Evaluating Digital Preservation and Promotion of Heritage

Overview of evaluating heritage

Understanding **the value of heritage**

Communicating value of heritage

Goals of evaluation

Quantitative and qualitative evaluation

Active evaluation

Passive evaluation

Participation and ethics

Communicating evaluation

Understanding the value of heritage

- Historical or archaeological significance?

- How rare or unique is it?

- What meaning does it have for different communities?

- Is it under threat?

- Does it have a monetary value?

Auditing digital resources

- People: digital literacies and skills

- Media: photos, films, models, interpretation

- Infrastructure: storage, presentation, creativity

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Communicating the value of heritage

Think through key aspects to communicate to funders and how to evidence them. Including:

- People's perceptions of the heritage (e.g. surveys).

- How it serves the local community (e.g. existing outreach activities).

- To what extent it forms a draw for visitors (e.g. tourism statistics).

- Social benefits (e.g. consider existing needs in the community and how this tackles local challenges).

- Economic benefits (e.g. calculating impact on economy of increased visitors).

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Goals of evaluation

- What is being evaluated
  - Ease of use
  - Findability, accessibility
  - Value
  - Impact
- Who is evaluation for
  - Potential audience
  - Funder
  - Understanding

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Quantitative and Qualitative Evaluation

- Qualitative – Interviews
- How general are the results?
  - Quantitative - Measurements
    - What are the assumptions?
    - Sample size
    - Summary statistics
    - Distribution
    - Confidence
  - Visual Representation of Data
    - Graphs

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Less bias
- Visitor books
- Questionnaires
- Informal observation

More bias
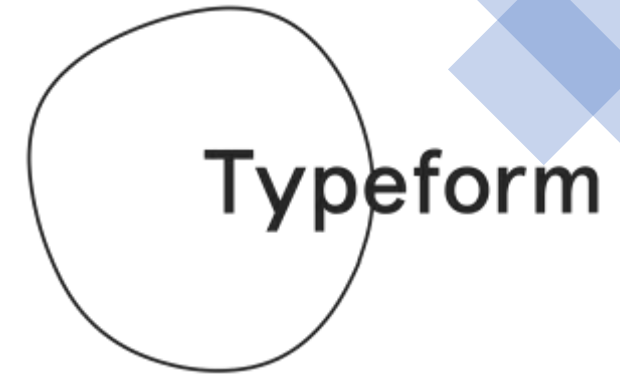- Active/influenced observation
- Structured interviews
- Focus groups

Google Forms

Typeform

Doodle

qualtrics XM

SurveyMonkey

SoGoSurvey

ProProfs Survey Maker
- Surveys
- Quizzes
- NPS Surveys
- In-App Surveys
- Forms
- SideBar Forms
- Polls
- Popup Surveys

Likert Scale

System Usability Scale

System Value Scale

SUS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I think that I would like to use this website frequently.	☐	☐	☐	☐	☐
2. I found the website unnecessarily complex.	☐	☐	☐	☐	☐
3. I thought the website was easy to use.	☐	☐	☐	☐	☐
4. I think that I would need the support of a technical person to be able to use this website.	☐	☐	☐	☐	☐
5. I found the various functions in this website were well integrated.	☐	☐	☐	☐	☐
6. I thought there was too much inconsistency in this website.	☐	☐	☐	☐	☐
7. I would imagine that most people would learn to use this website very quickly.	☐	☐	☐	☐	☐
8. I found the website very cumbersome / awkward to use.	☐	☐	☐	☐	☐
9. I felt very confident using the website.	☐	☐	☐	☐	☐
10. I needed to learn a lot of things before I could get going with this system.	☐	☐	☐	☐	☐

Source: UIUXTrend.com

The aim of this study is to evaluate the user experience aspects of a virtual reality system designed to provide a virtual tour of Medieval Edinburgh, as a project carried out by the Smart History team. The overall exercise should last for no more than a few minutes, and you are free to withdraw at any point during the exercise. While answering the questions, please be as precise as possible. If you do not understand any of the terms used in the questionnaire, please ask the team for assistance.

