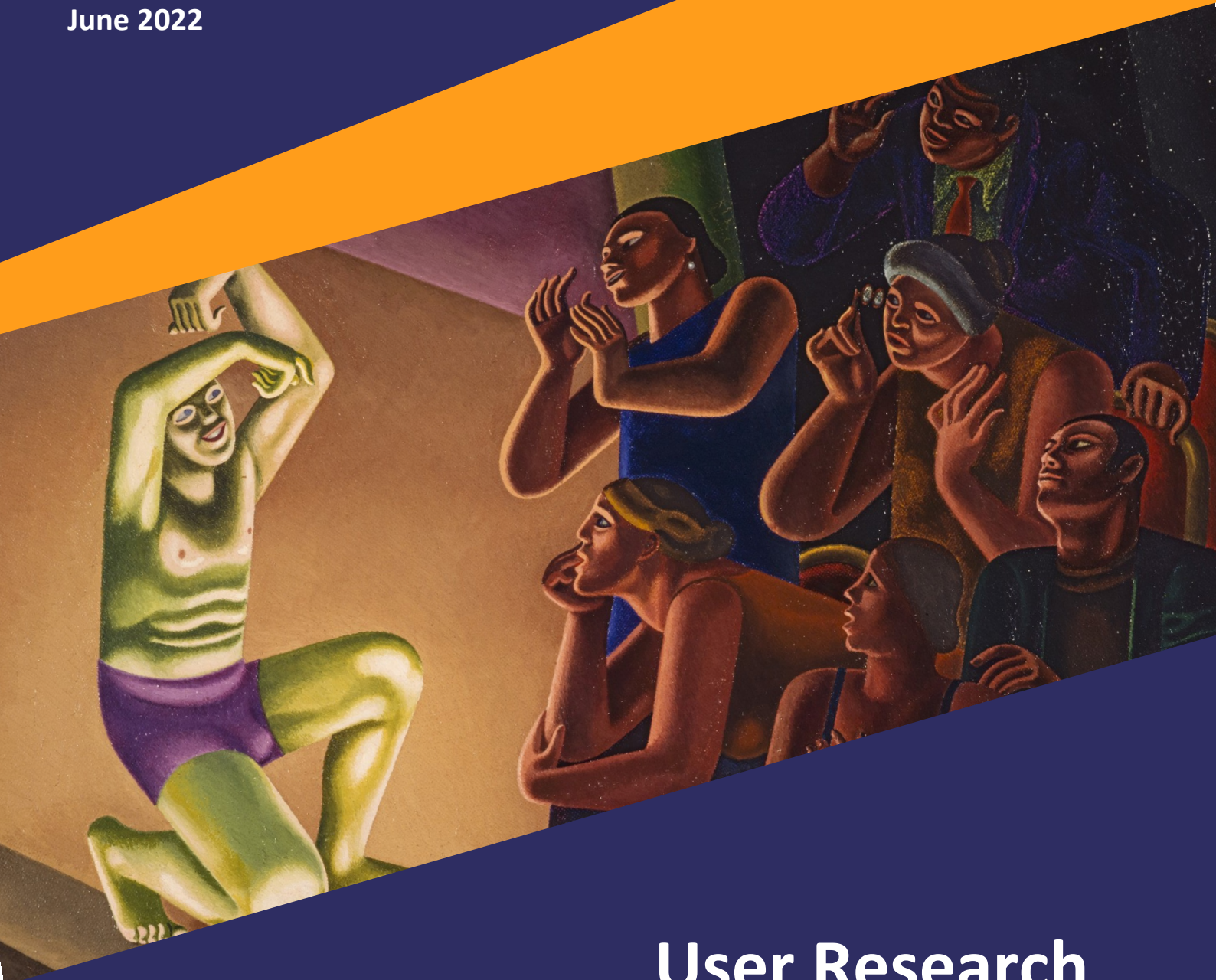# COMMISSIONED REPORT

June 2022

User Research

The Audience Agency

in collaboration with **Culture 24**

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Front cover image: William Roberts (1932). The Ballet [Oil on canvas]. National Galleries Scotland

1. Executive summary

1.1.   Introduction

The Audience Agency, working in collaboration with Culture 24, was commissioned to deliver user research to understand what users want and need from a future national collection digital infrastructure. Central to this was the clear driver within Towards a National Collection (TaNC) to involve and benefit an increasingly diverse and inclusive range of audiences.

The objectives were:

- To understand what a diverse range of users want and need from a future national collection digital infrastructure.
- To enable TaNC to involve and benefit an increasingly diverse and inclusive range of audiences.
- To inform the development of services, experiences, content and products built on top of a future national collection digital infrastructure.

We took a staged consultation approach:

- **Strategic context –** Talking to key stakeholders and decision makers to build an understanding of the strategic context for this project.

- **Framing sessions** – Initial consultation with each of the user groups to develop our approach with them and produce research tools that were relevant, appropriate and pitched correctly.

- **Needs gathering** – Gathering feedback from the user groups using the refined research tools.

- **Survey** – Delivering a public survey to gather further quantitative insights.

- **Sense making** – Sharing initial findings with professional user groups to sense-check and develop these findings.

Our research aimed to offer an initial view of how a future National Collection's digital infrastructure could and should be shaped to create maximum value across the UK and beyond in a way that is both feasible and sustainable. It points the way towards further research and key decisions that will need to be made about the future shape of the National Collection programme.

1.2. Key findings

- Current search/discovery behaviour:
    - Heavily focused on knowing who/knowing where to look.
    - Beyond this, both professionals and members of the public rely heavily on Google for search, browse and discovery.
    - But despite the dominance of Google, the younger the user, the more likely they are to use an app, social media or a smart speaker instead.
    - Mixed use of existing aggregators: The National Archives is highly valued, as are Art UK and BFI, with Europeana less so.
    - Most users come to collections records via external search or organic links, not through a catalogue search.
    - Current behaviour is oriented towards serendipity (discovery) as well as focused search, and academics saw serendipity as particularly important.

- Functionality and content:
    - For public users, images, descriptive text and stories around items were as important as raw data
    - Timeline and map search are heavily valued by members of the public, as is being shown similar content
    - Paywalls and account creation are major deterrents, particularly for members of the public
    - Many users question what a 'national' collection means/includes.

- Audiences:
    - Members of the public who already engage with collections, and/or who are students, saw the value in the National Collection as a cultural resource in itself. Interest grows as engagement with culture, history and/or archives grows.
    - Other members of the public remain to be convinced: they were only interested insofar as it could support or enrich a physical visit to a cultural organisation.
    - The group most likely to be interested in a National Collection are 25-44 years old.
    - Disabled users are more likely to be interested – and educators see increasing access for disabled students as an important part of the value proposition.

- Value proposition:
    - A strong case for a National Collection is based on the need for national cultural assets to be under public control and available for public access
    - GLAM professionals and academics would value a National Collection raising the profile of items in smaller institutions
    - The greatest value for the National Collection will be in doing things which existing offerings don't. There is particular interest in a system that allows connections to be made between items and between people and items: knowledge management not just information management.
    - Human knowledge, recommendation and connection are very important for successful search, and the National Collection will be valued if it can deliver or support that.

- Major risks:
  - National Collection platform(s) don't complete with the rich digital media experiences available elsewhere on the internet or provide sufficient added value to other search and discovery.
  - The service doesn't have sufficient volume and coverage of accurate and complete data about items and collections to be a (minimum) viable product.

- Strategic considerations:
  - Readiness and capacity of the cultural sector – both systems and cataloguing
  - Individual organisations needing to see the case for participation
  - Risk of reinforcing existing power structures and dynamics - colonial attitudes, dominance of big nationals
  - Need for persistence and sustainability beyond project funding
  - Uncertainty from users over what a 'national collection' might be

1.3.   Recommendations

- The key user segment for the public are those who already engage with collections. Those users could – through sharing functionality – act as advocates to culturally engaged public that are not collections users.
- Other public users will likely be best engaged indirectly via services, products and experiences built on top of the National Collection or using content or information derived from it which provide more context and/or narrative.
- Having excellent Search Engine Optimisation is at least as important for wide engagement as on-platform search.
- Key organising principles for a minimum viable product should be basic: who, when and where. Place is of particular interest as way of structuring interactions and information and should be highlighted wherever possible.
- Generous interfaces will be crucial for helping users to envision what is included in the National Collection – and what is not.[1]
- Accessibility needs to be designed into the National Collection from the start – further research is required with disabled people and other people with access needs.

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[1] 'Generous interfaces' are a class of user interfaces which attempt to help users get over the hurdle of knowing what to search for through providing 'results', suggestions, context and connections beyond what search alone would provide
http://www.digitalhumanities.org/dhq/vol/9/1/000205/000205.html

1.4.   Questions for further consideration

- Should the National Collection be primarily infrastructure or a (portfolio of) platforms?
- Should the National Collection aim directly to engage members of the public who are not currently engaged with collections?
- Should the National Collection aim to bring together different types of collection (museum, archive, gallery) in one unified search?
- Should the infrastructure enable crowdsourcing? The positives are clear, and there is some user interest, but it is resource-intensive and difficult to sustain

2. Our approach

Our research offers an initial view of how the National Collection's digital infrastructure can and should be shaped to create maximum value across the UK and beyond in a way that is both feasible and sustainable. It also points the way towards further research and key decisions that will need to be made about the future shape of the National Collection programme.

2.1.   What this research involved

The Audience Agency working in collaboration with Culture 24 were commissioned to deliver user research to understand what users want and need from a future national collection digital infrastructure. Central to this was the clear driver within Towards a National Collection to involve and benefit an increasingly diverse and inclusive range of audiences.

The objectives were:

- To understand what a diverse range of users want and need from a future national collection digital infrastructure.

- To enable TaNC to involve and benefit an increasingly diverse and inclusive range of audiences.

- To inform the development of services, experiences, content and products built on top of a future national collection digital infrastructure.

We took a staged consultation approach:

- **Strategic context** – Talking to key stakeholders and decision makers to build an understanding of the strategic context for this project.

- **Framing sessions** – Initial consultation with each of the user groups to develop our approach with them and produce research tools that were relevant, appropriate and pitched correctly.

- **Needs gathering** – Gathering feedback from the user groups using the refined research tools.

- **Survey** – Delivering a public survey to gather further quantitative insights.

- **Sense making** – Sharing initial findings with professional user groups to sense-check and develop these findings.

2.2.   What we were testing

It is a rare privilege to be able to conduct user testing at such an early stage of thinking – to contribute to shaping a proposition rather than testing a proposition whose shape has already been decided. However, it was necessary to shape an initial description in order to give participants an idea of the proposition they were discussing. Below is the description to which they were asked to respond.

The National Collection might be:

A portfolio of discovery and access tools, platforms, interfaces…

Enabling…

- search, browse, discovery, exploration, visualisation and connections

Combining…

- data and content from UK collections
- supporting information, especially on rights

Allowing…

- people and businesses to innovate and develop new products, services and experiences and add functionality
- and other new knowledge to be created through academic and nearer-market research

Our research considered the National Collection both as a portfolio of directly owned or managed tools, and as a data infrastructure that might enable a range of third parties to build their own cultural or information offers that engage wider and different publics, such as:

- GLAM institutions creating exhibitions, programmes and platforms for engagement.
- Academics building platforms for research to create new knowledge.
- Creative enterprises transforming collections and academic research into engaging and compelling narratives popularised for wider audiences.
- Developers creating new digital tools, platforms and experiences for a range of markets.

2.3.   What this research wasn't

As rapid early-stage user research across a wide range of potential user groups, this research was not able to cover all areas of interest. From the beginning we were conscious that the results of this phase of work would primarily serve to guide further research, providing insights into what should be pursued and what (potentially) should be ruled out.

In particular, this research did not involve:

- **A literature review.** In parallel with this project, literature reviews were conducted of existing user research and of worldwide digital comparators.[2] The results were published partway through this project.

- **User testing**. Due to the very early stage of the user research, there were no specific proposals to test with users – even in conceptual form. We recommend that there be extensive paper and digital prototyping throughout the future design and development process.

- **A specific focus on accessibility**. Although we have aimed to address accessibility throughout, time and budget constraints meant that we were not able to conduct targeted user research with disabled people and other people with access needs. This will need to be a priority in future design and testing work to ensure that accessibility is built into the project from the start.

In addition, there were limitations to the extent of our planned engagement:

- Although we ran a group with young people aged 16-25, we had limited participation from the younger end of the age range and from young people who were not in education

- Most academic engagement was from potential users who were already interested in, or engaged with, the TaNC programme in some way. Future user research will need to make additional efforts to reach more 'average' academic users.

2.4. Framework for user research

We engaged with a range of different users grouped under the following headings.

