff actions (front and back office)

2.4.1 Physical Resources

Physical evidence is necessary to indicate how and where to use the tools.

At the beginning of the visitor journey, you can install a presentation of the tools to help the visitor getting started. That first physical resource could be a sign with pictures and text (in local and foreign languages).

You will also need a place to store and recharge the devices. The arrival of digital tools could give rise to a need for changes in the layout of the site entrance. For example, at a medieval site in Paris, the manager decided to set up a screen with a short promotional video showing what additional content people could access with the tablet and how to use it.

At points in the journey you may spot a need to indicate how to trigger the virtual view of the content. For example, some sites set up areas where this is encouraged while others may have a sign that suggests scanning a building or another physical feature to trigger augmented reality content.

Visitor Actions

The use of digital tools can change the way visitors move around the site relative to their spatial characteristics. Factors such as whether it is indoor or outdoor, wide or narrow, etc, will need to be taken into account. To anticipate and avoid problems such as queuing, conflicts of use, the risk of falling, etc, you will need to identify likely visitors' actions, and the impact of them, at each point of interest.

For example, you want the visitor to trigger the AR view of a space by scanning a trigger. To do this, the visitor must be a meter away from the trigger. Two issues can occur: a difficulty in accessing the trigger when more than say five visitors in that space want to use it.

It's also possible that the presence of a visitor using the trigger can prevent another visitor from seeing an item located in the same space (a painting, an historic object, or just a sign). If congestion occurs they may also be prevented from seeing signage about the immersive technology and miss the experience altogether.

To help visitors behave as expected, you can also provide warning signs about security, age limit or indications of how to use the digital access tools as applicable.

Staff Actions

Another common misconception about technology is that it can replace humans completely. However, new digital tools normally bring with them new tasks that in most cases require human resources both front-of-house and back office.

Front-of-house Staff Actions

Actions carried out by front-of-house staff refer to all actions during which they are in direct contact with visitors. These include distributing the tools, explaining how they work, retrieving them and refunding the deposit if applicable.

New staffing needs are likely to arise both in quantity of staff and in specific skills needed to help visitors to use the new equipment while minimising downtime and breakages. The site may be able to handle these new tasks using current staff members but new staff members may be required. Site constraints such as layout and the availability of electrical points may complicate matters.

For example, two British castles have completely different layouts, especially at the entrance. One has space available next to the front desk where a special point of interest has been installed to help visitors to learn to use a tablet that gives an augmented experience.

It relieves strain on human resources by pooling the tasks of welcoming and explaining how to use the tools. The other castle does not have the space to allow proper assistance in handling the devices at the entrance.

Digital tools could also modify some front-of-house jobs such as that of the tour guide. As a site manager, it is important to check-in regularly with employees to ensure they are comfortable in their new roles.

Back-office Staff Actions

Back-office staff carry out activities that are often invisible to visitors but are nonetheless crucial to the smooth-functioning of the site. In terms of digital equipment, they must ensure devices are sufficiently charged and manage maintenance and repair. Some of this may be possible internally but they may also need to manage subcontractors to help with this while minimising downtime.

The communication department of the site will also have a key role to play. In their marketing role these staff are often the first point of communications in the visitor experience and they will be communicating the value proposition of the site to the potential visitors.

Consequently, it is important that these staff know about issues such as age restrictions or the number of participants able to use equipment, etc. If the immersive experience relies on a smartphone application; these staff may need to communicate how it can be downloaded.

From new activities to new resources

After defining the actions of visitors and our front-of-house and back-office staff, we will be able to define the resources needed to complete the new activities.

VISITOR JOURNEY		STORYTELLING	FACILITATION	DELIVERY			
EPISODE				VISITOR ACTIONS (IF ANY)	STAFF ACTIONS (FRONT-OF-HOUSE)	STAFF ACTIONS (BACK OFFICE)	RESOURCES
#1							
#2							
#3							
#4							
#5							
#6							
#7							
#8							
#9							

Output of Phase 2 – Delivery: Identification of visitors and staff actions necessary to ensure the delivery of AR/VR experiences, identification of new activities necessary to the site to function, identification of the resources needed (in quantity and quality).

2.5 VALUE CAPTURE

The business model is defined for a single value proposition, often for a single visitor segment. Just as a business model requires consideration of value to the client, when you design a new value proposition, you need to consider how you will capture value from it. Likewise, when introducing virtual and augmented reality experiences into an existing business model, the value proposition changes and this presents an opportunity to consider how it will create value.

What constitutes value for your site will depend on the primary goal of business model innovation. Often, given the investment required to develop these technologies, this will involve the design of an income stream, often referred to as a monetisation strategy.

A monetisation strategy is a plan of action, designed to convert an event, object, or transaction into a form of currency in order to achieve an overall aim or goal.

For others, for example those who have secured funds for innovation based on delivering social or cultural value, the primary goal may be entirely non-monetary. In such cases, designing value capture will not require a monetisation strategy but instead may focus on other sources of value with non-financial indicators of success.

This section focuses on monetisation strategies; types of strategy and factors affecting choice of strategy. In Phase 3, we set out a process for designing indicators of success which can be adapted if the primary goal is not to generate revenue. This may also be used in conjunction with a monetisation strategy if you have both monetary and non-monetary goals.

Types of monetisation strategy

» **Should we charge for the new immersive AR or VR experience?**

There are several options here. Monetisation strategies for digital technologies and experiences can be direct or indirect.

Direct revenue-generating strategy

A direct revenue-generating strategy directly charges a fee for delivery of the experience.

Indirect revenue-generating strategy

Indirect strategies generate revenue from activities other than from the experience itself. For example, by attracting new

or repeat visits or by driving customer spending in other activities such as food and beverages or souvenirs. In these cases, the goal is still to increase revenue for the site but not by directly charging a fee for the digital experience.

