Mingei

Representation and Preservation of Heritage Crafts

Measuring the impact of digital heritage projects - The Mingei approach

Part 1: Organisational learning

Contents

1. Introduction

How do we define impact, when we talk about digital heritage projects? And, more importantly, how can an organisation make sure their digital project has a positive impact on society, on the organisation's allies and stakeholders and on the organisation itself? This guide is written for heritage organisation that are developing, or are part of, a digital heritage project, big or small, that want to optimise the impact of their project within the organisation and its surroundings. This guide is developed as part of the Mingei project, a three-year EU funded international digital project, with partners from the fields of academia, technology, heritage and innovation.

Impact is not about the number of users, likes or clicks, although these metrics can help assess the impact of a project. Impact is about positive change. Change can happen in different realms and therefore impact can be measured in various ways (see Figure 1.). This guide will focus specifically on impact as organisational learning. The other two areas where impact can be measured are academia and awareness. These two areas are the focus of *Measuring the impact of digital heritage projects – The Mingei approach Part 2: Strategy.*

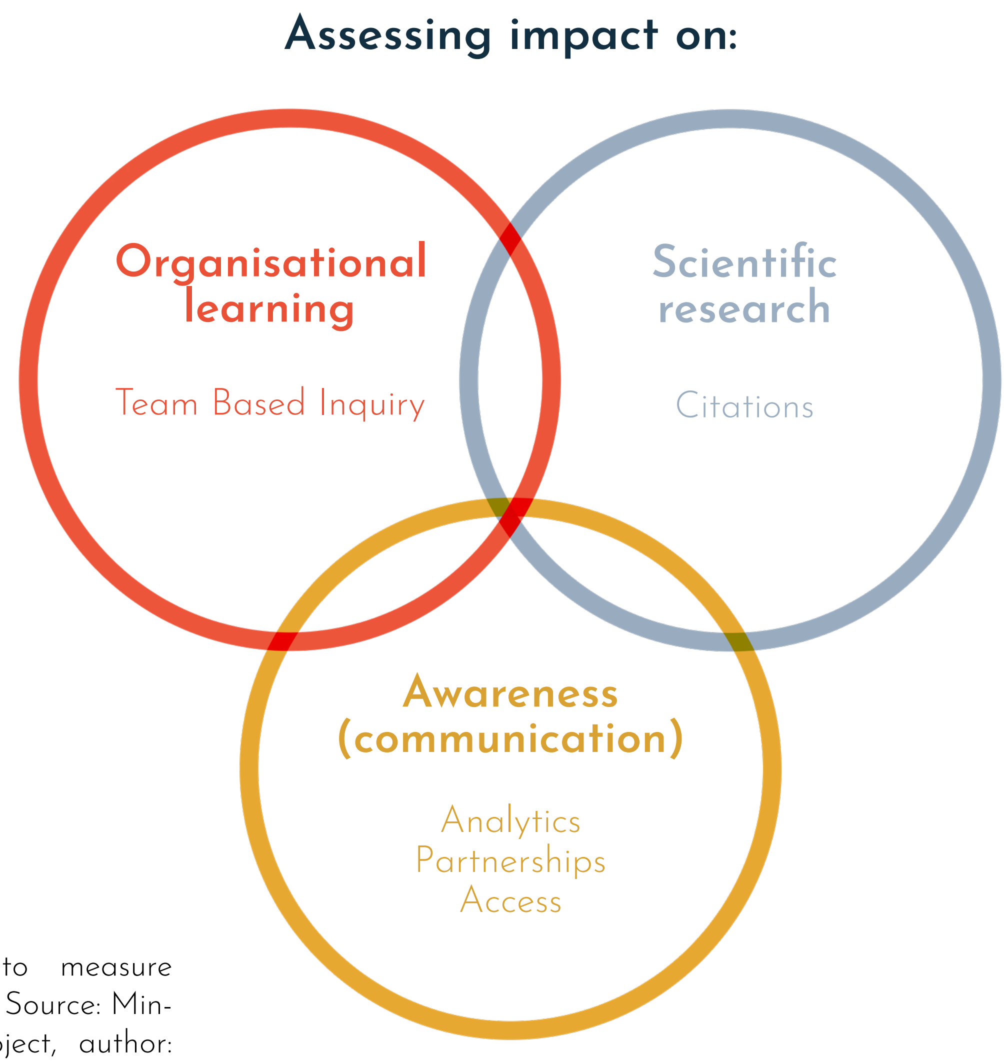

Figure 1.
Ways to measure impact. Source: Mingei Project, author: Dick van Dijk, 2019.

In order to achieve organisational learning, a mutual supportive, equitable and proactive partnership is key. In addition, clear communication, shared goals, for example with regards to learning objectives, and a cycle of observation, experimentation and reflection are important. To achieve this, this guide focuses on the use of Team Based Inquiry and Generic Learning Outcomes, two concepts that have been developed for and widely used by heritage organisations and other informal learning contexts, but in this case are framed specifically for improving the impact of digital heritage projects.

This guide will reflect on the role of heritage organisations within digital projects, and will provide tools to analyse and develop the impact of the project on the organisation and its stakeholders. Together, the two hands-on guides (Part 1 and Part 2) will guide you through the practical steps that you can take to measure, improve and communicate the impact of your digital heritage project.

2. Heritage organisations and digital heritage projects

Digital heritage projects come in all shapes and sizes. Sometimes a digital project is instigated by a museum, archive or heritage site. They are in charge of the project (to an extend). In other cases, for example in international EU funded projects, the heritage organisation is one of many partners in a consortium. Every partner has their own reason to join the consortium; to carry out ground-breaking research; to work on state-of-the-art technology solutions; to test the boundaries of current digital tools. A heritage partner might join because it allows them access to digital tools and knowledge they could never afford to pay for themselves, or because being part of an international network is important to them.

Whether the heritage organisation is in charge of the digital project, or is a partner in a consortium, they will always be part of a team. Because any digital project relies heavily on technical skills, skills heritage organisations might feel they are lacking, it is tempting for them to take on one of two roles: that of a client, or that of 'test site'. As a client, they can say what they want the end-product to be, but they might feel they can keep their distance from any practical, technical work that needs to be done. As a test-site, a heritage organisation can offer access to their collections or visitors to the technical partners of the project, but again they might feel they don't need to engage in much of the decision making or practical work that is part of the project. These are both valid roles, but they are also limiting, because they both allow for the heritage organisation to step away from the process that is the project.

Heritage professionals working with digital experts, might feel they don't have the relevant expertise or knowledge to contribute to the project. This can prevent heritage professionals to fully engage in all stages of the project. It is important to remember that heritage professionals, too, hold expertise that is important to the project. To truly engage in co-creation, proactive partnerships need equity, balance and ownership between partners. All parties need each other as proactive partners for the project to be a success.

2.1 Proactive partnership

Proactive partnership is especially important for a digital project, because they are essentially a process. This process relies on relatively short cycles of making, testing, reviewing and planning. Digital projects are iterative, leaving room for getting things wrong, adjusting and moving forward. It can be difficult for heritage organisations to adapt to this way of working. In many organisations, most audience-focused projects, like exhibitions, school programmes and events, are developed in a more linear way.

Digital heritage projects do not only bring together people with different kinds of expertise (tech and heritage). They also create a space where different sets of assumptions and different types of language meet. This is a challenge, because all people involved cannot rely on mutual understanding or shorthand. Being a proactive partner from the beginning of the project will allow heritage organisations to familiarise themselves with their technology partners and will make it possible for their heritage site, museum or archive to become familiar to technology experts before major milestones appear on the horizon.

What does all this have to do with impact? First of all, the iterative nature of technology projects allow for many moments in which impact can be created. Impact is not only created at the very end, when the final product is released. Heritage organisations and their key stakeholders can impact and be impacted by the process. By being actively involved in the digital heritage process, heritage partners will understand it better and will be able to contribute insights, on behalf of their organisation or their stakeholders that will improve the potential for the product to have an impact. Iteratively measuring impact and jointly reflecting and acting on the findings can be a good way to be a proactive partner. It allows the heritage organisation to contribute fact-based and testimonial evidence to the process. Exploitation can be economic, but also scientific, societal or political.[1]

3. The Mingei project and measuring impact

The Mingei project is a three-year, EU funded Digital Heritage project aimed at creating a system and tools that allow bespoke audiences to digitise heritage crafts and that will make it possible for various audiences to engage with these crafts digitally. As with most of these projects, the products that are being developed will be finished and ready for exploitation when the project ends. This has led to the Mingei team to review the concept of 'impact'. Rather than focusing on 'impact' as what happens after the product (and project) is finished, the team decided to view impact as something that has the potential to occur and be improved throughout the project. The Mingei team has decided to analyse and improve impact in three areas:

- ✔ **Relationships of heritage partners with stakeholders**
  Building new networks, working with local craft communities.
- ✔ **Skills development amongst heritage partners**
  Using new tools, identifying and exploring new creative opportunities and craft areas.
- ✔ **Strategizing**
  Developing a mid-term and long-term strategy to ensure future impact and encourage legacy with the heritage partners.

The first two areas listed above involve reaching out to and working together with heritage craft communities. Many of the examples in this guide will refer to the Mingei project and many of the stakeholders that will be mentioned will be members of heritage craft communities. These areas have been established in other EU projects such as BigPicnic[2] to be important aspects of organisational learning and professional development.

This guide is developed for the heritage partners that are part of the Mingei project, but is intended to also help other heritage organisations that (are about to) engage in a digital heritage project. This guide brings together a number of toolkits that have been developed by heritage and educational bodies to create an 'impact analysis toolbox'. The most important methods and tools that will be referred to throughout this guide are: Team Based Inquiry, Generic Learning Outcomes, the Europeana Impact Playbook for Museums, Libraries, Archives and Galleries and the tools developed as part of the first two iterations of the Let's Get Real research project.

This guide is intended to help heritage professionals think about the impact a digital heritage project has on their organisation and their stakeholders, and encourages them to work together with their project partners to analyse and improve the impact of their digital heritage project throughout its life cycle.

4. Definition of impact

One of the first things we have to establish before we are able to measure the impact of our digital project, is to define what we mean by the word 'impact'. Many definitions of impact exist, but we recommend using the definition used by Europeana in the *Impact Playbook for Museums, Libraries, Archives and Galleries*:

> Impact: Changes that occur for stakeholders or in society as a result of activities (for which the organisation is accountable).[3]

Impact, first and foremost, is about change. The question at the heart of every project-related impact study therefore is: What has changed as a result of this project? When the goal of your project is to develop a (digital) product, it can be tempting to think that impact is closely related to this end-product. Measuring the impact of your project can then become as simple as measuring the success of your end-product. But it is important to remember that impact is not the same as success, or the number of people reached. Aligning 'impact' with 'success' is limiting and allows only for a very narrow definition of impact. Yes, a successful product is likely to have a bigger impact than a product that is less successful. But when we look at the impact of a project as a whole, not just its end-product, we will be able to see a much bigger picture. We can examine all the different ways our stakeholders were impacted by being involved in the project. This, in return allows us to learn more about the way in which we can be relevant to our stakeholders, how we can support them and what we can offer them. To do this, we need to ask the right questions and collect the right data.

The approaches suggested in this guide allow you to design an integrated impact assessment throughout the course of your project in a way that suits the size of your organisation. A small study will yield fewer results that a big study, but as this guide will show you, even a small number of results will make it possible for your organisation to learn and improve. If you are new to this kind of research, we recommend starting small and maybe scaling up as your experience and confidence grow. And remember, throughout planning your study, collecting and analysing data, we are looking for change, not success. The desired change can be very different for each partner and will be different for every project.

5. Using Team Based Inquiry to measure and improve impact

Team Based Inquiry (TBI) is an evaluation method developed by the Nanoscience Informal Science Education Network (NISE Net)[4] to help education professionals reflect on their educational programmes, collect data and make changes. Because TBI is developed for practitioners in an informal learning context and is designed to be easy to use, scalable and efficient, it can be a very useful tool for heritage professionals. The iterative nature of TBI, as well as the focus on teamwork suit the concepts of proactive partnership and digital heritage projects as processes. TBI is scalable and allows teams to start off small and familiarise themselves with the approach, before potentially delving into bigger questions or more complex studies.