Academics/ Professional users	Academics
	GLAM professionals
Public users	Public - Existing engagers with collections
	Public – Non-engagers with collections
	Public - Young people
Intermediaries	Channels and developers
	Creative industries (non-GLAM)
	Educators

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[2] Bailey-Ross, Claire. (2021). Online User Research Literature Review: UK Gallery, Library, Archive and Museum (GLAM) Digital Collection. Zenodo. https://doi.org/10.5281/zenodo.5779826
Paltrinieri, Carlotta. (2021). International Benchmarking Review: A Towards a National Collection Report. Zenodo. https://doi.org/10.5281/zenodo.5793173

3. The public

3.1.   Introduction

Our approach to understanding public users was to understand their current cultural engagement and wider digital behaviours, expectations and preferences and to build upwards from that information to understand how they might expect or want to use a National Collection.

As one GLAM professional commented, the main risk for the National Collection when seeking to engage public users is building something that "doesn't compete with the experiences users have out in the world of the internet... It's probably not too hard to make something underwhelming compared to the rich experiences users have elsewhere on the internet... with information and digital media."

In the public research, we were therefore careful to not assume that digital behaviours or engagement with culture and entertainment were similar to professional users (such as those we consulted from GLAM, academic or creative industries).

We aimed to understand:

- Public interest in the National Collection as a concept and how this varies by factors such as current usage of archives, cultural engagement, digital confidence and demographics.
- Current patterns of usage of other interfaces (not just collections search or engaging with cultural content but operating systems, devices, social media etc) as a way of understanding how user expectations have been shaped.
- Conceptual and design metaphors for interaction and interfaces and conceptual structures for search and discovery.

The approach we took included:

- A review of existing literature and secondary sources.
- Two initial framing workshop sessions conducted with a range of public users:
    - One group who were current users of archives (online or in person) or online cultural collections
    - One non-user group composed of participants with at least some interest in heritage and cultural activities, having engaged in person or online in the last three years.
    - Both groups had a mix of ages, locations and ethnicity.
    - Recruitment was through a range of methods including open calls, email lists, social media and specialist recruiters. Those that were interested completed a screening survey and selections were made from there.
    - Respondents were given an incentive payment of retail vouchers to take part.
- Large scale quantitative survey with 1,092 respondents that were representative of the population in terms of age, gender, UK region and ethnicity.
    - We used a specialist panel supplier to recruit the respondents to the survey.
    - Analysis was conducted by The Audience Agency.
- Four needs gathering workshops were conducted with:

- o   Users of archives and/or collections.
- o   Non-users of archives and/or collections.
- o   16–24-year-olds specifically (with mixed use of archives and/or collections).
- o   Recruitment methods were the same as for the framing sessions.

The results from these different approaches are brought together in this section. Quantitative data has been derived from the public survey unless stated otherwise.

3.2.   Current state of play

To understand current levels of propensity for the public to use the National Collection, we considered the 'state of play' from a number of different perspectives. These included existing archive use, cultural engagement, interest in history and heritage and digital behaviours and confidence more generally.

Archive use and cultural engagement

- More than half (52%) of the public said they had used some type of archive at some point online, based on a broad definition of an archive. Although this was quite a high percentage, most people had only used archives for one or two purposes and in terms of those that had used them for historical interests, this was most often for family or place related research. Use was infrequent and specific for many.
- In terms of cultural visits for leisure, 54% of the sample had visited a museum in the last three years and 29% an exhibition or collection of art.
- Through Covid-19, there has been an increase in digital engagement, for example 21% had taken a virtual tour of a museum, gallery or art exhibition and 19% had taken a virtual tour of a heritage building or place.
- This indicates that there is an opportunity to develop part of the National Collection offer around supporting and informing visits or engagement from a cultural engagement perspective.

Digital behaviours and confidence

- Digital confidence in terms of searching for information was generally quite high for the public. That said, there was a proportion of the public who indicated that they could do with support in finding information, or that were unsure about what to trust online. The difference in confidence levels is something that needs to be taken into account if the National Collection wants a broad reach.
- Another key consideration is the increasing use of smartphones instead of other types of computing devices. Recent Ofcom research indicated that 21% of internet users were mobile only, even more likely among those aged 25-34, in lower socio-economic households[3].

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[3] Adults' Media Use and Attitudes report 2022, Ofcom, Key Findings p1
https://www.ofcom.org.uk/__data/assets/pdf_file/0020/234362/adults-media-use-and-attitudes-report-2022.pdf

- This was also demonstrated in the survey when users were asked about which device they would be comfortable using on a relevant scenario. The most common device was laptop or computer (68% of respondents), although mobile phone was also high at 46%.

- Age had a big impact on device use, with use of laptops and computers increasing with age and use of mobile phones decreasing (see following graph).
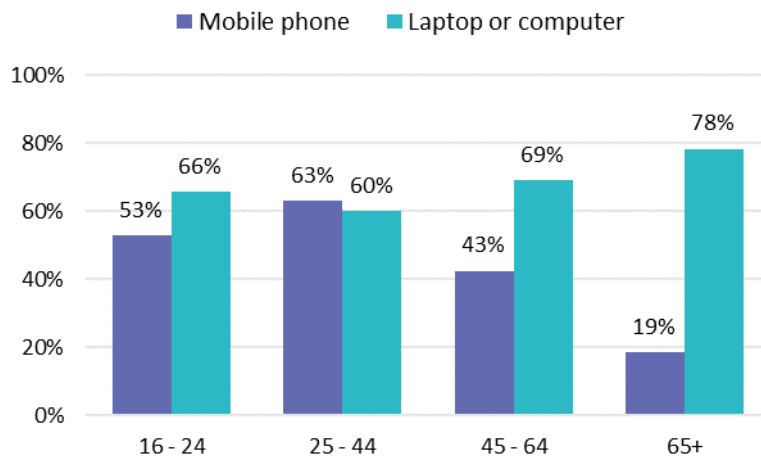
- In terms of social media, levels of regular use are high in the population. Facebook, WhatsApp, YouTube, Facebook Messenger and Instagram were the most popular. Only 10% did not regularly use some sort of social media platform. This concurs with wider industry data that describes the dominance of Facebook, YouTube, WhatsApp and other social media[4].
- Additionally, with higher levels of smartphone use, time spent on apps rather than websites increases.
- Those that are frequent users of social media and apps will be familiar with the search, browse and discover features that are typical of these platforms.

[4] *Online Nation Report 2021*, Ofcom
https://www.ofcom.org.uk/__data/assets/pdf_file/0013/220414/online-nation-2021-report.pdf

3.3.   Levels of interest in a National Collection

The public research initially tested the interest in the National Collection as an idea or concept. This is important because with many different information sources available it would be important for the National Collection to be quickly understood and perceived as a viable option for the public.

Overall interest levels

Interest was tested by first giving respondents a medium length description of the National Collection proposition. They were then asked how interesting it sounds and how likely they think they would be to use it. Responses were recorded on a scale where 10 was positive and 0 was negative.
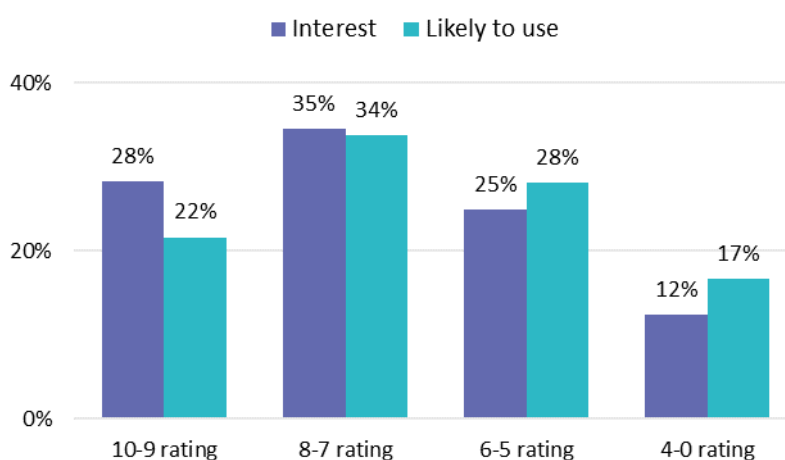
- When asked about potential use of a product or service, especially one they have not had experience of, people tend to answer quite positively. Bearing this in mind, we have considered ratings of 10 or 9 to be 'endorsers' whereas 8 and 7 are passive and 6 or lower are rejectors.
- Responses were reasonably positive on this scale. 28% indicated that they thought the National Collection was interesting and 22% felt that would use it. However, this does leave a large proportion of passives or rejectors and illustrates the challenge to build awareness and signal how and why the National Collection can bring benefit.

Interest by levels of cultural engagement and archive use

- Relevant subject interest and cultural engagement had a strong influence on likelihood to endorse the National Collection. This is shown on the following graph which shows how the proportion rating interest as 10 or 9 increases by the number of 'relevant historical topics' and 'art and cinema artforms' attended in person.

	0	1-2	3-5	6+
Number of historical topics of interest	12%	27%	41%	58%
Number of artforms attended in person in last three years	18%	24%	34%	45%

Interest level 10 or 9
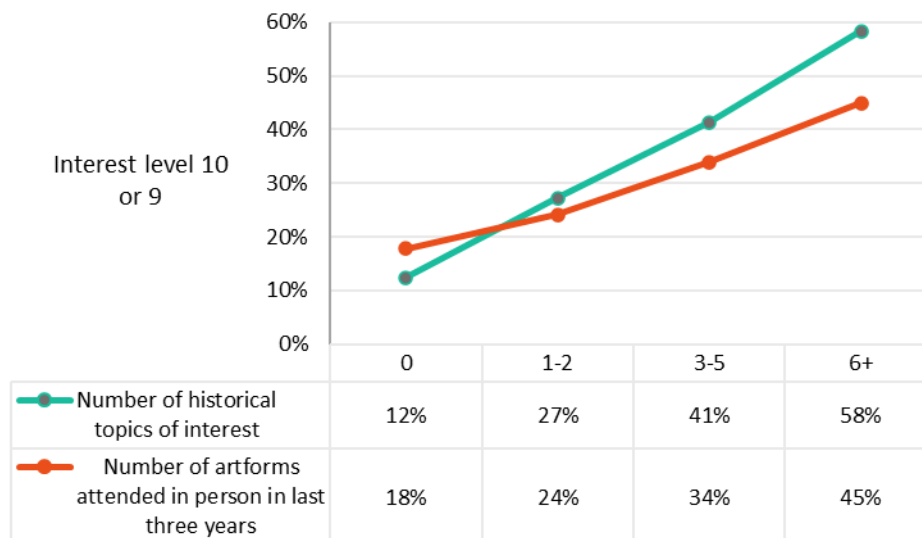
- A similar pattern was also found for a number of different heritage activities engaged with in person (this is not shown on the graph). As heritage engagement increased, the interest in the National Collection also did.
- Online, if a person has engaged in arts or heritage cultural content digitally, then they are also more likely to be interested in the National Collection than those that had not (37% rating '10 or 9' compared to 16% respectively).
- Although these findings are to be expected, the difference in quite considerable and it underlines the importance of developing strategies that aim to engage National Collection with members of the public that don't necessarily have related cultural or historical interests.
- In terms of archive use, the higher the level of use of existing archives, the higher the interest in the National Collection. Existing users are seeing value in the National Collection even though they will have sources they already use.

Interest by levels of digital confidence

- Those with low digital confidence were much more likely to reject the National Collection, in fact these were some of the lowest ratings observed. And those with high digital confidence were much more likely to be endorsers of the National Collection.
- Breath of social media use was less of an indicator of interest in the National Collection. In fact, those that use many social media platforms had less interest than those with average social media use.
-

	LOW	MED LOW	MED HIGH	HIGH
Grouped confidence in searching info online	14%	18%	33%	63%
Number of social media platforms they use reguarly	17%	31%	32%	23%

Interest level 10 or 9
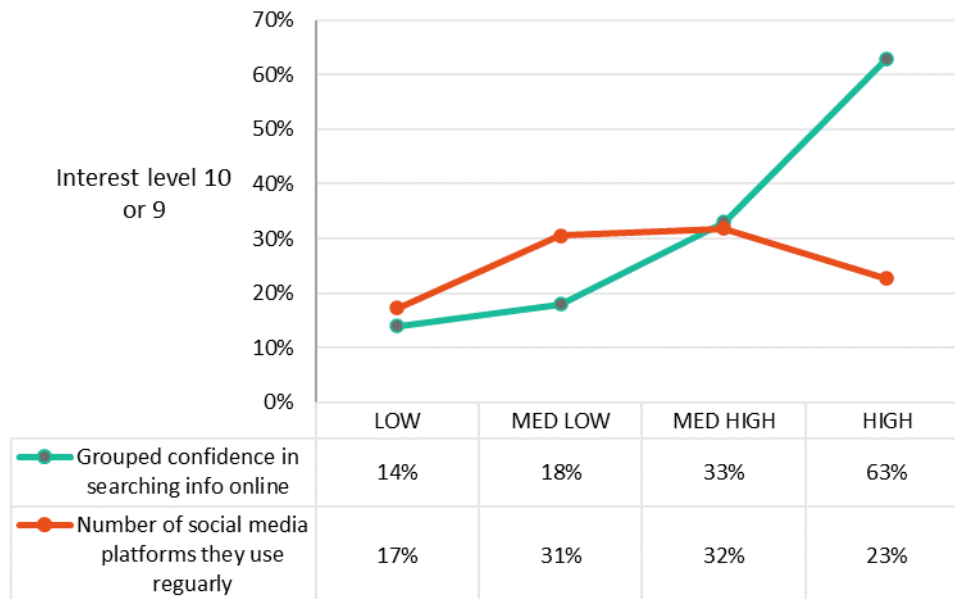
Interest by demographics

The levels of interest were investigated based on the demographic profile of respondents; including age, gender, ethnicity and disability.