Background Information (Please tick the appropriate column)			
How good are your English skills?	Need support	Confident	Very confident
How good are your IT skills?	Need support	Confident	Very confident
How interested are you in History?	Not interested	Quite interested	Very interested
Do you have previous experience with Virtual Reality (VR)?	None	Some	A lot
Do you have previous experience with Virtual Reality (VR) Headsets?	None	Some	A lot

Device Type (Please select the device(s) you used to take part in the virtual tour)			
Google Cardboard/Daydream	Oculus Rift	Screen-based Device	Xbox Controller

Experience Questionnaire (Please tick the appropriate column)					
	Strongly disagree	Probably disagree	Neither agree nor disagree	Probably agree	Strongly agree
Statement	1	2	3	4	5
1 I think that this system is easy to use.					
2 I would recommend this virtual reality system for learning history.					
3 This system has changed how I think about Medieval Edinburgh.					
4 I am now more interested in learning about local history.					
5 I felt like I was there in the virtual environment.					

Free Form Questions – Experience

1 Please describe your experience with this system in three words:
    1.
    2.
    3.

2 What do you like and what can be improved in the system?

System Usability Scale

Strongly disagree — Strongly agree

1. I think that I would like to use this system frequently
   1   2   3   4   5

2. I found the system unnecessarily complex
   1   2   3   4   5

3. I thought the system was easy to use
   1   2   3   4   5

4. I think that I would need the support of a technical person to be able to use this system
   1   2   3   4   5

5. I found the various functions in this system were well integrated
   1   2   3   4   5

6. I thought there was too much inconsistency in this system
   1   2   3   4   5

7. I would imagine that most people would learn to use this system very quickly
   1   2   3   4   5

8. I found the system very cumbersome to use
   1   2   3   4   5

9. I felt very confident using the system
   1   2   3   4   5

10. I needed to learn a lot of things before I could get going with this system
   1   2   3   4   5

CEUT survey

1. Have you noticed any changes in the weather on North Uist in your lifetime?

2. What changes have you noticed in the wildlife on the machair?

3. Have you noticed any changes in the dunes or near your land?

4. Have any of these changes effected the way you are crofting?

5. Is seaweed the main fertiliser you use?

You are being invited to participate in a research study [called] Disruptive Technologies for Heritage Preservation and Promotion: Virtual Museum Platforms Connecting Heritage, Community and Museums Through 3D Digitisation.

This study is being done by Catherine Anne Cassidy from the School of Computer Science at the University of St Andrews.

The research project is about the use of digital technologies in museums to evaluate the effectiveness of preservation and promotion of cultural and natural heritage. You are being asked to complete a questionnaire which will take you no more than ten minutes to complete. I will only collect statistical data about yourself, such as age range and background information.

If you are interested in taking part, please download a copy of the participant information sheet here Participant Information Sheet and retain this for your records before starting the questionnaire. If you have any questions, please email me at cc274@st-andrews.ac.uk.

Your participation is entirely voluntary, and you can withdraw at any time. You are free to omit any question

○ I consent, begin the study

○ I do not consent, I do not wish to participate

Please rank the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I am personally familiar with digital technologies	○	○	○	○	○	○	○
The shutdown has greatly affected my work	○	○	○	○	○	○	○
Digital technologies were an integral part of my organisation before lockdown	○	○	○	○	○	○	○
My organisation had plans to expand their use of digital technologies before the lockdown	○	○	○	○	○	○	○

Measuring the Impact of Digital Heritage

1. **Which digital heritage experience/app/website did you use?**

_____

Your experiences

This section asks about you and your previous experiences of heritage and digital technologies.

2. **What is your age?**
Mark only one oval.

- ( ) Under 18
- ( ) 18-24 years old
- ( ) 25-34 years old
- ( ) 35-44 years old
- ( ) 45-54 years old
- ( ) 55-64 years old
- ( ) 65-74 years old
- ( ) 75 years or older

3. **Which heritage activities have you taken part in in the last 2 years?**
Mark only one oval per row.

