

# Novice to Know-How Module Text

## Course 7: Providing Access to Preserved Digital Content

# Module 2: User Needs Analysis

The development of this course was funded by The National Archives (UK) as part of the "Plugged In, Powered Up" digital capacity building strategy.

## 1. Introduction.

As introduced in the previous module, gaining an understanding of the users who will want to access preserved digital content should be a core part of any digital preservation program. It is a particularly important step in providing successful access to preserved digital content, shaping every aspect of work in this area.

In this module we explore the key reasons to carry out user needs analysis, introduce key methods for gathering information on user needs, and begin to identify how this information can be used to shape access provision.

## 2. Why is it important to understand your users?

Developing a digital preservation program is a complex and difficult undertaking and there are many competing priorities. The temptation is often to prioritise the issues that seem most pressing, like ingest and storage, and spend little time on, or ignore, issues like user needs analysis. It might seem like a luxury rather than a necessity.

But a robust approach to user needs analysis should be a key component of any digital preservation program, into which it is worth investing time and effort. It is easy to see how it could influence the development of access provisions, but it should impact on all areas of digital preservation work. For example, user needs should be taken into consideration when developing preservation plans, because the ultimate aim of preservation should be to enable users to get value from our preserved digital content.

We can see this clearly demonstrated in the Open Archival Information System (OAIS) Model and its core concept of designated communities.

## 3. OAIS Designated Communities.

In the OAIS model, the Designated Community are the primary users of the information stored within an OAIS. The Designated Community of an OAIS can be anything from the general public to a small specialist group of researchers.

Of the six mandatory responsibilities that the model defines, three refer to the Designated Community:

- The Designated Community must be scoped
- The preserved information must be independently understandable by the Designated Community
- The preserved information must be available to the Designated Community in an authentic form

Through these responsibilities and other sections of the OAIS, user needs analysis emerges as an essential step in adhering to the standard and impacts on issues throughout the digital preservation lifecycle and, of course, specifically in relation to access.

## 4. User Needs Analysis Can Help...

User needs analysis can help guide a wide variety of digital preservation issues, in relation to access provision and also for broader digital preservation work. The lists below provide some examples.

### DP Issues

- Inform selection of content for preservation
- Advocate for resources
- Identify the significant properties of content that need to be preserved
- Inform the creation of a digital preservation policy
- Understand what metadata and documentation we need for preservation
- Decide which preservation methods to use

### Access Provisions

- Understand accessibility requirements
- Identify tools to aid reuse of content
- Know which formats users will be able to access
- Know what licences will be required to enable reuse
- Understand how to present content to make it discoverable
- Know what guidance users will need to open and use the content

## 5. Developing a Plan for User Needs Analysis.

The first step towards carrying out successful user needs analysis is developing a plan for what you will do. It is important not to just jump into the process, but to carefully consider what you want to achieve and how best to reach those aims.

Your user needs analysis plan should contain the standard elements of a project plan such as key aims, tasks to be undertaken, a timeline, risks, responsibilities, and potential benefits. You will also need to include sections on the user groups you will target as part of the analysis and how you will communicate with them, what methods you will use to capture information, and how you will report and utilize results.

It is important to remember to consider how user groups may change over time, and that, through good access provision and user engagement, we may attract new user groups. Therefore, we should plan to repeat user needs analysis at regular intervals. Designing a robust approach that can be repeated will help you capture data you can compare over time.

So, what should we think about before starting a user needs analysis exercise?

## 6. Useful Questions for Planning User Needs Analysis.

To start it is useful to consider questions like the following:

- What resources are available to you?
  - Do you have colleagues who have experience of completing user needs analysis? Either in your department or in other parts of the organization?
  - Does your organization have subscriptions to useful tools that could help with the process?
  - What data does your organisation already collect about users that you can examine?
- What are the key questions that you need answered?
  - Is there a particular issue you want feedback on or a tool you would like to test?
  - Do you need rich data about how users interact with your site? Or simple information like the browsers or devices they use?
- Who are your key user groups and what methods of user analysis are they likely to respond to?
  - Do you have a local user base that could attend focus groups in person?
  - Would an online survey be more likely to gain engagement?
  - Would asking users to complete a practical task produce more useful feedback?

