inDICEs

Measuring the Impact of Digital Culture

Deliverable 4.1

User scenarios and wireframes report

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D4.1 – User scenarios and wireframes report

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Glossary

Assembly	An assembly is a type of digital space for engagement on inDICEs Participatory Space. Assemblies can support multiple types of participatory activities. However, they are more akin to ongoing discussions around a thematic topic and do not have marked phases. Assemblies roughly translated to the inDICEs context can be described as working groups.
Decidim	A free open source participatory platform used to build inDICEs Participatory Space.
Hypothesis	A proposal that explains or provides solutions or scenarios to broad issues and obstacles faced when working within the cultural heritage sector. The use of a hypothesis has been applied when envisioning digital or platform based solutions for future users as well as to create research scenarios where the platform can be used as a pragmatic and convenient tool. In the latter a hypothesis was used as an exercise with participants various times to determine the direction of the functionality of the Open Observatory Platform.
Persona	Personas are a means to better understand users and are created to understand behavior especially as it pertains to a user's emotional fluctuations when using a product. Personas are a description of characteristics, needs, pains, and rewards of a unique user that should enable designers to empathize with those they are designing for or to better predict their reactions to design that is tailored to them. Personas are a powerful tool that can be used throughout the design process that summarizes research done through surveys and workshops conducted.
Process	A process is a sequence of participatory activities (e.g. first filling out a survey, then making proposals, discussing them in face-to-face or virtual meetings, and finally prioritizing them) with the aim of defining and making a decision on a specific topic. This process is then defined by a number of phases.
User Journey	Or often called a 'user flow' is a diagram that shows the different stages of a user's journey. A user journey can detail how a user behaves during each of these stages as they move towards completing a task. Using the scenarios from each of the personas, various user journeys were made to then define what important functionalities, buttons, options, etc. would be necessary to include within the platform's design.
User Scenario	They are an in-depth dive into a scenario a persona may experience in context of their interaction with a product. This provides a rich description that captures research and insights into user behavior that can be thought out from some different perspectives. It should detail how the user feels, channels the use, and who or what is important to them at each stage to facilitate design decisions.

Visual Data Analytics	Broadly refers to the interaction with visual interfaces to support analysis or analytical reasoning. Data is constantly generated at an incredible rate and is often complex to untangle in a more raw state. Visual data analytics allow people to process this data more quickly and ideally with greater command by having the data interpreted as visuals whether graphs, diagrams, or schemas.

1 Executive Summary

The objective of this deliverable is to describe the research process and the resulting user scenarios that will be utilized as tools in the design and development of the inDICEs Open Observatory Platform. These processes have so far ranged in activities and research methodologies that allow for stakeholders to identify user needs and functional requirements that have then been translated into technical specifications, wireframes, and design schemes in terms of data architecture. This deliverable draws from the activities carried out during the first 10 months of the inDICEs project within Work Package 4 (WP4) by all consortium partners and describes the results achieved by this work package.

The deliverable also includes a set of wireframes and prototypes providing a preliminary illustration of the different functionalities of the platform. These have been presented and discussed with the project partners, who represent the platform's end users, and incorporate the initial feedback received by them.

To define these requirements, Platoniq has been designing and leading online Co-creation workshops to generate user scenarios based on direct input from participants which have been used for analysing and prioritizing user needs. Applying a user-centered design approach, these user stories and wireframes have been and will be iteratively reviewed by the stakeholders so that the final product incorporates their feedback and optimizes the user experience.

Please note that the first iteration of the inDICEs Participatory Space (as described in T4.2) is up and running since M4 of the project which is much earlier than scheduled (M12) due to the COVID-19 lockdown situation. An extensive schedule of activities has been migrated online. In addition, these activities now have a framework on the platform and all insights included in this deliverable have been generated and documented within this online space (see section 3.1.2).

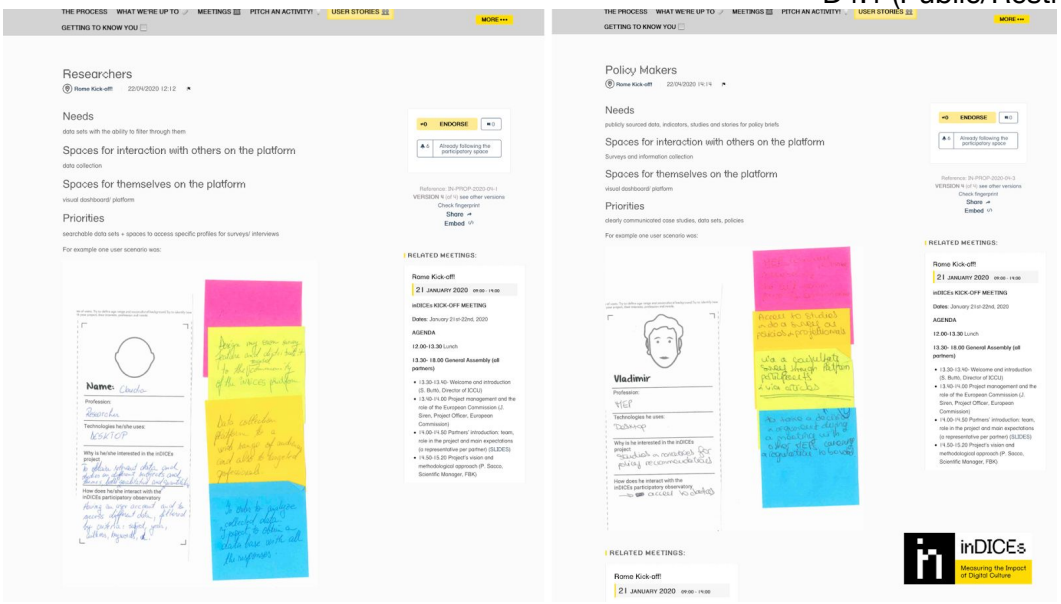


figure 1 is a screenshot of the synthesis of the results from the Rome workshop on the Decidim Platform

2 Introduction and Objectives of the work

2.1 Scope and Objectives: From User stories to Co-creating the Open Observatory Platform's Ethical and Data Compass

Within this deliverable there will be technical references to an Open Observatory, Participatory Space, and a Visual Analytics Dashboard. To provide context each of these components are envisioned to exist on one integrated digital space to which this report will refer to as the InDICEs Open Observatory Platform. While the report may refer to each component individually, the three form different facets of one whole. The inDICEs Open Observatory Platform aims at establishing a permanent participatory and monitoring platform to aggregate, manage and retrieve the collected open data and methodological tools, and to make them available to different networks and stakeholders. It will serve third-party interests through a REST API framework and a portfolio of embeddable data visualisation modules. The term Participatory Space refers to the inDICEs Decidim platform that hosts participation, engagement and community creation ranging from workshops to surveys. Finally, the Visual Analytics Dashboard refers to the technical integration and creation of a dashboard that has been envisioned as an additional tool for administrators and participants in the Participatory Space.

The main scope of the deliverable is to provide a coherent, user-friendly and technically concise description of the inDICEs Open Observatory Platform capabilities. To achieve this, following sub-objectives addressed:

- Defining the user profiles and roles that the platform will support, indicating the capacities, and functionalities encompassed by each profile.
- Describing a set of key personas that are expected to use the system and based on their profile and the feedback that has been received from intended users up to this point, define a set of scenarios in a story format detailing possible usages of the platform.
- Defining and presenting in a well-structured manner a rich set of user journeys that describe step-by-step the most typical activities that will be performed by the end users of the platform. Given that the set of user journeys is quite extensive, grouping has been applied in an effort to make the different functionalities enabled by the platform more comprehensive.
- Associating the functionalities described in the different user journeys with the key building blocks of the User Interaction (UI layer), as described in this deliverable.
- Establishing a common roadmap and help define the requirements of the Open Observatory technological platform architecture and contents.

As described in the DoA, the inDICEs design process follows an agile and user-centred methodology. In practice, the following sources of information have been considered to derive the user scenarios, user journeys and initial wireframes and prototypes:

1. User Scenarios and user requirements
2. Commitments and specifications included in the DoA and previous deliverables (D7.1 Requirements No.1: ethics principles and methodology and D7.2 Requirements No.2: informed consent procedures and information sheet).
3. Feedback on the wireframes provided by consortium partners, notably the participants representing the end users, in the context of the Technology integration and the Hypothesis Assemblies
4. Decidim specifications (Decidim is the piece of technology Platoniq is building the inDICEs Participatory Space upon, see section 5.1)

The other scope of this deliverable is creating a coherent and collective vision of the inDICEs Open Observatory within the consortium members.

In creating the inDICEs Open Observatory Platform, beyond user stories, it was important to ask 'What is an Open Observatory?' Through combining a co-creation process and drawing upon partner experiences to create an abstract to try and answer that question that is further explored and developed in **Chapter 6 Envisioning the inDICEs Open Observatory** and **Chapter 7 Technology and Data Integration.**

An observatory is a space with the infrastructure to study data that records natural phenomena. An online participatory observatory at its best should give insight into agency within a space where participants are free to collaborate, create, and break in ways that gatekeepers to democratic processes have yet to envision.

As popular demands for transparency and accountability demonstrate there are ways to shift paradigms around how agency by participants can work within society. The addition of technology within society has demonstrated that power can be shifted and new identities can thrive with the existence of digital space. While the Open Observatory Platform should demonstrate new ways to innovate democratic and participatory practices and methods, it will also be presented with the very real challenges present in online platforms such as rising hate speech and misinformation. In summary, these phenomena raise urgent and prevalent questions as to how past paradigms and systemic inequalities can be transformed more rapidly and popular movements taken further to enable more open access and above all agency to participants and accountability within governance.

How can data inform communities?

The world has become digitised from interpersonal social interaction to democratic practices. The inDICEs Open Observatory within this framework seeks to enable an environment for sharing, collaboration, archiving as well as a space to better understand the social and economic impact of digitisation.

Why - Technology has profoundly changed how museums, artists, and people interact with cultural institutions and culture. However, many technological advances in sharing and communications have been created by and for private interests. While the aim of inDICEs does not directly address the lack of public space in tech, inDICEs inherently responds to this question using open source software, generating data policies that are oriented towards user protection, and having at its core the creation of open access to resources and spaces for collaboration rather than monetization.

How - The design of the open observatory will be through the collaboration of various actors and organizations within the cultural heritage (CH) sector, to inform the function, usability, and priorities of different components and features. Stakeholders and partners have been present together at various workshops to co-create together with user oriented design methods, case studies, interviews, and facilitated group discussion to gain insight into the needs, preferences, and overarching themes and issues within the CH community.

What - The inDICEs Open Observatory Platform has been created within the framework as a public-commons that is free, open, open source, inclusive and with the digital infrastructure for participatory research. Within the Open Observatory, a *Participatory Space* has been created to facilitate creation of a community amongst organizations and participants, and engage stakeholders to actively participate in online activities by contributing to surveys, debates, collaborations that innovate existing practices and priorities of CHIs online and offline. Ultimately the Observatory and Participatory Space will serve three functions: facilitating different types of individuals seeking information and visual data, a toolbox with recommendations, models and references, and finally a space to collaborate and engage with the CH community.

To create the first iteration of the Open Observatory as well as resolve the needs for stakeholder collaboration online (due to the pandemic) a series of assemblies and processes were set-up with various activities. Please see section 3.1.2 Migrating the co-creation workshop online: Digital Processes and Relation to other WPs for further information.

2.2 Structure of the deliverable

This deliverable is structured to first give a narrative explanation of the co-creation and research process that is then followed by the technical changes and work that were parallel. Beginning linearly Chapter 2 covers the creation of the co-creation process to design the Open Observatory Platform and digitisation of the co-creation process. Due to the pandemic, several in person workshop activities were migrated online. However, this encompasses not just video calls and workshops but also online engagement activities and the structure of the platform. Chapter 3 delves into the inDICEs Participatory Space and activities like proposal creation or surveys that were interwoven to contribute to both the co-creation process and on board partners to the Decidim infrastructure that serves as the basis for the Open Observatory Platform.

Chapter 4 gives a narrative description of the process of the user experience research conducted that would then determine the future design of the Open Observatory Platform. Chapter 5 describes the Decidim technology that serves as a basis for the platform. This description explains the logic of choosing Decidim and the basics of the features and functions of this platform.

Then, in addition to user experience research several other digital observatories were investigated to help benchmark or contextualize how digital observatories function, to whom they cater to and how detailed in Chapter 6. Next, the deliverable gives a more technical explanation of changes and technological integration of the research on to the inDICEs Open Observatory Platform (Chapter 7)

Finally, Chapter 8 details conclusions and next steps in the design and co-creation of the Open Observatory Platform

3 Methodology. Co-Creation through online assemblies

The methodology to collaborate, co-create, gather, and evaluate findings has in large taken place through online workshops and assembly[1] meetings involving all Partners. This chapter describes the structure, activities, and outputs of the aforementioned online activities and community engagement.

3.1 Co-creation Workshop

3.1.1 From Rome to Lockdown

In January 2020 inDICEs partners came together for a kickoff meeting to begin the groundwork for a co-created Observatory. Several workshops were held to assess the sentiments, ideas, and

[1] Assemblies defined in 3.1.2

preferences of the partners involved, including creating profiles of actors and organizations in order to have a more nuanced understanding of their needs. For example, an obvious conclusion from the data is the need for more streamlined access to data and fact sheets in order to benchmark progress within CHIs or provide evidence-based recommendations for policy makers. While the internet has the potential to be a place of open access to limitless information, a need to have more curated and applicable information and data was quickly identified. Thus began the process of identifying users and the functionalities that would be most useful to them in the Participatory Space.

With the phenomena of COVID-19 much of the activities that would have taken place in person have to be migrated and negotiated online which presents new challenges and opportunities. COVID-19 has demanded the creation of new ways to work online and also an urgency in terms of organizing and reorienting to continue the work that started in January 2020. Moreover, much of these new circumstances have also required different approaches to work and care. To capture these conversations and ideas, the COVID-19 Assembly was created on the Open Observatory Participatory Space to generate ideas, conversations, and collaborations that might arise.

Following the Rome Kick-off for the observatory co-design, there have been online meetings with work package leaders, WP1 and the tech partners to gather ideas and momentum for the observatory creation.

Following these meetings, an extensive schedule of co-creation activities using the Open Observatory Participatory Space was created for the next six months to support the development of the observatory and create online activities as a result of COVID-19. Workshop activities for co-creation and co-design that otherwise would have happened during in person have been migrated as online activities. Additionally, the framework for the Participatory Space has been created much earlier than scheduled in M4 of the project timeline to avoid any risks that might further result from COVID-19.

3.1.2 Migrating the co-creation workshop online: Digital Processes and Relation to other WPs

The different workshop spaces and work areas (defined as Processes) have been created with an inclusive approach and in anticipation of a diverse range of actors, organizations and communities.

In anticipation of the life of the platform extending far beyond the normal parameters of an EU project, the work packages and tasks were restructured on the platform more as digital participatory processes. For the purpose of creating a digital platform for participant engagement and collaboration Decidim has been ideal. Decidim is the open source platform that serves as the basis of the Participatory Open Observatory. Decidim comes with a set of functions and structure that was created for practical needs within a community or organization whose decision making is based on a democratic structure and accountability. The tasks in the DOW (document of work) for inDICEs concerning the co-creation process were translated into digital participatory processes that also included new jargon and different modes of meetings and working groups for all the partners involved. To start the co-creation workshops a series of ‘processes’ and ‘assemblies’ were created.

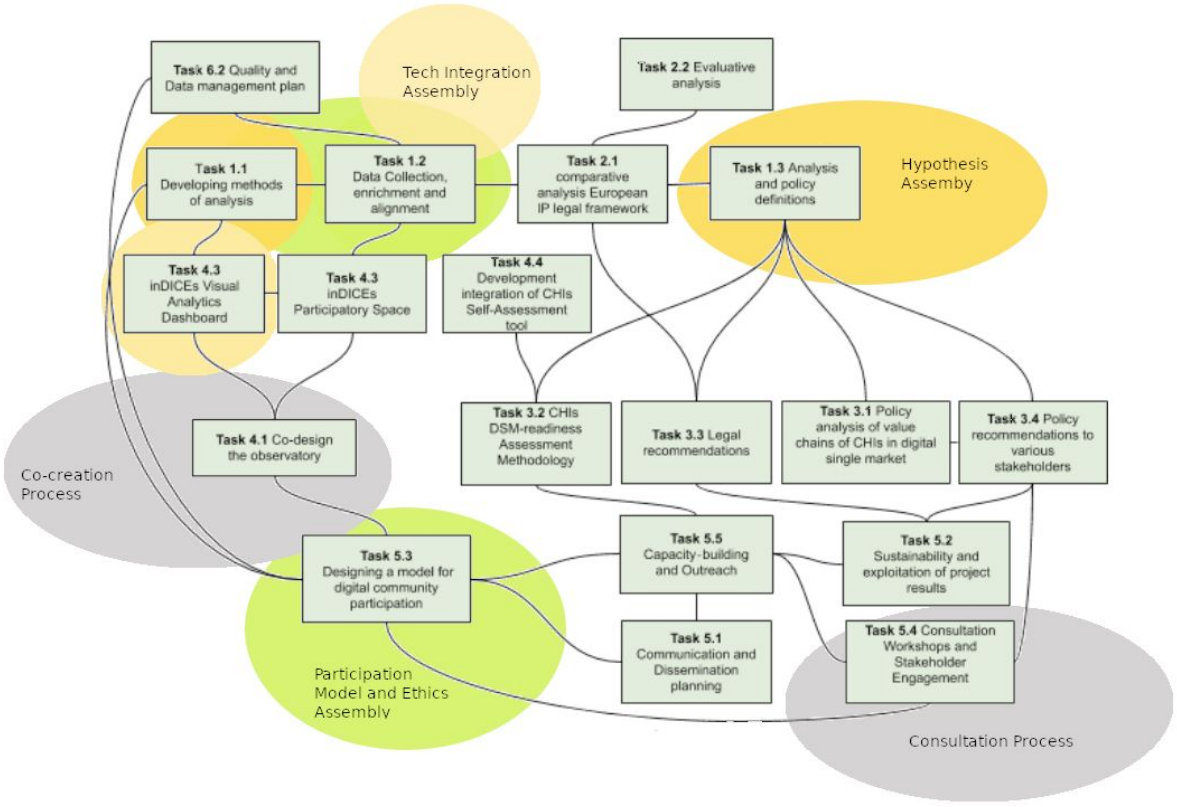


Figure 3.1.2 This diagram demonstrates the relationship between how the assemblies and process align with the creation of the Open Observatory Platform and partner engagement.