Age category	There were some considerable differences across the results by age. Those that were 16-24 had the lowest rate of endorsement (22% rating 10 or 9), and the lowest passive rating of 8 or 7. The majority of 16-24 year olds rated 6 or 5 (36% and much higher than that observed for the other age groups). The highest proportion of endorsers could be found in the 25-44 age bracket, 35% scored 10 or 9. Interest then drops off for those between 45-64 and then again for those 65+. **% of respondents** |	10-9 rating	8-7 rating	6-5 rating	4-0 rating | |---|---|---|---|---| | 16 - 24 | 25% | 35% | 29% | 11% | | 25 - 44 | 29% | 41% | 24% | 6% | | 45 - 64 | 30% | 33% | 24% | 12% | | 65+ | 19% | 31% | 29% | 21% |
Disability	There was a higher level of interest from those who said that they had a physical or mental health conditions or illnesses lasting or expected to last for 12 months or more (36%) than those that did not (26%). This may reflect the convenience and accessibility of the digital platform, and that it could replace physical visits.
Gender	There were similar interest levels for females and males. The sample was too small to consider interest levels for those who identify in another way.
Ethnicity	Interest was quite similar across the categories, with the 'Mixed, Asian, Black, Arab, or other ethnic group' having a higher proportion of 'passive' ratings of 8 or 7 and less strong rejectors rating 4 or less.
Location	Interest was broadly similar at a country level, although respondents in Scotland, Wales and Northern Ireland had the highest 10-7 rating.
Occupation	Occupation status did have an impact on interest. Those that were currently employed had a much higher interest level than those who are long term unemployed. Short term employed were somewhere in the middle.

3.4.   Requirements

Requirements gathering was achieved by asking workshop participants and survey respondents to consider practical examples of how they may carry out a relevant task. Workshop participants suggested their own task, and survey respondents chose one from three options that were served up randomly from a list of 16. Examples are as follows:

I am looking for vintage interior design ideas for my home

I want to find images of famous historical people who lived in my area to share on social media

I would like to find out more about the different places my great-uncle lived

I want to find out if I can visit a gallery to see a painting I have discovered online

This approach was used to give concrete examples to base the National Collection on and represents a diverse list of possible ways of using the National Collection. It is not weighted by how common a certain search may be in practice. For analysis the activities and scenarios were grouped under the following categories:

- To RESEARCH – To find a specific piece of information
- To EXPLORE - More about a topic and related areas
- To UNDERSTAND – To have something explained
- To DISCOVER – To find something new
- To PLAN - A visit or engagement

Confidence levels

- Overall, respondents were asked how confident they were in completing the scenario that they were given. Only a quarter showed high levels of confidence in their search (27% rated 10 or 9). 35% rated their confidence as 8 or 7 and this left 38% that scored 6 or lower. This is interesting because the scenarios were designed to be quite typical and not necessarily challenging.
- To understand this further, the ratings for different types of scenarios has been broken down below. The chart shows just those that rated 10 or 9. Respondents were most confident with the more open ended discover scenarios and least confident with more specific research tasks.

% rating confidence 10 or 9

Category	%
OVERALL	27%
DISCOVER – Something new	37%
UNDERSTAND – Have something explained	30%
TO PLAN – A visit	28%
EXPLORE – A topic	26%
RESEARCH - Something specific	22%
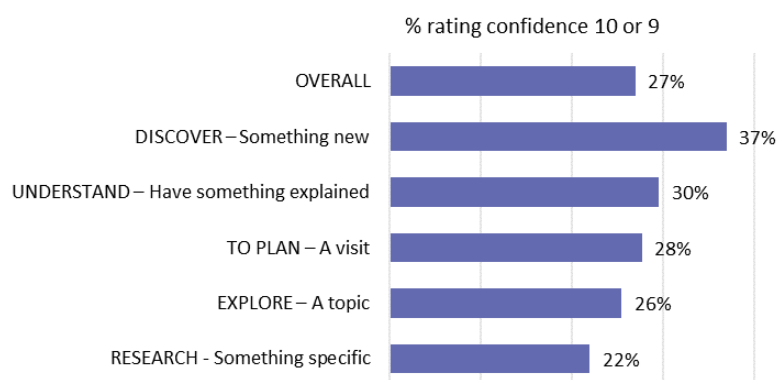
- Age did impact on confidence, with the 25-44 age group the most confident overall and the 65+ respondents the least confident.
- When asked how many separate sources of information they think they would need, only 12% said they thought there would be a single source that gives them adequate information. In terms of the scenario types, the highest percentage who felt that one source was adequate was those completing one of the discover scenarios (17%) and the lowest was for the research scenarios (9%).
- Across the whole sample, over half (54%) said 'a handful of sources' and 20% said 'many sources' (with an additional 14% 'not sure').
- The perception from many that multiple sources would be required, coupled with those with low confidence in the search, does point to an opportunity for the National Collection as a place where sources 'can be brought together'.

Touchpoints

- In terms of the first thing they would do, search engines, especially Google, as may be expected, are a crucial tool for searching. This is both to suggest sources (46% of respondents) and to locate websites they know about (32%).
- Only 5% said they would go direct to a website or websites they already know about (for example using tabs or favourites).
- Whilst search engines were the most common, use of other platforms such as apps, Alexa and social media were mentioned by small but significant proportions of respondents. 7% said social media is the first thing that they would do. Searching on social media via hashtags was particularly important to non-users.
- One workshop participant described using Facebook as her homepage from where she would discover a range of content. This 'single platform' behaviour came with a strong trust in the information provided.
- These 'non search engine' search methods were much more common with younger users as shown in the following graph.

	16 - 24	25 - 44	45 - 64	65+
Use an app	10%	5%	2%	1%
Use social media	13%	8%	7%	2%
Use a smart speaker (like Alexa)	7%	6%	3%	4%
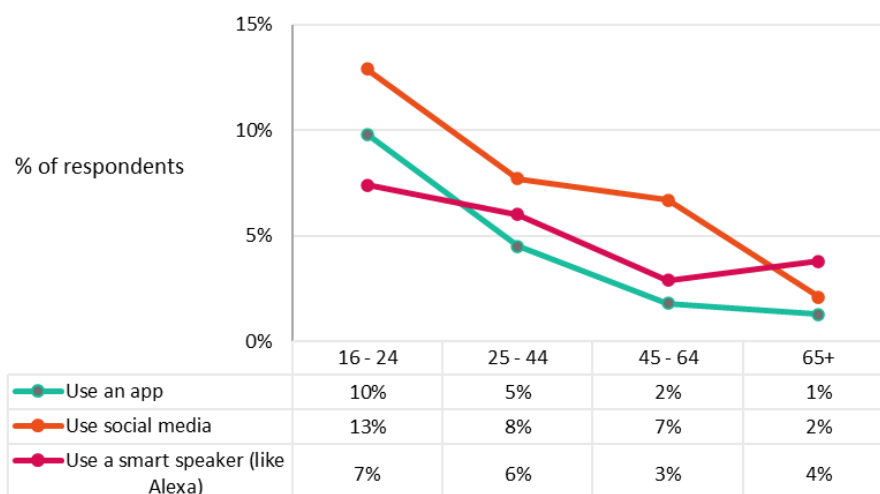
- When asked specifically, 31% said that they would be 'very likely' to use YouTube at some point, demonstrating the importance of this platform in many people's digital lives.

Functionality

Respondents were asked specifically about what functionality they would find useful when searching and browsing to complete their scenario. The results from the survey are shown on the following table, firstly based on 'all that apply' and then their 'top 3'. It is important to remember that these needs are based on the range of scenarios that were provided.

- In the 'all that apply' responses, 63% wanted to use a search box to type into, much higher than the figures observed for the other options. Although this would be expected, it does leave more than a third (37%) that did not mention it, and who were interested in using other search methods.
- In terms of other responses, there is a real range of needs, with map interfaces (26%) and timeline interfaces (23%) being the most popular, followed by predictive text (21%) and recommendations (20%).

What would they find useful	All that apply	Top 3
A search box that you can type into	63%	76%
A map interface to search with (e.g. where you can zoom to a location and see 'stuff')	26%	35%
A timeline interface to search with (e.g. that puts info into date order)	23%	31%
Predictive text options that help refine your request	21%	18%
Being shown other content similar to what you have just found	20%	24%
Being shown collections of content created by other people interested in the topic	18%	18%
Being shown groupings of content based on themes	17%	18%
Being shown suggested popular searches by other users	15%	10%
Voice activated search	15%	12%
Sending an enquiry using a webform or email	14%	12%
Posting the question to an app or other platform (e.g. Facebook, Twitter, a message board)	10%	6%
Ability to search by colour	9%	6%
Using a live chat or similar	9%	11%
None of these	10%	-

- These needs do vary strongly by scenario type, demonstrating the range of requirements that users have in different circumstances. An example of this for some selected categories is shown on the following graph.

	EXPLORE – A topic	RESEARCH - Something specific	DISCOVER – Something new	UNDERSTAND – Have something explained	TO PLAN – A visit
Being shown suggested popular searches by other users	13%	13%	20%	20%	19%
Posting the question to an app or other platform	10%	8%	14%	9%	11%
Sending an enquiry using a webform or email	15%	18%	14%	9%	11%
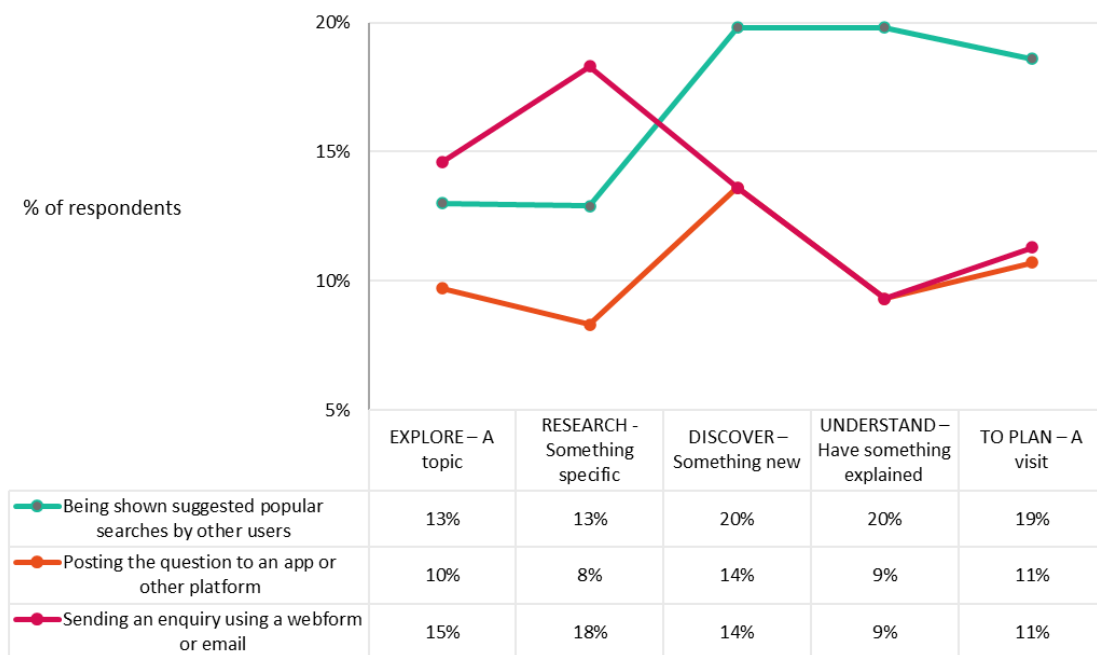
- The workshop results very much followed the same pattern. Search box functionality was most important, with enhanced search features such as 'did you mean xx?' and the predictive text function important for most.
- Generous interfaces were welcomed along with supporting context - particularly as most users will not land on an item record via the search page.
- Across the groups it was important to have intuitive search functionality, access to content without advertising and a platform that was responsive to their needs in terms of providing the right information quickly and effectively.
- Existing archive users were familiar and comfortable with conventional archival search methods (e.g. The National Archives advanced search). Non-users were not, finding the level of precision required to be beyond their capabilities or inclination.
- Many were concerned with being faced with too much information. A drip feed approach was preferred or the ability to dive in further if required.
- Access to the National Collection via an app was also mentioned, especially amongst younger users – a reflection of the high level of comfort with smart phones as devices to access information.
- Discovery through suggested or recommended content (examples used were YouTube, Instagram or TikTok) was enjoyed by all enabling further exploration of content that was relevant to their interests.