	Never	Once	2-3 times	Monthly	Weekly	Daily
Family history research	( )	( )	( )	( )	( )	( )
Local history research	( )	( )	( )	( )	( )	( )
Attended heritage talks	( )	( )	( )	( )	( )	( )
Visited a museum or heritage centre	( )	( )	( )	( )	( )	( )
Guided heritage walks	( )	( )	( )	( )	( )	( )
Read history/heritage magazines	( )	( )	( )	( )	( )	( )
Watched or listened to history/heritage television or radio programmes or podcasts	( )	( )	( )	( )	( )	( )
Been a member of a national heritage organisation	( )	( )	( )	( )	( )	( )
Been a member of a local heritage organisation	( )	( )	( )	( )	( )	( )
Volunteered for a heritage organisation	( )	( )	( )	( )	( )	( )
Undertaken professional heritage work	( )	( )	( )	( )	( )	( )

4. **Which types of digital technology have you used in the last 2 years?**
Mark only one oval per row.

	Never	Once	2-3 times	Monthly	Weekly	Daily
Standalone Virtual Reality (VR) headset, e.g. Oculus Rift, Samsun Gear VR, Google cardboard	( )	( )	( )	( )	( )	( )
Smartphone/tablet app	( )	( )	( )	( )	( )	( )
Websites	( )	( )	( )	( )	( )	( )
Digital games (on a phone, computer, tablet or console)	( )	( )	( )	( )	( )	( )
Xbox controller	( )	( )	( )	( )	( )	( )
Virtual Reality (VR) headset with hand-held controllers	( )	( )	( )	( )	( )	( )
Row 7	( )	( )	( )	( )	( )	( )

5. **Which types of digital heritage product have you used before? Tick all that apply**
Check all that apply.

- [ ] Virtual Reality (VR) experience
- [ ] Augmented Reality (AR) experience
- [ ] Heritage games
- [ ] Digitised cultural collections
- [ ] Heritage databases
- [ ] Map-based heritage experience
- [ ] Other: _____

Approaching the digital experience/app/website

This section asks you about your experiences in the moments before using the digital experience/app/website

6. **The design and look of the installation/digital experience/app/website attracted me to use it**
Mark only one oval.

	1	2	3	4	5	
Strongly disagree	( )	( )	( )	( )	( )	Strongly agree

7. **Which 3 features of the design and look most attracted you to the installation/digital experience/app/website?**