As a method for evaluation TBI makes use of a cycle of enquiry. This cycle of enquiry consists of four stages, which can be repeated as often as necessary. The four stages are: Question, Investigate, Reflect, and Improve. Moving through these stages is a team effort. Some stages could be carried out by a smaller number of people, for other stages all team members should be involved. The team can consist of only heritage professionals, but if TBI is used as part of a digital technology project, it is highly advisable to involve technology partners as much as possible. Clear communication with all partners that can benefit from the outcomes of TBI is key.

The strength of TBI lies in the fact that it not only evaluates an existing situation, but aims to improve that situation, followed by another cycle of inquiry to analyse the impact of these improvements. It is therefore a suitable evaluation tool for iterative processes that leave room for improvements and changes during development. In this guide we will focus on the use of TBI as a way to improve and evaluate the impact of a digital heritage project throughout its process. Partners can define their own, bespoke, questions. In the case of Mingei, TBI is used alongside, and complements, the project's co-creative approach.

In order to use TBI it is important to first determine the boundaries of your research. To keep this process manageable and to avoid feeling overwhelmed by your options, it is important to decide on a focus. For example, the Mingei team has decided as part of its TBI inquiries to focus on potential impact being produced in the realms of stakeholder relations and skills development. Another part of this boundary-setting is identifying your key-stakeholders. After this, a first small TBI cycle is advisable, in order for all parties involved to become comfortable with the process. Make sure to report back to your project partners after this 'test run', even if you feel you were still learning along the way. It will help your partners feel involved and see the value of this process. And it will help you feel comfortable sharing your work with partners as it is still ongoing. Your use and experience with TBI will always be changing, growing or moving in other directions. The exact content of the four TBI stages and your choice of research methods will depend on the question you ask, your relationship with the stakeholder you are working with and the time you have available. The aim of TBI is to provide space for incremental improvements that will lead to a better and higher-impact process and end-product. As the Mingei project has nine project partners, one partner will be in charge of rolling out TBI across the teams, with a focus on the three heritage partners, who will be leading the GLO cycles. Experience will be shared and evaluated by and with partners, during consortium meetings, where all partners meet, and through regular teleconferencing calls.

5.1 Stakeholder mapping

TBI is designed to help you evaluate and improve your product, process or service. One key question you should ask as a team is: For who do we want to improve things? Most heritage organisations intend to cater to a wide variety of audiences and stakeholders, but what works for one group, is not necessarily the best solution for another group. Because TBI is meant to be a fast, focused and small-scale approach, it is important to have a clear understanding of the stakeholders that are most important to you for this particular project. A good way to do this is to map the rich ecosystem of stakeholders that surround your organisation, followed by a more focused analysis. We recommend using these four steps, based on an approach developed by BSR.[5] Do not do this exercise on your own, but work as a team. We all have our blind spots. The more diverse your team is, the richer the outcome will be.

Identify

Who are the people, groups and organisations that are relevant to your organisation or project? Heritage organisations often use the term 'target audience' when they discuss the people they want to reach with their work. This allows you to use relatively abstract terms, such as 'school groups', or 'families with young children'. When we talk about stakeholders, it is important our list becomes more concrete. So instead of 'school groups' list all the schools you work with or want to work with. Stakeholders are always identifiable (groups of) people.

Analyse

In order to cater to your stakeholders, you have to understand their interests and perspectives. What is their relevance to your organisation? And more importantly, what is or could be your relevance for them? To define a stakeholder's relevance, you can score them on the following points: Contribution – how can they contribute to your project? Legitimacy – How is their knowledge & experience validated? Access – Is the stakeholder in a position to contribute to and engage in your project? Value – How is the involvement of this stakeholder crucial for the development of your project? Have you established a balanced representation, without over- or underrepresenting certain groups? This four-point assessment was also used as part of Mingei's co-creation process.

Map

Use a large piece of paper or a whiteboard to map out your different stakeholders. How do they relate to each other and to the objectives of your project? By visualising these relationships, placing stakeholders closer together, or further apart, your team will develop a shared understanding of your stakeholder relationships. Keep in mind relationships might already exist amongst stakeholders. For example, when a local history museum in the Netherlands decided to reach out to the various organisations representing the different migrant communities in the city, they found out these groups had already established a network and were in contact with each other. The museum then decided to not establish one-to-one relationships to these groups, but to invest in becoming part in and supporting the existing network. You can add an extra layer of understanding to this stakeholder mapping, by creating a stakeholder trust map. When you have visualised the relationships that exist between you and your stakeholders and amongst stakeholders themselves, you can mark each relationship with a +, - or , depending on whether it is a trustful relationship, a hostile relationship, or something in between. If you don't know what kind of relationship exists, you can use a question mark to indicate this. This stakeholder trust map was used by Mingei partners as part of the co-creation process.

Prioritise

No project has infinite time or money available to cater to all stakeholders all the time. We have to make choices, but this isn't necessarily a bad thing. In fact, research has shown that projects that are developed for a specific set of stakeholders, do a better job catering to a wide range of people, than projects that start out with a blanket approach, trying to please everyone. In other words, prioritisation will make your project better for everyone. Rank your stakeholders based on relevance. Make sure to also identify any concerns or other issues that exist around this group. Will you be able to meet these concerns with the time and money you have available? The best way to prioritise stakeholders is to divide the team in smaller groups and for each group to make a top 3 to top 5, depending on the scope of your project. Based on these shortlists, the team as a whole can decide who their key stakeholders are for this particular project.

You have now identified your key stakeholders, but they are not aware you want to work with them yet. Establishing contact and trust are the next steps.

Mingei example: Identifying your key stakeholders

All three heritage partners within the Mingei consortium are part of their own large network of organisations, groups and individuals who are interested in the craft(s) they represent. In the first few months of the project, the heritage partners mapped these networks, in a joint exercise with the other project partners. They then continued to score and organise their long list of stakeholders to eventually reach a short list of three stakeholders that were part of their (extended) heritage craft community. The Pireus Bank Group Cultural Foundation (PIOP) manages a number of museums. Amongst these is the Chios Mastic Museum. This museum is the focus for PIOP's contribution to Mingei. After identifying a long list of stakeholders, it was decided to focus their efforts on the following three: The Chios Gum Mastic Growers Association, representing all the mastic growers on the island; an individual mastic grower who is known for being the most important cultivator of mastic; Masticulture, a private enterprise working in the field of ecotourism on Chios, including focusing on the tradition of mastic cultivation. The first two stakeholders can be seen as sources of knowledge primarily, whereas the third stakeholder can represent and provide access to potential future users of the Mingei tools.

5.2 Establishing contact and trust

Some stakeholders might be well known to your organisation, others might be a desired audience, for example, who you have not been in contact with yet. Either way, it is important to establish contact (again) if you need their input as part of your TBI inquiry. Make sure you understand if and how much time they would have available to help you with your evaluation. Also try to establish what their preferred method of contact is. This is important information to have available when you are planning your research methods.

Sometimes you can ask your stakeholders this directly, because you know them relatively well, or it is possible to have one-to-one contact with them. Sometimes a stakeholder group might be a little more anonymous, for example because they are part of an (online) community you want to cater for, but don't know directly. In this case you will need to do some research into this stakeholder group and base the further development of your research on an educated guess with regards to their preferences. In this case, it is important to keep in mind your initial inquiry might not wield many results. This should not be a reason to abandon this stakeholder group or to think they are not interested. It simply means you need to reflect on what did and did not go according to plan and adjust your approach accordingly.

If you are not familiar with a certain community, it can help to establish contact with a 'bridge person'. This is somebody who is familiar with the community, because they are a member of it, or have experience working closely with them. This person can form a bridge between you and the community. They can advise you with regards to your research approach and can help you establish contact. A bridge person is not the same as a representative. Their role should be to help you establish contact with (a wide variety of) members of your stakeholder group, not to speak on their behalf. No matter how well their intentions, a representative will always bring their own assumptions, expectations and agenda to the table, which means they will not be able to provide you with the rich content the individual member of the group could share with you. If you want to improve your product, project or services for a group of stakeholders, it is important to understand the variety of needs and expectations that live within the group. Always aim to be as inclusive as possible. If time or money constraints require you to make choices as to how many people to engage, this approach allows you to make these choices in an informed way, instead of based on your own preferences.

Once you know who your key stakeholders are and you have established contact and trust, it is time to start the first TBI cycle of enquiry. Make sure to make use of the individual strengths of your team and work closely together. A focused session together will yield a better result that everyone working on their own tasks independently. It might require a bit of planning, but in the end, it will save you time and improve your results.

Mingei example: Reaching out to online communities

The Haus der Seidenkultur and the Mingei consortium have identified online craft communities as potential stakeholders for the Mingei project. The museum has not worked with online communities, although it has a strong online presence in all social media as well as excellent ties to local media. It is possible, these craft communities are not aware of the existence of the Haus der Seidenkultur, but the consortium believes that a case can be made for mutual relevance. In order to establish contact, the consortium under the guidance of Haus der Seidenkultur will conduct online surveys, to better understand which of the existing online communities are most relevant. How do they communicate? Are they a close-knit group, or more loosely organised? Are they based in more or less the same region, or spread across the globe? And do they meet in real live, for example during events or fairs?

Once these questions have been answered, the museum can reach out to a small group of potential bridge people. The museum can explain their intention and communicate what they think they will have to offer to the community, as well as what kind of help they are looking for. Based on these steps, desk-research and reaching out, the museum will probably be able to narrow its focus on one or two specific communities. From there on, they can work with their bridge person to establish contact and trust with the community. One way of doing this is to share existing resources or a look behind-the-scenes in a way that matches common interactions within the community. It is always advisable to start a relationship by giving or sharing something with the other party, to show you are interested in a mutual relationship.

5.3 Question

If you are new to TBI, starting your first cycle of enquiry might feel a bit intimidating. This is ok, you are all learning together as a team and no one should be expected to have all the answers. The TBI cycle is divided in four steps for a reason. Don't try to have a big picture overview of the whole cycle. Instead, focus on the step you are working on at that moment. Which means your team's focus should first be on developing the right question. It is important to remember that this is the question your team wants to answer, not a question you will ask your stakeholders. Another way to look at it, is to ask yourself: What piece of information will really help us improve (the impact of) our project? You should then be able to create a question this piece of information should be the answer to. NISE Net describe a good question to have the following three qualities.

1. You don't know the answer to this question

It seems obvious, but especially larger institutions sometimes have more information, for example about their stakeholders, than they know. So even if your department does not have any information that could answer this question, make sure to check with other departments as well. This is where an inter-departmental TBI team can make a difference. Additionally, an answer to your question might be available online, or through other easily accessible resources.

2. Your question focuses on useful and actionable information

This means you can actually do something with the answer to your question. For example, 'How many school groups make use of our services?' does not provide an actionable answer. Neither does: 'Which school groups do we fail to reach?' However, asking: 'What are the main reasons for those school groups to not engage with our schools offer?' will probably provide actionable information. When you know the barriers to engagement for those school groups, you can start working towards removing them.

When you develop a TBI question that will result in actionable information, but the potential resulting action would need to come from another team, or from your technical partner, make sure to involve them in this phase. Doing research into the ways in which the user interface of your new on-gallery kiosk could be improved, only to find out there is no money, time or intention to make those changes, is a waste of everyone's time. Therefore, 'actionable' does not only mean: Could we act upon the outcomes of this study? But also: Will the people responsible be able to act upon these outcomes? Try to involve your technical partners in this phase of the cycle of inquiry. But if this is not possible, please make sure to check your question with them, before moving to the next stage.

3. The question can realistically be investigated

Taking into consideration the time and money available to you. It is no use putting time and effort into pursuing a question you will not get to answer, because you simply don't have the resources available to carry out the necessary study. It is important to be realistic about the things we can do with the resources we have. Looking at the example above, you might not have the resources to engage all schools in your area that don't make use of your schools offer. But you will have the time to engage those nearest your organisation, or the three biggest schools in the area, for example. If you find it hard to decide at this point if a question is manageable, start small. You will feel less pressure using a new tool, if you're focussing on a small question first.