Processes

A process as defined by the Decidim community is a sequence of participatory activities (e.g. first filling out a survey, then making proposals, discussing them in face-to-face or virtual meetings, and finally prioritizing them) with the aim of defining and making a decision on a specific topic. This process is then defined by a number of phases. The first process on the inDICEs platform was the co-creation process to initiate activities that had to be migrated online due to the pandemic.

CO-CREATION WORKSHOP PROCESS

The Co-Creation workshop is meant to bring together the activities of on-board partners as well as create a common online process to design and execute different ideas for the inDICEs Open Observatory Platform.

The tasks related to this process are as follows:

Task 4.1 Co-design the observatory (M1-M24);

Task 4.2 inDICEs Participatory Space (M6-M34).

Assemblies

An assembly is another variety of digital space for engagement on Decidim. Like processes they involve multiple types of participatory activities. However, they are more akin to ongoing discussions around a thematic topic and do not have marked phases. Assemblies roughly translated to the inDICEs context can be described as working groups. The choice of the use of the word assembly (instead of more EU project management oriented language) comes from the language used within the democratically run Decidim community. Currently within the platform there are five different assemblies: Hypothesis, Participation Model and Ethics, Tech Integration, COVID-19, and the CHI consultation process. These different assemblies are meant to address the core areas of the work within the inDICEs project:

- tackling more theoretical areas such as academia and policy around cultural heritage
- integrating various technologies to create tools and grow and sustain online communities
- sharing, creating and developing an inventory of governance and ethics models and resources for online communities around cultural heritage in Europe
- rethinking the impact of COVID-19 on the work of the inDICEs project work.

Hypothesis Assembly

The theoretical frameworks and knowledge production of the Open Observatory Platform and inDICEs project such as research methodologies, data analysis, and definition of terms and ideas is ideated within the Hypothesis Assembly. As such, some activities within this assembly take a deep dive into the themes and trending topics around digitization. Ultimately it provides the empirical cornerstone to the platform and invites contributors from both academia and non academic backgrounds.

The work for the Hypothesis assembly comes from the following tasks:

Task 1.1 Develop methods of analysis

Task 1.3 Analysis and policy definitions

Within the context of the inDICEs project, an hypothesis describes a proposal that explains or provides solutions or scenarios to broad issues and obstacles faced when working within the CH sector. The use of a hypothesis has been applied when envisioning digital or platform based solutions for future users as well as to create research scenarios where the platform can be used as a pragmatic and convenient tool. In the latter a hypothesis was used as an exercise with participants various times to determine the direction of the functionality of the Open Observatory Platform.

As an exercise a hypothesis in the context of resolving a research question identifies a problem or theme and addresses the symptoms, knowledge gaps, impact areas, resources needed to resolve the problem, and references used to create the hypothesis. The research facet within CHIs has been integral to the general co-creation process of the observatory platform and dashboard to help determine important functions and features development. As a result there has been an assembly

and various user scenarios later mentioned in chapter 6 that refine research scenarios first conceived of through proposals within the Hypothesis assembly.

During the Hypothesis assembly, participants have created more than 20 user scenarios that have allowed Platoniq to outline specific functions and possible features for the digital platform. The assembly has helped to envision what the needs of the audience are. In addition, the assembly will be embarking on some more concrete steps towards creating a glossary of terms and metrics that will be salient to the progress of the Open Observatory Platform and framing digitisation in culture and heritage. Finally, WP3 is committed to aligning and working on three impact frameworks within the Hypothesis assembly.

Platform Model and Ethics Assembly

The (Platform Model and Ethics) PME assembly investigates ethics and digital participation to create a model of a participatory online community. Activities within this assembly have included developing principles, values, actions, and indicators for the governance of the assembly, reviewing user stories or personas, generating different hypothesis for user needs, functions, and impact areas, and reiterating to evaluating previous work to decide what remains a part of the inDICEs development and infrastructure. Parallel to this work is also to define an ethical compass for future steps and the governance of the Open Observatory Platform.

> The summary of the the PME's work stems from the following tasks within the DOW of the inDICEs project:
>
> **Task 5.3 Designing a model for digital community participation**
>
> **Task 1.1 Develop methods of analysis (M1-M18; Lead: FBK; Participants: KU Leuven, EF, PIN SCRL, CCC);**
>
> **Task 1.2 Data collection, enrichment and alignment (M1-M36). Lead: FBK; Task 7.1 Ethics requirement (M1-M36; Lead: ICCU)**

Tech Integration Assembly

In this assembly, discussions revolve around assuring the quality of technology developed within inDICEs as well as supporting the creation of a participatory digital space built using open source technologies, a visual analytics dashboard, and ideating new dashboard functions to support research, sharing and resource creation.

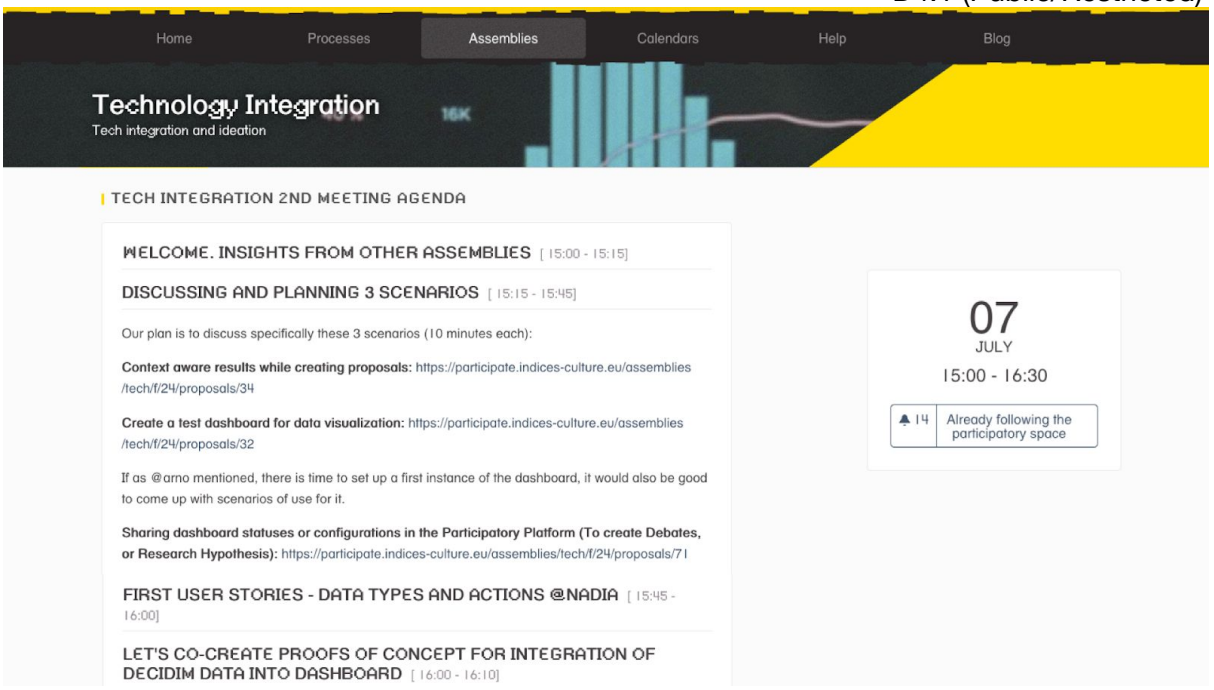


Figure 3.1.2.2 This Figure shows a screenshot of the meeting component and agenda feature in the Tech and Integration Assembly for the assembly meeting on 7 July 2020.

The Technology Integration Assembly was created with the following tasks and deliverable in mind:

Task 4.3 Build the inDICEs Dashboard (M6-M36; Lead: WLT)

Task 1.2 Data collection, enrichment and alignment (M1-M36). Lead: FBK

D4.1 User scenarios and wireframes report (M8) Translating the user needs and functional requirements specified by the different stakeholders into technological requirements. Defining the scenarios describing how users can interact with the inDICEs Open Observatory Platform depending on their roles/rights and for different user journeys

<u>COVID-19 Assembly</u>

Attitudes especially around digitization changed during the COVID-19 crisis and this project would be remiss if it did not also address how the global pandemic affected not just the move towards online interactions but also the impact of the crisis on labor is viewed, mental and physical wellness and digital lives and cultures. Unlike the other assemblies there were no mandatory meetings set. Instead it remains a place for partners and stakeholders to take ownership and initiate actions. Much of the activity took place on discussion threads where materials and ideas for other activities in other assemblies were sourced.

CULTURAL HERITAGE INSTITUTIONS CONSULTATION WORKSHOP PROCESS

This process is the first full partner-run process on the Open Observatory Platform as part of **Task 5.4 Consultation Workshops and Stakeholder Engagement (M3-M24)**. It covers and will be integrated into a series of three workshops that will serve to identify the needs and aspirations of CHI professionals around the theme of digitization and how it interacts with Intellectual Property Rights and crowdsourcing, future research, and ICT and change management. The proactive use of the platform has been a strong good sign in terms of support for the use and learning around the platform community.

The process created has three phases. It supports a series of three workshops developed by WP3 in providing a space where online engagement and activities takes place. The three phases in the process mark each workshop. For the first workshop organizers used the survey component to create two surveys. The first survey was to collect heritage reuse cases and the second investigated GLAMs (galleries, libraries, archives, and museums) and IPR. The future phases will explore more components within the platform as partners gain confidence as administrators.

3.2 Progressive engagement

Progressive engagement is the gradual process of equipping and supporting the project partners to engage with more digital tools, methods, and ideas for greater accountability and more meaningful participation. People interact with places, organizations, or communities based on the idea of a plural society that carries multiple histories, cultures, and geographical contexts and work to use established community based good practices as a starting point. In the context of the inDICEs project, progressive engagement has been used to introduce partners and partner organizations to adapt to use Decidim[2], to facilitate more participation-oriented processes and use tools that are not controlled by private corporations such as Facebook, Google, Slack, or Trello. The aim is to build a bridge between what works on the existing technologies they are familiar with and use, and expanding that knowledge to platforms that support collective processes with stronger protections for their rights and data. When using Decidim, organizations frame their web design and online interaction around ‘processes’ and ‘participants’. While the software is not necessarily intuitive, it is an aid to gradually introduce different methods that eventually give the ownership of the project to more communities and community members.

This platform was chosen because of the emphasis on collectives and more transparent decision making. The focus of this platform is not dazzling instant graphic design such as with different digital platform design to display creative content, but rather amplifying existing civic participation by creating more accountability and accessibility by putting it online. How participants relate to each other as a collective and to the organizations and institutions around matter, and Decidim as a tool helps refocus those priorities.

[2] For more description on why Decidim was chosen for this platform please go to chapter 5

3.2.1 What are the factors that encourage the engagement and motivation of users in digital participation platforms?

Onboarding activities

During the initial creation for the workshop, several activities were mapped out and planned for participants to get to know the platform. Over a period of two weeks, participants were encouraged to do one or two actions a week on the platform that would take between 10-15 minutes to execute. This was to enable them to start using the platform without being overwhelmed during an extensive orientation in terms of the platform's functionality and organization. Activities, links, and how to's were regularly posted on the platform's calendar, sent out through newsletters, and finally reminders posted on the project's internal communication platform Basecamp to make the experience of visiting the platform as easy as possible.

Incorporation of the platform in to workshops

As part of the assemblies described in section 3.1.2, participants take part in assembly meetings where several interactive tools such as Miro and Mentimeter have been incorporated to create an environment for interaction and co-creation. In addition, one of the important activities has also been to set aside time for participants to participate on the platform and start writing or performing tasks within the assemblies. Doing tasks together with others with the ability to immediately ask questions or share has been crucial to partners participating on the platform in mass and creating a culture of using the platform.

Capacity Building Workshop

Additionally, Platoniq has started a series of capacity building workshops that show participants how to become administrators of their process and take more autonomy and control of different activities and spaces online. The first capacity building workshop covered fundamentals in roles and tasks of administrators such as survey creation.

Useful components of the platform

An important aspect of the platform were components that partners could use in their work and deliverables. Perhaps the most commonly used component is the ability to make a survey on the platform. Partners from WP2 and WP3 have already incorporated the use of the platform into their activities using surveys to gather new data and case studies from the CH domain. Other components that have been used are proposals and debates which allow for discussion threads.

3.2.2 Roadmap for partners takeover

The phases that lead to partners taking over and managing their own spaces and activities has been an important part of planning activities and the overall design and development of the Participatory Space. The notion of a partner taking over is a cornerstone to the activities within the co-creation workshop and process. With the outbreak of the pandemic, the co-creation workshop that was originally planned to take place in Barcelona was transformed into what is now the 'Co-creation Workshop Process' and this process encompasses the activities that lead to partners building both their capacity and comfort with creating and collaborating on the inDICEs Decidim space.

The phases of this process are as follows:

1. **Initiating the Co-Creation Process**

   Within this phase participants will get to know each other through capacity building and surveys to inform future activities.

2. **Co-creation with Assemblies**
   Assemblies will begin to interact with the co-creation process to develop deliverables from the inDICEs project.
3. **Partner Take Over**
   Partners will take more active roles to manage the Open Observatory Platform and develop their own spaces within the observatory.
4. **Establishing an Identity + Framework**
   During this phase partners will develop models and frameworks during the co-creation process.

During these phases, some of the factors that were important to the success of partner engagement came into play. In the first phase of the co-creation workshop, participants were able to interact and adjust to the Open Observatory Platform with a series of simple and straightforward onboarding activities as well as during assembly meetings when they were encouraged to do activities on the platform. During the second phase of the process, partners during assemblies were given homework to complete on their own and in groups that had to be done on the platform. These tasks were often tied to the creation of different deliverables such as wireframes or creating building blocks for a model of governance on the platform. Currently in the third phase, partners are using the platform to create their own assemblies, calendars, and activities on the platform. The best example of this has been the Cultural Heritage Consultation workshop where partners created their own programme using the calendars on the platform and their own assemblies and processes to compliment the workshop.

The type of onboarding for external stakeholders will mirror these activities and begin with simple tasks that take no more than 10-15 minutes to complete. During any meeting, making use of the platform will be an integral part of incorporating individuals and giving them live support. Such as with the inDICEs overall project sustained engagement is generated through interweaving the platform into the everyday work of the group or organization.

Using the ideas and outputs that have been generated and expanded upon in the various co-creation assemblies, partners will begin to develop models to envision the future online community and create guidelines for its governance and modes of participation for future users.

4 Main Roles, Personas and User Scenarios

4.1 Description of Roles[3]

4.1.1 Getting to know you Survey

In the initial creation of the Open Observatory Platform it was important to understand and empathize with the partners' understanding of digital tools and platforms. To do this, the Platoniq team created a 'Getting to Know You' survey as its first community engagement activity. This survey serves multiple purposes. First, it allowed the team to on-board and design the capacity building facet of the co-creation process. Then the survey would also serve as an important research tool into the possible attitudes and character of future users of the Open Observatory Platform and feed into the user design research.

The research demonstrated that most participants were comfortable and regularly participating online in conversation to work and collaborate. In addition, most participants use different online platforms to find resources, verify information or reach out for collaboration and consultation. The research gave insight to the most commonly used online platforms such as Facebook or Linkedin as well as important pain points or difficulties with online collaborations which ranged from maintaining enthusiasm to creating clear channels of communication. Taking in this information through this survey works as a building block to begin to empathize with a user's frustrations, what they see, what they are interested in, and how to best design for it. For example, an important aspect to design for on the platform are the possible actions and activities users will want to execute and look for. With this initial survey Platoniq sourced what partners are doing online for work to get a better understanding of what possible users might find as rewarding tasks on the platform such as:

- Getting updated through news feeds
- Gaining a better understanding of the variety of issues and topics people in and around the sector are discussing
- Seeing what resonates with audiences and who may be starting the same conversations
- Finding relevant and trustworthy information for work
- Following conferences, debates or initiatives on openness
- Sharing information on related projects
- Verifying data
- Sharing resources/ideas
- Promoting activities/projects
- Finding and connecting with peers
- Exchanging and crowdsourcing knowledge
- Learning from the experience of others
- Tweeting to connect to a network of people who are willing to help

[3] There is an extended technical explanation in chapter six of this report.

Another insight from the survey includes what frustrations users might have while working online and working collaboratively. A few examples from the survey were maintaining enthusiasm during a project, having unclear communication and time management, and brainstorming but not creating products or impact. Through the survey needs, gains or positive outcomes users were reviewed and have had in their experience and would like to explore online. These results serve as a building block for a basic empathy map for creating user profiles and forming a base for developing a more positive user experience for current users or participants.

4.1.2 Rome Results Synthesis and Feedback

During the kick-off meeting in Rome in January 2020, several workshops were held to assess the sentiments, ideas, and preferences of the partners involved including creating profiles of actors and organizations interested in having a more nuanced understanding of their needs. To create these profiles, participants were asked to think using a tool called 'WHAT IF', a scenario developed by Platoniq. A 'WHAT IF' scenario is framed as such 'What if I as [insert role] could [insert action] with [insert tool/resource] in order to [outcome/impact]'. Participants were also given different prompts to create a persona and asked to imagine: the profession, technology they use, why they are interested in inDICEs, and how they would interact with the inDICEs Open Observatory Platform using the 'WHAT IF' scenario.