Direct monetisation strategies

There are three types of rights a business can legally sell – ownership, access, and matching rights. We will use these to classify types of direct monetisation strategy.

TYPES OF LEGAL RIGHT A BUSINESS CAN SELL	
Ownership	A business can sell the right of ownership of an asset. Customers who buy the right of ownership of an asset have the continuing right to use the asset in (almost) any way they want including selling or disposing of it.
Use/access	A business can sell the right to use an asset. Customers buy the right to use the asset in certain ways for a certain period of time, but the owner retains ownership, and can restrict the ways it is used. At the end of the time period, all rights revert to the owner.
Matching	A business can sell the right to be matched with potential buyers or sellers of something.

Ownership rights

It may seem unlikely that a site would sell ownership rights of an experience, allowing customers the right to use content without further charge and the to transfer ownership to another party. However, selling ownership rights to an experience can be a scalable way of encouraging people to visit the site without adding pressure to existing resources such as the delivery of guided tours.

Examples include selling a guidebook or app. When we sell a guidebook, customers own a copy of the book and have the right to resell, gift or dispose of it. Selling an experience in this way still encourages visits to the site.

Similarly, a trail or tour can be sold as a digital product, as an in-app purchase or as an app in its own right. A digital tour, in comparison to the print version, may be lower in price but is harder to transfer ownership or resell.

Usage or access rights

The most common direct monetisation strategies sell usage of, or access rights to, an experience. When selling usage rights for a digital experience as part of a broader cultural heritage offering, sites need to consider how to combine entrance charges with fees for the digital experiences.

For instance, there may be no charge for entry or customers may be charged a price per visit or a recurring membership fee. In addition, charges for the digital experiences themselves may be at an additional ticket cost or included in the entrance charge.

Where a ticket fee is charged, this may be at a price per experience or as part of a package of experiences. Which strategy you choose will depend on the following factors:

- Willingness to pay of potential visitors
- Competing business models
- Existing business models and current charging structures
- Type and length of experience

These factors affect customer expectation of price and their willingness to accept a charge.

Matching rights

Selling matching rights represents a fee paid to a site that matches potential customers to advertisers. This is akin to a traditional advertising model. While this model is sometimes criticised on the basis customers don't trust advertising media, often don't view the adverts and no longer need

adverts to inform a buying decision. This criticism is often directed at pop-up advertising, there may still be a place for matching rights where the content is linked and relevant to the activity.

For example, a walking trail provider sells matching rights to businesses wishing to advertise to users of their app. providing a free app to walkers, the app offers free content, such as trail maps, guides, and information. The walking trail provider gets income from the businesses advertising their accommodation, equipment, travel and rest stops to those who engage^{5,6}.

5 Weill et al (2004) *Do Some Business Models Perform Better than Others? A Study of the 1000 Largest US Firms*, MIT Sloan Management working paper, no.226

6 Clemons, E.K. (2009), *Business Models for monetizing internet applications and web sites: Experience, theory and predictions*, *Journal of Management Information systems*, Vol. 26, No. 2, pp.15-41

STRATEGY	DESCRIPTION	EXAMPLE	CONSIDERATIONS
Free site entry, pay per experience (freemium).	Entry is provided free of charge, but money (premium) is charged for proprietary experiences.	London Science Museum (free entry £3-7 per VR/MR exhibit).	<p>Requires valuable free content, yet a desire for paid content.</p> <p>Reliable data to suggest when to switch to paid and on different conversion offers, barriers.</p> <p>Suffers if there are market alternatives with free content.</p>
Entrance fee (per visit or recurring) plus pay per use.	Visitors pay a time-based fee or ticket cost for an experience.	Conciergerie (Paris) (€9.5 entry, €5 for a tablet tour).	Requires understanding of the maximum/optimum price combination for the total experience.
Entrance fee (per visit or recurring) inclusive of all experiences.	Tickets for unlimited access to all experiences available at a venue within a set period of time.	Location based VR experiences, £12-18 for a 2hr experience.	<p>Also requires understanding of the maximum/optimum price combination for the total experience.</p> <p>Requires the experiences to have universal value across customer segments and the ability to be able to deliver the experience to all customers.</p>
Donation.	Free or charged entry, no obligatory fee for experience but donation accepted.	The National Gallery's Mosaic Masterpiece project allowed visitors to select between three donation amounts (£5, £10, and £20) before taking an image of themselves to be included on large screen display of a masterpiece.	<p>Coin and digital donation are largely accepted as part of museum and gallery spaces and exhibits.</p> <p>Digital donation kiosks cost money and take time to set-up, position, and messaging are key.</p>

If you would like to understand more about how to work out how much your customers are likely to be willing to pay for an experience then we recommend using the price-sensitivity meter method. It is a simple-yet-effective way to get a range of acceptable prices. For a primer on how to carry this analysis out, see <https://www.5circles.com/van-westendorp-pricing-the-price-sensitivity-meter/>.

Memberships

Memberships models can be lucrative but they only tend to work in limited circumstances. They require a compelling value proposition with content or service that will justify an ongoing subscription for something that is not available for free. They can suffer from competition if there are free alternatives in the local market.

Further reading: <https://mw18.mwconf.org/paper/making-contact-experiments-with-digital-donations-at-national-museums-scotland/>

Indirect monetisation strategies

Indirect monetisation is where the business model generates revenues from the experiences without directly charging for the experience. The two most common indirect strategies are using digital experiences as 'unique traffic drivers' and

generating revenues from customer downtime or, in other words, encouraging visitor spending while they wait for an experience.

01

Unique Traffic Driving, Using VR and AR to increase relevancy, engagement and visitor numbers, ultimately to attract an increase in new and repeat visits, generating revenues through existing streams.