Content needs

The range of scenarios and practical examples mentioned by public users produced diverse content needs. The survey results are shown on the following table with the 'all that apply' and then 'top 2' question structure.
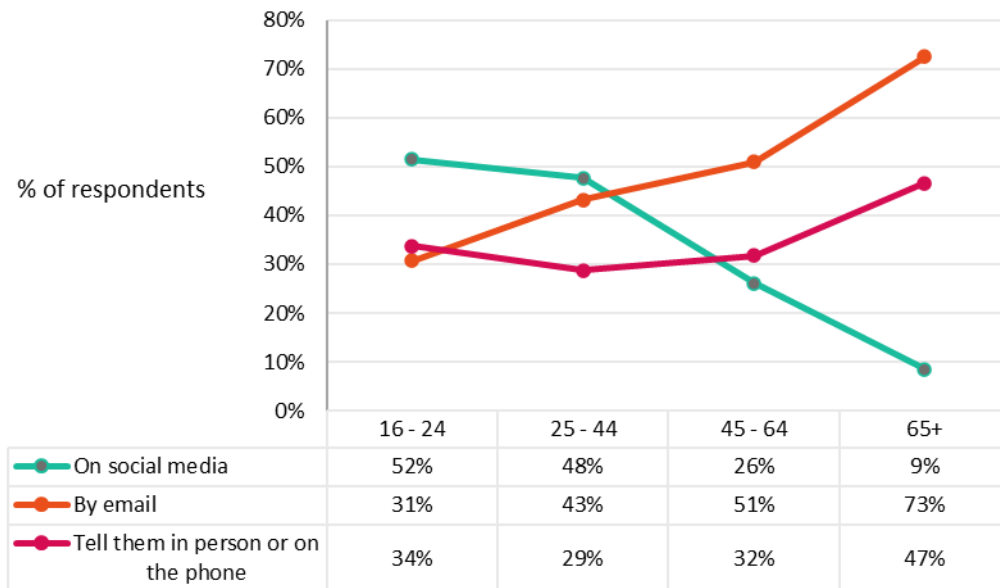
Content needs	All that apply	Top 2
Specific data, information or text (e.g. quite raw, specific info)	48%	56%
Images	43%	26%
An article or story	41%	30%
Longer descriptive text to explain what you find	35%	31%
Film / moving image / video (e.g. could be embedded on a website, YouTube or social media)	27%	19%
A video 'tour'	17%	8%
Audio description or podcast	11%	2%
A 3D digital picture	7%	2%

- Although 'specific data, information or text' was mentioned by 48% of respondents when asked 'all that apply', images (43%), and article or story (41%) were also frequently mentioned.
- What is interesting is that in many cases the content needs did not vary significantly by scenario type. Interest in images and film for example was relatively constant across the scenarios, with the exception of the 'video tour' which was rated higher by those looking to plan a visit.
- When asked what would make the National Collection relevant to them, the non-user workshop participants showed a higher interest in 3D functionality and virtual tours and the idea of bringing relevance through stories, narrative and curation (by experts). They also liked articles and/or items to be heavily cross-referenced as they found they enjoyed discovering about new things in these ways.

Saving and sharing

- In terms of sharing, the respondents mentioned a range of places and ways that they would save or store the information, the most often mentioned being on email, a word document or favourites.
- If they needed to share the results with a friend or relative, half said that they would do this by email (50%) and a third by social media (33%). 26% would show them on the screen of their device and 34% would tell them in person or on the phone.
- Although email is still clearly the most often used method, it was interesting how high social media was in the findings.
- Age made a difference in how people would share information, email use increased with age, social media dropped and 'face to face' or 'telephone' was high for 65+ ages.

- In the workshops, users would like more access to wish lists or saved lists on online collections or archives. This could be through an account on the National Collection platform.

% of respondents	16 - 24	25 - 44	45 - 64	65+
On social media	52%	48%	26%	9%
By email	31%	43%	51%	73%
Tell them in person or on the phone	34%	29%	32%	47%

3.5.   Value proposition

The public survey respondents were asked whether they thought the National Collection would bring value to their relevant scenario activity. This gives us a top-level understanding of value for public users.

- Overall, just over a quarter (26%) gave a rating of 10 or 9 and therefore endorsed the National Collection.
- Based on the wide range of scenarios that were given this is encouraging but it does leave a quite large proportion of the public who were less sure of the National Collection value. 39% rated 8 or 7 and this left 36% rating 6 or less.
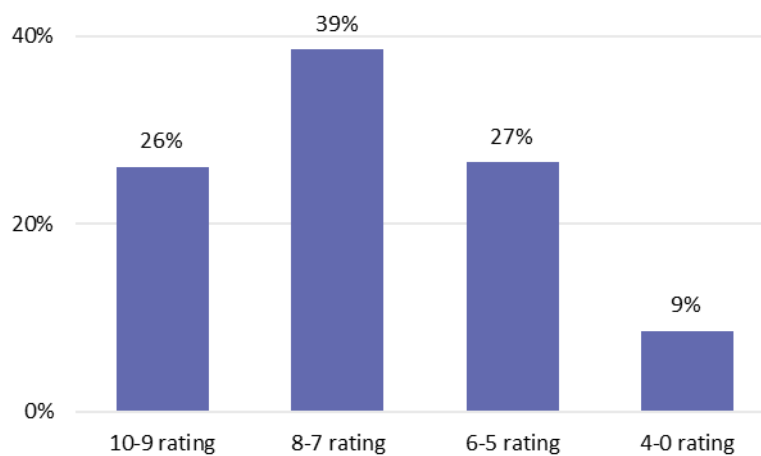
- These results help us to understand perceptions of the National Collection but it must be remembered that they are based on providing a description of what the National Collection can do, not a prototype. What it does demonstrate is that with the public, if they are using the National Collection for less typical archive searches (i.e. not family- or place-related), care must be taken to surface the benefit of the resource.
- When asked for further detail on how they would like the National Collection to help them, 'a place where you can trust the information' was the highest rated option. There is therefore an opportunity for the National Collection to build a trusted brand, a resource that can be used with confidence.
- Providing more depth and range of information was also important for potential users, as well as the ability to search across many sources and locate specialist information.
- Although less important that the above, discovery and learning were still important factors, although this will be driven by the range of scenarios that were tested.

The public workshops enabled us to explore further the value that the National Collection may bring for different specific types of user (16-24s, existing archive users and non- archive users).

Existing users

- Existing users see the National Collection as a 'one stop shop', somewhere that brings together multiple sources of information and saves them time and effort.
- They also saw value in the National Collection as a place that brings together different 'source types' from archives and collections, so breath of content was important.
- They are purposeful in their use, wanting to research or explore topics and subjects.
- These users were more likely to want an account within the platform that helps them organise information.
- They appreciate sophisticated search functions, but at the same time can be loyal to existing 'known methods'. It is therefore important to provide guidance and easily accessible functionality to encourage National Collection use.
- Existing users were open to recommendations, but some were wary of being taken 'off track'. For them, what they would like is for recommendations to be curated by 'experts', therefore adding value.
- Most important for these users is that the National Collection needs to deliver the information that is being sought.

Non-users

- Non-users felt that the National Collection was a place to use for information 'as and when' they needed it rather than a frequently used resource.
- It therefore needs to be 'put in front of them', so they know it can help. Having easily accessible and familiar ways of access, such as through search engines, apps or social media, are particularly important for this group.
- It needs to add value to the existing ways that they access information, enhanced functionality, generous interfaces, interactive formats were all benefits for this group. The ability for the National Collection to create new 'experiences' through combining data was of interest.
- Similar to the existing users, non-users were 'loyal' to their existing platforms, although these were much more likely to be search engines and social media and accessed through smart phones. To fit with their usage patterns some mentioned that it would be useful for National Collection to have an app.
- For this group a key benefit of the National Collection is to support physical visits. It could help by bringing together different listings but also to provide more information on what is to be expected from visits by using virtual tours, or other ways of accessing the collections.
- Additionally, this group were excited by new and interactive formats, especially as a result of the Covid-19 pandemic. They were open to digital only experiences such as virtual tours and online performances.

Younger respondents (16-24)

- This group showed the lowest levels of initial interest in the National Collection in the survey, and it was possible to explore this further in the workshops.
- It was generally felt that the National Collection did not fit with their current interests and it was for 'specialist' use. They didn't see it as useful for them unless they were studying history or another academic subject. It was likened to Wikipedia.
- When they do need to use it, they valued speed of access as well as detail of the information they find. They are confident at searching in a number of ways and need the National Collection to provide a high level of functionality.
- That said, these are not users who, for example, are familiar with advanced searching on platforms such as the National Archives, they are familiar with search engines and social media functionality.
- Paywalls are a deterrent for this group, so largely free content or the ability for universities to subscribe on behalf of students is important. They are also less likely to see value in sharing findings.

Overall reflections on public users

- Interest in the National Collection and ways they may use it did vary across the user types depending on whether they were existing archive users, cultural engagers, their 'digital confidence' and to a certain extent by age.
- What is clear is that the National Collection would be valued by those that are used to accessing archives as long as it adds value to their existing sources and processes. Coverage and depth are therefore key to success here.
- Those that have not used archives or collections need the National Collection to be there when they need it, and to 'come to them' into their digital lives.
- Where non-users value stories, narrative and curation as an interest point, the challenge for the National Collection is how to encourage the production of such a broad range of content. Key to this may be working with partners and contributors to provide this as well as strategies to then promote it so that it is picked up by people with a relevant interest.
- The potential of the National Collection to be a way of supporting physical or online 'leisure' cultural engagement came through strongly from non-users. However, to be useful this is likely to require a reasonable marketplace coverage to be credible, so has an impact on resources.
- The types of value described here are quite varied and it all impacts on the overall offer of the National Collection and its brand. The research showed that there were strong benefits of the National Collection as a trusted resource but also some mentioned the high expectations that comes with this.

4. GLAM professionals

4.1.   Introduction

Our research with GLAM professionals involved:

- One-to-one discussions with selected key stakeholders
- An initial framing session with 13 participants
- A needs gathering session with 11 participants
- A sensemaking session with 22 participants during which we presented our draft findings

These were recruited via The Audience Agency networks. Participants included Directors; Curators; Heads of Communications, Data and Digital; Archivists; Project Officers; and others.

4.2.   Current state of play

- When searching for collections items outside their own institution, existing knowledge is extremely important for GLAM professionals: both knowing **who to ask** (colleagues at other institutions) and knowing **where to look** (which institutional catalogues to search).

  "It's about guessing which institution it might be at, and then looking at their website first, and then possibly an inquiry."

- When in doubt, GLAM professionals tend to default to searching big institutions, assuming that their collections are better digitised and catalogued – as well as simply larger.

  "I would probably naturally go to the larger museums, who I would assume already have their collections online."

- Some aggregators are used. The National Archives were mentioned frequently, alongside Art UK. Europeana is somewhat less popular. Specialised databases are also used, such as the Archaeology Data Service and Portable Antiquities Scheme website.

- When pre-existing sources of knowledge fail, Google is an almost inevitable fallback option. It is one of the few sources that is seen as bringing up unexpected results and opening new avenues for discovery.

  "If I'm looking for subject strengths in other collections ... Google will probably be the only place where I can start to look for that sort of information."

  "Sometimes the [subjects] are so niche that you'll find they're held within smaller museums. And sometimes you end up going down the rabbit hole reading random articles online. I quite often end up Googling academic journals from any number of years ago just to see if someone's written about interesting artifacts in the past."

- GLAM professionals are conscious that existing records are not adequate to meet their needs – or the needs of the wider sector. Sometimes they aren't able to find collections items that they know are held by another institution, or they know that the information

available in a public search is only a small percentage of what is actually known about an item.

"Often the catalogue does not contain what your institution knows about that object, it contains some of those things or, maybe very few of them."

- This helps to further explain the reliance on personal knowledge in search and discovery: a personal contact at another institution will be able to share insights that are not easily searchable or perhaps not publicly available.
- Searches are often done on behalf of a colleague or a member of the public.

4.3.   Requirements

Touchpoints

- GLAM professionals are willing to go to a range of platforms and sources for search.
- Interaction is more likely to be via a computer (as opposed to mobile), with the exception of people working in the field.

Data/content

- An overwhelming concern for GLAM professionals is that the quality of catalogue data/metadata/item descriptions held by individual institutions may not be sufficient to support the aspirations of the National Collection.

"The mistake that we mustn't make is... think[ing] that our existing systems are quite good"

"You can't find what you don't document... rubbish data... that's what we're stuck with really."

- No less than other types of users, GLAM professionals are often simply looking for a really good story. This might be to inform an exhibition, drive online engagement or support a participation event. Whatever the context, the end goal is to find something that speaks to audiences. Having a platform that helps to surface new stories and connections would be a major value-add for the National Collection.