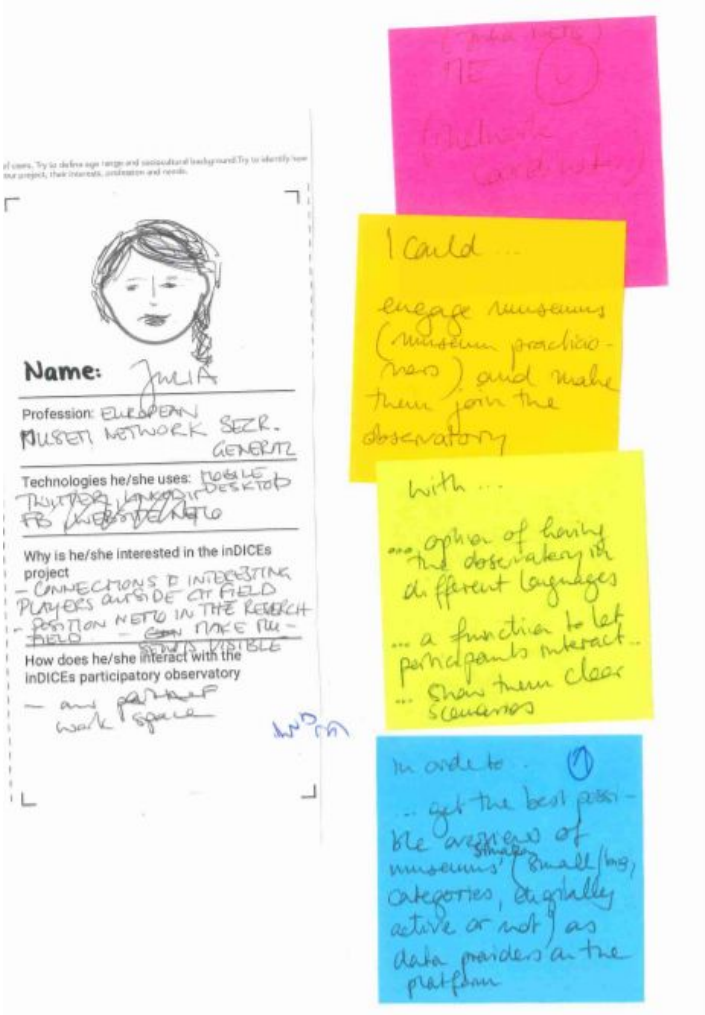


Figure 4.1.2 this is an image from participant input from the workshop in Rome January 2020

User profiles created by the partners were recorded and synthesized to create insights about potential users on the platform. The **users that were created fell into one of five different categories: artist, cultural heritage practitioner, special interest group, policy maker and researcher**. In line with the activities, certain profiles were highlighted such as individuals who work with cultural heritage institutions (CHIs, policy makers, artists and cultural heritage makers, and researchers).

The most prevalent interest for those working with CHIs was the need for more resources to follow how other CHIs are managed, how they are changing, and tools that give greater clarity when benchmarking their own progress, such as surveys and interactive tools for visitors or reports from other CHIs. When speaking about artists, their needs and desires were varied. Priorities for this audience was the need to engage and amplify their impact whether it be in terms of audience or collaboration with other actors and institutions. Interaction seemed to be at the crux of what would best serve for artist or artist communities' interest and sustainability. The most straightforward need expressed was that of researchers who voiced that data sets and access to contacts for interviews were what they might prioritize within the observatory, rather than any collaboration or participatory process. So while the observatory is open to participatory practices, what seemed

evident was an inclination towards more curated content, accessible contacts, streamlined conversations and work areas and collaborations.

Creating the observatory will in the end require negotiating these different interests especially in terms of developing an ethical compass that can both protect personal data, be managed transparently, while still maintaining spaces for enriching challenges, learning and collaboration.

Certain patterns were evident within each group. The information collected was grouped to outline each user's needs, spaces for interaction with others, spaces of work, and priorities. To illustrate some of the findings, the priorities for each group along with what would attract them to the inDICEs Open Observatory Platform are presented in the following table.

Profile	Priorities	Interest in inDICEs
Creative Communities and Artists	Impact assessments, contacts, tools to increase engagement, business models and references	Increase their social, cultural and economic impact, getting expert input, and brainstorming solutions within a larger community
Policy makers	Clearly communicated case studies, policies, and data sets	Studies, narratives, data from CHIs, indicators, and access to new contacts
Researchers	Searchable data sets and specific profiles to network with and study	Access to different data with different filtered criteria, the ability to play with data and be part of a working group
Cultural Heritage Practitioners	Sharing experiences, understanding user experience for their work, tools and resources, impact assessments, and performance benchmarkers	Recommendations, provide data, modernise the cultural heritage sector, participate with collaborators to solicit advice and also make decisions collectively
Special Interest Groups	Access contacts, learn CHI practices, explore data from CHIs and learn more about user experiences	Meeting interesting contacts to find new project partners, learning new technologies, and sharing experiences

Distinct results appeared. However, in a different exercise in Rome when rather than classifying participants within the Open Observatory Platform according to their job role, they were classified as a professional (expert) or citizen participant, different priorities appeared broadly across the group. Some of the more surprising results were that as professionals in pursuit of a challenge participants

rated a 'safe environment' and transparency as the lowest priority and the highest priority being collaboration within a community and motivation or engagement within a project, whilst when they were asked as citizens rated transparency as their highest priority.

4.1.3 Hypothesis Assembly Proposals

During the Hypothesis Assembly, participants identified problems or hypotheses where the platform would be most useful. They did this by creating their own hypotheses about the industry of cultural heritage as well as creating 'WHAT IF' scenarios. The activity resembles what participants did in Rome but this time the activity was performed when they had a better understanding of the platform, what digital tools they were working with, and after listening to talks from different partners about the research going on in different work packages. To reiterate 'WHAT IF' scenarios, participants were asked to identify one type of user such as an artist, researcher, or cultural heritage professional, and then name the issues they are tackling and what tools they might use to do so. The majority of scenarios created were users in search of tools, business models and easily accessible information to amplify their impact especially as entrepreneurs.

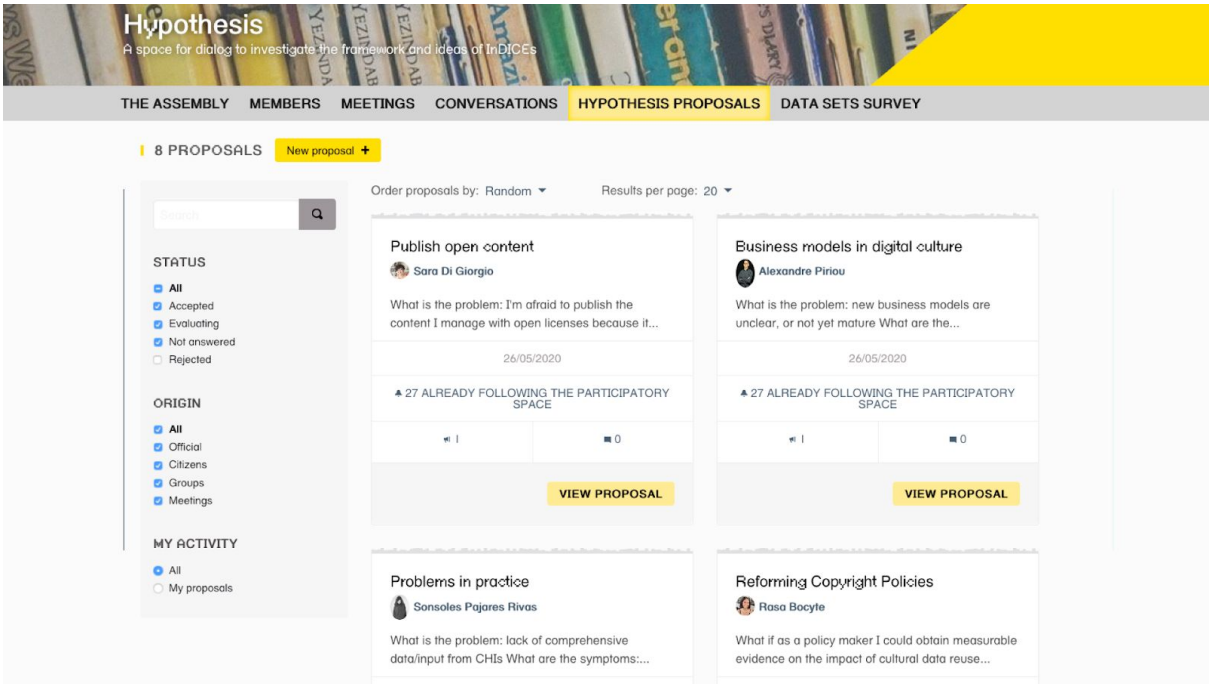


Figure 4.1.3 This Figure illustrates the proposal component in the Hypothesis Assembly where participants have been asked to propose Hypotheses and 'WHAT IF Scenarios'.

As a result this particular session highlighted the issues of entrepreneurship, innovation, and collaboration as an area that the Open Observatory Platform should address. These user scenarios reflected the needs of culture makers and artists to understand their impact on their audience, create more diverse collaborations, and create a sustainable business model. The results of this assembly were then used in the creation of the personas in 4.2.

4.2 Description of Personas

4.2.1 Personas as a method

Personas are a means to better understand users and are created to understand behavior especially as it pertains to a user's emotional fluctuations when using a product. Personas should enable designers to empathize with those they are designing for or to better predict their reactions to design that is tailored to them. Personas are a powerful tool that can be used throughout the design process that summarizes research done through surveys and workshops conducted. WP4 created a variety of personas based on the feedback from the getting to know you scenarios, the hypothesis assembly, and the kick off meeting in Rome.

4.2.2 Segmentation

From the beginning a form of segmentation has been created and more or less applied throughout the user research. Segmentation is the division of certain types of users into specific groups. This basic component to the work provides a foundation for the Platoniq team to focus resources and effort in the creation and development of features. From the more simplified profiles created in Rome of cultural heritage practitioners, artists, researchers, policy makers and special interest groups, Platoniq has developed more detailed personas with specific interests and objectives. These new personas allow for the InDICEs project to design around their needs and pain points they might have while navigating technology and what payoffs are needed to create meaningful engagement.

4.2.3 Personas developed

There have been seven personas developed. At this stage in the development in the platform, the personas serve as a tool that can be used on an ongoing basis to summarise and get the maximum value for the research conducted. From the survey to get to know the inDICEs Open Observatory participants, to the various exercises synthesised from Rome and the ongoing assemblies it is important not just to track the research and highlight important themes, but to also create methods to compress this information into tools that can be used to design for the platform. They are a shorthand method to share behaviors as well as refresh empathy for designers and programmers alike.

The following serves as a sample from what has grown to be around ten in depth profiles developed from different ideas and proposals for what the platform could look like:

Osoyo

Osoyo's profile came from a proposal within the Tech Integration assembly, where a participant proposed the following:

> 'The Visual Analytics Dashboard could be integrated while a user is writing a proposal in the inDICEs Open Observatory Platform.
>
> The writing page would be modified, adding a sidebar widget with a tag cloud and links to related content that could help the author to make its own content more relevant (recommendations are based on a real-time analysis of what is being written).
>
> Note that this provided context could also include content from the same inDICEs Participatory Space, useful e.g. to detect duplicates or relations between proposals.'

From there, a 'WHAT IF' scenario (like the one used in Rome) was created: What if **I, as a researcher** could **investigate digital engagement** with **analytics from posts** in order to **increase and evaluate engagement with different types of content I produce.**

From there the following in context was filled with the research done throughout the co-creation process inDICEs Open Observatory Platform:

- **Goals:** broaden audiences for CHIs and create different means to gain revenue online
- **Background**: research and communications in cultural heritage
- **Pronouns**: She/Her
- **Pain points:** Conversations around CHIs and revenue streams are disperse and often good information is spread across geographies that don't always apply to her situation
- **Needs:** An online platform that serves as a hub for different professionals with similar backgrounds where she can filter information that applies to her geography and even expand her regional community for support

Maxime

Maxime's profile came from a 'WHAT IF' scenario within the Tech Integration assembly, where a participant proposed the following:

> What if as a (role) **researcher** I could (action) **analyze data in the inDICEs Participatory Slatform** with (Tools/Data/features from the inDICEs Open Observatory) **the inDICEs Visual Analytics dashboard** so that (outcome/Impact) **allow to analyze and compare data from the platform and the external world.**
>
> In the dashboard, it could be selected as one of the data sources to view and analyze content from.

From there the following in context was created with the research done throughout the co-creation process inDICEs platform:

- **Goals:** Increase burstiness, virality, and long term engagement with her gallery's online audience
- **Background**: Media management
- **Pronouns**: She/Her
- **Pain points:** limited resources and limited interaction with audience in person due to COVID-19, difficulty communicating or creating solutions with ICT professionals unfamiliar with CHIs
- **Needs:** Benchmark her gallery's performance with other CHIs within the context of the pandemia, resources on digital engagement during COVID-19

Georgina

Georgina's profile came from inputs from within the Hypothesis and Tech Integration assembly. Her profile originates from this 'WHAT IF' scenario proposed in the Hypothesis assembly:

> What if **I, as a researcher** could **explore more narrative and visual data** with **infographics** in order to **make clear statements about gender equality in CHIs.**

As well as this proposal from the Proof of Concept Pool in the Tech Integration Assembly:

> *What if as a **researcher** and inDICEs observatory I could **generate a refined collections of graphs, keywords and other stats with relevance in some subject of study with the WebLyzard dashboard integrated in a Participatory Space in Decidim** to **initiate a collaborative analysis research process letting participants create debate and threads***

From there the following in context was filled in with the research done throughout the co-creation process inDICEs platform:

- **Goals:** find different methods and tools especially for digital work environments with a focus on visuals
- **Background**: gender mainstreaming within cultural institutions
- **Pronouns**: She/They
- **Pain points:** finding it difficult to connect with different experts and experiences without events and conferences, also finding consistent information for different regions in Europe
- **Needs:** find partners for a collaborative research project, a better search engine experience, more references for accessible visual materials and narratives

4.3 User Scenarios

4.3.1 Calibrating and Refining User Scenarios and User Scenario Research

Using the information provided during the Rome Kick-off session and later through the getting to know you survey, there was a clear lean towards researchers on the inDICEs team who had provided a substantial amount of information about their goals, challenges, and personal use of technology. With these clues the team began building a specific profile for a researcher persona and the challenges and tools they would need.

With research problems that participants identified in the Hypothesis assembly, different user scenarios were created in combination with existing personas. Using the role of researcher allowed a deeper dive into understanding what tools would be useful for finding and filtering information. However, more importantly, creating scenarios for research was a salient step to creating user journeys that would also serve as an aid to create wireframes for user experiences.

Because of the specific context of researchers looking for data and especially analytics such as those in Work Package 1 and CHI practitioners who have renewed reason to understand the analytics generated from their activities and engagement on the platform, some scenarios were tailored to the following questions:

- What are the top goals in your role and how using analytics helped you to achieve them?
- How often do you review metrics?
- What triggers you to look into data?
- What data would prompt you to immediately take an action?
- If you see this number increase/drop, what will you do next?
- How would you use data to understand the problem?
- What mistakes or missed opportunities could be prevented if you have data?
- What information do you need on a daily basis?
- What do you compare these numbers to? (historical, average, location...)
- How do you share information with others?

For example, to create the research oriented user scenario, the following research proposal (that was used to create Georgina's profile) was taken to create research persona Jana:

> 'What if as a (role) **researcher** I could (action) **initiate a collaborative analysis board** with (Tools/Data/features from the inDICEs observatory) **the WebLyzard dashboard integrated in a debate in Decidim** so that (outcome/Impact) **generate a refined collections of graphs, keywords and other stats with relevance in some subject of study**'

This description was then translated and expanded into the following scenario that allows for insights into the user's challenges, goals, and necessities using the platform. The scenario also shows how the user might interact with research and the platform to envision how to orient the

tools from the tech partners and Platoniq, to resolve some of her pain points and optimize her online engagement:

> **Jana** is a researcher looking at practices of digital transformation within cultural heritage institutions. Her aim is to create a readable report of what is happening across the EU in a way that will be easy and accessible to cultural heritage workers to read, process and implement. In her research and work, her goal is to create clear, straightforward graphs and graphics and spark a discussion within the cultural heritage community to enrich her work and enable others to engage with information she believes would enable cultural heritage institutions to be more digitally strategic. In order to do this, she has chosen the inDICEs platform to create her data visualizations and shares it to get feedback through a discussion or debate. Following her post others working within culture and heritage share thoughts, similar resources and provide a feedback loop that allows Jana to refine her research and others to benefit from her ongoing work. In addition those engaging with her work have also been able to tweak and change her data visualization to fit their contexts and move the conversation further. The end result is a series of interactions where readers can see the progress of the conversation and gain a more profound understanding of Jana's initial question.

Georgina's persona was also given the following user scenario with a focus on research.

> **Georgina** is an expert in gender mainstreaming within cultural institutions who have taken a more digital approach to their work since the outbreak of COVID-19. She is exploring how different digital platforms practice gender mainstreaming to incorporate different methods and tools into her work. In the course of her work, she wants to explore more narrative and visual data to analyse and present. Using the inDICEs dashboard she searches for different articles on gender inequality in cultural heritage to see if she can gain some broad understanding of the field and also give context to her work. She is interested in comparing different periods of time within Europe in terms of gender equality in play, leadership positions, and artistic representation. She is also looking for relevant trends and peaks in the conversation over a six month period within Europe. She uses the dashboard to geolocate her search as well as look at the analytics of the popularity of keywords during this time period. And creates a discussion thread in the Participatory Space to ask if other CHI professionals are also interested in similar practices and work in the same area that might be able to share tools

As mentioned before the following is **Osoyo**'s scenario:

> **Osoyo** is a researcher in cultural heritage looking at digital engagement and participation online to broaden audiences for CHIs and look into different means to gain revenue online. She is trying to compare data and news following the economy and metrics and advertising analytics in CHIs. She uses the inDICEs Open Observatory Platform in her research. In her research she engages in activities and conversations with other users. To generate more interaction she uses a sidebar widget that displays tags of relevant themes on the platform to create more space for collaboration and sharing about tools especially in terms of b2b

relations. She also uses the widget to identify content similar to her own and related discussions. She is urged to action when she sees CHI content that has gone viral or has engaged a larger audience to their content. On a daily basis she takes into account clicks, engagement, and conversations happening between peers. Ultimately, she uses these tools on the platform to connect to others facing similar challenges in terms of generating profits or funding.