02

Monetising Downtime. This is a strategy more relevant to VR, where experiences are solitary and limited in terms of the number who can partake at any one time. This gives an opportunity to entertain those waiting. Selling other forms of entertainment or food or drinks can work in this way⁵.

⁵ For more on how much customers are willing to pay for an experience, we recommend the PSM method. For more, click [here](#), [here](#) and [here](#). [footnotes 8, 9 & 10]

We recommend you take time now to consider what type of monetisation strategy you think will work for your cultural heritage site.

Phase 3: Evaluating the new business model

3.1 VALUE PROPOSITION

3.1.1. Assessing the new digital visitor journey

The success of the new value proposition and visitor journey is a direct reflection of overall visitor satisfaction and measuring visitor satisfaction is one way to measure the impact of the digital experiences in the new visitor journey. Key questions to consider include:

- » How many visitors choose to use the immersive digital experience?
- » What is their overall satisfaction?
- » Which visitor segments show more or less interest or satisfaction with the AR or VR experiences?

As digital installations, AR and VR systems are good at collecting data about their usage and this is often viewable via an online dashboard. Monitoring this visitor dashboard can give answers to these questions.

Some data, such as text analysis of online reviews, is continuously collected while personal data and visit outcomes can be gathered through the surveys on the device itself. You can check data collected post-implementation and compare it with baseline data from pre-implementation, referring to how engaged each target audience is to the digital technologies and how satisfied they are with the visitor journey.

3.1.2. Visitor satisfaction and outcomes

As for the number of visitors taking part in the visitor journey, you can set targets based on the minimum number of tickets necessary to cover development and operation costs of the digital experiences. Of course, defining target numbers will depend on the value capture strategy decided upon in Phase 2.

Concerning the quality of the experience, natural language processing of online reviews can indicate what aspects (positive and negative) of the digital experience stand out to visitors. This knowledge enables you to highlight the positive aspects, and address the issues that are having a negative impact.

EXAMPLE: USING VISITOR REVIEWS

Soon after introducing an AR tablet-based tour at a historic ruin, visitor reviews highlighted how the experience had helped them to understand the site's features.

However, reviews mentioned the size and weight of the tablets became a burden after some time, causing visitors to cut their visit short. Site managers added carry-straps to the tablets for greater comfort during the visit and feedback improved.

In terms of customer satisfaction, you can check if the levels of retention, such as intentions to revisit or actual revisits, have increased because of the digital experiences. If these results are disappointing, you may consider offering a revisiting incentive such as free re-entry to the ticketholder within a fixed period.

Likewise, the digital experiences may increase visitors' willingness to recommend the site to others. Being able to share their view of their visit to the site, particularly on social

media, can be a significant part of the visitor experience. Ways to encourage these word-of-mouth behaviours include installing prompts for picture-taking, selfie-spots or hashtags to stimulate interaction around certain subjects or points of interest.

3.1.3. Managing unexpected issues

Despite all the planning, the implementation of digital experiences can bring unforeseen changes in the visitor base. For instance, the new visitor journey could turn out to be quite attractive to visitor segments that were not considered during Phase 2.

For example, at one site an immersive room was designed to target families and groups of friends but data collected showed that the visitors who experienced the immersive room alone reported greater satisfaction than those visiting in groups. This information allowed the site's management team to explore new channels and value propositions to market the site to new potential visitor segments that have a different perception of the site as a tourism attraction because of the digital tech.

3.1.4. Evaluating impact on other business models

To evaluate how well the new business model integrates in the site, you can conduct short surveys on clients of other models.

For instance, after introducing a set of VR experiences for tourist enjoyment of a medieval cathedral, site managers collected informal interviews with local parishioners asking about their worship experience to ensure moments of prayer were not perturbed by visitors taking the VR tour. As a result, they decided to make the VR exhibits unavailable during the chaplain's prayers delivered throughout the day.

The table opposite shows some of the key performance indicators that can be used and gives an idea of the targets that might be aimed for, where the information might come from and reminds us that we need to set a time period during which to capture the data.

INDICATOR	TARGET	METHOD/ DATA SOURCE	REVIEW PERIOD
Number of users	Enough users to cover development and operational costs	Ticket office	Monthly / Quarterly / Half-year
Visitor satisfaction	Positive average score for digital visitor journey (eg at least 5 out of 7)	Dashboard	Monthly / Quarterly / Half-year
Intention to return		Dashboard	Monthly / Quarterly / Half-year
Word of mouth		Dashboard	Monthly / Quarterly / Half-year
Memorability of visit		Dashboard	Monthly / Quarterly / Half-year

Having read this section, we recommend that you plan to evaluate visitor satisfaction with the new visitor journey.

3.2. STORYTELLING

This section focuses on evaluating the content of the visitor journey and the key messages communicated through the new visitor journey and how well understood they were.

Key questions to consider:

- » How has the digital tech influenced the type of visitor experience?
- » How has the digital visitor journey influenced the understanding visitors develop of the site?
- » What are visitors taking away from the experience?
- » Is the intended message being effectively conveyed and retained?

3.2.1. Assessing interpretation outcomes

Some visitors value the educational dimension of the visit and will pay close attention to interpretative elements that focus on aspects such as the site's history, architecture, and relevant individuals. Others may be more interested in a chance to listen to the choir singing in a medieval cathedral.

Whatever the type of experience, digital interpretation will influence the understanding visitors get of the site.

For some visitor segments, schools for example, specific learning outcomes may be a critical part of the value proposition, as teachers will need to know that the visit forms a beneficial part of the students' education.

The visitor journey can be assessed to determine how effectively the message is being communicated. For instance, have visitors increased their knowledge on particular subjects, developed specific skills or has the experience made visitors feel enriched and wanting to share their experience with others?