## 7. Types of User Groups.

It is particularly important when planning your user needs analysis to consider how you will define your user groups. Will you only have one clearly defined group? Or will you have multiple groups with different needs? Are the groups large or small? Are they dispersed or local?

If you will have multiple user groups, you should decide how to group your users in a way that is both representative of them, as well as useful to you. Consider grouping users by issues such how they might want to use the digital content or what skills they might be expected to have.

Some types of user groups you might consider include:

- By discipline – e.g. researchers in social science or historians
- By sector – e.g. journalists or public servants

- How the resources will be used – e.g. by artists, data scientists, or genealogists
- For a particular age group – e.g. school or university students
- By location or language – e.g. residents of a particular country or city
- Or even as broad as the general public!

Choosing a user group as broad as the general public should be considered with caution. This can make it very difficult to understand how digital content will be used, how needs will be defined, and how skill levels will be clarified.

## 8. Methods for User Analysis.

Once we have defined the user groups we will include in our analysis, we need to consider which methodology (or methodologies) will work best to gather the information we need. In this section we will introduce some of the most commonly used methodologies for user needs analysis.

You may decide to use just one of these methods or a combination of a few, depending on the types of group you are investigating, the questions you need answered, and the resources and time you have available for the work.

For each method we will describe what it is, some pros and cons, and then provide some tips on getting the most from using the method.

## 9. Surveys.

Surveys are perhaps the most commonly used method for gathering information on users and their experiences and needs. It provides a mechanism for the collection and analysis of the opinions and/or attitudes of a group by asking them to answer a series of questions. Question types can include yes/no, multiple choice, grading options on a scale, and both short and long written answers.

Benefits of using surveys:

- They can potentially reach a lot of people without too much effort.
- They can be posted on your website or links distributed by email and social media.
- They are relatively cheap and easy to put together. Google Forms can be used for free or there are subscription services like TypeForm or SurveyMonkey.
- Will usually focus on quantitative outputs that are easy to analyse and use to create digestible facts and figures.

Downsides of using surveys:

- Can be difficult to capture detailed information. Large numbers of textual responses can be hard to process and find trends.
- Surveys are limited when hoping to gain a full picture of the user experience, as questions will focus on specific issues.
- Respondents may have limited knowledge of the range of possible access options, so will not actually know what will work best for them. Therefore, the phrasing of questions might then lead them unwittingly in a particular direction.

- You are reliant on those who have the time and inclination to fill in the survey.

## 10. Tips for Creating Successful Surveys

- Start by drafting a list of the answers you need the survey to provide. This will help develop a clear structure and keep it focused.
- Use simple, direct language at all times.
- Keep questions neutral, avoid any leading statements
- Address one issue per question and avoid duplication. Breakdown complicated situations into separate elements to keep things simple
- Use mostly closed-ended questions (e.g. yes/no, multiple choice, rating on a scale), try to limit open-ended questions (text-based) to a maximum of 2 per survey
- Have a balanced number of "positive" and "negative" answers when asking participants to rate on a scale, and use consistent scales throughout
- An even number of options will require a "positive" or "negative" response, an odd number will allow for a "neutral" option
- Include an option for "Other" on multiple choice questions where the list is not exhaustive.
- Do not make all questions mandatory, unless receiving an answer is essential, make the question optional.
- Keep the survey as short as possible and space it over multiple pages/include a progress bar so participants experience forward momentum
- Make sure to test the survey before publishing it

## 11. Web Analytics

Another, largely quantitative option is to use web analytics services to collect information from your existing online catalogues and resources. Web analytics services will automatically collect data about users to identify trends such as types of devices or browsers used, most visited pages, length of visit, etc. The most commonly used web analytics service is Google Analytics. You can get a Google Analytics account for free, and then a link to the service must be embedded in relevant web pages.

Benefits of using web analytics:

- Once set up, data is collected automatically.
- Data will be captured on most users who visit your online services
- Provides a clearer picture than survey results of how users are navigating the site
- It can show patterns of usage across a broad range of user groups
- It produces info that is easy to analyse and will likely include inbuilt tools to help filter and organize data.

Downsides of using web analytics:

- No qualitative responses are captured, only broad patterns
- It does not capture the user experience of visiting your online resources, only activity stats. So you will know which pages users visited, but not if they found the content useful

- It is relatively easy for users to block that capture of analytics information, meaning you will not gain a complete picture, particularly for more advance users.