Finally, another persona **Lazló** was also created with the following user scenario to envision what functions might need to be created and pain points will need to be addressed in the platform's design:

> **László** is a researcher specializing in performance art who is working on an interdisciplinary team to create new methods for creating digital experiences for the performing arts. Within this research, they aim to look at digital participation especially in terms of trending practices, terms, and outreach. They aim to use the visual dashboard to share their searches and filters with their team who work remotely so that they can collaborate easily and efficiently. They set their filter to performing arts in Scandinavia, with the key phrase 'creative industry'. they send their filtered search to their peers to review for relevance and if they see any links or insights they were not able to find before.
> He also hopes to engage with other researchers and art practitioners by creating a proposal on the inDICEs dashboard for best practices and learnings.

The following are cultural heritage practitioner scenarios such as the previously mentioned **Maxime**:

> **Maxime** is a media manager who creates a strategy for measuring the impact of digital participation on different online platforms for her gallery. In the course of her research, she aims to access useful and relevant data with the inDICEs dashboard to analyze and compare data from the Open Observatory Platform and other social media platforms to see the difference in burstiness, virality, and long term engagement. Maxime's aim is to create a strategy for execution and impact to best utilize the gallery's limited resources for increased online presence and reach out her audience while there exists the need for social distancing. She participates in a survey that gathers data on varying experiences and strategies for culture makers and artists in terms of their digital outreach and hopes to gain insights with the published results.

Isang is also another cultural heritage practitioner:

> **Isang** is a local museum curator who is searching for best practices around digitising their museum's content especially on a smaller scale. They have some broad ideas about how to approach this task, but also want to create an event for others like her so that they can share their experiences. They use theinDICEs platform to pitch an activity by writing a proposal and asking other users for comments. Because they want to create more traffic around their proposals they use a widget that lets them know what relevant and trending tags could boost their proposal's visibility.

These various scenarios speak for the actions, functions, fields of work, frustrations, and goals that the user research process has revealed. These scenarios summarise some of the more prevalent needs and data oriented scenarios for which the inDICEs tech partners and Platoniq will have to design. For more concrete detail on types of functions and sourcing data for the inDICEs Visual Analytics Dashboard sourced from workshops and assemblies please refer to chapter 7.

4.4 User Journeys

4.4.1 User Journeys as a method

User journeys are a diagram that shows the different stages of a user's journey. A user journey can detail how a user behaves during each of these stages as they move to complete a task. Using the scenarios from each of the personas, various user journeys were made to then define what important functionalities, buttons, options, etc. would be necessary to include within the platform's design.

4.4.2 Reiterating Personas to create User Journeys for the Dashboard

While creating the user journey for 'Georgina', an important question that arose was how did she get to the collaborative work space, who created it, and how? While the segmentation for different user types based on professional background was important, what also became apparent was the importance of creating user personas that also had varying levels of access to the platform, i.e. administrators who have greater command of the what the platform can appear as and with the power to configure Participatory Spaces. So from the process of creating a user journey for one of the personas, it was important to reiterate through the personas process and create a new persona that would encapsulate the administrator aspect of navigating the platform.

4.4.2.1 Abirami

Abirami was the persona created through this reiteration process. Her persona fell under the category of a special interest group, i.e. someone tangential to CHIs with a special focus on technology and participation. Abirami would serve as the administrative persona who would create the space that Georgina would then use in her scenario. Abirami works with digital engagement and inclusion and, due to the COVID-19 pandemic, has taken a new interest in how this might apply to cultural heritage institutions. She wants to build a collaborative space on the Open Observatory Platform to create an interdisciplinary collaboration. To do that, she has created an assembly on the inDICEs platform to have discussions, make proposals, and share information on changing trends and important highlights through creating a dashboard shared by the assembly. In short, Abirami's persona would have the following characteristics:

- **Goals:** create a collaborative space to explore and research how gender, cultural heritage, and technology intersect and inequalities that may result
- **Background**: participation, research, tech, arts
- **Pronouns**: She/her
- **Pain points:** finding a network with more cultural heritage contacts, streamlining communication and sharing around her research topic of gender/CHIs

- **Needs:** a central space to work that goes beyond conversations threads but also can serve as a research tool, and also facilitate collaboration especially in the context of remote work

4.4.3 User Journeys Creation and Learning

To illustrate the user journey for each of the personas, a diagram was created to accompany for various scenarios. Taking the scenario, the diagram followed a different series of steps that the user might take on a fully realised platform.

Two of the scenarios were used to create two journeys (illustrated in *Figure 4.2.3* in the following section) that were evaluated during the last Hypothesis assembly in October 2020. The participants were asked to review the journeys using the MIRO online space and post questions, opportunities, and challenges they saw along the journey. The MIRO space has served as a useful and agile tool to build diagrams and simulate what co-creation spaces are like offline with the ability of different participants to interact with materials rather than just video chatting or clarifying through text.

4.4.4 User Journeys Iteration

Using the notes given by the participants, Platoniq has gone through to adjust the user journeys in terms of clarity and functionality to be evaluated in future assemblies. These iterations allow for broad consensus as well as a streamlining of the design of the platform. They also raise questions about the concrete mechanisms with which a user has to interact.

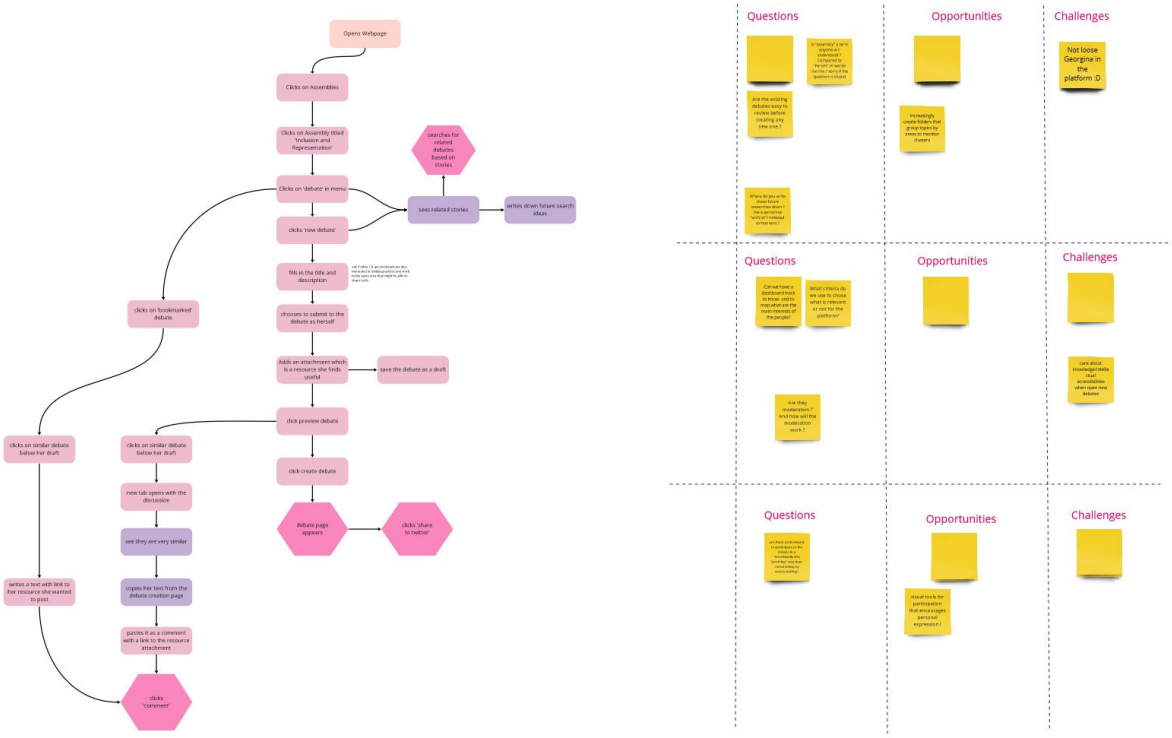


Figure 4.4.4 screenshot from MIRO board in the Hypothesis Assembly October 2020

The journey above is the user flow or path of Georgina from log-in to completing a few tasks to complete her objective to participate and learn anything new on the topic of Gender, Inclusion, and CHIs. The flow includes possible detours as well as alternative actions that might happen rather than completing the task of creating or participating in a debate on her topic as illustrated below.

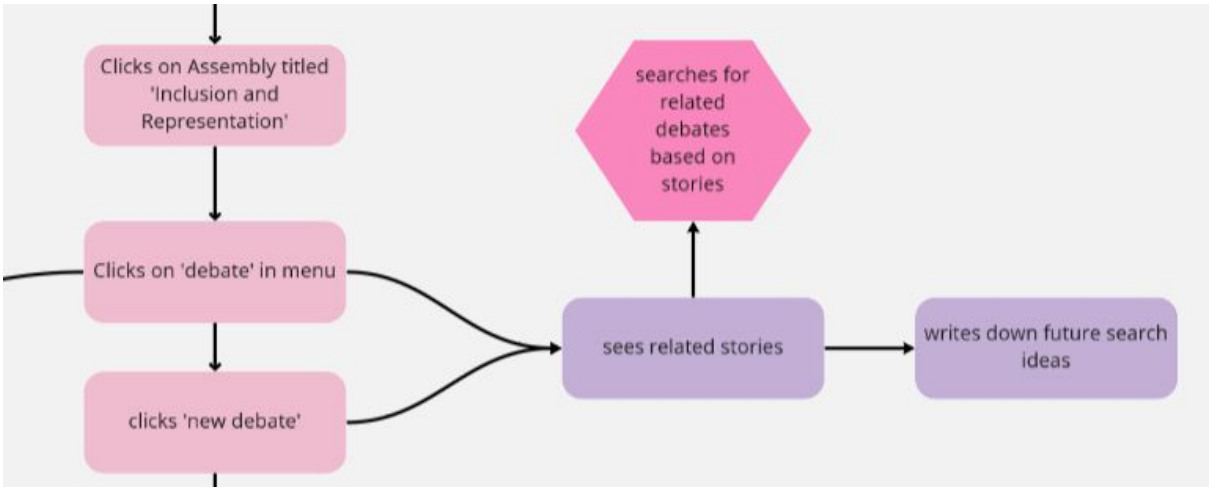


Figure 4.4.4.1 screenshot from the MIRO board shown at the last Hypothesis Assembly October 2020

Mapping each possibility helps participants gain a stronger idea of what the design of the platform might look and lead to. Having participants then raise questions, write out challenges, and opportunities helps streamline the design to something that aims to be an enriching and useful experience for the user. For example, in the following image the user flow ends with the user posting a comment as a form of participation in the debate.

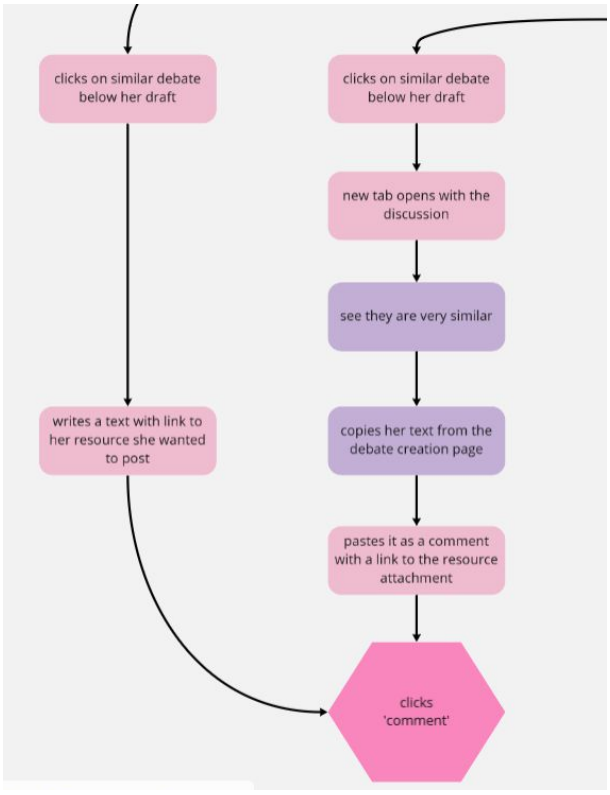


Figure 4.4.4.2 screenshot from the MIRO board shown at Hypothesis Assembly October 2020

However, one of the partners raised the issue of including different modes of reactions to also be included in the user flow such as emojis or upvoting. These are also valid and provide analytical insight into community sentiments and digital behaviors.

Other important issues raised in the journeys were how to create shareable content, not only within the platform but also on social media platforms, as well as creating clear visible linkages to sources of data which will be an important consideration on part of the tech partners in the project. Other insights were around what shared lingo the platform will use such as the term ‘assembly’ that comes from the decidim community. These important

questions touch on everything from user design to platform governance and community guidelines. Thus these diagrams within the exercise have served their purpose of combining research around community modeling to the look and feel of data and are cornerstones to building a common goal and understanding around the platform's progress.

5 Interacting with the inDICEs Participatory Space. User Journeys Descriptions

5.1 Introduction to Decidim

5.1.1 Why a Participatory Space in the first place

The purpose of the inDICEs project is to empower various decision makers and practitioners in the Cultural and Creative Industries (CCI) to fully understand and make informed decisions on the social and economic aspects of digitisation in their sectors. As all have witnessed, especially during the onset of the pandemic, digitisation of CCIs is in constant movement. Therefore, a Participatory Space is a cornerstone in the project as a means to keep conversations, learnings, and engagement current and create opportunities for innovative collaboration.

The inDICEs project also requires designing processes to guide and encourage participation with external stakeholders and publics. The aim is for the audiences defined in this project (memory institutions, policy makers, funding agencies, researchers, practitioner networks, etc.) to experience the value of opening their knowledge and sharing it through engagement and participation. The Participatory Space of the inDICEs Open Observatory Platform will take it a step further in terms of opening up their organizations and practices, making it possible for them to open their own research, production and decision-making processes while creating value.

The main benefits of a Participatory Space are:

1. Broader reach to more people than analog engagement processes, by virtue of longer, asynchronous feedback periods, all at a lower cost than traditional outreach methods
2. Feedback from a more diverse and statistically-representative range of participants (and methods to ensure it);Improved understanding of constituent feedback, through user validation, filtering tools, content moderation, and AI techniques to synthesize large volumes of communication;
3. Better ongoing communication with participants, like automated follow-up messaging to keep people informed on the issues and initiatives in which they displayed interest, or the ideas they submitted;
4. Simplified administration of the consultation process for administrators, allowing you to conduct more frequent consultations with faster turnaround times.

5.1.2 Why Decidim

Decidim is a powerful web application developed by the Barcelona Council. The platform is intended to be a "participatory democracy framework", providing a modular system to build a custom website without the need of modifying the original code.

Due to the custom requirements for the inDICEs Participatory Space, Platoniq had to choose between two options: either develop a full system from scratch or reuse an existing software that could meet some of the features needed.

The first option was quickly dismissed because of the limited time and available resources.

That left a second option, to reuse some existing software. To do that the following criteria was used:

1. **Modularity & customization**: How easy it is to create modifications in the code without messing up with the core code. Decidim was created from scratch with that goal in mind.
2. **Maintainability**: How easy is to keep up to date with the original project is a key feature if the concern is about security. Also to be able to integrate future features developed by external parties. A modular approach definitely helps on that matter.
3. **Community behind the project**: A strong community behind a project gives you the peace of mind of knowing that the project will be maintained in the long term. Decidim has a strong organization behind, with a very dynamic development and good documentation. And we're seeing more and more implementations in different countries with different languages (e.g. most of the implementations of the Consul software are in spanish language countries).
4. **Code quality:** There are some independ tools capable of doing automated analysis of the source code for open-sourced projects. Decidim satisfies the highest rates in Code Climate (rated A).[4]
5. **Multi-tenant capabilities**: The ability to act as independent installations whilst using the same server instance is a very powerful feature that is included by default in Decidim.
6. **Localization**: Decidim is already fully translated to English, Basque, Spanish, Catalan, Dutch, Finnish, French, Galician, Italian, Polish, Portuguese and Swedish.

5.1.2.1 Technology

Decidim is created in Ruby (Rails) and available as Gem (the package manager for the Ruby ecosystem). Custom versions should use Gem, enable/disable modules and features and expand capabilities through custom developed modules or by reusing existing Gem modules made by 3rd parties.

5.1.2.2 License

Decidim utilices the Affero General Public License (AGPLv3). The GNU Affero General Public License is a free, copyleft license for software and other kinds of works, specifically designed to ensure cooperation with the community in the case of network server software. One interesting

[4] More info at https://codeclimate.com/github/decidim/decidim

consequence of this license is that forcing the publication of the code and using the Gem Ruby system allows to track every piece of software using the Decidim framework.

5.1.2.3 Framework modules

As pointed before, Decidim is a framework, and as such, it must be customized before using it. There are various existing modules made by the original developers and various customized and hacked versions. Listed here are the modules with more potential to fit into the inDICEs project requirements.[5]

5.2 Participatory Spaces and main features

Decidim allows administrators of the platform to configure spaces for participation (initiatives, assemblies, processes or consultations) and enrich them through the multiple available components (face-to-face meetings, surveys, proposals, voting, follow-up of results, comments and many more).

5.2.1 Spaces for participation

These spaces are designed for participants to make proposals and decisions.

- **Participatory processes**

This feature helps to democratize common issues, step by step, allowing to create, activate/deactivate, and manage various participatory processes. These are distinguished from other spaces by being structured in different phases within which all of the components can be incorporated.

- **Assemblies**

Assemblies offer the possibility of setting decision-making bodies or groups (councils, working groups, committees, etc.) that meet up periodically, detailing their composition, listing and geolocating their meetings, and allowing to take part in them (for instance: attending if the seating capacity and nature of the assembly so permits, adding items to the agenda, or commenting on the proposals and decisions taken by that body).

- **Consultations**

Consultations make it possible to coordinate referendums, trigger discussions and debates, and get voting results published. These can be connected to a secure e-voting system with all democratic guarantees.