"We're trying quite often to flesh out a narrative and find something that people can really connect to. So it might be an object: sometimes objects have a really obvious story to tell. Sometimes the object itself is not interesting, but its biography is fascinating. So that can make searching collections really difficult, because sometimes you're looking for a needle in the haystack: a real strong narrative and connecting point. I don't always know what I'm looking for until I stumble across it."

- 'Connections' can be connections between items and the real world and its history – people, organisations, place etcetera. And they can be between items held in collections.

- There is a desire to be able to understand how collections items have been used in exhibitions and projects – and to be able to link this with knowledge created during those projects, perhaps through user participation.

  "We would log that it's been used in an exhibition, or it's been used as part of a major project, perhaps with a link to some form of data or archive for whatever could be made public within that."

- Participants had mixed feelings about the idea of crowdsourcing being supported on a National Collection platform.

  "If the goal is to build a truly inclusive national collection, finding ways to integrate individual citizen-researchers' responses to objects into the record will be crucial."

  "I think it's really important to have public input into these collections and their interpretation and updating the information. But the risk is people spreading misinformation and trolling – or if these things have to be approved, how do we maintain the capacity to actually deal with them."

Functionality needs

Participants in our GLAM professional workshops discussed both their own needs and the needs of other users with whom they interact (researchers, members of the public). Given that many GLAM professionals are focused on meeting other user needs – particularly supporting search and discovery – we view all of this as valid and important evidence.

- Interface style.
  - Visualise collections overall, generous interface style.
  - Mobile, responsive, and accessible – assume mobile-first.
- Search approach.
  - Multiple ways to search: language, images, etcetera.
  - Filter results to particular media types (i.e. photographs).
- Allow people to process and interact with pages and data in their own way, using their own tools, with an eye to universal design principles.[5]
  - Compatible with screen readers and Google translate.
  - Chatbot interface to accommodate voice.
  - Audio descriptions of images.
- Be aware of different search modalities with different types of content.

  "People are interested in representations of joy, or despair, or complex search queries that combine genre plus colour, plus emotion…" (film).

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[5] See for example George H. Williams, 'Disability, Universal Design, and the Digital Humanities,' in Matthew K. Gold, ed., Debates in the Digital Humanities (2012). https://doi.org/10.5749/9781452963754

"Diversity and inclusion – e.g. where are all the feature films with Afro Caribbean or Indian diaspora actors?" (film).

- o Places and people were by far the most popular search modes in archives.
- Accommodate reuse and next steps
    - o Offer clear permissions information (rights, etc.)
    - o Offer pointers to data sources – don't make it look as if it exists only on this platform.
    - o Save/curate/share search results – with enquirers, with colleagues.
    - o Export search results.

    "The capacity to export results within your search in a CSV or an Excel file is very handy. If it comes away with the right metadata, like the actual archive reference, and whatever else, more's the better."

- Facilitate connection with human knowledge.

    "Maybe a portal for museum professionals or archive professionals so that if you wanted to contact the relevant person about that object, [you could] work out who you would need to speak to in order to deal with those objects or get more information."

- Allow expression of connections between items.

    "One of the things that's very difficult to do on systems now – but we know that this will need to be much better – is making connections between items. We want to express much richer and more interesting connections between objects. And we probably want users to be able to do that as well. And if the system makes that easy, then the fact that there's multiple meanings isn't so much a problem, because at least we've got an easy way of expressing some of those things."

4.4.   Value proposition

- GLAM professionals imagined a broad range of scenarios in which they might make use of a National Collection infrastructure, including creating exhibitions, informing curatorial work, designing learning and participation programmes and making decisions about accessioning and (this was mentioned surprisingly frequently) deaccessioning.
- For most participants, the main value offered by a National Collection would be in conceptually or virtually bringing together collections items that are physically separated.

"Maybe there's a massive missed opportunity to say to people, here's a Google Maps search to show you everything held in the National Collection about your square mile. I would use that absolutely. [It's] quite persuasive."

"Having this massive kind of database would really help in looking at testing hypotheses, looking at big patterns, and also identifying unique spots, the uniqueness of various localities or cultures through time and across the landscape. But just from an engagement point of view with users, we are trying to get past our normal audiences, and I can see this as being a much more engaged way for people being able to look for and engage with the materials that they find meaningful, which is really limited within archaeology at this point. I think it would make a massive difference to engagement with our users."

- A National Collection was seen as – in theory at least – helping to level the playing field between different institutions. It could shine a light on the 'long tail' of important items that weren't held in larger institutions.

"we're saying that these government records are as interesting as these records held in local archives are as interesting as these ones held in community archives. And that's something that I hope towards the national collection will be able to do for lots of different kinds of collections."

- Participants saw value in bringing together search results from museums, archives and libraries. One participant noted that many members of the public don't understand the difference between these types of institutions anyway, while another saw it as "showing parity of esteem to different kinds of records."
-
- Participants also saw a National Collection as facilitating collaboration between institutions.

"It would help us to look at other collections differently and think differently about how we might organise loans or work collaboratively with other institutions."

- Major operational benefits were identified as well: reducing dependence on the knowledge of specific individuals within an organisation and saving staff time conducting – and particularly helping the public with – searches.

"One of the ways that we know that our search systems aren't that great is that we get a lot of inquiries that relate to questions that people should be able to answer using our search systems. And that's a key reason to be able to free up those resources."

"People say to us, I've looked on your website, I've tried the catalogue, and I can't find anything. And it's that not knowing how to get any further. That's the problem."

- However not all participants saw a clear institutional value in participating in a National Collection programme. In a sector where the focus of both funders and institutions is on widening audience participation and reach, any case for institutional participation as contributors to the National Collection would have to be made on this terrain.

"We're better off as an institution piling our resources into better social media."

"[As a local authority institution], to try and 'sell' something that mainly had benefits for people outside our county would be difficult."

"I spoke to some of the senior members of staff from national museums and galleries. And they said that our remit is not to tell everyone 'this is what we have, and this is how you would find it.' Our remit is to ensure that we get more visitors on the site, and then we decide which collections we want to draw their attention to."

5. Academics

5.1.   Introduction

Our research with academics involved:

- One-to-one discussions with selected key stakeholders
- An initial framing session with four participants
- A needs gathering session with 13 participants
- A sensemaking session with 13 participants during which we presented our draft findings
- A qualitative survey with 26 respondents that was promoted by Towards a National Collection, Audience Agency and Culture24 social media and newsletters

Disciplines represented include art, archaeology, architecture, archives and records management, digital humanities, history, information science, interdisciplinary arts, and museum studies.

5.2.   Current state of play

- As with GLAM professionals, successful academic search techniques often rely upon pre-existing knowledge: knowing where to search (which institution's catalogue) and who to ask (which curators, archivists, academic specialists). Participants were conscious that their reliance on existing knowledge narrows the scope of where they can find results.

"Usually, the first port of call are the well-known museums in my field that have publicly accessible databases: the Science Museum, the Wellcome Trust. And then if I can't find out I usually approach individuals to be honest, emailing those institutions to ask for more information about what they have, which is especially useful if I have previous connections with them. But it does mean there are many museums that I never reach out to, because I'm not familiar with people who work there."

"I've got particular archives that I'm interrogating, I'm going to their websites, but – I think it's a lot to do with how those things are described, and what categories they're in, what taxonomies they're using – you can't surface it online. I end up having to go to the museum itself, asking curators to bring out this artifact that I know is in their collection, I know is digitally documented, but it's not surfaceable through discovery."

- Like GLAM professionals, academics highly valued Google for its ability to suggest new possibilities and facilitate discovery when they didn't know where to search.

  "In the first instance, I've gone to a Google search to find the experts in the field, and then tried to connect to them, and take their input on the best way to tackle a topic."

- Using Google, many academics attempt to maximise their chance of finding something new by using terms that don't fit the standard mould.

  "Titles vary in artworks and descriptors are very inconsistent. So you get a much wider hit rate if you use what I would call dealer terms in material culture: the words and phrases used outside academic description of art history."

  "Very often when I search, I take off my research brain and my museum brain and try and go from multiple, almost vague terms."

- Existing aggregators prompt mixed feelings. Aggregated search was felt to be more useful in dealing with 'paper-based' collections items and where text search within items is available.

  "The problem with aggregation sites like Europeana is that it's not possible to interrogate the variety of terms."

  "On EBSCO, on ProQuest, where you can search a great deal of the text, you're not particularly guided by somebody else's algorithm or opinion."

  "I never go to Art UK. And that's a terrible admission. It is just not my go to, [even though] in the past I was uploading stuff to it from a collection."

- Academic expectations are shaped not just by cultural aggregators like Art UK and Europeana, but also by wider academic research platforms and portals.

  "Aggregators like Web of Science… create an interface where you do not need to know that this particular journal has got this particular article. For any university library, there is a standard search interface… [which] tells you these many objects as books, these many objects, as journals, there's many objects as other resources, etc. So this is indirectly influencing user behaviour as well in the academic context."

- Academics also use 'non-academic' sources as well as public sources for items that may currently be in private hands such as the Portable Antiquities Scheme.

  "More commercial sources have been really useful as well. The provenance records in auction houses are often the way that you can find where… that object or that kind of collection is held."

- Like GLAM professionals, academics are only too conscious of the limits of current cataloguing and digitisation of collections items.

  "Perhaps crucial to this project is that the digital documentation of collections is, pretty much across the board, absolutely woeful, even in major national institutions."

5.3. Requirements

Content/data

- A striking finding is the strength of academics' desire for serendipity (**discovery**) in their search results – and the impact of this on their views of aggregators and standardised information architecture.

  "When we do have aggregated searches, it's simply finding things that we knew about anyway."

  "I don't trust how a card catalogue from 80 years ago has categorised an item and I don't want to search a database that just reproduces that."

- Alongside this mistrust for fixed classification schemes there was a desire to offer students or new academics ways to navigate those schemes (**browse**).

  "I remember once trying to write a paper on what I was describing as the reception of Cicero in Petrarch. And I was really struggling to find that bibliography. I happened to mention it to an Italian historian who said, 'Oh, you mean Italian Renaissance humanism.' And all the bibliography was described under that. I think this is an access issue: if you're new to academia and to the university landscape, you're not going to know that that was called Italian Renaissance humanism."

Functionality

- Basic needs around functionality were clear:
  - Confidence – accuracy, provenance, permanence
  - Full text search wherever possible
  - Rights and reuse information
  - Easy referencing/citation of objects and object records
  - Downloadable search results
  - Transparency: "I would like to see why things were digitized, how and why and by whom, at what point associated with what activity."
- As discussed below, academic participants saw the value proposition of the National Collection as being the facilitation of building knowledge and connection. Therefore, they also discussed higher-level functionality that would be able to bring out the connections between objects and connections between the knowledge about them.

  "You have to dissolve the objects into every possible connected bit of knowledge that's attached to them, or is generated by themselves, which means you'll get a whole new set of interpretations which would be inherently more accessible. Because they would allow a new kind of commentary and interpretation that wasn't available in top-down models."

"Obviously, it is not possible manually to kind of build these hidden links amongst millions and millions of objects. But once we build that model, with specific groups of users and specific domains, then we can bring in machine learning techniques."

"A series of networks and webs, not just a portal, but something bigger, that will guide you to different places, as opposed to just a big sledgehammer space. That's a really useful and interesting opportunity to guide people to smaller and more unorthodox collections."

- Participants highlighted the need, insofar as the National Collection takes a machine learning approach, for transparency about how and what is presented.

"The sovereignty of those algorithms is really critical to engaging with them. And making them transparent, because these databases are made by older people whose visions of the world are completely different. So how do you change that vision to worry less about the past and be maybe a little bit more concerned about the future of this stuff?"

- Digital humanities requirements represent a special subset of requirements – and an increasingly important one. While our research was not comprehensive, workshops and discussions with key stakeholders highlighted some important points.
    - Access should not just be via an API, but through an interface allowing download of some or all of the dataset(s)
    - There should be clear indications of the scope and limitations of a particular corpus of data
    - Ideally the National Collection should be integrated with high-performance computing programmes such as ExCALIBUR
- Ongoing sustainability of the resource(s) are a core requirement for ongoing academic use, and participants were very conscious of this.

"The minimum is something that's persistent. So if there's going to be an infrastructure, whatever it looks like… it has to be persistent. It's completely pointless building something which is funded for four or five years, and then just expecting somehow it will persist after that. It won't."

5.4. Value proposition

- Academics are enthusiastic about the idea that a National Collection might bring together collections items that have been separated or removed from their original context. This is also seen as raising the profile and importance of items that are held in smaller institutions.

"From a specialist archaeology perspective, one particular challenge is where you have assemblages that were divided up into the individual components and those components and those constituent parts are now in different collections. Of course, that is a horrible practice and nobody has done that for 50-60 years… But it's really the virtual bringing

together of assemblages that have been split up in the past that would be one of the main benefits of such a repository or resource."