A team brainstorm can be a great way to get to a long list of potential questions, which you can then together score against the three requirements listed above. NISE Net also provide a really useful Question Worksheet[6] (Word document) that can help you score your questions. There are many different ways to brainstorm for questions, but it is advisable to make the various questions you come up with visible. What we mean by this is that it is much easier to score and discuss questions when they are written down, instead of just shouted out.

For each cycle you need only one question to get started, so scoring questions is important. Feel free to ask for clarification if you are not quite sure what a question means. In order to score them, it is important that all team members have a shared understanding of the meaning of each question. If necessary, you can rephrase a question or create a new one, inspired by what is already shared by others. Expect to spend about an hour on this phase.

5.4 Investigate

Once you know which question you want to answer, it is time to start thinking about the methods you could use. If you are new to evaluation, the book *Practical evaluation guide. Tools for museums and other informal education settings*[7] can be helpful. When choosing your methods, you have to think about several things: First of all, the nature of your question will have an impact. Based on your TBI question you can decide how much data you need to collect (at a minimum) in order to answer your question, as well as the kind of data you need. Do you need quantitative data (numbers, facts) or qualitative data (detailed explanations or personal views)? Secondly, the resources that are available to you, play a part. Collecting and processing data always takes time, but some data is easier to collect and process than others. Finally, you need to take into account your key stakeholders. Who are they? Where are they? What kind of contact have you established with them.

There are many different ways to conduct research and it is really important to stay open to trying out different methods as you move through various TBI cycles. Some methods might come more natural to you than others, but don't just stick to the method you tried during your first cycle of enquiry. Think of the different methods as tools in your toolbox. As the number of tools you can use grows, so does the number of problems you can fix, or questions you can ask. When you use a new method for the first time, be aware you are still learning to use it, but don't be afraid to try out new methods. You will grow more confident doing this once your experience with TBI grows.

If you are new to evaluation, it might be good to first familiarise yourself with three types of evaluation that are often used: written feedback, interviews, and observations. To answer your question, you can use one or a combination of methods. For TBI, 15 to 20 data sets (answers from 15 to 20 individuals or groups) will often be enough to start seeing patterns and to have enough information to see where your project or programme can be improved. In this sense, TBI differs from more formal academic studies, which often require many more participants.

Written feedback

Questionnaires are probably the best-known form of written feedback. They can be conducted on paper, or digitally, which means they can be suitable for getting feedback from people visiting your heritage site, or others who might not (yet) visit. Questionnaires allow you to ask specific open or closed questions. Open questions are questions to which a written answer is necessary. Closed questions allow visitors to choose from a set of given answers, such as multiple-choice questions, scales or questions that can have a yes/no answers. Questionnaires are used often and might seem easy to make. They also don't require much person-to-person contact, which might make them a preferred research method when you want to outsource data collection, for example by asking front of house staff to hand out questionnaires. Training someone to hand out a questionnaire takes less time than training them to follow an interview protocol.

Although questionnaires seem easy to make, creating a good questionnaire takes practice. First, it is important to formulate the right questions. Testing a new questionnaire is always recommended and you should expect to have to make some changes based on your test run. Some of the things to keep in mind when developing a questionnaire:

Don't make it too long. You might come up with a dozen questions to ask your participants, but don't make them answer more questions than are absolutely necessary to answer your TBI question. It also helps to give people an indication of how long it will take them to fill out the questionnaire, to help manage their expectations and give them the opportunity to decline if they don't have enough time. A half filled out questionnaire is of no use, so you lose nothing by letting them decline to participate, instead of walking out halfway, because they ran out of time.

Ask yourself: Are these open questions really open? We often think we write an open question, when in fact it could be answered with a yes or no.

Ask yourself: Do I really need an open question to get an answer? People often don't like answering open questions and the likelihood of participants skipping an open question is much higher than with closed questions. You might also have to deal with deciphering hard to read handwriting and processing and analysing open questions takes more time. If you can use a closed question, use a closed question.

Use simple language. One of the most common reasons for adapting your questionnaire after your test round is because people did not understand what you meant. Either people don't understand the meaning of a certain word. Or the answers you receive back seem to respond to a different question than the one you thought you were asking. Even seasoned evaluators encounter this. Always test your questionnaires.

When developing your questionnaire, think about how you will process and analyse the answers. If you don't know how you can analyse the answers you will receive, it's no use asking the question.

Questionnaires allow you to gather a lot of information from many people. Think about the amount of time it will take to process and analyse the data you collect. If you don't have the time to analyse the data, the data will be useless.

Questionnaires make it possible to let people participate anonymously. We often ask more personal details from people than we really need for our study. When designing your questionnaire, ask yourself: do I really need all these details to answer my TBI question? You might want to have the opportunity to contact people with follow-up questions, or to inform them about the outcome of your research, but it's worthwhile asking yourself if the questionnaire could be kept anonymous.

Questionnaires might be the best-known method for collecting written feedback, it is not the only, or even the easiest method. Another useful method is solicited written feedback. We use this term for more open, or simpler forms of getting feedback. On site, these could be comment cards, where visitors are maybe asked to answer one rather general open question, or guest books. Many heritage organisations collect these forms of feedback, but they don't always use them as evaluation tools. Online you can think of Twitter or Facebook polls or the question options in Instagram stories as ways to collect solicited written feedback. Social media comments can also be seen as solicited written feedback when the post they respond to actively asked for people's responses.

The final form of written feedback we want to mention here is unsolicited written feedback. This type of feedback can often be found online, for example in the form of Facebook or Google reviews, comments on social media that were not explicitly requested or social media mentions. What is great about this type of written feedback is that it already exists and you do not have to actively ask for the data. You only have to collect, process and analyse it. The down side is that you do not control the content. However, when your TBI question is related to satisfaction, or engagement, these online resources can help you answer your question.

Interviews

Interviews require person-to-person interaction. Ideally both those people are in the same space, but you can also conduct interviews over the phone over via video conferencing, for example via Skype. The plus side to video conferencing is that you will be able to see a person's face when talking, which can help you interpret what they are saying. The downside can be a faulty connection or other technical difficulties. For phone interviews, using a landline is always preferable, because it tends to provide a better-quality connection, with fewer risks of the connection dropping. However, many people don't have access to landlines anymore, so using a mobile phone connection might be your only option.

Interviews can help you answers more or less the same questions as questionnaires, but what they can really help with is better understanding people's feelings, motivation or opinions. You can ask more in-depth questions and follow up on things people say, which can help you to really drill down on a topic. For most people, speaking is easier than writing, so they are likely to share more, in depth information than they would on a written survey. Interviews are not anonymous, although you can of course anonymise the data before processing it.

Interviews are not just a casual conversation about a topic and conducting an interview well requires some training. The most important element of a good interview is the preparation. Make sure you know exactly what you want to get out of the interview. It is good to create a list of basic questions you want to ask each participant, but feel free to add questions to follow up on something interesting a participant said, or to rephrase a question if you didn't get a clear answer the first time around. Secondly, it is important to make sure your participant feels comfortable. When meeting in person, offer them a comfortable seat and a drink. Make sure the space you are in does not feel too formal and is not too noisy. Make sure to be open and friendly, even if you might be a bit nervous yourself. Reassure them it is not a quiz, but you are genuinely interested in their opinions, thoughts and ideas. Give them some context for the interview. Why did you ask them to participate? What are you researching? And introduce the topic. Be careful not to lead their thinking into a certain direction though. If you start off by saying: "we want to know what people like about X," they will want to confirm they liked X too, even if maybe they didn't. People are people pleasers, so make it very clear to them that what you really need from them is to be open, honest and critical. They language you use and how you talk about the topic can help with this.

It is advisable to make an audio recording of your interview. You have to ask permission for this from your participant. While conducting the interview, make sure to take notes as well. If this means the conversation will fall silent for a bit while you write, don't worry. It will give your participant time to gather their thoughts. They might remember something they didn't think of straight away. Don't be afraid to ask them to repeat themselves or to explain what they meant. It is important to capture their answers correctly. The most important reason to take notes during the interview is that something can always go wrong with your recording. If something does go wrong, it is good to know you still have your notes and you didn't lose everything the person said.

Conducting interviews takes more time than filling out a questionnaire. Is there something you can give participants as a way to say thank you?

Observation field notes

When your TBI question relates to visitor behaviour, you can choose to observe visitors as they are visiting your heritage site, or are engaging with your digital tool. When planning an observation study, make sure to familiarise yourself with the surroundings in which the study will take place. Is it busy or quiet? What are potential observation stations from which you can easily see the behaviour you want to observe, without being intrusive? Your observation data will often consist of notes you took while observing. Video observations are often cumbersome to plan and set-up and would not be recommended in the context of TBI, where we tend to work with relatively small numbers of participants. Sometimes just taking some time out of your schedule to look at people's behaviour, while taking some notes will already help you answer (or develop) your question. Sometimes, an observation sheet can facilitate your note-taking. For example, when you want to observe people's movement through a specific space, it can help to make a map of the space, marking and/or numbering all the elements that are present in the space. You can draw arrows indicating people's movement, add timings or other notes in an additional textbox. Test your observation sheet before carrying out the full study, so you know you can capture as much information as possible in the limited amount of time you have available for the observation. It is not common to actively ask people permission for observations. They might behave differently when asked if you can shadow them. However, it is important to notify people observations are taking place, for example via a sign at the entrance. Also make it clear that people are free to not participate, by letting you know they don't want to be observed.

Like with questionnaires, it can be helpful to think about how you will process your data before you start collecting it, but keep in mind unexpected patterns or behaviour might occur that you did not plan for. Sometimes you have to be creative and make adjustments as you go. If this happens make sure to make a note of the changes you made and try to be as consistent in your note taking as possible, to facilitate future analysis and interpretation.

Sometimes you might want to use an evaluation form that is a combination of an observation and an interview. During a guided visit, visitors are free to move and act as if you were not there, but they can also make comments and you can ask them questions about their actions, or inquire after their opinion on specific interactives, texts or displays. When you want to conduct a guided visit, make sure to ask permission beforehand and, as with observations, think about note-taking. Recording the conversation may not be possible in this case, so make sure to take ample notes while conducting the study.

5.5 Reflect

The reflection phase of the TBI cycle can take different forms, depending on the kind of data you collected. It should, however always consist of the following three steps:

Organising

By organising your data, you structure it in a way that can easily be processed and analysed. Quantitative data can be easily structured using a spreadsheet, for example. Qualitative data needs more work. You can decide to code it, or you can print out all the answers, so you can physically group them and discuss similarities or differences with the team. Organising means: making the data manageable, allowing you to see patterns or surprising behaviour or opinions.

Analysing

Quantitative data can be analysed in the form of numbers or charts. Be aware though that percentages can be misleading when you use small datasets. For example, if you interviewed ten people and your analysis shows that 10% of the interviewees was of a certain opinion, this means actually only one person gave this opinion. 10% sound like a lot, but the opinion of only one person shouldn't be leading us to change things, unless we have evidence (from other studies, experience or implied responses from others) that they represent a larger group of people.

Most of the time, analysis will consist of seeing patterns and comparing responses that are part of your qualitative data. You can sort the data into themes, or code the data based on topics you identify while reading through all the answers.

Interpreting

After analysing your data, noting patters and comparing answers or different groups of participants, it is time to interpret the data: What does it mean with regards to our TBI question? This interpretation can be done by one or a few members of the team, but could also be conducted as part of a group exercise. NISE Net have developed a four-step interpretation method, called a data-reflection discussion.

- ✔ **Step 1: Describe and clarify**. This will help to (re-)establish a common understanding of the study. Make sure all team members are reminded of the original TBI question and are aware of the data collection method and context.
- ✔ **Step 2: Observe and discuss.** Allow all team members to familiarise themselves with the data. What answers of facts stand out for them in relation to the TBI question? When they start talking about themes, this is ok, but try to bring the conversation back to specific responses, behaviours or other data.
- ✔ **Step 3: Immerse and notice.** Start listing all the patterns team members

notice. Where do you see similarities or people performing the same actions? Try to list all the patterns you can find as a team. Different team members might have a different focus here, based on their own experience or role within the organisation. A more diverse team will likely result in richer content at this stage.