One way to monitor these insights is via natural language processing of visitor feedback left in online reviews. This tech can uncover particular outcomes and keywords associated to the visitor experience eg words such as 'learned', 'inspired' or 'understood'.

Furthermore, the visitor dashboard will also provide a general overview of the type of experience, for example some visitors may report having had a more educational experience, while others may report having a strong

emotional experience. This can provide you with a general sense of the effects that new digital experiences are having on visitors.

Another way to assess these outcomes is to conduct a short survey or ask a sample of visitors to describe what they gained from the experience, with questions focusing on aspects such as knowledge, skills, or inspiration.

Learning outcomes include a range of dimensions and deciding which ones to assess will depend on the type of cultural heritage site as well as the aim of the new visitor journey. There are many tools for evaluating the impact of interpretive media on visitors. For instance, a commonly used framework in the UK is the Inspiring Learning for All evaluation tool.

3.2.2. Understanding outcomes in specific visitor segments

For a more detailed evaluation, learning outcomes should be analysed per visitor segment to understand how digital interpretation influences the experience of each audience group.

For instance, senior couples visiting a war museum may have a strong emotional experience and interest in stories of soldiers and spend time immersed in the interactive

screens containing digitalised letters written by soldiers. School groups and families with children may have greater interest in a virtual reality reenactment of particular events demonstrating how each side prepared and engaged in battle. Both groups may have similar satisfaction outcomes, even though the learning outcomes are different for each of them.

Understanding the sense-making experience of each visitor segment enables you to identify particular issues that might not have been spotted. Your visitor dashboard will offer you the capacity to provide insights into specific outcomes in function of a wide range of variables of the visitor profile. It might also be useful to examine outcomes in light of visitors' geospatial behaviour for a deeper understanding of the way the interpretation and points of interest are influencing the type of experience.

For example, you may find that visitors who spend more time at a certain exhibit will report greater learning and educational value in their experience compared to other visitors who engaged with other exhibits. Geospatial data and visitor navigation behaviour and patterns can normally be found in the visitor dashboard.⁵

5

For more about Inspiring Learning for All, click [here](#)

3.2.3. Adjusting the visitor journey curation

Depending on the experiences reported by each visitor segment, you may choose to change the way individual points of interest are curated. For instance, further interpretation can be added at exhibits that are popular for their educational qualities.

You can also use points of interest from other visitor journeys to complement the digital visitor journey. Likewise, information may be removed if it does not add significant value to the visitor journey, opening up space to concentrate the spotlight on the digital device.



INDICATOR	TARGET	METHOD/ DATA SOURCE	REVIEW PERIOD
Overall type of experience Educational Entertainment Escapist Aesthetic		Dashboard	Monthly / Quarterly / Half-year
Learning outcomes/ benefits gained Knowledge Skills Inspiration Fun		Dashboard (NLP) Visitor surveys	Monthly / Quarterly / Half-year

Output of Phase 3 - Storytelling: Plan to evaluate the visitor experience and learning outcomes from the new visitor journey.

3.3. DIGITAL EQUIPMENT

3.3.1. When should we evaluate our digital tools?

Evaluating your digital equipment is important. During the implementation stages we worked to ensure that they can be easily held and operated by visitors and that visitors will find the quality and the content satisfactory.

It is important to evaluate the devices at regular intervals to be able to detect any minor technical problems which, if left unchecked, will go on to affect quality and handling. Minor problems such as these often go unreported by visitors without the use of regular visitor surveys. Regular evaluation of the equipment, and the visitor's experience of it, will also help to identify when devices and their content have aged to a point where they cause dissatisfaction.

3.3.2. What should we assess?

The evaluation of digital equipment is done under two main themes:

» **How the visitor uses the equipment**

» **How the visitor understands and enjoys the content**

Regarding the use of digital equipment by visitors, the objective is to verify that each of the tools is easy to handle. This is mainly a question of ensuring that the tools are easy to use and that it is easy to understand how to use them.

For example, when evaluating an AR experience on a digital tablet computer, it would be sensible from a physical perspective, to ask questions such as: is the tablet interface easy to handle in terms of weight, brightness, straps, carrying equipment, etc? Considering the context of the site or of the exhibit in question, it is also important to evaluate any physical elements, such as: during what length, area or duration of the visitor journey is the tablet used? Is the animation triggered indoors or outdoors? This will allow the response to be better adapted in the event of visitor difficulties or dissatisfaction.

From a cognitive point of view, it is important to understand if the AR application is intuitive enough to be used as intended. Are the instructions easily understood? Do visitors understand easily what they are expected to do in order to benefit from the experience?

Regarding the quality of the content, the objective is to assess the visual, sonic and functional quality of the visitors' virtual or augmented reality experience. The aim of this evaluation is also to reveal any technical problems that could be affecting the quality of the experience.

For example, if evaluating a VR experience with a headset, it might be sensible to ask the following questions:

- » **Is the visual and sound quality good enough to allow visitors to achieve a feeling of immersion?**
- » **Are there any image or sound issues that could affect that sense of immersion?**
- » **Are the functionalities offered by the virtual reality application satisfactory?**
- » **Does the active or passive role of visitors using the equipment have an impact on the immersive experience of other visitors?**
- » **Is being able to move around in the virtual environment perceived as positive?**
- » **Is the possibility of interaction with virtual elements appreciated for its quality?**

3.3.3. How can we collect this information on the digital equipment?

Observing how visitors use the digital equipment can be done either by positioning oneself near a particular exhibit or by following a visitor or a group of visitors throughout their journey. The aim is both to analyse the ease of handling digital tools and to identify possible difficulties. It is also useful to observe how staff use the device, for example, during guided tours.

Specific visitor surveys or interviews focusing on aspects such as immersion, usefulness or interaction can also be employed to gain visitors' appreciation for quality and usability of the digital experience.