"From a Northern Irish perspective, it would be tremendously useful… because a large proportion of Irish material has gone across the water and is now in mainland UK. And there's endless lamentations, not just amongst colleagues, but also amongst the general public that these are not locally accessible…"

"A number of really significant, perhaps less high-status items are held in local museums, but they're part of assemblages of material, either through context or history or person or place with items in major national collections and one of the values of a system like this would be to raise the profile of those local holdings and to reconnect them back to the bigger picture of them of the major items that are held elsewhere."

- Apart from this, academics saw the major value of the National Collection not as simply providing aggregated data – but as enabling building of knowledge through creating connections between data, between data and people, and between people.

"I'm inclined to think that what we should be aiming at is something which is more like a network that represents relationships, and connections rather than just massive big lumps of stuff, digitized or otherwise, which probably already exist in different forms. So I think that to properly add value, it needs to be something that we can't currently do through our current mechanisms."

"It's about connecting people. Objects are just the landscape that people use to identify one another. So that's the extra value: putting communities of users together. Researchers identify other research that they're unaware of. That's the real value. It's a kind of social networking that results from and is made possible by connections between objects. The objects are a means to an end."

- There was some interest in the possibilities offered by crowdsourcing:

"There's lots of work going on behind the scenes to enrich cataloguing. But I think the big opportunity, especially with the more liminal aspects to contemporary technologies, is co-creation and bringing in the voices that we don't have in the archive at the moment."

6. Educators

6.1.   Introduction

Our research with educators involved a needs-gathering session with 11 participants. These were recruited via The Audience Agency and Culture24 contacts, including Curious Minds, Real Ideas Organisation and Arts Connect. They included two home educators.

6.2.   Current state of play

- Arts educators try to take their students to museums as often as possible, given significant cost and time pressure. They view in-person engagement as essential for their students.

    "It's probably the only time they have actually seen a museum and actually understood what a collection is."

- Basic approaches to search are in essence not too different from the professionals: using Google and going to the sites of known museums are both key strategies.

    "My main approach has been to think of a museum that might have relevant things, and ideally go and visit it physically, but if it wasn't open, then I would have a look on the website and look at what they had for learning resources."

- Some educators struggle to find digital resources.

    "I don't know enough about the collections to know what to search and so I struggle with the digital. I would like to supplement learning and to look at things before and after visiting, with resources that are available digitally, but I've never managed it. We've only ever really managed it physically."

- Social media is seen as a useful tool to engage students.

    "One thing that I think is quite powerful is to show students current artists… I will look on their Instagram pages."

    "I tend to use Instagram quite a lot… I tend to follow a lot of galleries both in the UK and in America, to be honest. Just because I find it's just easier to get excited by images… So, I want to be able to see things quite quickly that can then spark imagination from my kids… It's nice to find if they're exhibiting in a gallery, and then I will then follow that gallery on Instagram, and then hopefully find a video of their exhibition because we're not going to it."

6.3.   Requirements

Touchpoints

- Examination board sites are popular places for educators to find resources.

"We spend a lot of time, I know I personally do on, my exam board website. With AQA there's so many like links on there, they give us galleries, we've got University links, we've got all that kind of stuff on there. If [the National Collection] was on there as well, I think that [would mean] more footfall through that particular website."

Data/content

- There was strong interest in wrap-around content that could add context to collections.

"You've got to put things in context. What else was happening at the time? What was influencing the artist?... So having that historical reference or that political context, that cultural context for me, would be fabulous… And having those touch points to push the student in those directions if they weren't naturally doing that themselves."

"One of my neighbours is a curator at the National Maritime Museum. And he took us around the gallery at the Maritime Museum, and he explained why he curated it that way… It completely changed [my perception of] a gallery that I had never been interested before. I'd walked through it many times, and thought it was completely unengaging. And when he explained the story behind it, it made a massive difference. And I think that's probably almost always the case with every collection wherever… If there's that same explanation about the curation of the objects, it will bring things to life…. And that would be a really useful thing, different from just looking at an object."

6.4.   Value proposition

- Enriching – or in some cases substituting for – physical visits to institutions

"I spent a lot of my career very much trying to get schools to physically take people into cultural venues... But on the other side, [there's] that idea of inclusion and openness. We've done a lot around neurodiverse young people. They find galleries could be a very overwhelming place. We have issues in Cumbria around rural engagement, and just the geography can be a huge barrier to people… So part of me thinks that inclusion has been amazing, and also a route in for some people as a stepping stone into the physical visit. Opening up the world and familiarising could be really powerful. And that would hopefully then maybe lead to a physical visit in the future."

"The Whitworth and the Manchester ones [visits? workshops?] can be quite expensive. And then you're told classes can't afford that. And so if that's not always an option, or maybe that's only once a year, to have this resource where you've just got different resources to go to, and not just your outdated school library – yeah, it's going to help in every session."

- A trusted platform where students can be set free to explore

"It will give the students a chance to navigate through in their own terms and in their own way."

"There's a danger when you let students loose that they find an image and they're excited. And then you discover it's a hobbyist artist, as opposed to a recognized established artist. And there's a danger that the student cannot recognise the difference…. Which is why now I will avoid Pinterest, even though the students love it, and go directly to established websites like the Tate or like the National Gallery… where they've already set the parameters for you. So you can let them roam free, but in a safe professional arena."

7. Creative industries

7.1.   Introduction

Our research with Creative Industries professionals involved:

- One-to-one discussions with selected key stakeholders
- An initial framing session with eight participants
- A sensemaking session with nine participants during which we presented our draft findings

These were recruited via The Audience Agency networks. Participants included Managing Directors & CEOs; Chief Creatives; Heads of Collections and Programmes, and others.

By the 'creative industries' we mean organisations that fall within the creative industries definitions used by the Creative Industries Council and DCMS. We exclude the GLAM sector in this case, although they fall within that definition, because their relationship to and involvement in TaNC is different. As well as commercial design, media and entertainment, the creative industries include the non-GLAM arts sector[6].

We consulted them because they're potentially the main channel to reach members of the public who don't already engage with collections. As set out in the public user research, even the culturally engaged public will need mediation and interpretation – storytelling and connect-making – between them and collections information and search to make the National Collection relevant and accessible.

It is a core competence of enterprises in the marketing, TV, film, games, immersive, performance and crafts sectors – to name a few of the creative industries – to take raw material from archives and other sources of research and creative content and transform that material into engaging and compelling narratives, relevant to the places and people important to different publics.

As well as providing a channel for the National Collection to reach audiences, the creative sector are potential users of the National Collection and re-users of information and content they access through the service. Such reuse speaks to wider policy goals of the UK's research infrastructure, including:

- AHRC key objective 'Creative economy: research supporting the recovery and growth of the cultural and creative economy'[7]
- UK government research and development roadmap objective of: 'Become world-class at securing the economic and social benefits from research.'[8]

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[6] A summary of how these include arts, culture and heritage; their relationship to the wider creative economy; commercial aspects of arts, culture and heritage; non-profit aspects of the creative sector beyond the funded arts – can be found at pp 11-14 in *Creative Places – supporting your local creative economy* Local Government Association, 2020.

[7] https://www.ukri.org/about-us/ahrc/what-we-do/

[8] Bullet 2, p6, *UK Research and Development Roadmap,* 2020
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/896799/UK_Research_and_Development_Roadmap.pdf

7.2. Current state of play

For people working in the creative industries:

- Search is all important – but contextual – Google dominates but…
- Other platforms are used and set patterns in user's minds for the way they expect content search and discovery to work.

"Amazon basically owns me… And I then go down the rabbit hole…. It's how YouTube became YouTube. It's how Twitch has become Twitch. You find a thing that you like, or … you follow that thread… you…end up with this whole world opening up to you."

"I tend to use image searches and go down a rabbit hole through images and see where they go."

"Spotify is a great example: I can search by mood [and] surfacing stuff you don't know what you're looking for."

- The first step is often to search for a story.

"I am a developer of a game. And I want to tell a story that hasn't been told yet, and use these cultural artifacts in a way that I can afford. For me, it's all about the stories that can be told or the histories that can be retold."

- Searching for reference.

"Researching old pictures of West Wycombe from 100 years ago for an AR app relied on local libraries and Facebook where local people post their own archive materials."

"Converting the bridge of the HMS Wellington Battleship into VR experience – we were looking at videos in BFI archive for reference for 3D models as well as terminology. To recreate the engine room we had to obtain pictures of old engines in battleships and broader tech and innovation from 80 years ago."

- Searching for inspiration.

"Working on the RSC's [immersive media] Dream project there was a lot of googling going on within the creative team. Research to support creative process has to be quick and nimble. People don't necessarily have the skills or patience to do archive research like academics"

- Creatives often rely on the big brands – such the BFI, British Museum – because they have wide coverage (they are highly likely to find something of use), they trust the results and they tend to have 'accessible' (non-academic) descriptions.

"it's reasonably powerful, the online function, and they would therefore be able to establish what the V&A holds, and resources that are viewable and resources that are requestable."

- Getty Images is extremely popular – geared towards commercial clients, offers anniversaries and other story-led inspiration together with a one-stop shop for licensing.
- Game developers look first to asset libraries that exist inside game development engines.

7.3.   Requirements

- Rights information absolutely key.
    - Needs to be clear and reliable and trustworthy.
    - Not complex to license and use.
- Future-proofing – respondents saw this as a fast-moving area with many players and technologies operating – and the need to stay up to date:
    - Content formats supporting 3D and voice (e.g. smart speakers, voice-based navigation or transcription).
    - Open data and open systems approaches.
    - The increasing use of blockchain technologies.

    "it has to be built on and taking seriously technologies like blockchain that enable you to have this kind of decentralised ownership or attribution or license management or identity or whatever it might be."

    - The 'metaverse' as an environment in cultural organisations will need to be to be represented – as a potential alternative or complement to physically visiting institutions.

    "what the internet is going to be in five and 10 years' time, rather than what the internet has been or is now… It has to be thinking about the 3D future rather than what we've had in the past."

- Accommodate diverse needs – visually impaired, dyslexia, dyspraxia, autism.

7.4.   Value proposition

- A 'creative commons' – "we own it and we care about it, we should have access to it".

    "Where is our creative 'commons'? – our asset banks for digital assets that we treasure and value as a society? It just does not exist. And I'm really surprised it doesn't."

- All about stories – finding them – and finding the connections between items and other items, between items and places and people and times from which stories can be woven.
- Accuracy, provenance, permanence which you can trust.
- Initial simplicity of search and browse.
- The ability to find relevant expertise (curators, archivists, academic specialists etc) once relevant information and content has been identified.
- Simple, clear commercial licensing.

8. Competitors, comparators and exemplars

8.1.   Introduction

While we were not commissioned to do a literature review or desk research looking at competitors or comparators, one of our central principles for user research has been to consider the existing platforms and services that users utilise to search for, access and consume cultural and entertainment content, and the ways they use them. This is because:

- They set people's expectations – e.g. Google reverse image search is a fairly mainstream tool.
- They establish design patterns/interface metaphors – e.g. text box search, maps, hashtags, social-style streams navigated by scrolling.
- The service will compete with others for people's attention – competitors from outside culture, collections in broader leisure, information services, entertainment.
- They demonstrate what doesn't work for people – frustrations, pain points, gaps in market – and cautionary tales for the National Collection!
- They help to identify established best or emerging next practice that does work.

Many private, third and public sector organisations globally are attempting to aggregate cultural and academic content for different audiences and purposes. It's a competitive space and will continue to be so, with continual innovation responding to user expectations and taking advantage of technology advances. The National Collection needs to carve out a space where it brings value that others can't – hence the focus in the research with each user group on the potential value proposition for them.

We take as a basic premise that the National Collection should, where possible, meet users where they already are – or provide obvious journeys and/or integrations with a National Collection platform(s). While global media platforms like Facebook or Amazon have the market penetration, scale and marketing resources to successfully pursue initiatives that significantly alter user behaviour, the National Collection is not likely to be able to do the same.

8.2. Competitors and comparators

Platform	Key users	Implications
Google	All	Good Search Engine Optimization (SEO) is crucial. Google search results will be the initial channel through which most users, both public and professional, will engage with the National Collection.
YouTube	Public	Key platform for public to seek explanation, understanding and context. Whilst it allows for free text search, and organises content by creators and themed channels, it strongly supports serendipitous discovery through recommendation algorithms.
Facebook	Public	For some members of the public this is a 'one stop shop' for online content, but it is seeing increasingly limited use by young people. Content is strongly organised by who generated or shared it. Groups are popular sources for information around common interests and hobbies.
Getty Images	Creative Industries	Clean data, categorisation by mostly highly sought-after image content, highlighting interesting stories, and easy licensing with clear rights status. A 'one stop shop.'
Game engines	Creative Industries	Games engines support the development and deployment of games and immersive experiences. They rely on high fidelity digital assets (representing people, objects, buildings and other environments) that can be created from scratch by designers but increasingly sourced from libraries of digital assets or based on 3D scans of real objects. Some such libraries are commonly embedded in these games' engines.
The National Archives	Academics, GLAM, Public	Viewed as a very useful aggregator and a starting point for archive-based content.
Wikipedia	Public	Source of context and link-rich, meaning that it provides 'rabbit holes to go down'. Crowdsourced content collaboratively edited.
Google Scholar	Academics, Public	Popular among young people in education as well as academics. Seen as trustworthy, with statistics on citations adding to trust.
BFI Britain on Film	Public	Map interface seen as easy to use. Place-based proposition is extremely popular. Engagement built through social media. Cross-sells to value-added paid for BFI Player services.