- **Conferences**

The conference space allows an organization to create a website for a big event by joining up a series of predefined meetings (chats, workshops etc.), putting together a unified program and managing attendees.

- **Initiatives**

[5] For a full list go to https://github.com/decidim/decidim.

Initiatives allow participants to collaboratively create actions, define their trajectory and goals, gather endorsements, discuss, debate and disseminate initiatives and define meeting points where signatures can be collected from attendees or debates opened to other members of the organization.

5.2.2 Components

Components are reusable modules that the administrators configure in any Participatory Space (such a process or an assembly) in order to provide meaning and functionality to it. Each component creates a subspace where certain actions are possible. In short, this is where the participation happens. Depending on the type of participatory space, components can behave slightly differently. For instance, in a process, a proposal component can accept votes or not depending on the active phase.
For participants and spaces to interact it is generally the case that they need some kind of authentication, having a log in suffices, sometimes participation is opened to everybody (for instance if using anonymous surveys) and others additional restrictions apply (this is configurable in the admin backend).

Components can also be personalized in several ways, it is possible for example to change the default texts and give them a different meaning or purpose that the originally intended. Decidim by default comes with a number of components but that can be expanded by using third party modules created by the Decidim community.

The more important components and features used in the inDICEs Open Observatory Platform are:

- **Meetings**

The meeting component offers organizations and participants the opportunity to convene meetings, determine their location and time, register and limit attendees. This component allows admiinstrators to define the structure and content of the meeting as well as publishing the minutes, and the resulting proposals. Although this component is originally designed to be used with physical venues, due to the COVID-19 situation and the distributed team, in inDICEs Platoniq has adapted them to keep track of all the meetings, now mostly online.

- **Surveys**

The surveys component can be used to design and publish surveys and to display and download their results.

- **Proposals**

The proposals component allows the user to create a proposal using a creation wizard, compare it with the existing ones, publish it on the platform and include additional information such as geolocation or attached documents and images. This component also allows users to navigate, filter and interact with a set of proposals. In addition, with the proposal-incubator users can create collaborative proposals.

- **Participatory texts mode**

The participatory texts component can be used to convert lengthy text documents into various proposals or results and, vice versa, to compose and display a unified text based on a collection of proposals or results. This is not an independent component but a specific way to configure the proposal component that integrates different items into a single document.

- **Voting**

The voting feature is part of proposals as well, it offers organizations the possibility of activating different voting or support systems around proposals: unlimited, limited to a given threshold, weighted, cost-based, etc.

- **Debates**

This is a forum-like component where topics for discussion can be proposed by final users or administrators. Creating debates and discussions can be enabled or disabled in each phase of a process. By opting in to follow certain topics, users can receive notifications regarding any new debates or discussions related to those topics. In inDICEs this is used to discuss topics when they are in an embryonic state usually and not ready to be considered a formal proposal.

- **Comments**

This is not a shared feature for building collective intelligence and it is used by other components (such as debates or proposals). They enable users to add comments and to identify other comments as being in favor, against or neutral in relation to the commented object. It is also possible to vote comments, respond to them and to receive notifications about responses.

- **Accountability**

The accountability component offers the possibility of subdividing results into projects, defining and applying progress statuses around their implementation, as well as displaying the extent of the results' implementation grouped by categories and scopes.

- **Results**

As part of the accountability component, proposals can be turned into results and give official responses concerning their acceptance or rejection, to establish a percentage of completion (if accepted). It is also possible to merge various proposals into a single result.

- **Sortition**

The sortition component allows to select a number of proposals (e.g. candidates for a jury) with random, yet reproducible, procedures that guarantees non-biased and uniform distributions.

- **Pages and blogs**

A way to keep your community, informed and up to date.
The pages component is used to create informative pages with rich text formatting, embedded pictures and videos. The blog component makes possible the creation of posts or news, and to navigate them chronologically.

- **Notifications**

This feature enables users to receive personalized information on interesting contents. Decidim permits to track any space or component to receive updates every time they happen.

- **Newsletter**.

The newsletter feature makes it possible to send emails to everyone registered in the platform or, more selectively, to those who participate in a specific space such as an assembly.

5.2.3 Recent Developments

During the first months of the project, Platoniq created a more customised version of Decidim for inDICEs. So far improvements have been implemented to the conversations module and survey component. This first includes the "Notify/Conversations" module which can be installed as a plugin, providing a real time functionality that allows some users (called "note-takers") to take notes on behalf of the participants on a meeting (either physical or virtual). These notes can be taken in real time and provide a visual narrative for the notes which differs from a general etherpad.

Then there are the surveys in which new types of questions have been created. Three major developments have taken place in this regard, the first has added the capability to Decidim to create conditional questions in a survey, allowing different paths for users depending on their answers. The second is a new type of question called "matrix", which allows complex user interaction with a formula by choosing different answers from a row/column presentation.

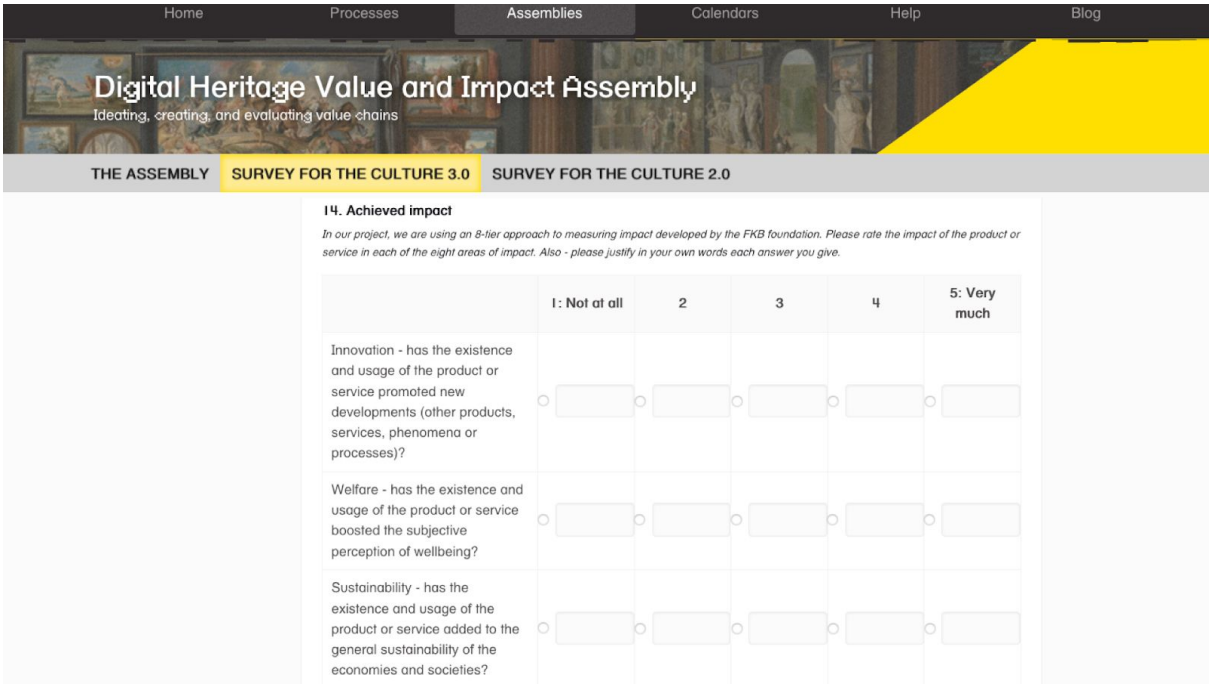


Figure 5.2.3 Survey deployed by WP3 on the inDICEs Participatory Space to collect cases of value chains generated by (re)use of digital cultural heritage in bottom-up initiatives and communities of practice - the so called Culture 3.0 regime.

Finally, Platoniq added a better user experience to the administrators of the platform. They are now capable of viewing and exporting survey answers in several formats (html, pdf or csv).

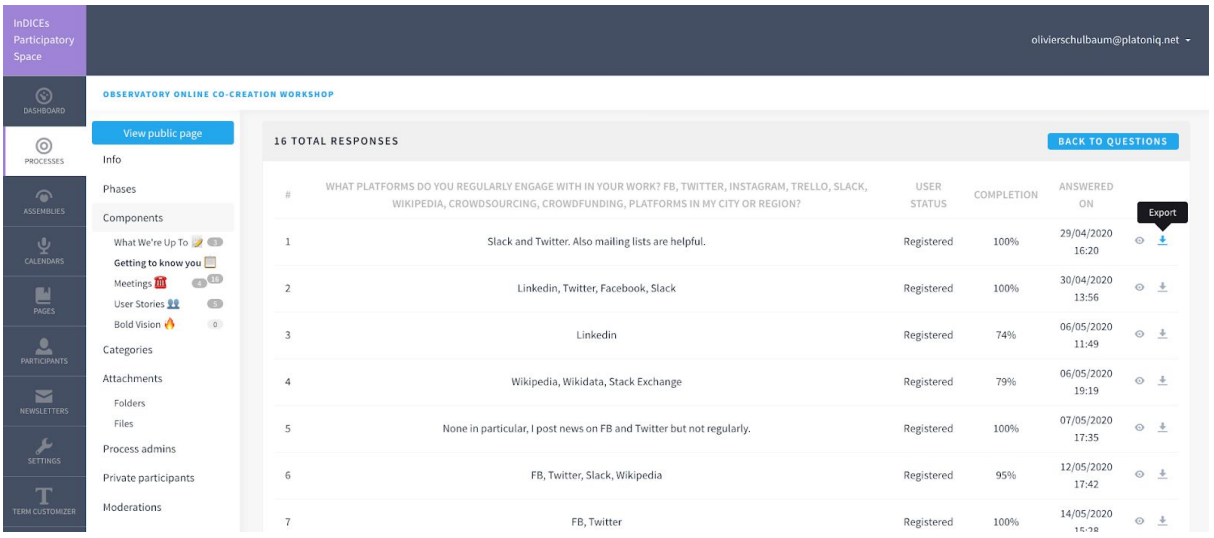


Figure 5.2.4 This Figure is a screenshot of the survey results in the 'Getting to Know You' survey filled out by the partners in the first phase of the Co-creation workshop process.

5.3 User journeys

The inDICEs Participatory Space provides numerous ways of interaction for any participant user, it would be unrealistic to pretend to show all the possible user journeys available. Instead, this deliverable focuses on selected paradigmatic scenarios that will show the purpose of the Open Observatory Platform applied to the inDICEs case.

The first one is the Welcome, a first visit to the platform from the perspective of someone that has never been in it before. Although it should be considered that this person has an interest in its content and might be a future potential participant. This journey will explore the homepage, navigate to an assembly, view the content in it: discover proposals and meetings and perform a global search for a common keyword to see if a specific topic is being discussed. **This is described in detail in the Appendix 1, section 1 (A1.1).**

The second assumes that the user visiting wants to participate in the platform and signs in to it. This journey also takes the point of view of someone performing all the actions using a mobile phone, showing how the display adapts to different devices. In this case, once the user has registered and logged in, it performs a simple participatory action in the platform. **See this in detail in the Appendix 1, section 2 (A1.2).**

The third journey is about a researcher creating an hypothesis in one of the assemblies that the inDICEs project is using in the platform. Platoniq includes in this demonstration some future improvements to how the final version of what it is desirable here. These developments are

explained in the roadmap (See chapter 7.5). **The Appendix 1, section 3 (A1.3), shows this in detail mockups of the planned new features.**

Finally, the last journey shows how an admin manages the platform, for this there is the example of how to create a participatory process from scratch. This is described in the admin backend and how the different parts of Decidim interact with each other to assembly a new Participatory Space. **See Appendix 1, section 4 (A1.4) details.**

6 Envisioning the inDICEs Open Observatory

This chapter summarizes the research on data observatories, feedback from outside experts, and work by the inDICEs stakeholders to construct guidelines for governance of this digital community and expand the platform's capacity to influence and inform the design of the platform's own data analytics.

6.1 Benchmarking Data Observatories

Much progress has been made during the various assembly meetings and has been incorporated in the co-creation process. During the last general assembly, WP4 presented a structure to frame case studies as well as criterias created through insights from the Hypothesis and Platform Model and Ethics Assembly. The following section takes a deeper look at these insights and outputs.

6.1.1 Case Study Frameworks

Starting with case studies, a framework was created to research the case studies. After looking at various case studies and going through different iterations of trying to pinpoint what factors would be salient to replicate or expand upon. What became clear was the importance to start with the basics to communicate in an accessible manner across the interdisciplinary inDICEs team. So before tackling points of innovation and how to take insights first, it was necessary to show:

- Description/website
- What data is being collected?
- What data is being published?
- Who is collecting data and contributing to the data collection?
- Is there an ethical compass?
- Is there a governance model?
- What are the impact areas? / main values?

The priorities of these questions are to narrow down the who, what data, and why. Globally, in light of the movement for equality and justice it is important as a platform centering cultural heritage to intentionally support greater transparency and accountability in the organization and work. These questions reveal if the reviewed case studies align with inDICEs and for further consideration the users, data framework and features were reviewed. The second framework is oriented around user experience and usability especially in terms of:

    - Accessibility
        - Easy access to ethics of their data collection and references
        - Legibility and usability of data and narratives
        - Website
        - Language
- Adaptations to COVID-19 if any

These priorities reflect what needs to be built and rethought within the inDICEs online platform. Additionally, more than just understanding how a case study functions in terms of organisational structure, what is also important is a demonstrated commitment to more critical and just practices.

6.1.2 Methodology for Case Studies Benchmarking

Within the Hypothesis and Platform Model and Ethics Assemblies, participants and organisers have diligently worked to have meaningful outputs from various meetings and tasks.

From the Hypothesis assembly, they extracted impact frameworks and co-created criterias for the analysis of the case studies from various partners.

Much of the reference for these values which then influenced the criterias and impact areas derive from Pier Luigi Sacco's work. Pier Luigi Sacco is Professor of Cultural Economics, IULM University Milan; Senior Researcher, metaLAB (at) Harvard, and visiting scholar at Harvard University. He works and consults internationally in the fields of culture-led local development and is currently leading Work Package 1 with the Bruno Kessler Foundation. Then through research and the online co-creation process the following criteria were formed:

Criteria	Description
C1	Serves, aggregates and manages collected open data and methodological tools
C2	Includes a Participatory Space to facilitate community and stakeholder involvement with clear governance model
C3	Provides a transparent infrastructure to share legal and technical documentation and training resources
C4	Allows feedback from a diverse and statistically-representative range of participants (and methods to ensure it)
C5	Responsible use of user validation, filtering tools, content moderation, and AI techniques to synthesize large volumes of communication and data
C6	Green deal works towards a climate neutral carbon footprint that encourages innovation and a more circular economy.
C7	Creates connections and networks that enable use of work and processes to support resources, tools, strategies, and policies for more effective and cohesive digital transition by CHIs

C8	Empowers CHIs to have a stronger voice regardless of size or geography and have a more interdisciplinary approach towards their own data and resource creation

Finally, each case study was given an initial framework to ground their context and function, reviewed through the listed criteria, as well as through basic analysis of their audience, features, and information architecture.

This will only be a preliminary study with the criteria that will go further in depth in the next deliverable. For now, the focus is to understand the observatories in terms of users, user experience, and features created to accommodate both.

6.1.3 Five Case Studies

The five case studies presented are different digital observatories. The underlying common themes are a connection to the public sector and public data as well as a targeted professional audience for the use of their observatories. By taking a look at these different spaces, it helps benchmark inDICEs in terms of technical capacity and user experience research. The cases have been summarised in the tables below.

6.1.3.1 Public Impact observatory

	Description: A database of public policy case studies. Using their Public Impact Fundamentals they have analysed hundreds of examples of public policy succeeding or failing, drawing out the key lessons for future policy work.							
DATA	**Data Collected/ Published**: Public policies and case studies				**Who is collecting data and contributing to the data collection:**centre for public impact in partnership with national and local governments			
DIGITAL GOVERNANCE	**Ethical Compass:** - respect differences, seek to understand them and look out for one another - positive about what the organization and governments can do for societies - non-partisan, work together and seek ideas and solutions across the divides				**Governance:** They are an international team of innovators, researchers, communicators, a board of trustees, fellows, and the People's Panel. Members of the Panel come from a variety of backgrounds, and share a passion about the positive impact government can have on citizens. The Panel members regularly input into our work by raising issues that affect people's lives, which CPI can help the government to understand and solve.			
CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8

Compliance with the Criteria: In terms of criteria the Public Impact Observatory uses policies and publicly published case studies, aggregates them and provides a method and use for their work as per the transparent in their practices (C1). In line with this they also demonstrate while limited a space for community facilitation with a published explanation of their governance structure (C2).

However, the transparency regarding their infrastructure is limited since they do not include technical documentation or training resources (C3). It should be noted that they do create space for calibrating their data with people represented in their data with the People's Panel (C4). Finally, they show a basic level of commitment to the environment by including environmental case studies (C6).

6.1.3.2 The Observatory of Economic Complexity (OEC)

	Description: Online data visualization and distribution platform focused on the geography and dynamics of economic activities. The OEC integrates and distributes data from a variety of sources to empower analysts in the private sector, public sector, and academia.							
DATA	**Data Collected/ Published:** It includes subnational level data for dozens of countries, sourced directly from their public customs records. Data visualizations focused on the geography and dynamics of economic activities.				**Who is collecting data and contributing to the data collection:** Data Wheel			
CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8

Compliance with the Criteria: The Observatory of Economic makes transparent the data they are using as well as their progress and methods in processing this data (C1). To a certain extent they do make transparent their infrastructure and their qualifications for producing this observatory, however they do not provide any methodologies (C3). Finally, perhaps most notable is the powerful AI tools they use to process large amounts of data (C5). However, there is no mention of governance because it is run by a private entity that has not demonstrated a transparent governance or commitment to values, principles, etc.