Interviews can be conducted with contact staff, such as guides, reception staff, stewards and technical staff, to find out how frequently visitors require assistance in using the devices.

Finally, a digital visitor dashboard, should you have access to one, may also provide data that can be useful in this type of analysis.

Output of Phase 3 – digital equipment: Plan for collecting information on the use and appreciation of digital equipment for analysis and decision-making to adjust negative elements.

AREAS OF ASSESSMENT	INDICATORS	DATA COLLECTION METHODS	RESULTS	ACTIONS / SOLUTIONS
Uses	Physical			
	Cognitive			
Quality	Visual			
	Sound			
	Features			

You can use the table above to record your research into the effectiveness of the new digital tools and decide your next actions.

3.4. DELIVERY

In order to deliver a new visitor journey enhanced by immersive digital tools the site's organisation was redesigned during Phase 2. In this phase our job is to evaluate how that has been working. This means we need to examine physical evidence as well as the behaviour that we anticipated made by visitors, front-of-house staff and back office staff in Phase 1. For each of these levels, we must check if we have the requisite resources for a smooth visitor journey and if any unanticipated issues have become apparent as a result of visitors taking the new visitor journey. This evaluation must be done for each point of interest in the visitor journey.

3.4.1. Physical evidence

Three issues concerning the “physical elements” should be assessed at each point of interest of the visitor route.

- Does signage, including directions of the route and instructions to use devices, information on heritage content, etc. and furnished elements such as models, sounds, lights, etc. help visitors to engage with the point of interest?
- Does device storage and charging furniture contribute to satisfactory working conditions for staff?
- Does the point of interest raise issues of flow management that had not been anticipated?

EXAMPLE 1: PHYSICAL ELEMENTS TO ADDRESS QUEUING PROBLEM

Visitors queuing for a VR projection room cause an obstruction to one of a site's visitor journeys. This could be approached by installation of a highly-visible timer at the entrance indicating the current running time of the video show, how long until the next start and at what intervals the video show is regularly played.

EXAMPLE 2: SPACE LIMITATIONS AND PHYSICAL ELEMENTS: CASE OF TABLET COMPUTERS

Due to space constraints at the site's welcome desk, tablets are stored and charged in different areas meaning frequent trips between both areas for reception staff, distracting them from their core tasks of welcoming visitors and selling tickets. Reconfiguring the space could help the staff to better combine their reception tasks with the new tasks required to support the use of the digital tools.

3.4.2. Visitor actions

Concerning the actions that are required by visitors to ensure a smooth visit, key questions include:

- To what extent do visitors adopt the anticipated behaviour at each point of interest?
- Even when they adopt the anticipated behaviour, are there unexpected issues such as queuing, understanding of the storytelling or elongated dwell times?

These two questions can be asked on various issues depending on the site:

Issues regarding the use of digital tools

- Since digital tools are part of the visitor journey, visitors are expected to be able to use them easily. Is this the case?
- Do visitors learn more about using the digital tools as they progress on their journey enabling them to enjoy the heritage content without disturbance from inability to use the digital tools?

Visitor flow and crowding issues

- What is the dwell time at each point of interest?
- Is it equal, more or less than what was estimated?
- If different from estimated, it is necessary to rethink the flow management on the site (see 3.4.4.).
- Do visitors easily follow the route?
- Do digital tools generate interactions among visitors?
- Are they negative such as being unable to trigger the animation because another visitor is standing in the way or positive such as sharing an experience?
- Are these interactions aligned with the site's performance objectives?

Optimisation of waiting times

- Are issues caused by queues and waiting time on arrival at the site or before approaching a point of interest with digital tools?
- Are systems in place to entertain during the waiting time, if appropriate?
- What do visitors think?

3.4.3. Front-of-house staff actions

This section is about evaluating if the changes anticipated in Phase 2 concerning the various tasks of front-of-house staff are relevant: are new activities required from these staff that had not been anticipated? If so, how can these be managed?

Several solutions may be suitable:

- Allocating new tasks to front-of-house staff
- Recruiting additional human resources such as redeployed back-office staff
- Introducing additional physical evidence such as signage or an explanatory video

Reception staff

With mobile digital tools, such as tablet computers, new tasks arise, especially for staff working at the welcome desk or ticket office. The average time it takes to provide the devices to visitors and receive them at the end of the visit must be evaluated in order to check whether the anticipated impact on the tasks of the reception staff is adequate.

This work in itself can involve any of several activities:

- Presenting the digital device
- Verifying the device's battery charge
- Retention of a deposit, where applicable
- Starting up the device with operating instructions
- Verifying the device at control point to reimburse the deposit, where applicable
- Store and recharge the returned device

The total duration of this action, as well as of each specific sub-action, must be evaluated. Knowing this information helps optimise the process. For instance, the time a member of staff takes to show to a visitor how the device works could be reduced by introducing physical evidence nearby such as a panel or video with user instructions.

In addition to the tasks of providing and returning devices, the mobilisation of additional staff time can happen in the course of the visit. It is therefore necessary to consider the time staff take to attend to visitors needing assistance during their journey. This time might be spent assisting visitors with difficulty triggering the AR or problems with running the VR, for example. Analysis of the feedback collected from front-of-house staff deployed on the ground compared with observation of visitor behaviour will make it possible to assess the average time this type of activity takes.

Two options are available to the site:

- Improving the application itself, for example when a problem recurs at a particular point of interest;
- Introducing non-human support for troubleshooting so that staff are mobilised as a last resort. This may be helped via an explanation embedded within the digital tool or via signage.