- ✔ **Step 4. Categorise and explain.** As a team, or individually, go through the data again and count which patterns are most common. When looking at the data closely, does it really reflect the patterns you initially saw? Are the patterns backed by clear data? You can start thinking about the meaning behind these patterns. Why does this pattern occur and what does that mean with regards to your TBI question?

These phases can be more or less straight forward, depending on the data you have collected. It might be easier to see patterns (and to have the data clearly back them up) when analysing questionnaire data, than when you are working with visitor comment cards, for example. The more control you had over the kind of data you collected, the easier that data is to analyse, but the less likely it will be that you will encounter surprise findings that change the way you think about (the potential of) your project. Either way, be sure to always go back to the data and check if the patterns you think are there are really backed up by the data you collected.

5.6 Improve

You have defined your question, collected, analysed and interpreted your data. Now it is time to act on your findings. As we said before, you might need to work closely together with your technical partners, or other colleagues to improve your project. That is why it is important to engage them with your TBI cycle from the start. It is a much more satisfying process when you know the team will be able to act upon the outcomes of your research. Of course, there can always be surprises, outcomes or feedback you did not expect. If this is the case, engage the relevant colleagues in the Reflection stage and work closely together in the Improve stage to come to manageable actions, that can respond to these surprise findings.

If you notice it is hard to engage colleagues in improving your project, reflect on the whole TBI process and ask yourself how you can prevent this from happening again. Did you ask a question that was not sufficiently urgent for all parties involved? Did you not engage colleagues in the data analysis? Or can you look for improvements that are easier to implement, that will help you show the value of TBI as you prepare for your next cycle of enquiry? The strength of TBI is that it is a fairly quick and dirty method that doesn't require too many resources, and that allows you to adjust and try again, learning from every step of the process.

Like the other stages, the Improve stage is most successful when the whole team engages in it. NISE Net suggest hosting an improvement discussion, to identify and prioritise the improvements that can be made together with the whole team. Keep in mind that not all findings will or can result in an improvement. For each finding the team should try to answer the following questions:

- ➜ What are the consequences of this finding, when we look at our project?
- ➜ What actions can we take to improve our project, based on this finding?

After you have answered these questions for every finding, it is time to prioritise. It is unlikely you will be able to undertake all actions you have identified. By prioritising, you can try to have as big a positive impact on the project as possible within the time you have available. Make sure to look back at the data at this point, so you know the data supports the changes you are about to make.

5.7 Tips and tricks

- ✔ Make sure the whole team is on board at the beginning of the TBI cycle. If you notice a team member is particularly sceptical about the process, but they have valuable skills to contribute, have an honest conversation with them and check if they might want to ask a colleague with similar skills to take their place in the TBI team.
- ✔ Make sure that throughout the cycle, the whole team feels engaged. There will probably be one person leading the process, but make sure all the decisions and steps you take are a team effort.
- ✔ Document your work. Keep notes of every stage so you can learn from them, look back over time to see how things happened or what decisions were made exactly. NISE Net offer a useful TBI summary form[8] (Word document) on their website.
- ✔ Keep it small. Especially if you are new to evaluations. It is much more useful to take small, focused steps than to try to tackle a huge question and be overwhelmed by it.
- ✔ Confidence grows over time and TBI is something we learn by doing. Keep an open mind, also after you have tried several TBI cycles. Stay open to the different types of evaluation methods you can use, be open minded when collecting and analysing your data (this can be challenging when you are reviewing your own work) and be creative in the Improvement phase. Small changes can sometimes already have a huge impact.
- ✔ TBI is not a usability study. It is not intended to test core functions of your project, but to improve it step by little step.

Mingei example: Making sure your TBI cycles have actionable outcomes

Mingei is a three-year digital heritage project. This means the project will go through various phases of content collection, prototyping, developing and testing a basic product, and improving it based on partner and stakeholder feedback. Heritage partners to the project will take the lead in the TBI-powered impact analysis, but it is important their work aligns with that of the technology partners. Therefore, the TBI cycles are divided in two different phases. In the first phase, the heritage teams will focus on improving the relationship with and impact of key-stakeholders. In this stage the outcomes of TBI cycles can still be taken on-board in the broad development of the tools, allowing tech partners to take into consideration the needs and expertise of the key-stakeholders. Impact analysis reporting will focus on the impact the Mingei platform has (had) on the type of relationships the heritage partners have with new and existing stakeholders.

The second phase will focus on skills development. This project has the potential to positively impact the digital skills of both the project partners and their stakeholders. As soon as a first version of the digital tool will be available, the TBI cycles will be used to optimise the impact of the project as a process on the skills of the various parties involved, as well as to make sure heritage partners' experiences and needs will be taken into consideration when further developing the digital tool, so its use is optimised for their knowledge and skill-level. Impact analysis reporting for this second phase will focus on the ways in which heritage partners and their stakeholders can positively impact the development of the Mingei platform and tools, with the potential to improve the impact of the platform as a whole.

6. Using Generic Learning Outcomes as part of Team Based Inquiry

Team Based Inquiry is an evaluation method that allows teams to analyse and improve the impact of their project, using short and focused cycles of inquiry. Generic Learning Outcomes allow cultural organisations to plan, evaluation and report on the learning impact of their projects, programmes or products. So, how do the two fit together? When your TBI question focuses on experience or learning in any way, the GLO framework can help you formulate your question. More importantly, in the Reflection phase, the GLO framework can help you code, analyse and discuss your data. Especially qualitative data can benefit from coding and GLOs will help you do this in a coherent way. In addition, when you notice your team referring to 'learning' in a more generalised way, GLOs make it possible to drill down and better understand, as a team, what is exactly meant by that phrase. The more concrete you can be in understanding and describing your project, the more clearly you can phrase your TBI question. Clearly formulated questions allow for a more focused and structured evaluation, which will result in more actionable outcomes.

In short, not all TBI questions benefit from using the GLO framework, but when talking about experience and learning, GLOs can help you frame your question and findings more clearly, creating a shared language and understanding amongst your team.

7. An introduction to Generic Learning Outcomes

Generic Learning Outcomes (GLOs) were developed for the UK's Museum, Libraries and Archives Council (MLA) as part of the Learning Impact Research Project in 2001-2004. Since then, they have been used across the UK, and beyond, by various museums and other cultural institutions to assess (the impact of) informal learning. After the MLA disbanded, Arts Council England (ACE) has taken over the information provision about GLOs. Generic Learning Outcomes were developed to help museums think about, develop and measure (the impact of) learning outcomes in informal cultural learning environments. GLOs are based on the idea that learning is a verb (rather than a noun)[9] and "[t]he understanding of learning as a series of complex and lifelong processes."[9] The GLOs divide informal learning into five separate types of learning outcomes:

- ✔ Knowledge and understanding
- ✔ Skills
- ✔ Attitudes and values
- ✔ Enjoyment, inspiration and creativity
- ✔ Activity, behaviour, progression

On their website, ACE provide examples for all five GLO's. They also offer a great set of tools, such as a GLO checklist and examples and practice sheets for scoring qualitative data.[10] Thinking about the impact of your project in the context of GLOs can help you formulate concrete goals or analyses. It can also help you think about informal learning in a broader sense. GLOs can be used in three different ways.

Planning

When planning your project, GLOs can help you think about the learning impact you want your project to have. Do you want people to remember certain information? Describe what information or knowledge is most important. This can take the shape of a message document. A message document identifies one key message, something all users of the tool or service should know or take with them after using it, followed by a series of lower level messages. It is easy to get lost in all the details, when you are sharing your knowledge with people, but by focusing on one key message, you force yourself to answer the question: What is it really about? You can then work to make sure all your content supports this key message. The same goes for certain skills, attitudes, inspiration or behaviour you want to visitors or users to gain. By making it explicit and planning for it, rather than assuming it as a given, you enhance the chances of reaching the learning goals you set. It should not be your goal to cover all GLOs in all your programmes and products. Rather, they are a tool that help you make conscious decisions with regards to the type of learning experience you want to create.

Evaluation and improvement

We mentioned before that one way of analysing qualitative data is to code it. GLOs are a great coding tool. Coding against GLOs means taking every bit of information from a piece of qualitative data and asking yourself which of the GLOs they refer to. For example. If a visitor leaves an online review saying: "We really enjoyed our visit to your museum. Our daughter still talks about the different dinosaurs she saw and has remembered so many fun facts about them. After we came home she made a drawing of a Triceratops and took it to school for show and tell," you can code this as follows: "We really enjoyed our visit" – Enjoyment, inspiration and creativity. "Our daughter still talks about the different dinosaurs she saw" - Activity, behaviour, progression. "and has remembered so many fun facts about them" - Knowledge and understanding. "After we came home she made a drawing of a Triceratops" - Enjoyment, inspiration and creativity. "and took it to school for show and tell" - Activity, behaviour, progression. Upon first reading the review, you might be inclined to only focus on the fact that the family had a good time and the daughter learned new facts, but when coding the entire text, it becomes clear that the visit also inspired creativity (making a drawing) and certain behaviour (the daughter talking about dinosaurs and her drawing, at home and in front of her classmates). Using GLOs can help you better analyse the breadth of the impact your project is having beyond the obvious goals you might have set out to achieve.

Reporting

Using the GLO framework will help you structure your reporting and communication towards funders, stakeholders and colleagues. It helps you articulate the impact of your project and allows you to frame learning as an ongoing activity with many facets, that different people can engage in in different ways.

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Mingei

Representation and Preservation
of Heritage Crafts

Measuring the impact of digital heritage projects - The Mingei approach

Part 2: Strategy

Contents

1. Introduction

When an organisation develops a digital heritage project, this can be a multi-year endeavour. As the (digital) world around you changes during the lifetime of the project, how do you ensure your project will have a positive impact on society, on the organisation's allies and stakeholders and on the organisation itself? This guide is written for (heritage) organisations that are developing, or are part of, a digital heritage project, big or small, that want to optimise the impact of their project within the organisation and its surroundings. It is developed as part of the Mingei project, a three-year EU funded international digital project, with partners from the fields of academia, technology, heritage and innovation.

Impact is about positive change. Change can happen in different realms and therefore impact can be achieved in various ways. This guide will focus specifically on the strategies you can develop as part of your communication, dissemination and exploitation activities in order to facilitate impact of the project on your organisation's surroundings. This is the second guide of a two-part series. Part one focuses on the impact a project can have on the organisation itself, throughout the lifetime of the project.

2. The Mingei project and measuring impact

The Mingei project is a three-year, EU funded Digital Heritage project aimed at creating a system and tools that allow bespoke audiences to digitise heritage crafts and that will make it possible for various audiences to engage with these crafts digitally. As with most of these types of multi-year, externally funded projects, the products that are being developed will be finished and ready for exploitation when the project ends. This has led to the Mingei team to review the concept of 'impact'. Rather than focusing on 'impact' as what happens after the product (and project) is finished, the team decided to view impact as something that has the potential to occur and be improved throughout the project. The Mingei team has decided to analyse and improve impact in three areas:

- ➔ **Relationships of heritage partners with stakeholders:** building new networks, working with local craft communities.
- ➔ **Skills development amongst heritage partners:** using new tools, identifying and exploring new creative opportunities and craft areas.
- ➔ **Strategizing:** developing a mid-term and long-term strategy to ensure future impact and encourage legacy through awareness, use and academic research.

This guide will focus on the last point: Strategizing. It is intended to help members of digital heritage project groups responsible for communication, dissemination and exploitation to think strategically about their project's impact, while the project is still ongoing. This means developing a communication and dissemination strategy focusing on (future) impact, as well as working on an exploitation plan while the product is being developed, rather than when it is ready for market. The aim of this guide is to give practical tips and examples to help communication and exploitation professionals to optimise and analyse the impact of their work.