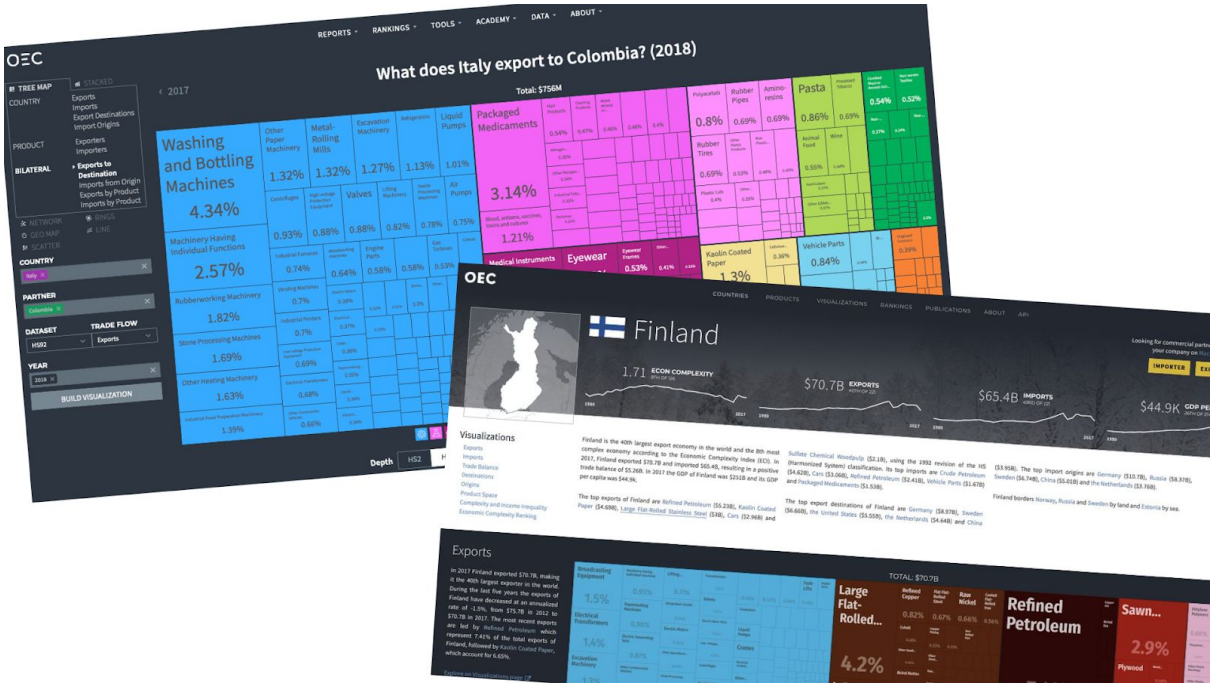


Figure 6.1.3.2 shows the different data visualization tools created by Data Wheel for the Observatory of Economic Complexity.

6.1.3.3 Data Africa

	Description: Data Africa is an open data platform designed to provide information on key themes for research and development such as: agriculture, climate, poverty and child health across Africa South of the Sahara at the sub-national level. The main goal of the online tool is to present the themes to a wide, even non-technical audience through easily accessible visual narratives.							
DATA	**Data Collected:** The data contained in the online tool draws from a variety of sources, including: Agricultural Data IFPRI's CELL5M Database, Climate Data University of East Anglia's Climatic Research Unit, Health Data DHS Program, Poverty DataWorld Bank's PovcalNet				**Who is collecting data and contributing to the data collection:**Data Africa is a HarvestChoice project website.			
	Data Published: Country Background, Crops by Harvested Area, Crops by Production Value, Harvested Area Versus Value of Production, Water Supply for Crops, Rainfall by Location, Health Conditions Among Children, Health Conditions Among Children by Gender, Health Conditions Among Children by Residence, Poverty Levels, Poverty Measures by Gender of Head of Household, Poverty Measures by Residence							
CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8

Compliance with the Criteria: Data Africa similarly to the previous observatory makes transparent the data they are using as well as their progress and methods in processing this data (C1). To a certain extent they do make transparent their infrastructure i.e. the partnering organizations and their ethos and their qualifications for producing this observatory, however they do not provide any methodologies (C3). Finally, perhaps most notable is the powerful AI tools they use to process large amounts of data (C5). However, there is no mention of governance because it is run by a private entity in tandem with a university that has focused more on the data rather than demonstrating basic transparency in governance or commitment to values, principles, etc.

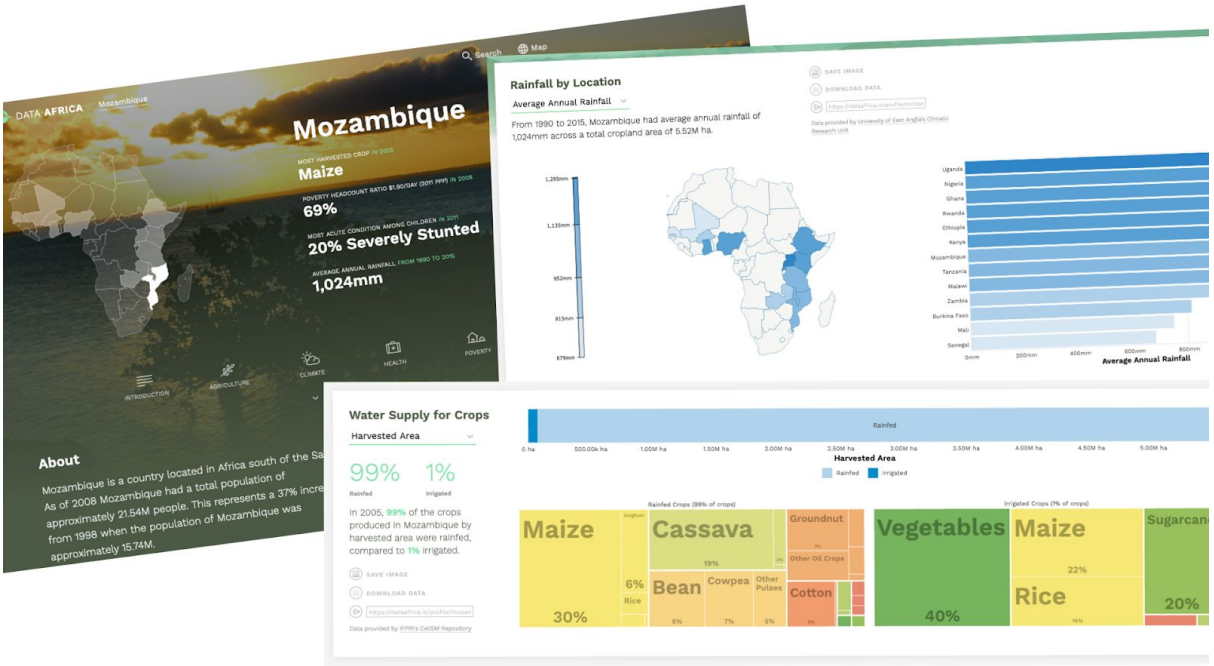


Figure 6.1.3.3 shows the data analytics and visualization tools within Data Africa within their narrative and country context.

6.1.3.4 Enumerate Observatory

	Description: The ENUMERATE Observatory provides a reliable baseline of statistical data about digitization, digital preservation and online access to cultural heritage in Europe. They collect statistics through surveys, reuse data from existing research, analyse and publish the results, develop indicators and collect various user needs on intelligence.							
DATA	**Data Collected/ Published**: They have conducted numerous surveys across Europe. They have extensive publication of the survey results, methodologies and learning about digitisation in Europe.			**Who is collecting data and contributing to the data collection:**National partners across Europe who mainly consist of institutional cultural heritage contacts.				
DIGITAL GOVERNANCE	**Governance:** Members council: Each year Europeana Network Association members elect a governing body of 36 representatives to form the Members Council. The Members Council decides on the Association's priorities, steers its activities and ensures general progress against the Europeana Strategy. The Members Council appoints six members to form the Europeana Network Association Management Board. The Board leads the development of the ENA's strategic vision. They also sit on the Europeana Foundation Governing Board to represent the Network Association in Europeana Foundation's executive decision making. Governance Working Group The main objective is to have a place to exchange and share information in the following areas: Resolve challenges related to governance procedures and decisions of the Europeana Network Association, Implement changes and improvements to the Europeana Network Association Statutes and Bylaws, Set-up and act as the Voting/Election Committee, guiding and monitoring the electoral procedures, voting and results of the Europeana Network Association elections, as well as elections of its Management Board and Members Council, Run campaigns related to the Europeana Network Association elections							
CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8

Compliance with the Criteria: The Enumberate Observatory has incorporated a Participatory Space for their governance that includes both a council and working group (C2). They also provide a transparent look into their structure with documentation from both a legal and technical standpoint (C3). Their observatory supports networks and network creation that support a more cohesive digital transition of CHIs (C7). Finally they provide resources and learning from studies as well as space for CHIs to have a stronger voice regardless of size (C8).

6.1.3.5 European Audiovisual Observatory

	Description: The European Audiovisual Observatory was set up in Strasbourg in 1992 to reply to a distinct lack of information and transparency concerning this industry. To the present day, it continues to provide a comparative European overview of the audiovisual industry in 41 different countries as well as detailed analysis of national and even regional industries.	
DATA	**Data Collected/ Published**: Gathering information on the audiovisual industries in 41 countries is clearly a mammoth task. In order to do so the European Audiovisual Observatory has become specialised in network management. They have built up, for each sector of the audiovisual industries, a network of national and pan-national contacts and information providers who supply them with raw data and analysis. These can be individual correspondents or national institutions or, in some cases, professional consultancies which supply us with information. Thanks to its statute, the European Audiovisual Observatory enjoys very privileged access to and relationships with other public bodies working in the audiovisual field in Europe. Once they receive the information, it is then up to the Observatory to apply its methodological expertise in order to harmonize it so that it may be used for comparative purposes. In this way, the Observatory is one of the only organisations capable of providing a comparative overview of the audiovisual industry in Europe.	**Who is collecting data and contributing to the data collection:**The Observatory has two departments whose Experts and Analysts gather and process their information. The Department for Market Information produces statistical and economic analysis of the trends in the European cinema, television, video and internet sectors. It also produces intelligence on the means of financing of these various sectors. The Department for Legal Information analyses key legal issues linked to the audiovisual sector and reports on major legal developments and ground breaking cases which affect media legislation in Europe.

DIGITAL GOVERNANCE	**Governance:** Each of the Observatory's members is represented within the Observatory's governing body, the Executive Council, with one vote per member. The Executive Council meets twice a year: once in the country holding the annually rotating Presidency of the Observatory and once in Strasbourg. The purpose of these meetings is to adopt the Observatory's annual action plans and Mid-term Strategy (which form the basis of all our work) and to approve the budget needed to finance the work involved. The Observatory's budget comes from contributions from our members and is also partly financed by the sales of our products and services. The full list of member organisations can be found on the Members page.							
CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8

Compliance with the Criteria: The European Audiovisual Observatory has a governance structure that is mostly run through a council that allows for a certain degree of democratic practices but is not necessarily oriented around creating a Participatory Space (C2). They provide extensive documentation to demonstrate transparent (C3). They also allow space for networking and connection to support audiovisual oriented sectors (C7). Finally, they have a very interdisciplinary approach to data with a variety of data types and search engines (C8).

6.1.4 Audience, Features, and Information Frameworks

In terms of a more user experience oriented evaluation of the aforementioned observatories the following tables provide an overview of features, data architecture from the perspective of the user and the types of users mostly likely to explore or participate.

Table 6.1.4

	Data Africa	Observatory of Economic Complexity	Enumerate Observatory
Users	researchers, government agencies and workers, investors/funders interested in SSA agriculture	analysts in the private sector, public sector, and academia	European cultural heritage sector
Data Architecture Framework	data categorized by nation or indicator within a preset glossary; concrete set of data objects repurposed to be relevant to users	data categorized by province/nation/region according to the harmonized system or by product; concrete set of data objects repurposed to be relevant to users to make it more accessible	data categorized by relevant themes; concrete set of data objects repurposed to be relevant to users through interactive tools to make it more accessible
Features	can save the image of the data visualization download data presented via csv shareable link of data visualization	can save the image of the data visualization download data presented via csv shareable link of data visualization create specific visualizations within set parameters of import/export and geographic scale, to forecast can set a span of years	series of curated, preset data, interactive dashboards share dashboard page

Table 6.1.4

	European Audiovisual Observatory	Center for Public Impact
Users	European cinema, television, radio, video sectors	public servants, individuals and organizations interested in public policy and services
Data Framework	Data categorized by industry, nation; also a set of searchable databases relevant to the observatory	data categorized by nation or indicator within a preset glossary; concrete set of data objects repurposed to be relevant to users
Features	a series of industry themed databases newsletter	filter through case studies by international region and preset filter themes related to public goods and services

6.1.5 Learnings

Data and Accountability

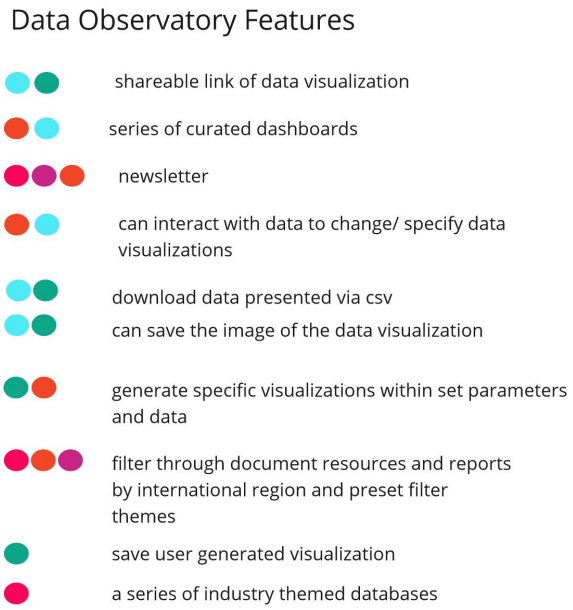
The various observatories that were chosen clearly demonstrated an effort to resolve the need to have information organised, evaluated, and processed where by others might more easily access and understand what this raw data might be communicating.

By and large, the majority of the data collected and used for the observatories came from policies and reports made freely available by governments. It is notable that amongst these projects only one explicitly had any sort of documentation around the principles and values that was easily accessible and readable.

While most of these projects lean towards creating greater awareness and providing resources towards a betterment for the human condition such as Data Africa and the Observatory of Economic Complexity, there is not a transparent or clear statement that demonstrates ethical purpose or intention. As such no accountability measures or systems of governance exist either. Rather these two observatories are run behind closed doors and are ultimately, of private interest. Other observatories that were backed by public institutions or held a sort of non governmental organization status did provide reference for their governance and clear language about who and what is represented in this governance. However, governance will be further explored in the next deliverable and the focus of these learnings will be on information architecture and user experience.

User Experience, Data Frameworks, and Features

While each of the platforms in the case studies demonstrates a focus on an expert user who is likely able to navigate through jargon and curated datasets more easily than a non-expert, there was no one standard experience or feature shared across a broad majority of the cases.



In each of the observatories there was an opportunity to download selected data. However, there was no consistent pattern to the openness of having participants participate in governance or contribution to the observatory.

Insights from Criteria

While most of the observatories work with data that is publicly available, that data is not necessarily classified as open and whether or not the people and organizations behind the observatory are from the private or public sector is a strong indicator of the transparency of methods and tools used to create the observatory.

Figure 6.1.5 shows the features from the different observatories where each dot corresponds to an observatory from above

A Participatory Space for the community and stakeholders if it existed was done through reports on meetings and structures, rather than the observatory itself serving as a platform for stakeholder engagement like within inDICEs. It might be more valuable to reference participation within Participatory Spaces that encourage engagement whether through other civic engagement spaces or socially driven platforms which will be conducted in the following months.

There was a legal note on all websites, however, the transparency of the governance or formation of participating individuals generally depended on whether the resources for the project were more public than private.

While the data demonstrated a diversity of geographies more often than not there was no process to check back to calibrate the data with people who represent those geographies for the majority of the studies. The only case that came close to such a review was the people's panel in the impact observatory, however, there was no further documentation of its governance or detailing of how it

functioned. For this criteria, further research will be performed with platforms oriented towards equality and justice.

Few of the platforms used AI techniques to synthesize data, but rather drew upon fixed data sets and using filtering tools to then moderate content or create curated content.

None of the observatories demonstrated a more circular technological economy or greener practices around data and technology.

All of the civically minded and publicly funded projects had a network of communities and stakeholders. Enumerate, which is a Europeana project, was oriented towards CHIs and provided resources and tools for a more cohesive digital transition.

6.2 Interviews with Experts

Within Platoniq's research several expert interviews were conducted. This provided an inside look into some of the most successful online data analytics and participatory projects online at the moment. Interviewees divulged information about topics from organizational practices, the future of their technologies, and their own work processes and visions. This provided rich information to benchmark and contextualize what opportunities and challenges lay ahead for inDICEs.

6.2.1 Participation Experts

6.2.1.1 Civiclytics

Methods

The framework that was used to review case studies was also applied to the question creation with Civiclytics to create a consistent study of the platform and how their practices and structure might inform the design and creation of inDICEs.

Introduction

Civiclytics has both a private and public platform. The private platform is used internally for insights and intelligence for the organizations. This is where they generate country specific briefings every month. However, the public observatory came from an idea to make an open space that displays what people are concerned about in Latin America and the Caribbean covering topics such as access to education, the healthcare system collapsing, access to food, comparing countries, and if the listed topics change overtime. It helps civil society, and others like engineers and companies know what are relevant areas of work to work with.

Their aim is to connect data with types of actions citizens can take; this aim comes from the vision and mission of the company rooted in social coin[6]. Data and analytics are important, but their real goal is to inspire action and create research that makes people move and take action. They found that one of the main aspects of inciting action is answering the question of why me and why now. This shaped what they wanted to do with Citibeats that urges people to go out and do something.

[6] https://thesocialcoin.com/

However, one of the issues they encountered was the scale at which they were working and the necessary resources they had to complete an action. Currently, their means of working is through automated suggestions with human curators, and being a human curator is a big task in matching data to context.

Their Data

90% of the data they source comes from Twitter along with a typeform website where they gather a few thousand comments a month. They had little to no success asking for data sets. With their data they categorize it into terms people already use. On the public website information is aggregated anonymously so a user just sees metrics, KPI, etc. However, there is a part of the website that displays quotes to show there are real people behind the data. A human is needed to filter for sensitive information.