Special case of facilitation staff

Human and digital facilitation of parts of the visitor journey are possible. Tour guides may, for example, use the digital content to enhance their regular script. However, in some

cases tour guides can be reluctant to use digital devices in this way. This can become a management issue and therefore, some HR aspects need to be considered, including:

- Training guides on tablet use.
- Training guides on business innovation to mitigate any perceived threat to their business.
- Closely examining skills and expertise so that, for example, if the digital device makes it possible to deliver basic content in an automated way, the guide can focus on enhanced content. Or if part of the journey is now covered by the device, the overall work of the guide is shortened, enabling him/her to accommodate more groups with more added value.

3.4.4. Back-office staff actions

Back-office staff support the functioning of the site and its relationship with suppliers, partners and other services. It is therefore necessary to assess whether the impact on the work of the back-office team caused by introducing digital tools has been predicted or whether adjustments are necessary. The most adequate method is through interviews with staff and possibly with visitors.

» Staff training in digital tools:

- Have all members of front-of-house staff received training in how to manage the electronic equipment as well as perform their other tasks?
- Are they equipped, and prepared to, answer questions on the digital tools from visitors?
- What knowledge and skills do they lack, if any?

» Return of devices

- How do staff deal with the return of the devices? They are required to process returns and check them which adds to their workload and required skill-set.

» Coordination procedures

- Are coordination procedures in place between staff members on problems and solutions? In particular, are they asked to express their views on the 'cascading effects' (see example below) related to decisions taken by various members of staff?

EXAMPLE: ILLUSTRATION OF "CASCADING EFFECTS"

Take the case of a malfunction at a point of interest during a visitor journey, eg difficulty in triggering an animation. This leads visitors to turn back and seek explanations at the welcome desk or from floor staff at different locations on the site. This creates reverse flows, or even traffic jams, at the point of interest in question, negatively-affecting the experience of other visitors.

A solution might be to add an explanatory panel at the point of interest or add an explanatory pop-up in the application through the digital interface.

Output of Phase 3 – Delivery: Plan for collecting information on the functioning of the site according to the different levels of analysis suggested in the table below, the objective being to adjust the functioning as a result.

BLUEPRINT LEVELS	INDICATORS	DATA COLLECTION METHODS	RESULTS	ACTIONS / SOLUTIONS
Physical evidence				
Visitors actions				
Actions of staff in contact				
Staff actions behind the scenes				

3.5. VALUE CAPTURE

» **Is the monetisation strategy effective?**

» **How can the strategy be monitored?**

While it's easy to look at what other cultural heritage and tourism sites consider important measures of success, it's best to measure what makes the most sense for your situation. What makes sense for your site will depend on the primary objective of the business model innovation as was discussed in Phase 2.5 Value Capture.

If the primary objective is not financial, it may be wise to consider designing other key performance indicators (KPIs) for the digital investment, rather than KPIs for the monetisation strategy.

This section focuses on key performance indicators for direct and indirect monetisation strategies designed in Phase 2. If they do not fit your goal, you can adapt the process of setting KPIs to suit your situation.

KPIs are a measurement or indicator that help you to understand how well a strategy is performing in relation to its primary objectives and monetisation goals. In short, it will show whether you are on track or not and, in turn, assist in decision-making.

While they aid monitoring, they do not tell us the answer as to why it might be underperforming – to address this you may need to conduct further investigation into the cause or revisit Phase 1 and re-analyse the business model.

It is also important to note that KPIs may need to be changed over time. For instance, when starting out, you may be focused on building an audience for the new experience. As a result, your first KPI may be designed to monitor an increase in visitor numbers or to track positive word-of-mouth. Over time this might change to, or expand to include, a financial indicator such as average revenue per user.

A process for setting KPIs

Before setting a KPI, it is a good idea to define the **monetisation goals** based on the primary objective of the business model innovation and the type of monetisation strategy.

In the example provided in the **Key performance indicator planning template** below, the monetisation goal is to increase the spread of positive word of mouth on the experience, based on a primary objective to increase visitor numbers and market share.

- 01

Identify **KPI**, a measurement(s) or indicator that helps you to understand how well the strategy is performing against its goal.
- 02

Set a **target** or benchmark for each indicator. Here you can also outline the performance thresholds, that is, when performance levels are judged to be good or bad.
- 03

For your **data source**, identify and describe the data collection method you are going to use for each KPI. Data collection methods can include surveys, questionnaires, interviews, sensor data collection, focus groups, and automated machine data collection as well as archive data.
- 04

Review period. Some KPIs require data to be collected daily, others specify monthly, quarterly or annual collection. Make sure your schedule allows enough time to collect the data, analyse it, solve any issues and deliver the report.

It is also important to recognise that one KPI may not represent the full picture, it may have shortcomings that need to be documented and addressed with additional information.

For example, net promoter score is a widely used market research metric that typically takes the form of a survey question asking respondents to rate the likelihood that they would recommend a product or a service to a friend or colleague.

The table below shows how we might monitor this data supplemented with unstructured customer feedback to identify areas of improvement. NPS only tells us our proportion of promoters; it doesn't provide insight into why an improvement may be desirable.

INDICATOR	TARGET	DATA SOURCE	REVIEW PERIOD
Net Promoter Score (NPS).	NPS of 85% by 2023	Survey administered in device Q: How likely are you to recommend us to a friend? Using a 0-10 scale (not at all likely to extremely likely)	Quarterly

3.5.1. Direct Monetisation KPIs

This section provides some example KPIs that you may find useful when evaluating direct monetisation strategies.

Price Sentiment

» How is the price perceived by visitors?

How customers perceive your price level will determine their intention to visit and visit again. It will also determine how they speak of their visit to others, so you will want your price to be perceived positively and be considered to represent 'value'.

Perception of pricing at cultural heritage sites is nuanced in comparison to tourism more generally, some expect culture activities to be free or to be subsidised. Capturing this and seeking to identify where there is willingness-to-accept paid activities is key.