8.3.   Exemplars

We asked users which current platforms offer a particularly good search, browse and discovery experience. This resulting list is indicative rather than definitive but can serve as inspiration for National Collection platform features.

- **Amazon:** "Just the sheer extent of it – and reach of it and the powerful algorithms that underpin those sorts of searches." (GLAM professional)
- **TikTok:** "The algorithm is the best one that I've found, by a long way. It's scarily accurate, how little information you can give it and how much it will pick out about what you're interested in." (Public)
- **Trove newspaper search:** "It's a free search, and it's a very flexible search. And it's a very effective and strong search." (Academic)
- **British Red Cross collections**: "for whatever reason they put a lot of time and money into making a colour-based object search, which I've spent many hours playing with for no real research reason other than personal interest." (Academic)
- **Data Foundry at National Library of Scotland.** Doesn't require access via the search interface, you can download the dataset in one block. Offers DOI and is clear how to cite it as a source. Uses CC-By licence. (Academic)
- **Ashmolean Museum**: "They've got their collections mapped across time, and you've got different sized blobs. And it just gives you that instant overview: they've got this much about the Iron Age, they've got this much Roman staff, they've got this much relating to the Tudors. And you can just see it, the whole thing, in one quick picture. And then you just click on a dot, and it takes you off that way." (GLAM professional).
- **Layers of London**: Example of contributed information layered over maps (GLAM professional).

9. Strategic considerations

Although the considerations in this section might be considered beyond the scope of 'user research to inform digital infrastructure,' we include them because they were clearly at the forefront of the minds of many professional users. Whilst not forming 'requirements' on a future National Collection portfolio of services as such, they highlight:

- Dependencies on others for success.
- Risks and issues (of going ahead and of not going ahead).
- Necessary choices of role of existing significant aggregators of collections data.
- Implications of coverage and equity in a national service, where it is headlined as 'national' or not.
- How public and non-expert users' needs are balanced with those of professionals
- Challenges of maintaining relevance and a competitive position.

The reflections in this section are drawn both from our user workshops (hence there may be some duplication with points made above) and from our one-on-one interviews with sector stakeholders.

- A strong case for the National Collection was made by stakeholders based upon the need for national cultural assets to be under public control and available for public access.

  "If the sector doesn't grasp this by the horns and make real progress, Apple or Google will do it for us. And they'll then own the data in a way that none of us may be very comfortable with. And the problem is, they'll probably do it better. But they'll potentially remove the expertise and understanding and community ownership of that data at the same time."

  "Commercial companies are only going to digitise and describe and make available the stuff that they can make money from. If you truly want to have the full spectrum of humanity's cultural output available to all, then someone's going to have to pay for it because it isn't going to be Google and it isn't going to be Epic."

- The critical dependency for the National Collection digital infrastructure is upon the readiness, capacity and willingness of the GLAM sector to engage with and contribute to it – ensuring that it aggregates data (and digitised content) at sufficient scale and completeness to generate value.
  - This dependency spans individual institutions' systems, cataloguing, metadata and digitisation. Creating an infrastructure that is valuable to users will require a level of resourcing for these foundational tasks that in many cases is currently not available.
  - Individual organisations need to be persuaded of the case for participation. While the potential value to the GLAM sector as users is considerable, the majority of the case will have to be made in terms of enabling the sector to better reach and engage with wider and more diverse publics.
  - An open data approach that allows new products and services to be built on top of National Collection infrastructure by third parties will require standardisation not just of data but also of quality standards, data/content governance and licensing terms.

- Based on past experience, users felt that a very significant effort would be required to make the National Collection into a recognised public-facing brand.
- The National Collection can nonetheless drive wider and deeper public engagement with the nation's collections by providing infrastructure – and access to aggregated information and indirectly content on a scale – that no individual institution could ever create.
- Many users expressed concern that a National Collection infrastructure built upon existing foundations risks reinforcing existing power structures and dynamics.
    - Colonialist cataloguing and structures of thought
    - Dominance of big national institutions with the resources to participate
    - An approach that privileges academic institutions over community and local institutions
- There was some concern from stakeholders about the scope and focus of prior engagement by Towards a National Collection. There is a strong feeling that further work – and funding – needs to reach beyond big cultural and academic institutions if it is to reflect the needs of the research community as a whole, as well as a diverse range of public users.

"It would make sense that you would have these communities in the conversation from the very beginning…. Working with community organisations is important; thinking about facilitating participation is important. If you want those voices in there, it's going to take much more resources, time and effort, and building of relationships for that to happen."

"[TaNC] has a very narrow idea of what research organisations are… If you're not a university, or two hundred year old museum, there is no way of even beginning to get access to that funding … It eliminates community based research, it eliminates independent researchers. As far as I can tell, I'm not necessarily included in the idea of who a researcher is and what they might need."

- Users questioned the meaning of 'national' in a National Collection. They expressed the requirement to be able to envision and understand the gaps in what is catalogued or digitised just as clearly as they are able to envision and understand what is actually there. They also wanted to understand which gaps were based on policy choices and which the National Collection would aim to fill eventually.

"The national institutions have enough resources to contribute to a national collection. And the many, many, many local, regional, community, and other cultural collections generally have no resources and always get left out, yet may have actually what people really want to find and use… There is a danger that this is another 'national cultural institutions' thing, which is fine. But if that's what it's going to be, you need to be honest about that upfront, and not try and pretend it is actually something which embraces the local community. Because 'national' has to embrace the local and the community or it's not really national."

"Once you use a term like national, it's loaded. And you need to have some definition of what you mean by that. You could say a UK-wide collection. And that might be a little bit more honest and open: it takes some of the politics out."

- A focus on place – which many users find powerful as an organising principle – would have power in a wider context where many funders, including Arts Council England,[9] National Lottery Heritage Fund,[10] central and local government, are increasingly developing place-based approaches to inclusive growth, regeneration, and health and wellbeing, centred around the idea of 'levelling up.'
    - It should be noted that many items in the National Collection would originate from outside the United Kingdom – this can be considered both a challenge and an opportunity
- Users wondered how the National Collection would be different from existing aggregators, highlighting a key need for differentiation in value proposition and scope, and wider communication of this.

"I'm wondering at the start how it's different than Europeana, which has that same sort of dual purpose in that there's public engagement aspects or public interfaces, but also a series of services behind the scenes that do aggregation, distributed search, mapping metadata standards…"

- Users made it clear that a National Collection can only be widely adopted and generate value if it is demonstrably persistent and sustainable.

"The danger of having a big interface approach is that it's just yet another thing that people feel the need to contribute to, and becomes very much out of date once funding dries up… It needs to be a sustainable approach. People [need] confidence in the data and in its reusability. And that it can support their work, the employment of people, temporary staff and so on. That they can add to it."

- There are questions about how the National Collection infrastructure will integrate across different collections types, as well as the role in the infrastructure of existing aggregators that cover specific types (for example, JISC's Archives Hub).
    - Some stakeholders noted that current user behaviour differs depending on whether they are engaging with museum, gallery, archive or library catalogues. Therefore, there may be a need for interface design to accommodate these different patterns.

        "Oddly museum catalogues tend not to be used by researchers, they often need us to [help], whereas people using archive and library catalogues are very familiar with how they're used. And so we have very different sorts of user engagement."

    - Further work on the overall business and technical architecture of the service will be needed to look at cost, complexity and the institutional benefits/downsides of building from scratch versus integrating with existing solutions.
- There is some appetite from GLAM institutions, academics and technical developers to build upon a National Collection infrastructure, but this requires some control to be given up, or at least shared, by institutional contributors and by the National Collection itself.
- Finally, users were conscious of a need for future-proofing in infrastructure design, given the rate of change in digital technology, and behaviour and expectations around it.

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[9] https://www.artscouncil.org.uk/themes-actions/strengthening-our-place-based-approach-and-supporting-levelling
[10] https://www.heritagefund.org.uk/our-work/thriving-places

10. Implications for infrastructure and delivery model

Knowing what we now know about users, what implications can be drawn for the future National Collection infrastructure and delivery model? Our initial research cannot provide a full options analysis of the technical and organisational choices available. Nonetheless some user research suggests by whom and 'where' services should be supplied. Lessons can also be learned from existing digital projects – as we have aimed to do in our discussions with stakeholders, including digital developers in the cultural space.

Given the track record in the sector of highly ambitious digital projects that have failed to fully or sustainably deliver, there is a need to manage expectations and to define an initial Minimum Viable Product that can be delivered relatively simply – and then built upon in the future.[11] Suggestions made to us about the shape of such an MVP included:

- A 'data lake' that can be processed and drawn upon by a range of institutions and individuals.
- High-level tools allowing users to understand where collections are held.

  "Even something as simple as a national signposting system that could direct you to a subset of institutions you could then begin to search more granularly…"

- Standards to enable further aggregation – including for unique identifiers.

  "Part of the role of TaNC should be setting standards, enabling interoperability, negotiating with private sector companies, embedding services and improvements in them…"

  "So many of our materials don't appear in standard identity schemes… There's no ISBN for manuscripts or for paintings or things like that… Just find a way of searching, and even create services, which will allow people to easily find out if their thing already has an identifier. And if not, give it one in a fairly lightweight way, [so] that identifier becomes available to other people [as a] backbone of aggregation."

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[11] In technology product design, a 'minimum viable product' or MVP for short is "a product with enough features to attract early-adopter customers and validate a product idea early in the product development cycle" https://www.productplan.com/glossary/minimum-viable-product/

We suggest that National Collection infrastructure can be understood in a tripartite structure:

Data foundation	Core infrastructure necessary to enable all other services/platforms. Can be Minimum Viable Product.
Portfolio of National Collection run/managed user-facing services or platforms	Which user segments will these aim to serve? Arguably professional users should be prioritised in the first instance.
Third party services or platforms drawing on NC data	These are likely to be the main route to engagement with the public. Success requires NC infrastructure, data, content to be open to use/re-use.

As a minimum viable product, the National Collection might provide an infrastructure to gather and make available unmediated, uninterpreted raw data about a range of collections across the UK – the 'data lake' approach. However, our research has shown that a range of users do value curated, expert- or peer-mediated content: to contextualise, to understand the stories behind the items, to find experts or make human connections, to surface the expertise that is too often buried within institutions or communities of practice.

Therefore, there is a decision to be made about whether the National Collection is fundamentally an information management or a knowledge management project. Should the National Collection infrastructure aim to directly support knowledge creation and sharing directly, or should it aim to be a foundation on which others can build these structures?

Framing the National Collection as a digital 'commons'[12] can be helpful. This means that the service can build on the thinking around governance – control, ownership, transparency – already applied to such commons.

If a decision were made to focus totally on the data foundation layer, as opposed to developing a significant public-facing brand, this would mean that choices about user experience and platform design would be made by third party developers rather than by the National Collection itself. Instead, the priority would turn to ensuring that the foundation layer is fit for as broad a range of potential purposes as possible.

However, we expect that the National Collection portfolio will include at least some branded platforms or services. Therefore, it is also worth reflecting on what the user research tells us about high-level requirements, the value proposition and the opportunities for National Collection platform(s) before thinking about how these might be implemented in a staged approach.

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[12] "They form a third way of organising society and the economy that differs from both market-based approaches, with their orientation toward prices, and from bureaucratic forms of organisation, with their orientation toward hierarchies and commands." https://policyreview.info/concepts/digital-commons

As was discussed earlier in this report, users who currently engage with UK collections (both professional and public) navigate the landscape by knowing **who to ask** and **where to look**. When neither of these approaches succeed, Google is a common fallback.

What could a National Collection platform(s) add to this landscape? Our research suggests that:

- **Places** and **stories** are compelling organising principles across a range of user groups – this may be because they allow users to connect with topics and themes that have personal relevance for them
- There is a desire for **human insight and connection** to enable better navigation within and across collections
- **Knowledge management platforms** (built on top of the foundation of a data/information management system, connecting items and collections with people and less structured 'knowledge' assets and content) would offer the greatest opportunity to add value to the current landscape

As this final conclusion is likely to be the most novel, we elaborate on it below.