3. Definition of impact

One of the first things we have to establish before we are able to measure the impact of our digital project, is to define what we mean by the word 'impact'. Many definitions of impact exist, but we recommend using the definition used by *Europeana in the Impact Playbook for Museums, Libraries, Archives and Galleries*:

> Impact: Changes that occur for stakeholders or in society as a result of activities (for which the organisation is accountable).[1]

Impact, first and foremost is about change. The question at the heart of every project-related impact study therefore is: What has changed as a result of this project? When the goal of your project is to develop a (digital) product, it can be tempting to think that impact is closely related to this end-product. Measuring the impact of your project can then become as simple as measuring the success of your end-product. But it is important to remember that impact is not the same as success, or the number of people reached. Aligning 'impact' with 'success' is limiting and allows only for a very narrow definition of impact. Yes, a successful product is likely to have a bigger impact than a product that is less successful. But when we look at the impact of a project as a whole, not just its end-product, we will be able to see a much bigger picture. We can examine all the different ways our stakeholders, peers and society were impacted by being involved in the project. This, in return allows us to learn more about the way in which we can be relevant to our stakeholders, how we can support them and what we can offer them. To do this, we need to ask the right questions and collect the right data.

The approaches suggested in this guide allow you to design an integrated impact strategy and assessment throughout the course of your project in a way that suits the size of your organisation.

4. Communication, dissemination and exploitation

As said before, this guide will focus on developing a mid-term and long-term strategy to ensure future impact and encourage legacy through awareness, use and academic research. For this kind of strategy, three types of activities should be considered: communication activities, dissemination activities and exploitation activities. Communication is probably the most straight-forward of the three. It means sharing (information about) your project. Many different channels can be used to do this, from websites and newsletters, local or regional news outlets, and of course social media channels. The aim is to reach the people you have identified as your target audiences and to let them know your project exists and is relevant to them. Dissemination means sharing the outcomes of your project. You don't have to wait until the project is finished to do this. Especially multi-year projects will have many outcomes before the project ends. They can be big or small outcomes and they might be useful for a very specific audience or stakeholder, or might be interesting for a much wider set of audiences. Where through communication you tell others about your project and its outcomes, dissemination means sharing these outcomes in such a way, others can use them. Exploitation, finally, means using the outcomes of your project. Exploitation can be economic, but also scientific, societal or political.[2]

5. Communication and impact

Communication means telling people about your project and its results. Communication in itself does not equate impact, but it does have the potential to create impact. Through your communication activities you can reach relevant audiences and create awareness. The first step towards impact is letting people know your project exists and to show them it is relevant to them. Secondly, the story you tell about your project needs to be engaging. If your project is perceived as being engaging, inspiring and relevant, the chances are higher that people will be using its outputs or outcomes, and by doing so create impact.

For your communication to be successful, it is important to develop a well-defined and specially designed communication strategy. A communication strategy can facilitate and enhance impact, even if it doesn't directly create it. First of all, it should include a clear definition of the purpose, the message, the audience, the method and the timing of the communication activities. Once your audiences are identified, it will take time and continual communication efforts to reach and engage them. Therefore, core communication activities are expected to be strategically performed across multiple phases. This also allows you to reflect key stages in your project's evolution according to clearly defined and coordinated action agendas.

✔ Guideline

Define the target groups of communication activities as an initial step towards successful communication.[3]

Mingei example

In Mingei, related target groups include the general public, museums that engage with heritage crafts, cultural and creative sector companies, craft training organisations, digital humanity infrastructures, service providers, technological innovators, and policy making entities.

Mingei has formulated a communication strategy that is summarized in the following table:

Activity or material	Main objective	Target Audience
Project website	The project website will spread the objectives and results as widely as possible.	General audience, heritage and technology professionals. At least 25000 visitors by the end of the project.
Project documentation and printing costs	The project brochure will be a key document, to be spread by the Consortium as a whole and by each Consortium partner, as widely as possible.	Heritage & technology professionals. 1000 copies of the project brochure will be distributed throughout the project duration.
ICT 2019-2021	EC key dissemination event for H2020	International scientific audience 5000 delegates + media
<u>CH Journals & Conferences:</u> Museums and the Web, Computer Applications and Quantitative Methods in Archaeology, DISH, Museum Next, DIMEA, ICOM conferences, Digital Heritage JOCCH ACM, Digital Applications in Archaeology, Museum and Society Journal, The Curator, Virtual Archaeology Review, Journal Of Heritage Studies, Journal of Cultural Heritage, Public Understanding of Science, Euromed, Digital Humanities	Paper / poster presentations	International scientific audience
<u>Publications in Journals and Conferences focused at individual disciplines of the project:</u> Knowledge Representation and Semantics, Computer Vision, Human Computer Interaction, AR, VR, Graphics	Paper / poster presentations	International scientific audience
Mingei Workshops	Reaching of stakeholders in the context of Co-creation activities and dissemination of project scope, goals and when appropriate outcomes	Stakeholder (Heritage craft museums, scientists, professionals, Cultural Heritage Institutions (CHIs), Cultural and Creative Industries (CCIs), etc.)
Mingei DAY	Dissemination of project outcomes to the wider public	End users

Table 1: Overview of the Mingei communication strategy. Source: Deliverable D8.2.1 – Publicity & Dissemination Plan, Mingei Project. [4]

5.1 Selecting the appropriate tools to measure online success and engagement

Online communication is becoming ever more important and creating online content can be relatively easy and cheap. But how do you make sure your content reaches the right people and how do you know how successful and engaging your online content is?

To measure the success of online communication, the Mingei consortium will follow the models and methods developed as part of the Let's Get Real research project. In particularly Let's Get Real 1: How to evaluate online success, and Let's Get Real 2: Measuring digital engagement. When it comes to digital engagement, the following main pillars are defined by Let's Get Real.

- ✔ Be clear 'what' you are trying to do online and 'who' it is for. Some people you might simply want to inform about your project, but others you might want to activate. Maybe you want them to give feedback on prototypes or concepts, maybe you want them to consider becoming a user, or early adopter of your product, after you have made them aware of your project and have formed a relationship. Think about possible pathways for specific audiences from being informed by you, to being an active and engaged stakeholder.
- ✔ Focus your online investment. When you spread your time and attention across many online platforms, it will become hard to create good content consistently and to be responsive to people's comments. Make informed decisions about the platforms you will be focusing on. Make sure to review these decisions from time to time. The online world can change quickly and you will need to be ready to adapt.
- ✔ Recognise the value, and the limits, of social media.
- ✔ Question whether the web is enabling you to reach new audiences. Some people are better reached offline, through one-to-one contact, events or more traditional media.
- ✔ Standardise methods of reporting online metrics to external stakeholders.

✔ Guideline

Don't think about digital activities as something separate from the physical. Build links between your overall mission and business strategy and all your activities. Define your overall strategy before you deploy any specific tactics – digital or otherwise.

Online analytics for your web content, too, can give you great insight in who your content is reaching and how people are engaging with and using your content. Google analytics is an easy to use option to support web analytics as it is straightforward and easy to use. Use analytics to collect and rationalize data as for example:

- ✔ Visits from inside the organisation
- ✔ Global visits
- ✔ Visits from a particular country
- ✔ Organic search visits
- ✔ Paid search visits
- ✔ All social media referred visits

✔ Guideline

Set up a single question audience survey to track the audience motivations for visiting your website. Analyse the outcomes of this survey in combination with analytics to understand user visiting behaviour.

Google Analytics can offer so much data that it can be easy to get lost in numbers, rather than really understanding the behaviour and needs of your online visitors. When looking at the data try to see clear patterns of behaviour. One option would be to link visitor behaviour patterns with seasonal variations to plan your communication strategy in a more responsive way.

✔ Guideline

Get ready for mobile. Ensure your website is mobile friendly and you can respond to the growing trend of mobile access. Consider what your users want to on the move?

Another way to come to grips with the analytical data is to set up and measure concrete goals, for example: Email subscriptions, downloads, new user accounts, user comments on the web page, while being aware of the way in which Google Analytics calculates time on site, so you can take this into account when reporting. You can also create reports regarding web engagement and use them for comparative studies across periods: e.g. visitors for the four quarter of the year, visits from Greece using mobile devices, visitors in conjunction to the source web referral.

✔ Guideline

Know what the future trends will be, so you are ready for them, for example: "In the future mobile traffic is expected to be increased"

Finally, consider ways to enhance Search Engine Optimisation (SEO). This includes registering relative keywords for each of your webpages and in GoogleAds, and featuring a contents page where all your webpages are listed. Make sure to revise these very six months or so, while reviewing the insights provided by the GoogleAds tool regarding the specific keywords that led to your webpages when sought. Google Ads also provides a tool that helps you find keywords that are expected to maximise the site reachability through search engines and advertisements.

Mingei example

The Mingei team has incorporated Google Analytics on the project website and for basic reporting to government, configured according to the guidelines provided in the Let's Get Real 1: How to evaluate online success report to ensure consistent reporting. This covers basic health checks, user segments and goal definition. The team will also set up methods for tracking views and downloads of non-HTML pages. Lastly, the team will consider the way in which Google Analytics calculates time on site and will take this into account when reporting. This will ensure that the information received from Google Analytics is accurate and reflects the actual time that the users spent on the site.

5.2 Measure social media engagement

In the social media era it is important to establish presence of your project to popular social media channels. Some basic research can help you better understand which social media channels are most used by your target audiences. You can then set up social media accounts for your project for the social media channels that are most used by your audiences. Make sure to revise this on a yearly basis, as social media trends come and go. Also look into the amount of time and effort that is needed to make a social media channel successful. Some channels need more frequent updates than others. You aim is not to become an influencer or a top-tier online presence, but make sure that your expectations match the amount and time you have available. When possible, include social media content to your webpage rather that redirecting users to the social media channels. And make sure to use analytics to measure the interplay between social media and your website, for example by measuring the outgoing links from the website to social media and online audio-visual content. Of course, you can also collect and analyse data from your social media accounts themselves.

✔ Guideline

Ensure that your project has constant social media presence throughout its duration.

The Let's Get Real research project suggests collecting and analysing the following data.

General information

- ✔ List of social media channels that each organization uses
- ✔ Strategy for linking to social media from the main website
- ✔ Size of the organization (based on number of physical visits)

Facebook

- ✔ Number of fans
- ✔ Growth rate in fans
- ✔ Fan demographics
- ✔ Amount of organisational content
- ✔ Amount of user-generated content
- ✔ Amount of content

Twitter

- ✔ Number of followers
- ✔ Number of mentions
- ✔ Number and type of tweets
- ✔ Tweet level stats

Youtube

- ✔ Number of viewers and subscribers
- ✔ Amount of user-generated content

Figure 1. Overview of data collected in phase 1 of the Let's Get Real project. Source: Let's get Real 'How to Evaluate Online Success?'(p16). [3]

Use this data to measure the popularity of your project to social media channels.
For this purpose, explore possible option for measuring engagement. For example, in Let's Get Real research project the following approach was followed to measure user engagement in Facebook.

$$\left(\begin{array}{c} \text{wall posts in past week} \\ + \\ \text{comments in past week} \\ + \\ \text{wall 'likes' in past week} \end{array} \times 52 \right) + \begin{array}{c} \text{total media added} \\ + \\ \text{total discussions} \\ + \\ \text{total reviews} \end{array} = \begin{array}{c} \text{engagement} \\ \text{(un-weighted)} \end{array}$$

Figure 2. Calculation for Facebook Engagement used by the Let's Get Real project. Source: Let's get Real 'How to Evaluate Online Success?'(p18). [3]

Remember to look at the patterns, not just the numbers. Small can be beautiful. Success is not defined by scale but by fulfilling your objectives or your audience's needs.
In general, measuring the success of social media presence is not straightforward. To this end your project can use the set of guidelines presented in this document to assist the evaluation of your social media strategies.

✔ Guideline

Set objectives for social media that relate to broader objectives within your project. Align each high-level objective with a set of tangible outcomes that you hope to see happen as a result of social media engagement. Select metrics for social media which relate to the outcomes.