In terms of how data could be sourced to monitor this KPI, it could be addressed anecdotally by interviewing staff at ticketing and customer service desks. At the medieval cathedral, for example, staff at the ticketing desk receive a significant amount of feedback on pricing, both verbally and non-verbally by observing walk-away numbers.

An alternative data source could be the use of an online dashboard that uses natural language processing to capture positive and negative sentiment towards price in TripAdvisor reviews. It can even show how this sentiment is driving ratings. Reviewing this data and the reviews themselves may also indicate why they don't perceive the price to reflect the value of the offering, aiding decision-making. This KPI would work well for all direct monetisation strategies.

Average Income per Visitor (AIPV)

» What level of income (revenue) is being generated per visitor?

Where you have a direct charge for an experience, for example if you have implemented a 'free site entry, pay per experience' strategy or one that charges 'entrance fee plus pay-per-use', the revenue per visitor is easy to identify, it is simply the use charge.

However, if your site has a recurring membership strategy, it is not always that simple, especially where membership is inclusive of all experiences. Similarly, if you have a range of pricing strategies such as a mix of membership offers, per visit entry fees and additional pay per use charges) you may wish to calculate the AIPV across these strategies to compare growth at the per-visitor level over time.

AIPV is calculated by dividing revenue generated in a specific time period by the number of visitors using the offering in that period.

$$\text{AIPV} = \frac{\text{Total revenue generated within a given period}}{\text{Total number of visitors within the same period}}$$

AIPV is typically reported on a monthly basis but this may depend on the volume and frequency of visits to the site. If monitoring an app where there is a high number of visitors but a low retention rate, for example, it may make more sense to report weekly or daily.

Visitor Lifetime Value (VLTV)

» What is a visitor's monetary worth over time?

You can convert the AIPV into a visitor lifetime value by predicting the 'lifespan' of an average visitor. To measure this, you need to know your churn rate (the percentage of customers who stop using your offering within the timeframe) and invert it to get the predicted amount of time a customer will spend using the offering. This is then multiplied by the AIPV.

$$\text{VLTV} = \text{AIPV} \times \frac{1}{\left(\frac{\text{Number of visitors lost in the period}}{\text{Number of visitors at start of period}} \right)}$$

For example, let's say your average user generates £5 in revenue every month based on a membership plan and you have a monthly churn rate of 20%.

$$\text{VLTV } £25.00 = £5.00 \times \frac{1}{\left(\frac{20}{100} = 0.2 \right)}$$

This means your average customer has a predicted lifetime value of £25.00. This is based on recurring membership only but could be done across business models and pricing strategies.

Clearly if all visitors visit only once in a period then the VLTV equates to the AIPV. As a result, this is a measure that works where at least one of your customer segments is a repeat visitor (for example, where you have a recurring membership charge).

Return per Visitor (RV)

» What return is being made per visitor?

If your VLTV is greater than the Cost of Investment per Visitor (CIPV) then there is a positive return. Given the level of investment required to develop these experiences, this is a long-term goal and it is likely that the target in the short-to-medium term will be to reach a point where visitor lifetime value meets CIPV. As a long-term goal this is likely to have an annual review period.

To calculate this, you can measure your CIPV and compare it to how much revenue you're generating per user.

$$CIPV = \frac{\text{Investment}}{\text{Number of (new) visitors tied to investment}}$$

$$RV = \frac{VLTV}{CIPV}$$

3.5.2. Indirect monetisation KPIs

This section provides some example KPIs that you may find useful when evaluating indirect monetisation strategies that were discussed in 2.5.

Visitor numbers

» Have visitor numbers increased as a result of the BMI?

If your primary objective was to attract new and repeat visits then a simple-yet-effective metric is to monitor visitor numbers. This can be monitored to reflect growth over time. A new exhibit may see an initial increase in visits and numbers vary by season so, when looking at trends, it is often a good idea to compare like with like to get an accurate reflection of change.⁵

⁵ There are several ways to do this but this one is based on: *Measuring the Lifetime Value of a Mobile Customer*. Click [here](#).

Word of Mouth

» How likely are visitors to recommend the experience to others?

Positive word of mouth is linked to new and repeat visits and improved business performance. It is usually captured as part of visitor surveys. This could be embedded in a device as part of an end of tour survey or be done periodically as part of a larger data collection exercise.

Average Spend per Visitor (ASPV)

» What ancillary revenue is being generated per visit?

If you have designed an indirect monetisation strategy, particularly 'monetising downtime', you may adapt AIPV to reflect spending generated in ancillary services. Rather than use ticket revenues, you could look at average visitor spend in the shop or café, for example, monitoring whether average spend per user has increased over time.

$$\text{AIPV} = \frac{\text{Total revenue from ancillary services generated within a given period}}{\text{Total number of visitors within the same period}}$$



Output of Phase 3 – Value capture: KPI plan to monitor monetisation effectiveness.

Next Steps

Congratulations, you have reached the end of the evaluation phase and have been through the digital innovation process.

You began by taking stock of the situation then you designed and experimented with devices which were then evaluated. You have raised many questions and provided many answers. Now, at the end of these three phases, you know a lot more about what is working and what still needs work.

There will be new questions raised by the evaluation, for example customer lifetime value which you cannot measure accurately until you have some hindsight.

You will by now know from experience that the innovation cycle does not have a beginning and an end. It is a repetitive sequence of cycles from Phase 1 to Phase 3, and back to Phase 1 for another round.

As you innovate, you are transforming your existing offer and this will be subject to adaptations which themselves constitute innovations even if only subtle ones.

However, it is clear that your heritage site cannot remain in a state of constant, radical innovation. A minimum level of stability is required to ensure efficient operation and a satisfying visitor experience.