On their team to collect data are several different profiles from a social data analyst, individuals with a social science and data science backgrounds. Also contributing to data collection are occasional workshops that help define categories from both a bottom up perspective asking what people care about and a top down approach asking what do experts see. They have yet to use the bottom up approach with everyday citizens. While the use of Twitter is not representative of whole populations they operate under the theory that people do not just talk about themselves but also about those around them. The driving idea behind Citibeats is that everyone wants to be data driven but citizen voices should be part of that data.

A facet of Civiclytics that could be improved from the public web is that the data is shared at a national level, but it might be more relevant to share data from a state level and be even more specific in terms of the problems flagged. The challenges faced are on a medium to long term scale that revolves around how do they detect problems that motivate people, create viral interactions between people to get a maximum ripple effect.

Within their work, it is important to be realistic about what happens to their data. Decisions are not just made with data, but serve to create more awareness. Journalists can put it to use in articles which is a more successful indicator of its use. However, it should be noted that on an educational level it can be used to open discussions and create a sort of soft impact on people's everyday lives.

Impact

It is too difficult to measure impact according to separate audiences simply because they are too large and diverse. It is much easier to understand impact with their private dashboard and within the organization because they know exactly who they are serving and how they are supposed to meet specific needs.

Design

Their design was not a structured process and came through their UIX expert along with client feedback.

Trends and Open Data

Most of their metrics are dictated by social media. The algorithm that they use is not customised per client but rather adapts to volume in the project. Their algorithm is not open but they have a positive attitude towards the use of open source code. They have not used open data because it is not unstructured text and usually comes as a number which is not usable. They would love to be the middleware that converts unstructured data into open data.

Imagining data driven proposals on Decidim

The inDICEs project could start by framing topics of interest on Decidim and then obtain a wide scale of data to validate it. There is also ground truthing which is AI in crowdsourcing data where Decidim could be the ground truth of the data as a well controlled sample that is representative of a specific audience. An academic may see it as complimenting other data or raising questions, but in most cases if the number of comments is not reliable and the changes in numbers are too subtle it may not be precise.

Technology

In terms of the API, one can be a viewer, explorer, or a builder. An explorer can build upon data and a builder has the most power to upload data. Overall, they try to focus on building a consistent tool that can be adaptable.

Diverse representation

They cannot ensure diverse representation but have started to create practices to avoid widespread biases around gender and age. They do a segmentation based on names and bio descriptions then calibrate based on the population.

6.2.1.2 Carol Romero, Decidim Product Owner

Background and Work

Carol Romero works in social education within a digital context. She has always worked with digital platforms for municipalities and citizens. Originally, her work revolved more around GIS systems and digitising networks. She has worked with Decidim for the past five years and has been involved in the city governance area of the project. Romero has been working on product design for the past two years and is the current product owner of Decidim. Carol Romero views user experience as participant experience especially in this new age where it will be seen how digital platforms have adapted to COVID-19. Her current idea for the platform is to develop three user journeys beginning with an aspect of participation that happened during the state of alarm in Barcelona. In France there is a current project around what life will be like post COVID-19.

Main Takeaways from the Progress Decidim Development in Barcelona

In terms of the development of Decidim, an administrator can create a space such as a process, assembly, or consultation with a variety of components on the landing page. Within each component documentation can be generated such as within a survey results can be exported or in space with proposals, proposals can be exported into multiple file formats. This type of platform prioritizes a participatory experience and makes different aspects of participation more clear and straightforward for organisers and participants. While they have toyed with the idea of having

preformatted designs for processes or proposals, it does not seem to be worth the time and could be more time efficient for administrators to create according to their needs.

Hashtags
In terms of other ideas, one would be the use of hashtags within proposals. Comments are the most interactive part of the platform and it is a dynamic social interaction. It would be very valuable to use hashtags to make sense of all of this interaction in an agile manner. The plan is to incorporate hashtags, but there has yet to be a definitive deadline for their creation.

Accountability
Currently, accountability is limited in terms of design and structure, it would be interesting in the future to create different views or means to export or view accountability to make it more accessible and communicate in a more meaningful way.

Conversations and Communication
In the coming version of Decidim, there will be improved conversation threads and design oriented towards exchange between participants. Also planned is the capacity to integrate video calls. One example would be that when creating a meeting, the meeting will take you to the video call. There will always be tools that do it better but what the Decidim team is working towards is what would be best and most practical to integrate well rather than racing to do everything the best.

Participant Experience
An important priority of the future of Decidim is improving user or participant experience of the platform. For the upcoming version, the team is thinking about personalizing terminology to make it more accessible on different platforms because things have been translated too literally on the platform. To improve the overall experience there will be user tests to validate some of the concepts they are working on and also to remove inconsistencies on the platform. This will form part of a diagnostic and create corrections and they will have to do user research of the pain points in Decidim. Ideally there is a reinvention of the interface so that participants have faster access to their interests and will be able to generate content to some degree resembling what happens on social media.

Proposals
A proposal by Data for Good BCN (a collective that helps NGOs take advantage of their data analytics) that is being taken into account is for when a participant is publishing a proposal that a list of similar entries is displayed to avoid duplicates using a technique called word embeddings.

Homepage
Finally, on the list of current improvements is the homepage of the platform so that groups administering a process have the same functionality as the homepage to more easily configure and customize a page.

6.2.1.3 Pablo Aragon Expert Interview and Talk

Pablo Aragon is a Research scientist at Eurecat, Technology Centre of Catalonia, adjunct professor at Universitat Pompeu Fabra, and a Board member of Decidim.

Decidim

Decidim has 3 tiers:

- Political
- Technical
- Technopolitical

Within this context the city of Barcelona is encapsulated in the political tier. While it is the central actor on the platform, the most populated communities on the platform are actually created by individuals i.e. residents.

While often generally framed through processes, assemblies, or consultations, Decidim can also be thought of as host for different encounters and organizations, thus a platform for engagement and network building. This network building and community hosting comes with it the capacity of citizens to share and collaborate on policies and proposals through open data.

Data visualization and Participant Empowerment

Democratic participation is not exempt from the use of visualization techniques. On the contrary, any civic or public platform is obliged to present its information for different reasons: to provide information relevant to the participants, to facilitate the decision-making process in complex situations, to offer mechanisms for reporting on the decisions taken, to guarantee transparency policies, etc.

BarcelonaNow is a project that allows citizens to create data visualizations through widgets. Participants can choose from available data sets to create visualizations or graphs and maps to represent the numbers they want to process. This is one level of interaction with open data. However, to take it a step further would be to use Decidim as a repository of data itself that can also be used to gain insight to support the communities using it.

The number of possibilities for hacking Decidim and building upon its current system are vast. Following proposals that were used in many of the wireframe current proposals under review are those that suggest similar proposals as one is writing their own one can see similar content such as the one proposed by Data for Good BCN. This follows with the logic of using WebLyzard tools that filter search results to generate a dashboard of articles, keywords, and online sentiments. Having such a tool would be useful before or while writing a proposal, but in the schema of a user's journey on the platform where would it be? From there, the Platoniq team have added that this might be a dashboard that an administrator can create for specific Participatory Spaces that is accessible to collaborators or participants.

Part of engaging residents on a civic platform has been to create compelling points of interaction that are oriented around specific themes or stories. Stories serve a frame that invites participants to see their role in the narrative. Data offers these thematic areas or stories evidence and ground them in real world phenomena to make clear connections and narratives that they have been presented. Taking this idea further if the goal is innovation, is to foster greater involvement of varying participants by making the data more accessible and tangible so that people can comprehend and work with complexity. Approaches might include amplifying data in ways that allow creation on part of the participant that allows for both learning and creating a shared vision for the future.

Reflections and Recommendations

Any project that is working to expand the possibilities of Decidim should also take into account that Decidim is not only a facilitation platform but also a repository of participant generated data: concerns, activities, opinions that also are opportunities for community engagement, collaboration, and learning.

Furthermore, informed decision making processes should be promoted. This can take many forms in terms of participant or user interaction. It will require tools i.e. dashboards to combine data from Decidim and data from other valuable external sources. These dashboards provide opportunities for innovation and collaboration. Additionally, Decidim is complex, data visualization could be a strategy to make complexity simpler and more accessible to participants.

6.1.3 Learnings

By looking at these various case studies it becomes clear that their structures and features is a negotiation between organizations, user needs, and available resources. Governance, especially within a sector or various communities might be better analysed with case studies where community governance. With the exception of observatories directly connected to or funded by public bodies there was not a large emphasis on digital community governance. The exception to this, of course, was in the case of Decidim upon which the experts Pablo Aragon and Carol Romero detailed in their interviews. Core to Decidim's design and governance is the incorporation of transparency, traceability, and accountability. One important aspect of these core values is use of open source code. Additionally, Decidim also provides a strong reference for an active online community, in terms of the meta Decidim community that convenes and discusses the future of the platform. In lieu of the experts and their experience in user experience important to note is that pragmatic, usable, and accessible trump sleek design and that measuring and designing participation needs to be calibrated against existing inequalities in terms of sexism, racism etc. that are often augmented on the internet (in terms of who can access it and how).

However when looking generally at the data observatory cases, important takeaways were how they catered to their user audience through developing specific tools, using accurate jargon, and developing resources as a basis to take action. Each of the observatories were created out of a perceived need to provide specific actors and organizations tools with information to help them navigate the context of their sector. Overwhelmingly, this information was organized according to nation, region, or international groupings. Other important notes from the observatories was the accessibility in terms of searching for, filtering, referencing and creating resources. In terms of the

inDICEs project it will be crucial that the different dashboard functions are integrated in a way that is more tailored to the core audience(s).

6.3 Principles and Values. Determining the priorities and ethical compass of the Open Observatory

6.3.1 Platform Model and Ethics assembly insights

This section details the work and outputs of the Participation Model and Ethics assembly where a vast majority of the work revolved around both developing the governance of the platform and refining the needs and functions that will best serve future users. The section will detail the former.

Within the Model and Ethics assembly 22 proposals for possible principles have been generated for the digital space. From these 22 proposals partners are working in smaller break out groups to finalise and write statements concerning principles and values. The inspiration of this work comes from the OECD digital governance toolkit. The main activity during the past two assemblies has been to define an ethical framework to cover the governance and engagement of communities and institutions partnered with the inDICEs project. Within the process of creating breakout groups for participants, principles were broken down into four groups:

- Impact & Engagement
- Accessibility & Diversity
- Policy & digitisation
- Voice & Narrative

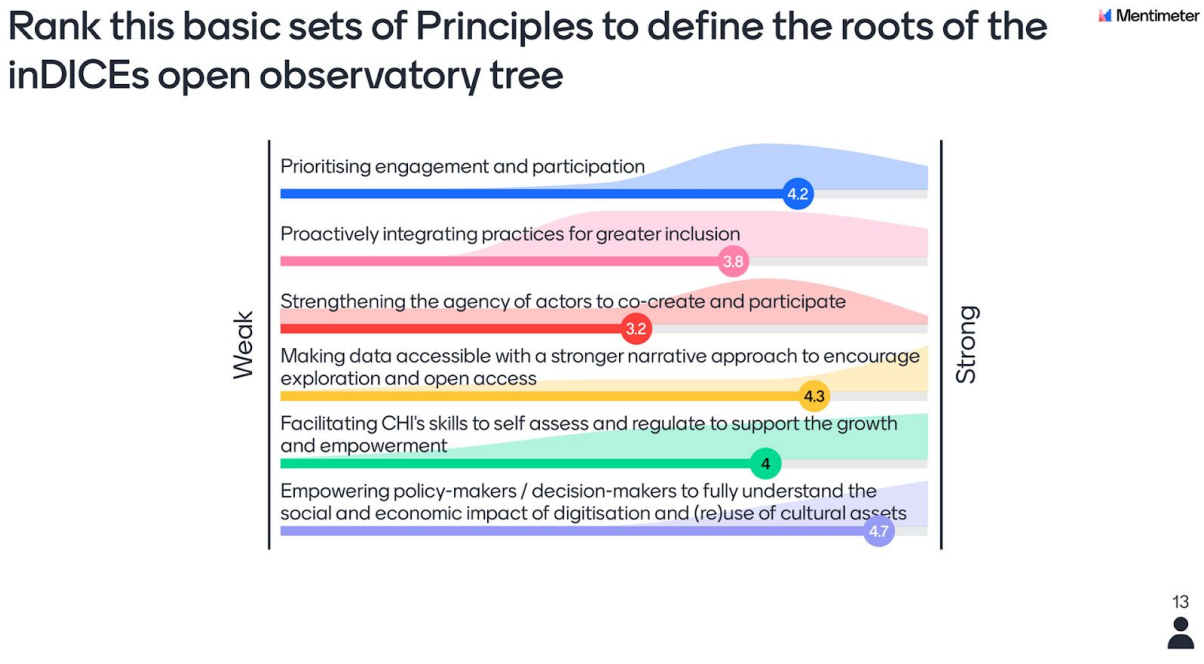


Figure 6.3.1The image above refers to one of the first activities in the Platform Model and Ethics assembly to determine what principles should be prioritised for the governance and guidance of the platform.

The activity in figure 6.3.1 then led to the creation of proposals for principles and thereafter the categories previously mentioned. These group categories now form part of the proposed impact areas on the platform. Values from the project were generated in reference to previous work from the partners, especially work done by Fondazione Bruno Kessler and WP1.

6.3.2 Co-creating inDICEs principles and defining a set of indicators to measure actions

However, since incorporating the use of MIRO tool (a shared digital white board where participants can write, create, post, and use post-its together) the different on line assemblies have taken on a different character and interaction. During the last Platform and Ethics Assembly this past September 2020, participants were asked to complete the task set during the summer which was to merge similar principles and add actions or indicators that would enable the inDICEs community to fulfill the ethical principle. Below are the impact frameworks with the merged principles and actions to follow each principle straight from the participant's digital post-its such as in the image below:

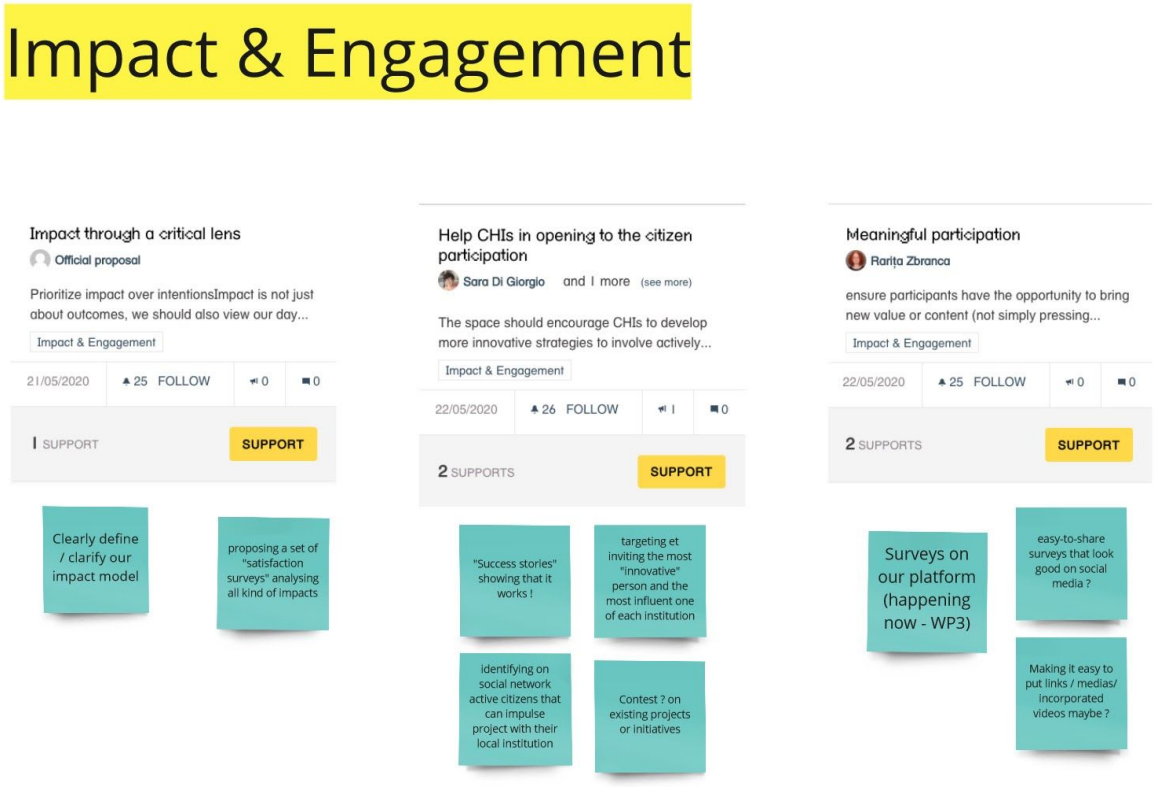


Figure 6.3.1.2 is a screenshot of the MIRO board for the Hypothesis Assembly October 2020

This exercise was inspired by the OECD digital governance toolkit. Currently, the input is being processed for the following assemblies and deliverable so that there is a finalized list of principles

that correspond to a value, indicator, and action in following with D5.4 inDICEs model for community participation and T5.3. Designing a model for digital community participation as a driver of impact

In the following Platform and Ethics Assembly planned for November 2020, the aim is to draw inspiration from this past work and evaluate how to incorporate these different action approaches into the governance of the platform. Just to note this work also draws reference to the work done by the OECD Governance toolkit. With the consensus of the partners the accountability component will be used as a part of actions finalised in the platform's governance because it offers the possibility of subdividing results into projects, defining and applying progress statuses around their implementation, as well as displaying the extent of the results' implementation grouped by categories and scopes.

7 Technology and data integration

The Data and Integration component of inDICEs focuses on developing a comprehensive and integrated digital platform with the technologies and input of the inDICEs technological partners. A substantial priority is to interweave the capabilities of the different technologies such as the Decidim platform and the WebLyzard Visual Analytics Dashboard to create a streamlined, holistic digital platform that serves the needs of those working with and in CHIs. For instance, an example is incorporating the dashboard into the platform. The ensemble of customisable data visualization tools will be a powerful tool if incorporated well into the Open Observatory Platform presenting the data in an interactive format and allowing users to navigate the knowledge repository along multiple context dimensions. To accomplish this aim a Technology and Integration assembly was created.