Before you start a campaign or any new activity, ensure that you have taken a benchmark of the current position, in order to assess the impact of changes. For example, Mingei targets to establish a strong social media presence by focussing initially on popular social media platforms such as Twitter, Facebook, YouTube, and Instagram. Furthermore, as the project progresses additional platforms will be considered, such as craft-specific social media and trade portals that will disseminate exhibitions and increase content valorisation.

5.3 Measuring impact of outreach events including media outreach

Just like with online content, for outreach activities too it is important to have a clear definition of the outreach events of your project, as well as a clear understanding of how impact will be measured.

Mingei example

In Mingei the following outreach events, expected impact and impact metrics are defined:

Outreach events (external)
Identifying pertinent events (among cultural heritage institutions, cultural and creative industries, ICT, stakeholders), and partner actions, promotional material for circulation/display, monitoring and communicating outcomes (eNews, social networks), using social networking tools and events, promoting interest, personal relevance and motivation.

Expected impact: Sharing and gaining new knowledge through networking, building the community.

Impact metrics: Number of external events attended quarterly; number of new contacts made and inserted in the database; number of resulting channel registrants and social network followers; number of project collaterals circulated and in-house digital tools used. Communication of outcomes will also include qualitative measures.

Mingei DAY
Timely and clearly defined promotional campaign planning (documented) with all-partner involvement; 'Save the date', e-News and external event calendar announcements; press releases (pre- and post-event); live-streaming; social networking. Mingei will also: make media partner agreements, capture audience reactions in real-time; produce 'virtual goody bags' with all conference documents.

Expected impact: gaining valuable feedback on the Mingei solution and determine any modifications needed; matching Mingei to different uptake scenarios, supporting exploitation focus and planning.

Impact metrics: numbers of physical & virtual attendees, breakdown of participant type, number of tweets/discussion posts, number of resulting channel registrants and social network followers, number of media partners and press clippings (dedicated reports), outcome reporting and all content generated (dedicated reports).

✔ Guideline

Ensure that all your communication activities and data analysis target main stakeholders / communities / domains / activities related with or targeted by your project.

5.4 Measuring impact of audience development

As said before, communication activities don't directly cause impact, but they can facilitate it. Make sure to identify metrics that can help you see where impact is being made as a result of your communication activities. Think about user engagement and reaching targeted communities and stakeholders.

Understanding your audiences and their behaviours and needs online, allows you to make informed decisions to improve, finetune or change your impact strategy. A communication plan that has clear goals, but is also responsive to a changing (digital) world, makes it possible to lay the foundation for successful dissemination and exploitation activities.

Mingei example

Below you will find a selection of the communication metrics identified by the Mingei team and their potential related impact.

Metrics

- ➜ Number of people who join the Mingei Online Collaboration Platform
- ➜ Number of people who enroll in cultural education classes
- ➜ Number of tutorial reads (article link hits)
- ➜ Number of people in cultural communities
- ➜ Number of attenders in project events
- ➜ Number of people enrol in online workshops and technical education classes
- ➜ Number of local stakeholders expressing interest in exploiting material, educational content and place based memories to formulate strategies towards sustainable tourism and impact on the local economy

Impact

- ➜ Spreading of cultural knowledge
- ➜ Promoting mutual cultural understanding
- ➜ Fostering cultural diversity

Figure 3. selection of the communication metrics identified by the Mingei team and their potential related impact. Source: Mingei Project, author: Xenophon Zabulis.

6. Impact of Dissemination

Another important way for your project to have an impact is through dissemination activities. In other words: sharing the knowledge, experience and tools you have developed as part of your project. Dissemination is closely linked to communication. Communication activities can build and activate an audience. Dissemination can also be part of your communication activities, but you can also develop dedicated dissemination actions. Dissemination activities can include scientific communication (e.g. writing book chapters), contributions to the public debate, policy advice (e.g. producing policy documents), participative research, or consultancy. These activities can lead to impact if, as a result, societal stakeholders consequently use or are affected by your project or research. The processes/activities that lead towards impact are commonly referred to as 'pathways',[5] although generating impact has also been linked to concepts such as knowledge transfer,[6] knowledge utilization (effects) and knowledge exploitation (revenues),[7] valorisation or valuation, and productive interactions.[8][9][10][11] The use of terms usually differs between regions, while their meaning is largely the same. However, it is important to stress that, although proxy indicators that are used for measuring impact often refer to research dissemination, the latter is not impact as such. Impact must therefore refer to the changes we can see (demonstrate, measure, capture).[12] These changes can be reached through numerous pathways. A recent analysis of 6679 impact case studies showed that 3709 unique pathways could be identified.[13] Identifying pathways, however, does not shed light on the process that lies underneath. Scholars have often tried to capture these processes in a linear or non-linear way.[14]

In this chapter we will talk about both scientific and wider dissemination.

6.1 Dissemination plan

In Mingei the dissemination plan can be summarised as a 4-step methodology detailed below, which describes why, what, to whom & how to communicate and disseminate.

➜ **Step 1. Why to disseminate?**
In order for the project to have the biggest possible impact on stakeholders outside the project partnership, it is important to ensure the following:

- ✔ Project outputs can be fully exploited and used effectively.
- ✔ Knowledge produced is accessed, reused and made available as part of research and innovation.
- ✔ Knowledge and information gained through the project become available to all interested organizations.
- ✔ Elements of excellence of the project can be reused and replicated in other projects.
- ✔ The project reaches decision-makers to contribute to improving future policies
- ✔ The benefits that project outcomes will bring to society are well pointed out.

➜ Step 2. What to disseminate?
The following project information should be communicated to the relevant audience:

- ✔ Vision (objectives, strategic relevance) and key facts: messages will follow an evolution from the start of the project to the aftermath and therefore, they will be reviewed periodically in the course of the project.
- ✔ Events promotion and events results.
- ✔ Project outputs and outcomes.

➜ Step 3. To whom to disseminate?
These are your key audiences and stakeholders. Make a list and prioritise them, so it will be clear to all involved how important it will be for the project to successfully engage the various audiences.

➜ Step 4. How to disseminate
Choosing the right supports & channels: Your choice of dissemination channels will depend on various things, such as your key audiences' preferences, the kind of content you will be able to create, the nature of your project and the amount of time you have available.

✔ Guideline

Ensure that your project has a clear understanding of the dissemination targets and main dissemination channels.

For Mingei, all partners have formulated a dissemination strategy from the beginning of the project which was outlined both in the submitted version of the proposal and the Mingei's project Grant Agreement .

✔ Guideline

Promote individual partner strategies. Ensure that all partners have defined their dissemination targets based on their experience and expertise.

6.2 Increase access to research publication and results

For your project to have impact, it is important to make sure as many people as possible have access to its outcomes and outputs.

✔ Guideline

Increase access to research publications and results by providing and adopting open access.

In Mingei, the consortium endeavours to offer open access to its scientific results reported in publications, to the relevant scientific data, and to data generated throughout the project lifetime in its numerous technology evaluations and use case demonstrators. We consider that giving open access to scientific results, important breakthroughs can speed up knowledge transfer among European researchers and industries, boosting knowledge and competitiveness in Europe. Nevertheless, where exploitation purposes mandate tighter control, IPR will be appropriately handled according to the Consortium Agreement that was signed at the beginning of the project.

Where possible, aim for "Gold" open access and allocate budget for this activity. Wherever "gold" is not possible, "green" open access should be pursued. The target is to maximise the impact on scientific excellence in ways that include publication in open access yet highly appreciated journals as well as blogs and publicly available White Papers.

For depositing publications within a European context, consider selecting a repository from: OpenAIRE, ROAR and OpenDOAR. Also consider linking to research data, in cooperation with DataCite.

Measuring the impact of scientific research

There are various tools and methods with which to measure the impact of scientific research.

H-index: The h-index is an index to quantify an individual's scientific research output (J.E. Hirsch). There are several databases (Web of Science, Scopus, and Google Scholar) that will provide an h-index for an individual based on publications indexed in the tools.

Citation Analysis: The process whereby the impact or "quality" of an article is assessed by counting the number of times other authors mention it in their work.

Altmetrics: A quantitative measure of the quality and quantity of attention that a scholarly work is receiving through social media, citations, and article downloads.

The impact factor: A measure of the frequency in which the average article in a journal is cited in a particular year. Impact factors measure the impact of a journal, not the impact of individual articles.

7. Measuring the impact of exploitation activities

Exploitation of your project relates to the achieved excellence and the interest generated within the project in order to move forward to valorise the outcomes commercially.
To this end a number of guidelines can assist your project towards measuring the outcomes of your exploitation activities.

✔ Guideline

Ensure that your project has clearly identified which is the main outcome in terms of innovation. This will drive exploitation activities and is valuable for measuring impact.

As well as identifying your main innovation outcomes, identify the innovation potential of the project as a whole. Try to define alternative innovation potentials for your project as these may be targeted under different exploitation paths.

Mingei example

In Mingei the main outcome in terms of innovation is:
"Mingei will improve the quality and learning value of digital cultural resources through the introduction of an affordable, ready-to-use and cost effective theoretical and technological framework for collaborative social representation of a cultural element and the usage of outcomes to foster novel means of presentation and education. The adopted approach ensures that the results can be directly applied at a European-wide level and can be integrated in the cultural and creative sector with minimal effort."

7.1 Exploitation planning

Ensure that your project has formulated a clear exploitation strategy. This is essential for achieving impact and should be present before any form of impact assessment takes place.

✔ Guideline

Pursue gains from use and re-use of digital assets, for the economic, social, research and cultural impact for content-owning creative industries and cultural institutions.

In Mingei, a clear exploitation strategy has been formulated at the beginning of the project. The exploitation strategy will occur in the following steps:

- ✔ Create a plan for the exploitation strategy to identify innovative results of the project and classify them according to their commercial potential and impact.
- ✔ Conduct a market analysis to establish commercial possibilities of the systems developed starting by a market analysis survey. This market survey will be constantly updated during the course of the project, to cater for new technological evolution.
- ✔ Conduct a Cost Benefit Analysis (CBA) using a set of tools, such as questionnaires and presentation tools which will support and facilitate the progressive and iterative elaboration of the CBA.
- ✔ Conduct a Cost Effectiveness Analysis (CEA) following business-oriented assessment criteria
- ✔ Create a business plan to determine the necessary venture capitals, the business/sales strategy and the human resources needed for market deployment of the proposed project.

✔ Guideline

Be clear from the beginning of the project about what you are going to exploit and try to highlight the market potential of the product. The so called 'exploitable outcome' can be different for the various partners in the project. Ensure that all partners are aware of their exploitable outcomes. Ensure that each partner has a clear individual strategy towards exploitation.

The Europeana Impact Playbook[1] for Museums, Libraries, Archives and Galleries recommends using the following six steps in order to maximise the impact of a digital project.

- ✔ **Preparation:** team building, tool selection, and material preparation.
- ✔ **Kick-Off Workshop:** ensure that the work of internal stakeholders is aligned with the impact assessment strategy.
- ✔ **Change Pathway Workshop:** using the Empathy Map tool, the Value Lenses and Change Pathway Canvas to work out what value you deliver to your stakeholders.
- ✔ **Homework:** understanding the achieved impact, documentation using the Pathway Builder and validation using the Change Pathways.
- ✔ **Measurements Workshop:** through this workshop measured quantities in impact assessment are determined.
- ✔ **Tie Up the Loose Ends:** documentation of decisions you and measures you generated.

7.2 User experience evaluation and impact assessment

✔ Guideline

Harness the outcomes of user-based evaluation activities to measure the impact of the produced technology.

Having an iterative User Center Design approach throughout the duration of the project is important to assess the potential user value of the technologies developed in the project. The implementation approach that can be adopted by you project can be based on the best practices in User-Centred Design (UCD) as advocated by the ISO standard 13407. Using this methodology, all relevant stakeholder groups are intended to participate in all project phases, including staff from each partner organisation, as well as representatives of the stakeholder groups. This iterative nature of activities ensures that ongoing evaluation throughout the duration of the project will be conducted in all stages of design and development.

User experience evaluation covers a wide range measurements, including user satisfaction which is important to measure the potential impact of the produced technologies. When planning evaluation to introduce sessions that include both user observations and user feedback questionnaires.