For such, it is important to ensure consistency between the different aspects of your Business Model Wheel for each of your business models.

You have evaluated these different aspects and have probably identified contradictions or friction in the implementation of your new business model which will need to be addressed.

We've seen that for a business model based on innovative technology to work, a wider set of parameters must be taken into account while setting up the system in an optimal and sustainable way.

In the end, the success of your innovation will depend on your ability to consistently realign the key elements of your business model and build this time into your regular work patterns so that there is a good balance between working on the business and working in the business.

Good luck!

CASE STUDIES

ANNEX I: SAMPLE QUESTIONNAIRE

A questionnaire-based research instrument can be deployed at the start of the visit and embedded within a digital interpretation device provided to visitors.

This sample questionnaire includes items to investigate a visitor’s socio-demographic, geographic and motivational attributes as well as items related to the general context of the visit.

DATA	DIMENSIONS	QUESTIONS/ITEMS	MEASURES
Socio-demographic and geographic	Age	1. How old are you?	Select one: <ul style="list-style-type: none">• 15 and under• 16-24• 25-34• 35-44• 45-54• 55-64• 65 and over
Socio-demographic and geographic	Gender	1. How would you describe your gender?	Select one: <ul style="list-style-type: none">• Male (including transgender men)• Female (including transgender women)• Prefer to self describe as _____ (non-binary, gender-fluid, agender, please specify)• Prefer not to say
Socio-demographic and geographic	Country/Region of residence	1. What is your nationality?	(open question)

DATA	DIMENSIONS	QUESTIONS/ITEMS	MEASURES
Socio-demographic and geographic		2. Do you currently live in this country or abroad?	<ul style="list-style-type: none"> • Yes, please enter first part of your postcode • No, please state the country you have travelled from
Socio-demographic and geographic	Children in household	1. How many children live in your household?	(open question)
Socio-demographic and geographic	Marital status	1. Are you now married, widowed, divorced, separated, or have you never been married?	Select one: <ul style="list-style-type: none"> • Married • Widowed • Divorced • Separated • Never married
Socio-demographic and geographic	Education	What is the highest level of education you have completed?	Select one: <ul style="list-style-type: none"> • No qualifications • Level 2 (e.g., GCSE, O Level or equivalent, NVQ level 2, BTEC level 2) • Higher education Level 3 (e.g., As and A level, IB, NVQ level 3, BTEC level 3) • Higher education Level 4-5 (e.g., BTEC level 4, HNC/HND, Diploma of higher or further education) • Bachelor's degree or equivalent (e.g., BA, BSc, Graduate certificate/diploma, NVQ level 4, BTEC Advanced Professional award) • Master's degree or equivalent (e.g., MA, MSc, MBA, MEng, Postgraduate certificate/diploma, NVQ level 5) • Doctoral degree or equivalent (e.g., PhD, EngD, Vocational qualifications level 8)

DATA	DIMENSIONS	QUESTIONS/ITEMS	MEASURES
Socio-demographic and geographic	Work status	1. Which of these best describes your current employment status?	Select one: <ul style="list-style-type: none"> Employee Self-employed Retired Student Unemployed Other
Psychographic	Motivations	1. Which one of these statements best reflects why you chose to visit the CHS today?	Select one: <ul style="list-style-type: none"> To bring a friend or family member To feel a sense of peace To learn or discover something new To see a famous attraction To visit an important part of my cultural heritage To learn something about a subject I am passionate about
Visit context	Type of holiday	1. Which of the following best describes your visit to this CHS today?	Select one: <ul style="list-style-type: none"> A day trip Part of an extended holiday (a week or more) Part of a short break (less than a week) Other (please specify)
Visit context	Party size and composition	Who are you visiting with today?	Select one: <ul style="list-style-type: none"> Alone Group including children One other adult Organised group Adult group Other (please specify):

DATA	DIMENSIONS	QUESTIONS/ITEMS	MEASURES
Visit context	Repeat visit	How often do you visit this cultural heritage site?	Select one: <ul style="list-style-type: none">• This is my first visit• Less than once every 5 years• Once every 2-5 years• At least once a year• At least once a month• Usually every week

ANNEX II: SAMPLE POST-VISIT QUESTIONNAIRE

A similar questionnaire-based research instrument can be deployed at the end of the visit with measures relating to the type of experience, general outcomes and satisfaction.

DATA	DIMENSIONS	QUESTIONS/ITEMS	MEASURES
Type of experience	Educational	It was a real learning experience.	Rate between 1-7: 1. Strongly agree 2. Agree 3. Somewhat agree 4. Neither agree nor disagree 5. Somewhat disagree 6. Disagree 7. Strongly disagree
	Aesthetic	I felt a sense of harmony.	
	Entertainment	I really enjoyed watching the activities on-site (e.g., musical performances, guided tours, shows).	
	Escapist	I completely escaped from reality.	
Outcomes	Arousal	1. How interesting was your visit? 2. How stimulating was your visit? 3. How exciting was your visit?	Rate between 1-5: 1. Extremely 2. Very 3. Moderately 4. Slightly 5. Not at all

DATA	DIMENSIONS	QUESTIONS/ITEMS	MEASURES
Outcomes (continued)	Memory	<i>I will remember my visit to this cultural heritage site</i>	Rate between 1-7: 1. Strongly agree 2. Agree 3. Somewhat agree 4. Neither agree nor disagree 5. Somewhat disagree 6. Disagree 7. Strongly disagree
	Intent to revisit	<i>I will visit again in the next few years</i>	
	Word-of-mouth	<i>I will speak positively about my visit to others</i>	
Satisfaction		<i>How would you rate your experience today?</i>	1. Terrible 2. Poor 3. Satisfactory 4. Good 5. Excellent
		<i>In your own words, please tell us about your experience of visiting us today</i>	(open question)