_____

_____

_____

_____

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Active evaluation

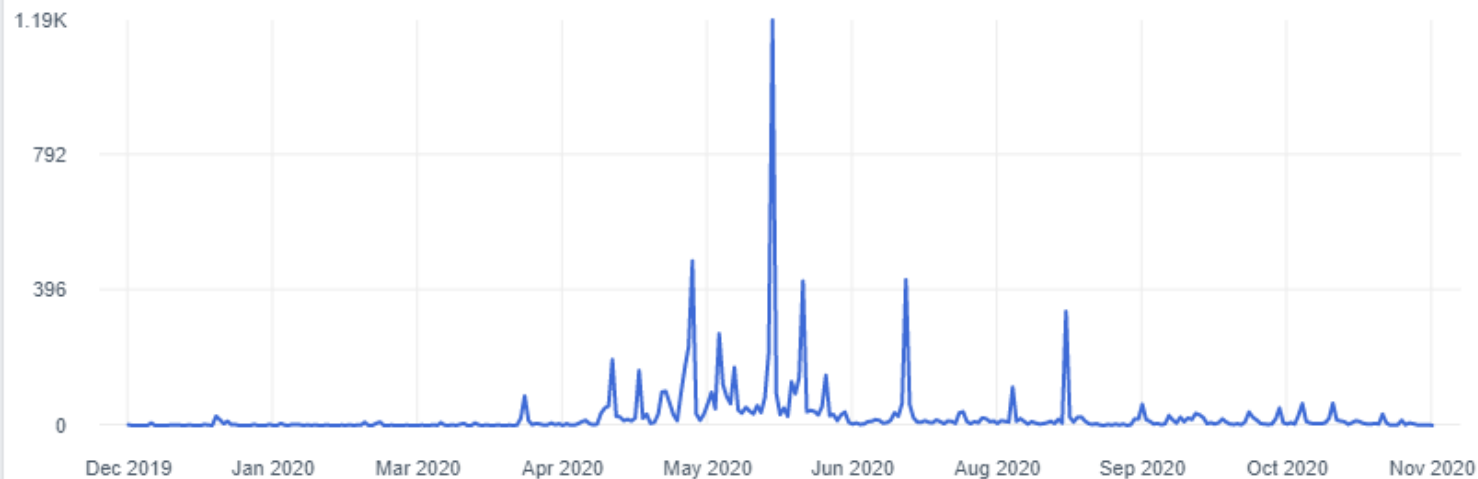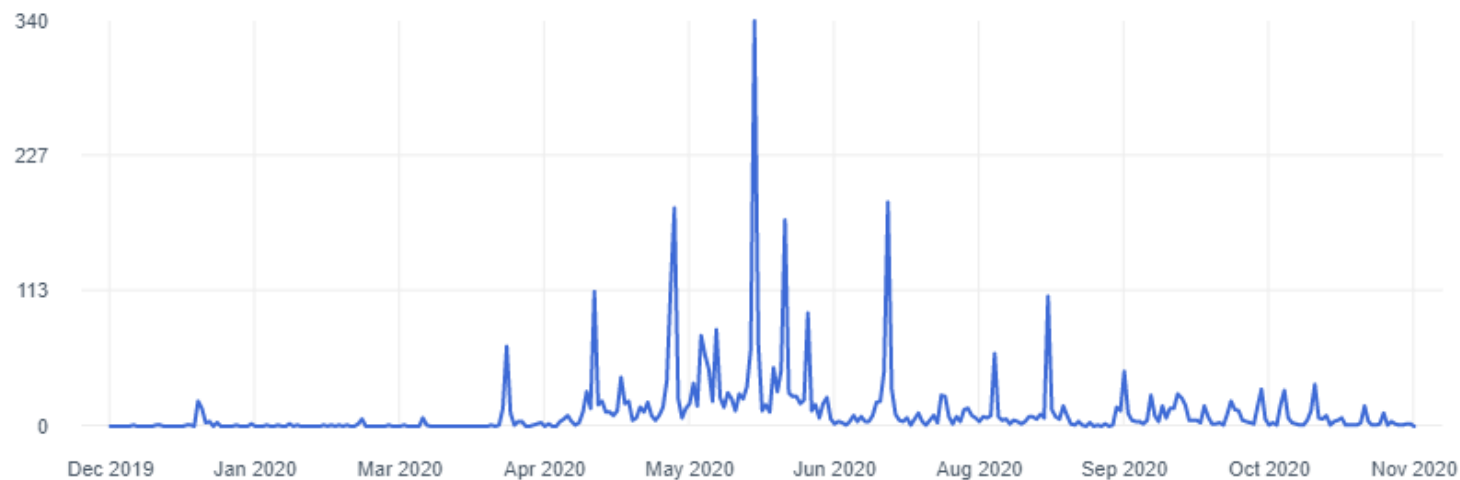**Passive evaluation**

Participation and ethics

Communicating evaluation

Passive evaluation

- Statistics and records
  - Visitor numbers
  - Web site visitors
  - Social media

- What do metrics mean?
  - Views
  - Follows
  - Likes
  - Shares

Total views   By section   ⓘ

Total Views

1.19K	
792	
396	
0	

Dec 2019　Jan 2020　Mar 2020　Apr 2020　May 2020　Jun 2020　Aug 2020　Sep 2020　Oct 2020　Nov 2020

Total people who viewed   By section   By age and gender   By country   By city   By device   ⓘ

Total people who viewed

340	
227	
113	
0	

Dec 2019　Jan 2020　Mar 2020　Apr 2020　May 2020　Jun 2020　Aug 2020　Sep 2020　Oct 2020　Nov 2020