✔ Guideline

Structure user feedback questionnaires so as to introduce measurable impact assessment metrics.

7.3 Case study: The (potential) improvement of the ability to digitize craft

We use the Mingei case study of the digitization of tangible heritage as an example to show how one could go about mapping the potential impact of a project.

Three-dimensional digitization has attracted wide interest in the documentation of Tangible Cultural Heritage, during the last two decades. This research has been funded by a series of EU funded projects EPOCH (266660), 3D COFORM (231809), PRESIOUS (600533), STORM (700191), DIGIFACT (625637), and recently 3D ICONS (297194). It is acknowledged that European interest progressed 3D digitisation as a form of documentation of tangible heritage "In 2004, [...] was clear at that time that there was a paucity of North American publications on the topic of 3D scanning for the heritage."

The development of technologies for the capture of three-dimensional artefacts and monuments increased the proliferation of the documentation of geometrical and structural information. In the last 15 years, several 3D scanning modalities have been developed, which are distinguished as to whether they require contact or not, with the scanned surfaces and objects. Contact systems are not widespread in the cultural heritage domain, due to the possible fragility of artefacts. Non-contact scanning modalities are widely employed in the cultural heritage domain, as they use light as the operating principle of the sensor.

For tangible cultural heritage, the maturity of the digitisation resulted in direct benefits to stakeholders. Global trends in valorisation of intangible cultural heritage indicate that supporting and streamlining digital representation of this type of heritage assists the identified growth and is recommended by the UNWTO. Heritage crafts are a unique combination of tangible and intangible heritage.

Technologies for storytelling and mobile & remote accessibility empower outreach to wider audiences. Educational tools contribute in the preservation and long-term sustainability of heritage craft economies. The economic resource due to heritage and re-use of digital assets is a primary motivator and source of funding for the preservation of cultural heritage. In accordance, heritage crafts are to be positively affected by the use of digital documentation, representation, and presentation.

As such it is expected that the ability to digitize craft will contribute to the preservation of craft heritage and the sustainability of heritage craft economy.

The possibility of digitising craft exhibits:

- ✔ Social impact as it contributes to the preservation of a society's craft heritage and to social cohesion.
- ✔ Economic impact due to the improvement of craft heritage products and support of cultural tourism.
- ✔ Innovate, as due to the Mingei project outcomes heritage crafts are represented and presented in a comprehensive way.

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Appendix 1: Stakeholder definition, prioritisation and analysis for Mingei

Introduction

The Mingei consortium partners have identified a list of 93 stakeholders and have scored them regarding their potential impact, influence and commitment to the project. The relevance of these stakeholders is not the same for all activities. Some stakeholders are important for dissemination and communication activities. Others are important sources of knowledge and experience that need to be involved in content development. A third group could be described as 'potential future users' of the Mingei tools.

These different roles stakeholders (can) have are important to take into consideration when developing activities for WP7 – Maximizing Impact: Evaluation and Impact Assessment. The impact analysis for WP7 will focus on three different aspects:

- ➜ **Relationships with stakeholders:** building new networks, working with local craft communities.
- ➜ **Skills development:** using new tools, identifying and exploring new creative opportunities and craft areas.
- ➜ **Strategizing:** developing a mid-term and long-term strategy to ensure future impact and encourage legacy.

These three areas of focus each engage different stakeholder groups. These relationships can be mapped as follows:

Relationships with stakeholders: building new networks, working with local craft communities – Stakeholders for this piece of research are primarily sources of knowledge and experience, they might also be future users of Mingei products.

Skills development: using new tools, identifying and exploring new creative opportunities and craft areas – Stakeholders are primarily potential future users, they might also be sources of knowledge and experience.

Strategizing: developing a mid-term and long-term strategy to ensure future impact and encourage legacy – Stakeholders are parties who are relevant for dissemination and communication activities.

To provide a manageable context for the impact assessment of Mingei, all three heritage partners have been asked to identify their top-three of stakeholders they deem important for their organisation in relation to Mingei.

Conservatoire National des Arts et Métiers (CNAM)

- **Visitors and tourists (children and family)**
  The visitors and tourists of the Musée des arts et métiers are the most important stakeholder for the Glass Pilot. The museum is part of a research and teaching institution (Cnam) and is mostly an educational museum which missions are the conservation and diffusion of the scientific and technological culture. The museum receives about 250 000 visitors each year with a large majority of school visitors, children and family. This group of stakeholders could be seen as future user of the Mingei tool.
- **Craft enthusiasts (Louis Luc Associations for the History of Choisy-le-Roi and Institut National des Métiers d'Art)**
  The Louis Luc Associations for the History of Choisy-le-Roi helps to better understand the rich industrial heritage of the Glass factory of Choisy-le-Roi in editing a "Journal about glass history" in collaboration with previous glassmaker of the glass factory. Ms. Danielle Velde, the historian who worked on Georges Bontemps' biography, is a member of this association and with the other members will provide project partners with important contextual knowledge. The Institut National des Métiers d'Art (INMA) is a French state institution which promote and support craft knowledge and activities. In January 2019, INMA filed the request to inscribe glass technical gesture in the Unesco intangible heritage list. Flore Leclercq who wrote this request and conduct an inquiry about glass craft in France will provide project partners about knowledge and feedback about the glass pilot.
- **Craft educators and students (Cerfav)**
  The Cerfav (European Research and Educational Center for Glass Craft) has been founded in 1991 at Vannes-le-Châtel in the east of France. Cerfav is the leading Glass School in France and its four main objectives are Innovation and Research, Creation, Education and Development of glass craft. Working closely with its glass master, this stakeholder will be first a source of knowledge and experiment. As an educational site, it will also be a partner to experiment Mingei tools as a source of knowledge transmission.

Pireus Bank Group Cultural Foundation (PIOP)

The key stakeholders for PIOP are identified as being the following:

- **Chios Gum Mastic Growers Association**
  The Chios Gum Mastic Growers Association is the most important stakeholder for the mastic pilot. The Association was founded in 1938 and includes 21 mastic producer cooperatives from the villages of southern Chios. The Association is the only direct recipient of the annual mastiha production, as well as the organization that protects the interests of producers. For UNESCO, the Association is considered to be the body of "knowledge of traditional mastic cultivation in Chios", as it represents all the mastic pro-

ducers, the people who hold the tradition alive. It is also the first producer and marketer of mastic products. As such, the Chios Gum Mastic Growers Association can primarily be identified as a stakeholder that is a source of knowledge and experience.

➜ **Mr. Manolis Zafeiris**
Mr. Zafeiris is the most important cultivator of mastic on Chios. He will help the consortium to understand the cultivation of mastic and provide project partners with us all the necessary information about trees and the product. Mr. Zafeiris is primarily a source of knowledge and experience.

➜ **Masticulture**
Masticulture is a private enterprise based in the village of Mesta, Chios. It is the first and only tourist business specializing in ecotourism on the island. It covers a wide range of activities that involve the environment (natural and man-made), people, businesses and associations, with the tradition and culture of Chios. Masticulture organizes ecotourism travel packages that combine hospitality and alternative outdoor activities with everything that compose the culture of the region: manners and customs, folk arts, agricultural and agricultural production, architecture, etc. It will give us valuable information about the future commercial use of the project's product. Masticulture will primarily represent potential future users of the Mingei product.

Haus der Seidenkultur (HdS)

➜ **The Association of Friends of the Haus de Seidenkultur**
This Association consists of people who are near to the museum. Some of them are craftspeople responsible for demonstrating the various processes related to the design and production of jacquard silks. Others are craft enthusiasts, holding a wealth of knowledge about the history of silk weaving in Krefeld, as well as the various processes. As such this group of stakeholders can primarily be seen as sources of knowledge and experience, although they might also become users of the Mingei tools.

➜ **Craft enthusiasts**
Various online lists of craft communities have been identified.[1] The next step will be to establish contact with a small number of 'bridge persons' that could help the team to connect with the community. This community can primarily be described as potential future users of the Mingei tools.

➜ **Creative Industries**
The Haus der Seidenkultur is already in contact with a local weaving technology museum, TextilTechnikum, not far from Krefeld. In addition, the Jacquard by Google project could be an interesting stakeholder, provided they are interested in this role and supporting the Mingei project. Lastly, an online search has resulted in the identification of various potential stakeholders that are part of the creative industries. Further research and outreach will be carried out in this field. The creative industries could be seen as potential users of the Mingei tools.

References

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Appendix 2: Detailed planning of WP7 activities and reporting

Introduction

The work carried out as part of the impact assessment of Mingei (WP7) will focus on the following three topics:

- ➜ **Relationships with stakeholders:** building new networks, working with local craft communities.
- ➜ **Skills development:** using new tools, identifying and exploring new creative opportunities and craft areas.
- ➜ **Strategizing:** developing a mid-term and long-term strategy to ensure future impact and encourage legacy.

The topics mentioned above will be studied at different times and using different methods. This planning document describes the different phases of research that will together form the impact assessment for Mingei. In essence, WP7 research can be divided in two phases, each bookended by an iteration of a comparative study, which will be carried out thrice: as a baseline study, a mid-term study and a final-phase study. Both of the two larger research phases, which align with the overall planning and progress of the project, can be subdivided in smaller studies, each focusing on one of the three research topics listed above. Below, we will describe the three research topics in more detail and place them within the research timeframe. After this, will give a visual representation of the timeframe, followed by a more detailed planning of all WP7 work that is to be carried out.

Relationships with stakeholders

The research topic focusing on the relationships with stakeholders will be closely aligned with the work conducted in WP 1 (co-creation) in two ways:

- ➜ The research developed in WP7 regarding the relationships with stakeholders will make use of the outcomes of WP1 activities, such as stakeholder definitions, prioritisations and collaborations.
- ➜ The outcomes of WP7 research can function as a check for colleagues developing the WP1 activities: Is the information that is fed back by pilot partners as part of WP7 reporting in line with what is/should be happening in WP1?

This research will primarily take place in the first phase of WP7 (M11 to M22), when stakeholder input can still realistically be taken on board in the development of tools and platform, if desired by the project partners.

Pilot partners will be guided to use Team Based Enquiry (TBI) to question and improve their stakeholder relations to benefit the Mingei project. This might also involve stakeholders' needs and desires related to informal learning opportunities. When researching these learning opportunities, partners will use the [Generic Learning Outcomes]() (GLO) framework to describe (desired) learning outcomes and their impact. For a description of GLOs, see 'An introduction to Generic Learning Outcomes' as part of 'Measuring the impact of digital heritage projects – a Mingei approach'.

WP7 reporting will focus on the impact the Mingei platform has (had) on the type of relationships the pilot partners have with new and existing stakeholders.

Skills development

The second research phase for WP7, starting at M23, will primarily focus on using new (digital) tools, and identifying and exploring new creative opportunities and craft areas. At this time a first version of the Mingei authoring platform will be available, which means pilot partners can engage in using this platform and develop questions around its use and the kinds of learning that can take place through the platform (either related to themselves or their stakeholders). In this phase, the use of GLOs will play a central role in identifying and measuring impact.

The work carried out in this phase is intended to feed into WP3 (examine) and WP6 (experience, learn & express). This second phase of TBI cycles will end in M28.

WP7 reporting will focus on the ways in which pilot partners and their stakeholders can positively impact the development of the Mingei platform and tools, with the potential to improve the impact of the platform as a whole.

Strategizing

With regards to developing a mid-term and long-term strategy to ensure future impact and encourage legacy, work will focus on three topics: communication, dissemination and exploitation.

Communication and Impact

This research topic is focusing on the communication activities of Mingei and includes the following:

- ➔ Selecting the appropriate tools to measure online success and engagement. The selection and setup of the appropriate tools will happen during M1-M12 in the context of WP8. Measuring of online success and engagement will start at M12 and will last until the end of the project and will be conducted in the context of WP7.
- ➔ Measure Social Media Engagement. Social media channels are setup in M3 in the context of WP8. Measuring of impact occurs in WP7 from M3-M36.
- ➔ Measuring impact of outreach events including media outreach. Information regarding the outreach activities of Mingei is gathered in WP8. WP7 is responsible with the assessment of the impact of these activities throughout the duration of the project

- Measuring impact of audience development. This activity is fed by WP8 and the analysis is conducted in WP7.