## 12. Tips for Using Web Analytics.

- Be clear on what answers you want to gain from using analytics, specific questions will help sift through the abundance of data.
- Learn basic analytics terminology, e.g. bounce rate = the percentage of users who leave your website after only viewing one page.
- Look at patterns of use to identify which pages are acting as barriers to users (e.g. is there a page the users tend to drop-off of the site after using)
- Set-up automated reports for issues you want to monitor on an ongoing basis.
- Pay particular attention to data about searches and the terms being used. This can help identify content that is popular, underused, or potentially hard to find.
- Look at results over different time periods (e.g. a month, 6 months, a year...) to see different trends over time.
- Make use of inbuilt tools for visualization, e.g. heat maps showing the numbers of users from different locations, or visitor flows to see the paths users are taking through the site.
- Use information on devices to see if users are accessing content on a desktop or mobile device.
- Visitor frequency will tell you how many times users have accessed the site; visitor recency shows how much time between visits.

## 13. Focus Groups and Workshops.

A third commonly used method of analysing user needs is organising focus groups and workshops. This allows you to bring together small groups of users to describe and discuss their experiences and needs in person. Focus groups will ask participants to provide feedback on existing resources or will raise issues for discussion. A workshop will add a practical exercise to this format, which participants will be asked to provide feedback on.

The benefits of focus groups and workshops:

- An opportunity for direct interaction with users.
- Able to deep dive into important issues.
- Can capture multiple perspectives at once.
- Can follow interesting discussions as they occur
- Able to generate and discuss new ideas and gain immediate feedback.

The downsides of using focus groups and workshops:

- Can be difficult and expensive to organise, particularly if you have disparate user groups e.g. geographically or multiple languages.
- Limited to users willing and able to attend.
- Can get off track or produce limited useful information without a skilled facilitator.

## 14. Tips for Focus Groups and Workshops.

- Start by identifying what information you need to gather and build the structure of the event and discussion questions/exercises from there.
- Spend time recruiting the right people. Make sure they are representative of the relevant user group and are keen to participate.
- Run a pilot if possible, this gives an opportunity to test the discussion questions and get the timings right.
- Create a welcoming atmosphere; be friendly, have a few icebreakers prepared, and provide refreshments if you can.
- Providing examples of digital content that might be accessed can help to focus discussion on practical rather than hypothetical issues
- Keep control of the session; reign in discussions that get off track, keep to timings, and encourage all participants to contribute.
- Have a co-facilitator, if possible, to manage any recording devices, take notes, and look after catering. This means you can focus on the discussions.
- Always remain neutral and avoid leading questions.
- Make sure to thank participants, and let them know what your next steps are.

## 15. Interviews.

Interviews are another popular method for capturing information on user needs and experiences, especially with modern communications allowing them to be conducted remotely. The interviewer will usually pose a series of structured or semi-structured questions for the interviewee and can range from a quite formal experience to a more casual chat.

The benefits of interviews:

- Provide an opportunity for direct interaction with users
- Offer the ability to deep dive into important issues
- Can ask follow-on questions about answers that have raised interesting issues
- Can be tailored to individual users to capture the most useful information

The downsides of using interviews:

- May only reach a limited number of users unless there is a significant investment of time and effort, so results may not be representative of large user groups
- Can be difficult to organise, especially identifying the right users to interview
- Generally very time consuming to process and analysis results
- Can be intimidating for participants, which might lead to insincere or limited answers

## 16. Tips for Interviews.

- Draft a list of key issues to be addressed before writing your questions.
- Decide if you are going to opt for a structured interview (all interviewees will be asked the same questions) or open/semi-structured (a few questions are pre-prepared, but there is freedom to explore further issues brought up by the interviewee)

- Start with easy to answer questions to help relax the interviewee.
- Make sure the phrasing of the questions is clear and easy to understand.
- Test the questions with colleagues ahead of real interviews.
- Hold the interview in a setting that is comfortable and convenient for the interviewee (e.g. on the phone, via video call, or in person) and be welcoming.
- Record the interview if possible (with the interviewee's permission), so you can be focused on the interviewee rather than having to also write notes.
- Try to talk less and listen more.
- Let the interviewee know how the information will be used and next steps.