Search 3D models

UPLOAD

EU-LAC-3D PRO ⚲ St Andrews, Scotland

EU-LAC-MUSEUMS 3D Workshops

EDIT PROFILE   **155** Followers   **47** Followings

SUMMARY   208 MODELS   COLLECTIONS   144 LIKES   UPLOADS

POPULAR 3D MODELS   View all (208) ▸

Bica romana - Roman fountai...   👁 193 💬 0 ⭐ 13

Estatueta de terracota de touro ...   👁 95 💬 0 ⭐ 8

Estátua de bronze de mercúrio...   👁 415 💬 0 ⭐ 8
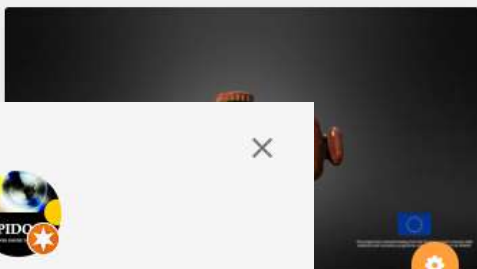
👁 110 💬 0 ⭐ 7

Vasija trípode jaguar - Jaguar t...   👁 180 💬 0 ⭐ 6

Emigrants doll   👁 161 💬 0 ⭐ 6

ABOUT

The EU-LAC-MUSEUMS project is funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No 693669.

CATEGORY

Individual / 3D Scanning Enthusiast

WEBSITE

http://eu-lac.org ↗

MEMBER SINCE

September 8th 2016

STATS

👁 **16.3k** views
⭐ **369** likes
◁ **304.1M** triangles
⚲ **154.6M** vertices

SKILLS

☰   ✕

CUPIDO Interreg

Local Guide · Level 6

2,839 points ›

1,500   3,500   5,000

CONTRIBUTE   REVIEWS   **PHOTOS**   EDITS

📷 389   👁 860,526   Date ⌄

58:40

Vikings Live
2.4K views · 13 weeks ago

1:28:53

Helmsdale Fishing Village 1890: The Herring Boom & Gutting Girls
1.2K views · 15 weeks ago

1:04:49

Highland Clearances Longhouse Settlement 1813
1.7K views · 19 weeks ago

1:10:19

Iron Age Kildonan: Roundhouse Farming Settlement
3.1K views · 22 weeks ago

1:35:18

Heritage at Home: Medieval St Andrews
3.1K views · 23 weeks ago

1:24:41

Heritage at Home: The Lords of the Isles
4.8K views · 24 weeks ago

1:07:56

Join us for the live launch of our digital exhibition REAL RIGHTS. Sadie and...
1.9K views · 25 weeks ago

1:24:25

A Virtual Tour of Helmsdale Castle
1.7K views · 26 weeks ago

1:12:21

Heritage at Home: Edinburgh 1544
1.5K views · 27 weeks ago

19:20

1:08:34

54:32

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Participation and Ethics

- What is being evaluated
- Ethics
  - Informed consent
  - Voluntary participation
  - Incentive
- What is the data?
- How will it be collected?
- How will it be stored?
- How will it be shared?

Research with human subjects

Does your research involve human subjects or have potential adverse consequences for human welfare and wellbeing?

Will you be surveying, observing or interviewing human subjects?

Will you be analysing secondary data that could significantly affect human subjects?

Does your research have the potential to have a significant negative effect on people in the study area?

Potential physical or psychological harm, discomfort or stress

Are there any foreseeable risks to the researcher, or to any participants in this research?

For example:

Is there any potential that there could be physical harm for anyone involved in the research?

Is there any potential for psychological harm, discomfort or stress for anyone involved in the research?

Conflicts of interest

Do any conflicts of interest arise?

Might research objectivity be compromised by sponsorship?

Might any issues of intellectual property or roles in research be raised?

Ethics

- **Research with human subjects**
- Does your research involve human subjects or have potential adverse consequences for human welfare and wellbeing?
- Will you be surveying, observing or interviewing human subjects?
- Will you be analysing secondary data that could significantly affect human subjects?
- Does your research have the potential to have a significant negative effect on people in the study area?

- **Potential physical or psychological harm, discomfort or stress**
- Are there any foreseeable risks to the researcher, or to any participants in this research?
- For example:
- Is there any potential that there could be physical harm for anyone involved in the research?
- Is there any potential for psychological harm, discomfort or stress for anyone involved in the research?