Impact of Dissemination

This research topic regards the impact of dissemination. All partners will contribute to dissemination activities as part of their effort in the project and reporting will be produced by WP8. The Impact of the Mingei dissemination plan will be measured in WP7 as part of the effort of Mingei to increase access to research publications and its impact to scientific research. This will be done from M12 to M36 taking into account the statistics of open access repositories, social platforms of researchers (e.g. ResearchGate) and traditional methods and tools such as h-Index, citation analysis, etc.

Measuring the impact of exploitation activities

This research topic will focus on three directions:

- Exploitation planning. WP7 will analyse the outcomes of WP8 exploitation activities in terms of impact. KPIs will be measured such as potential interest of customers, early adopters of Mingei technologies, expression of interest from third parties, etc.
- User experience evaluation and impact assessment. WP7 will harmonise the evaluation activities conducted in WP6 with this WP in order to get valuable input in terms of technology impact assessment. It is foreseen that a section of the post-evaluation questionnaire will be dedicated to impact assessment of the produced technologies and experiences. This will have done in parallel with the user based evaluation activities of the project.
- Case study: The (potential) improvement of the ability to digitize craft. The Improvement of the ability of organisations and end user communities to digitise HC is considered one of the most Important contributions of the project. To this end in WP7 an analysis of the pre and post Mingei landscape will be conducted in order to measure the increase in efficiency both in terms of time needed and in terms of the overall cost and quality of digitisation. This analysis will happen between M24 and M36.

Comparative study

Whereas the two research phases will be an ongoing TBI-based reflection on, and intended improvement of the impact of the Mingei project, a more extensive study will be carried out thrice over the course of the project to better understand the impact Mingei has (had) on the pilot partners and their stakeholders. These studies will be carried out in M8, M22 and M27. The focus of these baseline studies will be:

- Expectations expressed by pilot partners and their stakeholders related to the Mingei project and an analysis to the extend at which these expectations were met.
- (Expectations of) skills gained by pilot partners and their stakeholders.

- ➜ The extent to which the project encourages pilot partners and their stakeholders to explore new creative opportunities and craft areas.

Planning and reporting

The chart below indicates how the multiple WP7 activities will be divided over time, which of the three identified fields of study they relate to, how and when they will be reported on, and who will be leading the effort.

Fields of study:

- ➜ Relationships of heritage partners with stakeholders: building new networks, working with local craft communities.
- ➜ Skills development amongst heritage partners: using new tools, identifying and exploring new creative opportunities and craft areas.
- ➜ Strategizing: developing a mid-term and long-term strategy to ensure future impact and encourage legacy through awareness, use and academic research.

REPORTING: D7.1 – M9		
2. Expectations & skills: Baseline study		
1 & 2. TBI Cycles phase 1.	3. Digitizing Craft & Exploitation	3. Dissemination, Outreach & Communication
2. Expectations & skills: Mid-term study		
REPORTING : D7.2 – M24		
1 & 2. TBI Cycles phase 2.	3. Digitizing Craft & Exploitation	3. Dissemination, Outreach & Communication
2. Expectations & skills: Final phase of project study		
REPORTING: D7.3 – M30		

Table 1. Overview of WP7 planning. Source: Internal planning document. [1]

Following on from this chart is this detailed planning:

M8:	Baseline study related to expectations and skills carried out by Waag.
M9:	Deliver D7.1
M9:	Impact workshop during consortium meeting, followed by reflection and feedback from partners.
M9:	Presentation of results of baseline study during consortium meeting.
M11:	Pilot partners start their first TBI cycle.

M13:	Pilot partners report on outcomes of first TBI cycle.
M13:	FORTH reports on first dissemination, outreach and communication impact.
M14:	Pilot partners reflect and receive feedback on their first TBI cycle.
M14 – M22:	Ongoing support for pilot partners during their first phase of TBI cycles with bi-weekly skype calls.
M19 – M21:	Analysing best practices from other projects or organisations within Europe.
M22:	Mid-term study as part of comparative study.
M22 – M23:	Mid-term analysis, gathering of findings and writing D7.2.
M23:	Presentation of results of mid-term study during consortium meeting. (Timing dependent on consortium meeting)
M23:	Reporting on mid-term dissemination, outreach and communication impact. (Timing dependent on consortium meeting)
M23:	Reporting on first finding related to the (potential) improvement of the ability to digitize craft and exploitation.
M24:	Deliver D7.2
M23 – M28:	Ongoing support for pilot partners during their second phase of TBI cycles with bi-weekly skype calls.
M24 – M27:	Develop full analysis of impact data collected throughout the project
M27:	Final phase of comparative study, related to expectation and skills.
M27 – M29:	Final data analysis and writing of D7.3.
M30:	Deliver D7.3

References

[1] Van der Vaart, M.J. (2019) Internal planning document, Mingei project.

Appendix 3: Innovation, social, and scientific impact of Mingei

Mingei provides technologies that will provide more and better representation and preservation of cultural heritage, in the domain of heritage crafts.

- Better regards a semantic representation that can represent, present. and preserve the wide variability of information types, required to record craft dimensions.
- More regards the systematic approach on streamlining the digitisation process and proliferation of the Mingei digital curation tools, so that more instances of CH, and HC in particular, can be digitised.

Heritage Crafts offer a very rich opportunity to study Europe's cultural heritage, as they are historically related to industrial revolution, economic and social change, as well as European cultural industries and artistic movements. Many heritage crafts have deep historical roots, relevant to the formation and structure of urban and rural societies in Europe. The change that Mingei will provide is the introduction of a systematic approach for the representation and preservation of pertinent knowledge, based on a semantic representation of multimedia, as well as, historical and contextual data. Up to now, most preservation of crafts has taken the form of (descriptive) literature and online repositories, such as that of UNESCO. However, few crafts have been preserved and they do not represent the rich diversity of crafts that exist in Europe. More complete representation also means capturing the diversity within a craft, by recording more craft instances, rather than one 'ideal' representation of the craft, before they become extinct. Preservation of cultural heritage for future generations is incredibly valuable to society.

Use Cases

Three use cases are to be studied in the three pilots of the Mingei project.

Glassmaking brings together artistic skill with a thorough technical and sensory understanding of the material. With a set of simple tools and processes, glassblowers are able to produce an almost endless variation of objects, from the decorative and fragile to the robust and functional. Glassmaking and glassblowing exhibit a range of expressions from handicraft to industrial, while it has been globally practiced for centuries. This pilot offers an excellent opportunity to produce and test meaningful tools for capturing the gestures of the contemporary creators of glass objects (tools, light machinery and glassware artefacts, etc.) and to investigate "reverse engineering" techniques for "re-inventing the gestures" of the creators of rare classical objects, thus integrating them into motion-driven narratives for its visitors, in a mixed reality environment.

Silk weaving for ecclesiastical textile production provides the case of a craft at risk of becoming extinct. During this pilot, partners will explore the challenges and requirements related to an industrialised craft that takes place in a (small) factory setting. Some of the expected points of attention will be the challenge of dealing with a wide variety of information, from written archival sources to fragile textiles and large looms; the use of machinery; capturing the locality of a craft strongly associated with Krefeld, yet also practiced elsewhere in slightly different ways; recording the activity and noise associated with the craft; the role of gender in silk weaving.

The cultivation of mastic at has a strong geographical link as it is a product from the mastic tree which exclusively grows in the south-west of Chios. This heritage craft related to mastic is therefore highly localised (indigenous craft) and part of the fabric of local life. The 24 villages from where mastíha is harvested are known as Mastihochoria, or Mastic Villages, their name being an indication of the importance of mastíha for the region. It is expected that the pilot at the Chios Mastic Museum will explore the impact of hyper-locality, as well as the challenges related to capturing a craft that is highly interwoven with the everyday life of a region. In addition, this pilot offers the possibility of exploring unique traits related to an outdoors craft that relies on cottage industry, but is also centralised and organised through the Association of Mastic Producers of Chios. The production of mastíha, an ancestral practice, unaltered over time, is a family occupation that requires laborious care throughout the year, and in which men and women of all ages participate on equal terms. Tasks are divided across genders and ages. Men take care of plant fertilisation, pruning, as well as soil and plant preparation. Women (and, in the past, children too) harvest and prepare the raw product, while older members of the community are responsible for transmitting know-how down the generations. The culture of mastíha represents a comprehensive social event, around which networks of alliances and mutual help have been established in society. Traditions and legends survive in the vernacular language, some of religious nature, such as the one about the tree that shed tears when seeing the death of Saint Isidore. Those from this culture see Mastic as part of their identity, which drives their feeling of belonging to the community. The know-how for growing mastíha follows certain rules and traditional characteristics, which ensure its authenticity, while also promoting improvisation and individuality. The craft and local life still witness age-old traditions related to the production of mastíha, even if the cultivation and application of mastíha are constantly subject to innovation.

Measuring long term impact on cultural history and cultural tourism

For practical reasons, the long term-impact of digital heritage projects is often difficult to measure. The Mingei project is no exception. However, such impact may be predicted by the adoption of the project outcomes by cultural stakeholders, and the interest expressed in the potential of the project. For Mingei, such stakeholders are cultural heritage institutions, heritage craft communities and enthusiasts, local cultural heritage associations, the scientific community, and craft educational organisations.

Measurable results include:

- ✔ Scientific impact
- ✔ Number of tool adoptions by stakeholders
- ✔ Number of digital assets integrated
- ✔ Number of new digitisations
- ✔ Number of heritage crafts digitised

- ✔ Number of adopted or curated content and digital assets by international repositories
- ✔ Number of contributions to standards
- ✔ Contribution to public knowledge (i.e. number of Wikipedia entries or edits)

Enhancement of cultural history and cultural tourism

Mingei will create educational and thematic tourism experiences that enhance the presentation of cultural history and cultural tourism. In this way it will enhance the cultural tourism product and support heritage craft preservation and presentation. For this reason, Mingei will provide (a) research tools to represent, associate and access digital assets for the documentation of cultural history, (b) captivating, collective, and experiential cultural tourism experiences that promote cultural history, and (c) interactive educational experiences that will enhance tourism services and can be used to prolong visit duration by facilitating heritage craft training workshops.

The change that will be introduced is that digitised crafts encompass a wide collection of heterogeneous digital assets, from historical information to visualisations of practitioner skills, which are presented together in a meaningful manner.
Measurable results include the:

- ➜ Digitisations and publication of more HCs using the Mingei protocol and tools
- ➜ Exhibitions created using Mingei created content or tools
- ➜ Adoption of HC digitisations by international repositories
- ➜ Contribution to standards
- ➜ Contribution to public knowledge
- ➜ Number of introductory experiences on HCs
- ➜ Visitors reached by project outcomes in pilots
- ➜ CHIs interested in the Mingei approach
- ➜ Interest and collaborations with CHIs and tourism industry

Re-use of digital assets

CHIs and CCIs will extend the scope of their presentations and museum education programmes with new content, based on comprehensive HC presentations and educational experiences. New ways of appreciating and experiencing HCs will be an important asset, for reaching new collocated and distant audiences. Storytelling and educational experiences will enhance visitor attractions and services. In addition, the semantic HC representation will provide a valuable content resource of new products and presentation of stories in CH.

Storytelling and educational tools contribute to the preservation of crafts by rising of interest and awareness in HC safeguarding. In terms of long term sustainability of CHI and CCI, educational tools of HC will pave the way of attracting prospective apprentices to HCs. The semantic repository organisation will facilitate creation of educational and edutainment services focused on user type (i.e. school visits, practitioner research, or tourism promotion). Digital assets will be re-used by HC communities for encouraging acquaintance with HCs, promotion of HC and region, demonstrating authenticity, and finding information on the conservation of products and artefacts

The change that Mingei introduces is a technical way to re-use existing curated material and digitisations in combination with contextual information. The re-used content will be transformed in the form of narratives and visualisations.
Measurable results:

- ➜ Number of re-used assets
- ➜ Interest and collaborations with CHIs and tourism industry