A National Collection infrastructure will be valuable because it allows connections to be built between and across collections in different institutions. These connections can exist on a number of different levels:

- **Items**: At the most basic level there is an opportunity to connect items that relate to one another – because they are of a similar type, were found together, or for some other reason. By itself this would be a significant advance over anything currently available. Connections could be built through machine learning, through data about user behaviour, through crowdsourcing or through professional contributions.
- **Concepts**: Building conceptual linkages would allow users to discover how items connect to the real world – for example, a collection of items that relate to a single person in different ways (depicted, created, owned, lived in…). This would require records/pages that represent concepts rather than items. In user interfaces, these pages would provide for browse and discovery rather than search.
- **Knowledge**: Finally the most value can be built by connecting items to knowledge about them that doesn't currently exist in collections catalogues. This might be interpretative, curatorial, academic or educational knowledge, articles or exhibition catalogues or bespoke content aimed at public engagement. It might also facilitate connections to people and institutions who have knowledge about specific collections.

Building such a knowledge management system may well be beyond the current scope or ambition of the National Collection. However, there is a clear user need for this – particularly among academics – and it was identified as being the most significant differentiator from the platforms that are currently available. It may be that this functionality is enabled by the National Collection infrastructure in future years, and developed by others, rather than being a part of the National Collection owned/managed offer.

Stage 0	Preconditions for aggregation – standards, foundational cataloguing.
Stage 1	'Data lake' aggregation. Basic infrastructure available to developers, academics and GLAM institutions. High-level search that might indicate which institutions have relevant holdings.
Stage 2	Platform(s) offering basic search functionality.
Stage 3	Platform(s) offering more sophisticated browse and discovery Evolve these continually based on ongoing user research and analysis of usage data. Initial focus on place is likely to generate the most user engagement.
Stage 4	More fully featured knowledge management system allowing connections to be built on top of the basic infrastructure.

11. Recommendations for future work

This piece of work has been extremely early-stage user research – contributing to shaping a proposition rather than testing a proposition whose shape has already been decided – across a wide range of potential user groups. Therefore, we would expect additional in-depth research to follow once further decisions have been made about target audiences and the shape of the potential proposition(s).

We recommend that this should include, as a next phase of work:

- Accessibility research looking at the experiences of D/deaf, disabled, and neurodiverse users, as well as other users with access needs, to ensure that accessibility is foundational to the National Collection offer.
- Targeted user research looking at:
    - o behaviour across different types of collections catalogue (museums, galleries, libraries, archives)
    - o interaction of users with specific types of offer, such as place-based or timeline search
- Further development of audience segmentation to inform the development of specific propositions (for example, looking at whether academics working in different fields have specific user needs)
- In-depth, direct and long-term work with a diverse range of community groups (if reaching wider and more diverse public audiences is a priority) to take a co-design approach to understanding how engagement with collections can be developed
- Engagement with additional channels, platforms, technology developers and brand partners to support engagement with users via third parties.

12. Stakeholders consulted

Name	Role & Organisation	Sector	Attended
Beatrice Alex	Turing Fellow, Turing Institute	Academic	Interview
Kate Arnold-Foster	Director, Museum of English Rural Life	GLAM	Workshop
Hasan Bakhshi	Director, Creative Industries Policy and Evidence Centre, Nesta	Creative Industries	Interview
Elton Barker	Professor of Greek Literature and Culture, Open University	Academic	Workshop
Hannah Bentley	Museum Development Project Officer, SHARE Museums East	GLAM	Workshop
Jake Berger	Executive Product Manager, BBC Archive Development	Creative Industries	Workshop
Gillian Berry	Deputy Manager and Curator, Haworth Art Gallery	GLAM	Workshop
Oliver Betts	Museum Head of Research, National Railway Museum	GLAM	Workshop
Barbara Birley	Curator, Vindolanda/Roman Army Museum	GLAM	Workshop
Hannah Boulton	Head of Communication and Engagement, Royal Collection Trust	GLAM	Workshop
Dr Dirk Brandherm	Reader, School of Natural and Built Environment, Queens University Belfast	Academic	Workshop
Jessica BrodeFrank	Digital Collections Access Manager, Adler Planetarium	GLAM	Interview
Dr Geoff Browell	Head of Archives and Research Collections, Kings College London	Academic	Workshop
Clare Buchanan	Textile Design Tutor, Dudley College of Technology	Educators	Workshop
Dr Claire Bunyan	Senior Research Fellow, University of the Arts London	Creative Industries	Workshop
Sally Butcher	Foundation Diploma lead, Birmingham Metropolitan College	Educators	Workshop
Phil Carlisle	Data Standards Specialist, Historic England	Channels & Developers	Interview
Maria Castrillo	Head of Collections Access and Research, Imperial War Museums	GLAM	Workshop
Caroline Catchpole	Digital Development Officer, National Archives	GLAM	Workshop

Professor Gobinda Chowdhury	Professor of Information Science, University of Strathclyde	Academics	Workshop
Matthew Cock	Chief Executive, VocalEyes	GLAM	Workshop
Emma Cooper	Business Development Manager, Cooperative Innovations	Creative Industries	Workshop
Chris Copp	Collections Manager, Staffordshire County Council	GLAM	Workshop
Magnus Copps	Head of Programming and Partnerships, Museum of London Archaeology	GLAM	Workshop
Adam Corsini	Collections Engagement Manager, Jewish Museum London	GLAM	Workshop
Martin Devereux	Head of Project and Partnerships, Postal Museum	GLAM	Workshop
Naomi Dines	Senior Lecturer, Central Saint Martin's College of Arts & Design, UAL	Academic	Workshop
Oliver Douglas	Curator of MERL Collections, MERL	GLAM	Workshop
Jessica Driscoll	Director of Technology, Digital Catapult	Creative Industries	Workshop
Maria Duarte	Collections Engagement Assistant, Jewish Museum London	GLAM	Workshop
Aimee Edwards	Teacher, Wednesfield Academy	Educators	Workshop
Dr Kate Faccia	Research Associate, Museum of London Archaeology	GLAM	Workshop
Ailsa Grant Ferguson	Principal Lecturer in Literature, School of Humanities & Social Science, University of Brighton	Academics	Workshop
Thomas Flynn	Cultural Heritage Lead & Community Manager, Sketchfab, Epic Games	Creative Industries	Workshop
Hannah Ford	Programmes Producer, Crafts Council	Creative Industries	Workshop
Kelly Foster	Public historian	GLAM	Interview
Medhavi Gandhi	Founder, The Heritage Lab	GLAM	Workshop
Emily Goddard	Collections and Engagement Officer, Cornwall Museum	GLAM	Workshop
Dan Gordon	Keeper of Biology, Great North Museum	GLAM	Workshop
Neil Grindley	Director of Content and Discovery services, JISC	GLAM	Interview
Jennie Hancock	Archivist, Cornwall Council	GLAM	Workshop
Dr Rebekah Higgitt	Acting Keeper, National Museum of Scotland	GLAM	Workshop
Maddy Horne	Teacher	Educators	Workshop

Lorna Hughes	Professor of Digital Humanities, University of Glasgow	Academics	Workshop
Abira Hussein	Associate Producer, all change	GLAM	Interview
Dr Kristin Hussey	Post-doctoral Researcher, Medical Museion Copenhagen	Academics	Workshop
Laura Hutchings	Head of Design and Technology, Holyrood Academy	Educators	Workshop
Huw Jones	Head of the Digital Library Unit, University of Cambridge	Academics	Workshop
Diane Jordan	Home educator	Educators	Workshop
Louise Kerbiriou	Home educator	Educators	Workshop
Tom Kiehl	Deputy CEO & Director of Public Affairs, UK Music	Creative Industries	Workshop
Chloe Lambert	Head of Commercial Sales & Partnerships, Association of Online Publishing	Creative Industries	Workshop
Brigitte Lardinois	Professor of Archives and Records Management in the Department of Information Studies, University of the Arts in London	Academics	Workshop
Kaja Marczewska	Head of Collections Research, National Archives	GLAM	Workshop
Polly Martin	Head of Policy and Communications, Heritage Alliance	Creative Industries	Workshop
Stephen McConnachie	Head of Data and Digital Preservation, BFI	GLAM	Workshop
Dawn McCarthy-Simpson	Managing Director Business & Global Strategy, PACT	Creative Industries	Workshop
Sarah Middle	Researcher, National Museums Scotland	GLAM	Workshop
Marjotte Miles	ESRC funded PhD Candidate at the University of Liverpool	Academic	Workshop
Professor Jim Mills	Professor of Modern History, University of Strathclyde	Academic	Workshop
Elizabeth Montgomery	Senior Curator, West Cheshire Museums	GLAM	Workshop
Graham Moore	Associate Lecturer, History, University of Reading	Academics	Workshop
James Morley	'Heritage hacker' and creator of A Street Near You	Channels & Developers	Interview
Paul Mullan	Country Director Northern Ireland, National Lottery Heritage Fund	Creative Industries	Interview
Gerry O'Neill	Museum Officer, Kings Own Scottish Borders	GLAM	Workshop
Paola Palma	Research And Development Specialist, University of Portsmouth	Academics	Workshop

Gill Parkes	Principal Archivist, Durham County Council	GLAM	Workshop
Himakshi Patel	Teacher, St Claudine's Catholic School for Girls, Harlesden	Educators	Workshop
Michala Pearson	Operations Manager, Beck Isle Museum	GLAM	Workshop
John Pelan	Director, the Scottish Council on Archives	GLAM	Workshop
Daniel Pett	Head of Digital, Fitzwilliam Museum	GLAM	Workshop
Mike Phillips	Professor of Interdisciplinary Arts, University of Plymouth	Academics	Workshop
Caitlin Plant	Teacher, Highfield Primary School	Educators	Workshop
David Preece	Registrar, Curatorial Department, English Heritage	GLAM	Workshop
Robert Prior	Managing Director, Stock Footage Index	Creative Industries	Workshop
Paul Prowse	Senior Picture Editor, Getty Images	Creative Industries	Workshop
Jo Pugh	Digital Development Manager, National Archives	GLAM	Workshop
Alice Purkiss	National Trust Partnership Lead, University of Oxford	Academics	Workshop
Dr Lorna-Jane Richardson	Lecturer in Digital Humanities & Heritage, University of East Anglia	Academics	Workshop
Mia Ridge	Digital Curator Western Heritage Collections, British Library	GLAM	Interview
Deborah Ridley	Collections Manager, Crafts Council	Creative Industries	Workshop
Fiona Rosher	Museum Manager, Dales Country Museum	GLAM	Workshop
Ananda Rutherford	Research Fellow, University of the Arts, London	Academics	Workshop
Rupinder Sandhu	Tutor, Sandwell College	Educators	Workshop
Will Saunders	Chief Creative Officer, StoryFutures & StoryFutures Academy	Creative Industries	Workshop
Michael Selway	Managing Director, System Simulation	Channels & Developers	Interview
Rebecca Shawcross	Senior Curator, Northamptonshire Museums and Art Gallery	GLAM	Workshop
Dr Elizabeth Shepherd	Professor of Archives and Records Management in the Department of Information Studies, University College London	Academics	Workshop
James Simpson	Director, Copper Candle	Channels & Developers	Interview
Julianne Simpson	Collections and Discovery Manager, Rylands Library	GLAM	Workshop
Amy Smith	Curator, Ure Museum of Greek Archaeology	GLAM	Workshop

Neil Smith	Director, Knowledge Integration	Channels & Developers	Interview
Emily Sorrell	Freelance Creative Strategist and Pedlar of design innovation in the heritage sector	GLAM	Workshop
Robin James Sullivan	Freelance artist	GLAM	Workshop
Tarek Teba	Senior Lecturer, University of Portsmouth	Academics	Workshop
Professor Melissa Terras	Professor of Digital Cultural Heritage, University of Edinburgh	Academic	Interview
Jade Thompson	Documentation Officer, English Heritage	GLAM	Workshop
Matt Thompson	Head Collections Curator, English Heritage	GLAM	Workshop
Olivia Thompson	Digital Humanities Project Officer, University of Reading	Academics	Workshop
Anne Tober	Director, Greater Manchester Coalition of Disabled People	GLAM	Workshop
Dr Jo Twist	CEO, UKIE	Creative Industries	Workshop
Sumitra Upham	Head of Public Programmes, Crafts Council	Creative Industries	Workshop
Dr Elena Villaespesa	Assistant Professor, School of Information, Pratt Institute	Academic	Interview
Simon Walton	Freelance Data/Information Systems specialist, formerly University of Portsmouth	Channels & Developers	Interview
Rose Wilmot	Media Officer at GOALD (Generating Older Active Lives Digitally), EPIC	GLAM	Workshop
Sarah Wilson	Curator, Museum of the Order of St John	GLAM	Workshop
Joanna Wiltcher	Consultant, Wessex Museums	GLAM	Workshop
Professor Jane Winters	Professor of Digital Humanities & Director of the Digital Humanities Research Hub, Institute of Historical Research	Academic	Interview
Jeni Woolcock	Collections Manager, Cornwall Museum	GLAM	Workshop
Gillian Worley	Fine Art Tutor, Dudley College of Technology	Educators	Workshop
Richard Worthington	Head of Digital, Historic England	Creative Industries	Interview
Dr Holly Wright	Archaeology Data Service - FAIR data expert, York University	Academics	Workshop
Jessica Wright	Managing Director and Chief Operating Officer, Peel Interactive	Channels & Developers	Interview

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