- **Conflicts of interest**
- Do any conflicts of interest arise?
- Might research objectivity be compromised by sponsorship?
- Might any issues of intellectual property or roles in research be raised?

Possible Ethics Documents

- Participation Information Sheet
- Consent form
- Debrief form
- Advertisements
- Questionnaire
- Interview questions

Participant Consent Form

Project Title
Virtual Museums for Community Engagement|

Researcher(s) Name(s)
Adeola Fabola
School of Computer Science
aef6@st-andrews.ac.uk

Supervisors Names
Dr Alan Miller
School of Computer Science
alan.miller@st-andrews.ac.uk

The University of St Andrews attaches high priority to the ethical conduct of research. We therefore ask you to consider the following points before signing this form. Your signature confirms that you are happy to participate in the study.

Will I be able to be identified?
Any responses you make will not be identifiable as yours, however we still need your consent to take part in this research.

Consent
The purpose of this form is to ensure that you are willing to take part in this study and to let you understand what it entails. Signing this form does not commit you to anything you do not wish to do.

Material gathered will be kept confidential by the researcher who alone with the Supervisor will have access to it, stored in a safe filing cabinet in the researcher's office and backed up electronically. These will be kept for 5 years before being destroyed.

I have read and understood the information sheet.	☐ Yes	☐ No
I have been given the opportunity to ask questions about the study.	☐ Yes	☐ No
I have had my questions answered satisfactorily.	☐ Yes	☐ No
I understand that I can withdraw from the study without having to give an explanation.	☐ Yes	☐ No
I understand that my data once processed will be anonymous and be stored for a period of 5 years before being destroyed	☐ Yes	☐ No
I have been made fully aware of the potential risks associated with this research and am satisfied with the information provided.	☐ Yes	☐ No
I agree to take part in the study	☐ Yes	☐ No

Participation in this research is completely voluntary and your consent is required before you can participate in this research.

Name in Block Capitals _____

Signature _____

Date _____

Participant Information Sheet

Project Title
Virtual Museums for Community Engagement

What is the study about?
We invite you to take part in an exercise to help us understand the value of virtual museums for heritage curation and dissemination in community museums. This will enable us develop affordable, easy-to-use, interactive systems that can meet the needs of community museums. This exercise is being conducted as part of Adeola Fabola's PhD Thesis in the School of Computer Science at the University of St Andrews.

Do I have to take part?
This information sheet has been written to help you decide if you would like to take part. If you do decide to take part you will be free to withdraw at any time without providing a reason.

What would I be required to do?
You will be required to interact with a virtual museum system to visualise heritage content, after which you will answer some questions about your experience and your perception of the system. The exercise can be completed in approximately 30 minutes. However, you are free to continue interacting with the system afterwards for as long as you like.

Will my participation be anonymous and confidential?
Your data will be stored in such a way that it cannot be used to identify you.

Storage and destruction of data collected
The material gathered will be kept securely. The paper documents will be stored in file cabinets in the School of Computer Science. The content of these paper documents will be stored in electronic spreadsheets, and the data will be retained for a period of 5 years before being destroyed.

What will happen to the results of the research study?
The results will be finalised by 2018 and written up as part of the researcher's PhD Thesis.

Are there any potential risks to taking part?
No.

Questions
You will have the opportunity to ask any questions in relation to this project before completing a Consent Form.

Ethical approval
This research proposal has been scrutinised and been granted Ethical Approval through the ethical approval process at the University of St Andrews.

What should I do if I have concerns about this study?
A full outline of the procedures governed by the University Teaching and Research Ethical Committee is available at http://www.st-andrews.ac.uk/utrec/Guidelines/complaints/

Contact Details
Researcher: *Adeola Fabola*
Contact Details: *School of Computer Science*
     aef6@st-andrews.ac.uk

Supervisor: *Dr Alan Miller*
Contact Details: *School of Computer Science*
     alan.miller@st-andrews.ac.uk

Consent Form

University of St Andrews

Measuring the Impact of Digital Heritage (Heritage Organisation Representatives)

Jo Clements

The University of St Andrews attaches high priority to the ethical conduct of research. We therefore ask you to consider the following points before signing this form. Your signature confirms that you are willing to participate in this study, however, signing this form does not commit you to anything you do not wish to do and you are free to withdraw your participation at any time.