## 17. Usability Testing.

Usability testing is a technique for testing a product with users. This is often achieved by asking them to perform a set of tasks before answering questions on how they completed those tasks, how they felt about the experience, and what feedback they would give. It can be used with prototype systems or with existing systems to influence how they could be repurposed or improved.

The benefits of usability testing:

- Can provide feedback on particular functionality. Is it easy to use? Does it meet user requirements?
- Providing the same task to everyone allows direct comparison of user experiences. May show that particular groups need additional documentation or assistance, or that new tools are needed.
- Can produce both quantitative and qualitative data, capturing useful facts and figures as well as more detailed information.

The downsides of usability testing:

- Like interviews, can be difficult to organise depending on your user groups, their locations, and their access to technology
- May also be difficult to define useful tasks that cover everything needed, particularly so that they are not too easy or too difficult.
- The process will reach a limited number of users, and therefore may not be representative.

## 18. Tips for Usability Testing.

- Be clear on what functionality you wish to test; small, focused tasks will provide more consistent results than large, complicated ones.
- Make sure that tasks are aligned with how you expect the access system to be used
- Consider having separate rounds of usability testing, focusing on different issues.
- Make sure instructions for testers are clear and that they understand the process. Also that it is the system that is being tested, not them
- Test the instructions by asking colleagues to work through the task. Colleagues not directly involved in the project are best.



- Carefully select testers who are representative of the relevant user group. Make sure communications clearly explain the process, many may not have encountered this type of activity before.
- Consider whether you will monitor progress in person, or ask testers to report back on tasks they complete in their own time.
- If monitoring the task, resist the temptation to offer help
- Reporting may use one or more of the techniques mentioned on previous slides.
- Make sure to thank testers and inform them of results and next steps.

## 19. Analysis and Reporting.

After you have developed your User Needs Analysis plan and then put it into action you will need to analyse the data and report on results. The process of data analysis will depend on the method(s) used for gathering data but might include the following stages:

1. Processing – formatting the data for analysis, e.g. transferring it to a spreadsheet
2. Cleaning – Fixing issues with the data, e.g. incomplete entries, duplicates, or errors
3. Exploratory analysis – working with the prepared data to identify trends and calculate statistics such as averages. You may need to work through a data set more than once to find trends using processes like keyword analysis.

When it comes to reporting results of the user needs analysis, it is worth considering preparing two versions of the report: a short summary report with headline findings for advocacy purposes, and a full report for use in the development of your digital preservation program and related access services.

Clear recommendations should be an essential part of both versions, have taken the data collected to create coherent story of the need for change. In the summary version these can be tailored to make the case for additional resources, in the full report they should focus on clear and realistic actions to improve digital preservation capabilities and access provision.

## 20. User Stories.

A useful technique to employ during the analysis and reporting phase of User Needs Analysis is the creation of “user stories”. This involves identifying of particular roles (in this case we would choose a user from a particular group) and then defining a list of interactions they might be expected to have with a system (your access portal). For example, we may create a user story for a journalist searching for committee papers detailing local planning decisions.

Interactions for an access system might include actions such as:

- Browsing a gallery of images on a particular subject of interest
- Entering a keyword search
- Using filters to narrow the results of a search
- Downloading an image file
- Using a viewer to access video content

We can use the data from the information gathering phase to shape our user stories, which in turn will help identify requirements for our access systems and guidance, and the resources we will need to develop them. User stories can be as complicated or as simple as we want them to be, depending on the time and resources we have available.

## 21. Module Summary.

User Needs Analysis is a key element of a successful digital preservation program, and is particularly important in determining how to provide access to preserved digital content. This is clearly demonstrated by the concept of “Designated Communities”, a core facet of the OAIS standard.

When embarking on a User Needs Analysis exercise, it is essential to carefully plan the activities that will be involved. This will include identifying the user groups you will work with, as well as deciding which methodologies to use. Key methodologies for user needs analysis include:

1. Surveys
2. Web Analytics
3. Focus Groups/Workshops
4. Interviews
5. Usability Testing

After a plan is prepared and carried out, it is important to also put sufficient effort into the analysis of the collected data and the preparation of reports on results. Developing user stories as part of the reporting can help focus your results. Creating a summary report is useful for advocacy purposes, while a full detailed report can inform developments in your digital preservation program, and how you approach access provision.