Please initial box

- o I understand the contents of the Participant Information Sheet (marked 'PIS_20190107_v0.2_Measuring Impact of Digital Heritage (Heritage Org Reps)') ☐
- o I have been given the opportunity to ask questions about the study and have had them answered satisfactorily. ☐
- o I understand that my participation is entirely voluntary and that I can withdraw from the study at any time without giving an explanation. ☐
- o I understand who will have access to my data, how it will be stored, in what form it will be shared, and what will happen to it at the end of the study. I understand that I will be able to withdraw my data within 1 month. ☐
- o I agree to being quoted directly against my name in research publications (in the event that you do not agree to being quoted directly against your name your data will be anonymised). ☐
- o I agree to take part in the above study ☐

Audio recordings

I understand that part of this research involves taking audio recordings. These recordings and their transcripts will be kept securely and stored separately to any identifiable information, i.e. consent forms and questionnaires.

Audio data can be a valuable resource for future studies and therefore we ask for your additional consent to maintain transcripts of this data for this purpose.

- o I agree to being tape recorded ☐
- o I agree to my transcribed audio material being published as part of this research. ☐
- o I give permission for transcriptions of my audio material to be used in future studies without further consultation. ☐

Signatures

I confirm that I am willing to take part in this research

	Print name	Date	Signature
Participant			
Researcher			

Debrief

University of St Andrews

Measuring the Impact of Digital Heritage (Heritage Organisation Representatives)

Jo Clements

Thank you for taking part in my research project; your contribution is valuable.

<u>Nature of study</u>

We want to find out how the digital heritage apps and exhibitions produced in collaboration with the Open Virtual Worlds group at the University of St Andrews have changed people's and organisations' knowledge, interests, or behaviours.

We asked you to take part in this research project because you are part of a group or organisation for whom a digital heritage app and/or exhibition was designed.

We will study your responses to find out whether the digital heritage apps and exhibitions changed people's and organisations' knowledge, interests, or behaviours in the ways that we expected. We will also look at whether the digital heritage apps and exhibitions caused any unexpected changes.

We will use this knowledge to help design future digital heritage applications.

<u>Data</u>

As outlined in the Participant Information Sheet (marked 'PIS_20190107_v0.2_Measuring Impact of Digital Heritage (Heritage Org Reps)');

- o The information (data) you have provided will be stored in either fully identifiable or anonymised form in accordance with your wishes as provided on the participant consent form.
- o Your information (data) will be stored on the University of St Andrews secure central file store and only members of the Open Virtual Worlds Group at the University of St Andrews will be able to access it.
- o Your data will be shared (published and/or placed in a database accessible by others) in either fully identifiable or anonymised form in accordance with your wishes as provided on the participant consent form.
- o Your information (data) will be shared as described above, and then the information (data) held by the researcher will be destroyed 10 years following the last date on which access to the data was requested by a third party.
- o Your data may be used for related research projects in the future without further consultation.
- o If you no longer wish to participate in the research, you are free to withdraw at any time. You can withdraw your data up to 1 month after participation in the study. After this point your data will have been anonymised and so we cannot withdraw your data as we will no longer know which information (data) is yours.

<u>Contact</u>

If you have concerns or if you would like to view a summary of the results of my research, please email the researcher or the supervisor detailed below.

Researcher(s) Jo Clements
Jlc24@st-andrews.ac.uk

Supervisor(s) Alan Miller
Alan.miller@st-andrews.ac.uk
01334 46 3261

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Communicating Evaluation

- Summarise in standard ways
- Provide context for numbers
- Provide context for quotes

Resources

- [Values and benefits of heritage A research review](#)

Survey resources
- [Qualitrics](#)
- [Survey Monkey](#)
- [Doodle](#)
- [Google Forms](#)
- [Typeform](#)
- [SoGoSurvey](#)
- [ProProfs Survey Maker](#)