The main goals of this assembly was to:

- create a highly scalable knowledge repository for storing content processed in WP1 (documents and statistical observations) together with automatically generated metadata (e.g., sentiment, entities, relations)
- enrich and structure the various content items and align them with the evolving inDICEs knowledge graph and WP4 data that results from the Observatory Participatory Spaces processes.
- develop a web crawler and API connections to various social media platforms (the Observatory API will support the ingestion of documents as well as statistical observations (time series data, optionally with geolocation)

7.1 Technology Integration Assembly Insights

Over the past year there have been four Tech and Integration assemblies to coordinate with technological partners to best integrate the Decidim platform and incorporate the dashboard into the Open observatory, a unified digital platform with various components, features and functionalities. From the first meeting the conversations included how the partners might be able to use WebLyzard's data analytics tools to process and produce data from engagement on the platform. The engagement on the platform that could be used to generate analytics revolved around the debate or proposal content where participants or users produce content.

Two of the main priorities that emerged through the assemblies from these ideas were creating a space to make proposals that would also provide the user more context in the proposal creation process. For example, if a user were to create a proposal, similar proposals might appear along with key words also trending around that topic. The second priority was creating a test dashboard for the inDICEs project with WebLyzard to see how the functionality of the existing dashboard aligns with the user needs identified in the user experience research and what developments might be necessary to make changes. A source of inspiration came from the Pablo Aragon talk in the third assembly. Pablo Aragon is a research scientist at the Big Data & Data Science unit in Eurecat, Centre Tecnològic de Catalunya and an adjunct professor at Universitat Pompeu Fabra. His research focuses

on understanding social and political phenomena through the analysis of data from the Internet. During his talk he gave various examples of different components on Decidim, especially proposals that have been useful to gather data about participation and also how that data has been visualised. The progress that has been made thus far on these core concepts were a series of wireframes Platoniq created following up on the context aware proposals concept from earlier meetings. Partners were able to review and give comments and in moving forward the design will be streamlined to fit feedback and tested for an optimum user experience. In terms of the dashboard and data visualizations, there have been inputs from various assemblies as previously mentioned in chapter six that will be developed into wireframes and require further investigation with WebLyzard to create tools that will be of use to future participants.

7.2 Interaction and Data Types

7.2.1 Sourcing data types and functions of the inDICEs Visual Analytics Dashboard and Participatory Space from workshops and assemblies

Platoniq has extracted the types of data and functionalities partners reconceived as users might require while using the inDICEs Visual Analytics Dashboard and Participatory Space. From the first Hypothesis Assembly and Platform and Ethics Assembly in the spring of 2020 a list of possible data types and functionalities were drawn out. These assemblies focus on research needs as well as models of digital communities and governance the platform will need to develop to best serve future users.

Broadly the data and functionalities listed from the first Hypothesis and Platform and Ethics Assembly are listed and visualized in the following image:

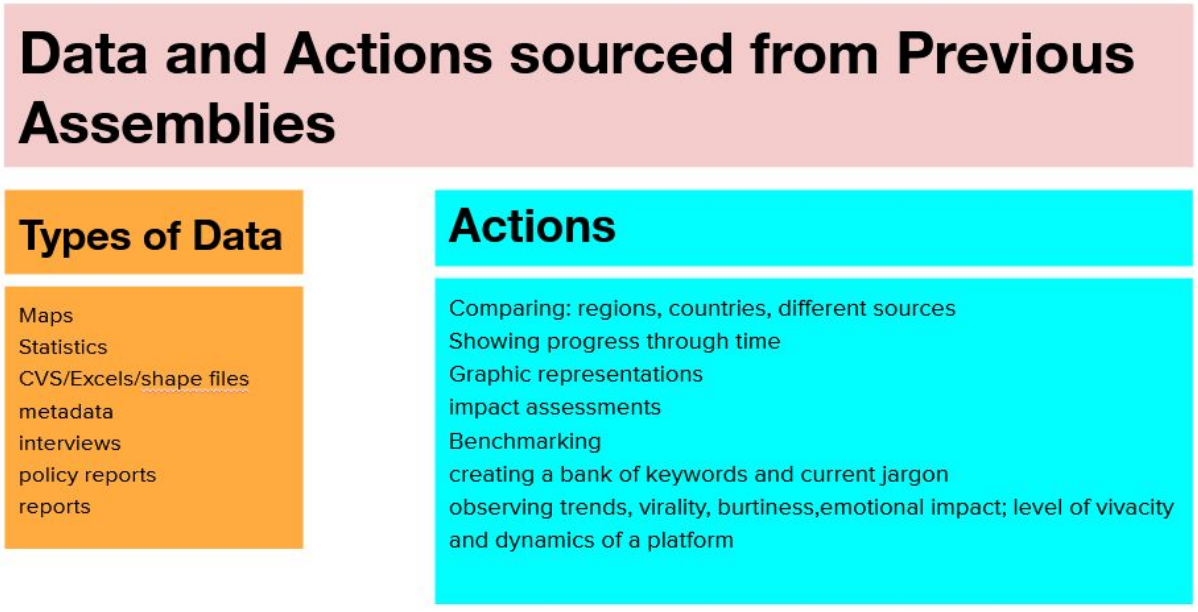


Figure 7.2.1 shows the amalgamation of different data types and actions identified

This list was made pulling from participant written content that was produced during assemblies such as the image below:

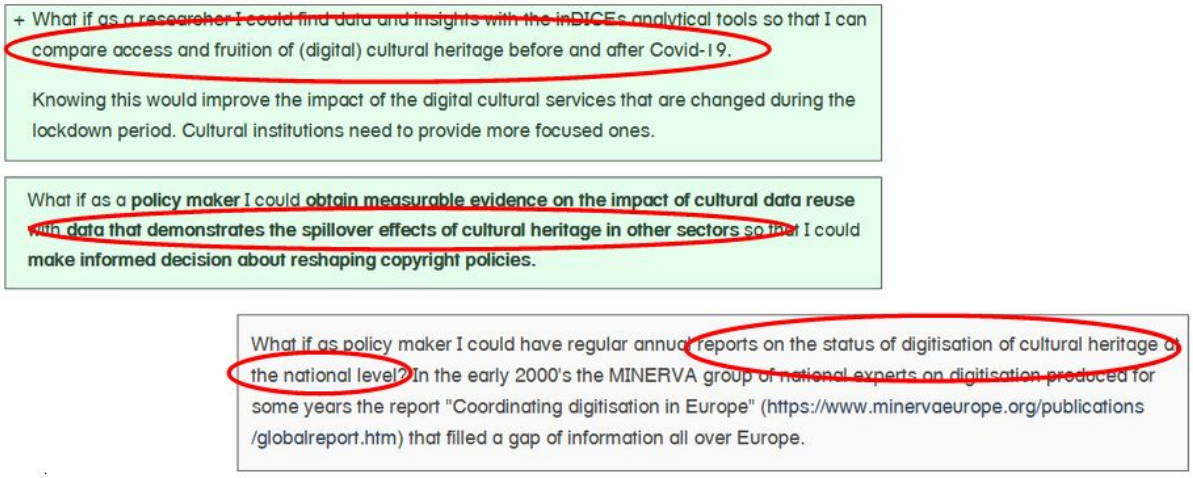


Figure 7.2.1 is a screenshot of different participant proposals for 'WHAT IF' Scenarios

Participants were encouraged to produce 'WHAT IF' scenarios. A 'WHAT IF' scenario is framed as such 'What if I as [insert role] could [insert action] with [insert tool/resource] in order to [outcome/impact]. This tool developed by Platoniq allows for users to approximate tools, functions and data they use in their day to day work as well as what they could use in a more ideal research space. Some of the insights are even sourced from participants writing 'WHAT IF' scenarios in the Rome Kick-off meeting in January 2020 such as the image below:

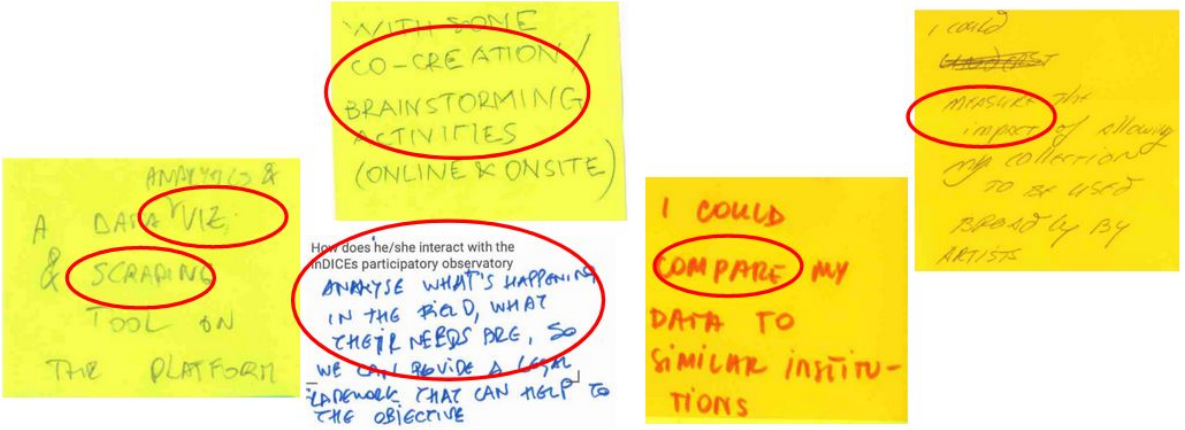


Figure 7.2.1 shows different post-its and input from participants in the Rome Workshop in January 2020

7.2.2 Data types and actions

Initial explorations of the information given by participants was then organized to pair data with the type of actions or functionalities that might follow. To elaborate and give a more concrete idea of

what this might look like or result in examples from existing data observatories were taken including examples from five different case studies used to inform data observatory and platform research.

7.2.2.1 Comparing national frameworks

Within the context of the EU there were different proposals and also mention of the need to compare anything from funding to digital engagement of cultural heritage institutions across nations especially for users who are cultural heritage practitioners and policy makers. In the image below the national data that would be accessible and possible to compare might be numerical or text data from excel, shape, and cvs formats. The accompanying images are various data visualizations and data observatory content such as OCIM that transforms this into understandable, interactive, visual content.

In addition, the section of the image also demonstrates where the data could also be sourced to create visualizations from the inDICEs Platform, which are the proposal, debate, and survey components. Each can be sourced for text or numerical data.

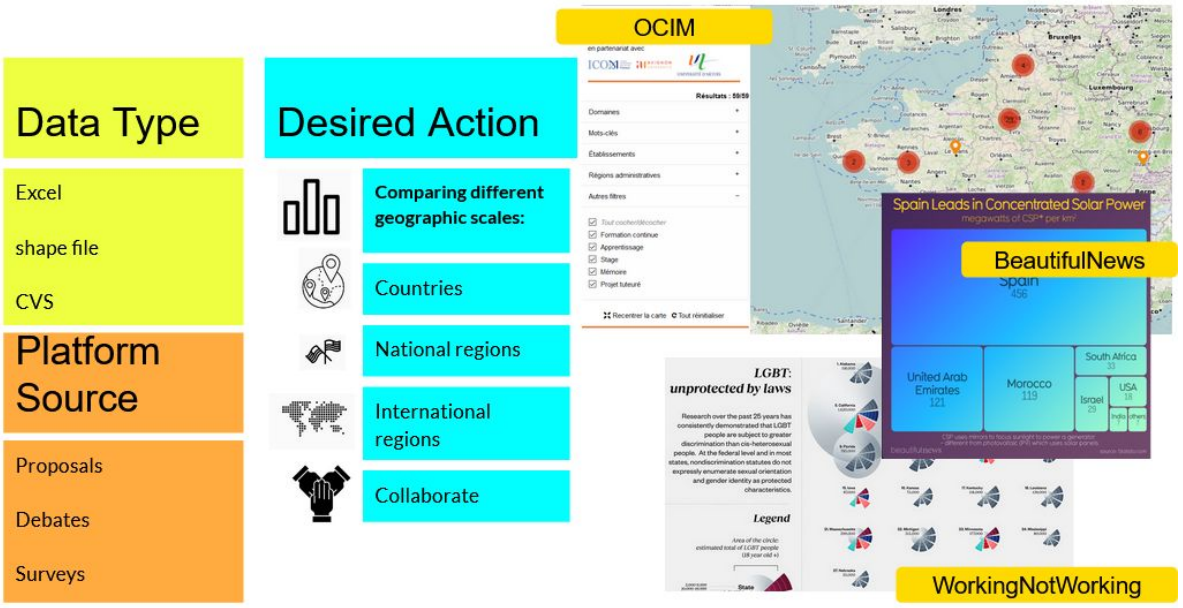


Figure 7.2.2.1 This Figure details data types that would compliment a comparative analysis between countries or regions. The data types and functions come from participant input within different assemblies. Along with this, is also different data visualizations or data observatories such as OCIM that offer a regional or national perspective on various statistics.

7.2.2.2 Sifting through Text and Time

Across the assemblies another salient piece of data has been text. Text in the form of conversations, key words, interviews, reports etc. However, what partners expressed was not simple access to text, but the power to sift through important keywords and highlights that allow them agility in fact finding to capture or create visuals that then communicate that information with greater interest and accessibility. Examples of tools that help do that come from tech partner, WebLyzard, case studies such as the European AudioVisual Observatory, and Beautiful News.

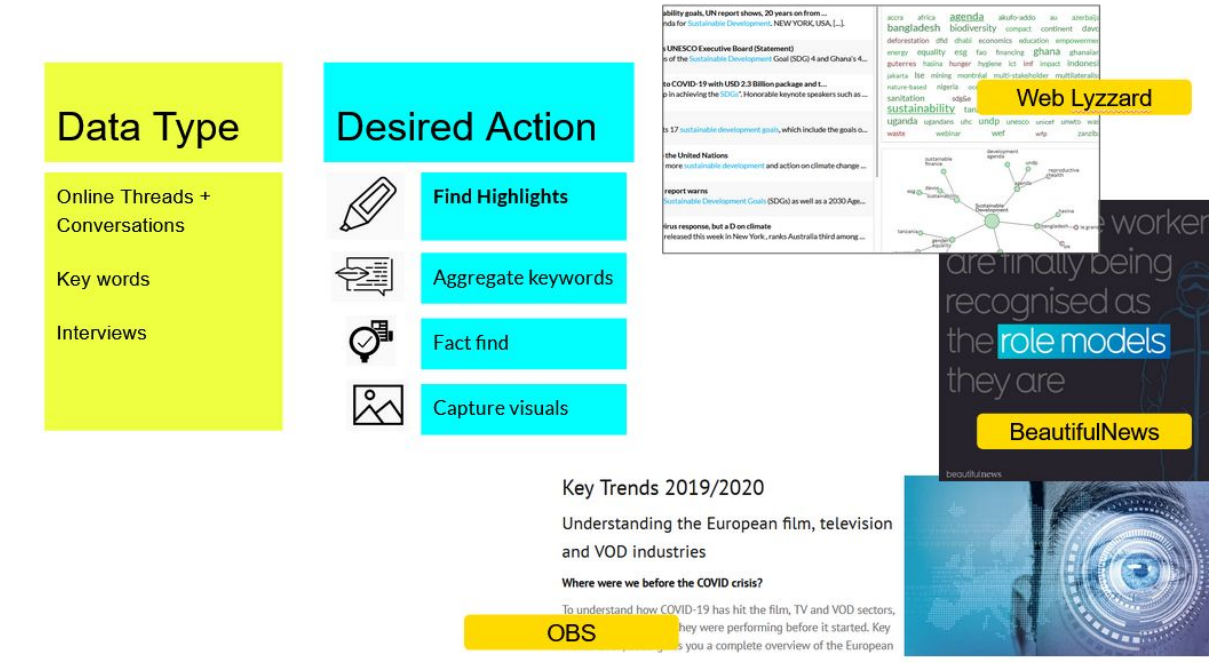


Figure 7.2.2.2 This Figure demonstrates the actions and data that compliment each other that were sourced from different assemblies. Here there is a focus on text data, the actions, and observatories or analytical data tools that can be used as a reference in terms of visualizations or features.

Further Iteration

After further research and iteration of what sifting text might be envisioned as through reviewing participant feedback another list of actions was produced such as the capacity to compare changing sentiments and policies through time. Projects such as Civiclytics (see in depth interview with them in chapter 6), also another case study where an interview was performed with one of the main coordinators (see chapter 6) have been doing this work quite extensively even providing predictions of phenomena such as food shortage far ahead of mainstream media. Time proves to be an important frame with which to view and compare case studies, policy reports and social media. Having a means to visualise and produce milestones for national and regional changes or phenomena can serve as important resources across audiences or users on the platform.

Figure 7.2.2.2 This Figure demonstrates the actions and data that compliment each other that were sourced from different assemblies. Here there is a focus on text data and performing comparisons. Additionally are observatories or analytical data tools that can be used as a reference in terms of how to visualise text to compare different scales or timelines.

7.2.3 Revising/Iterating Data Types and Actions with User Journeys: Admin Dashboard

As mentioned in chapter 4, a user journey can detail how a user behaves during each of these stages as they move towards completing a task. User scenarios were used to review and reiterate through data types and functions to reevaluate priorities and create new insights. The scenarios from each of the personas various user journeys allowed for a more refined idea of what important functionalities, buttons, options etc. would be necessary to include within the platform's design.

While creating the user journey for a general user or more specifically a researcher what also proved necessary was creating user personas that also had varying levels of access to the platform i.e. also administrators who have greater command of the what the platform can appear as and with the power to configure Participatory Spaces. Thus, in this process an administrator scenario was created to encapsulate a different but pivotal aspect of navigating the platform. The user scenario for the persona 'Abirami' serves as the administrative persona who would create the space that a researcher would then participate in in her scenario. Abirami's needs are that she should have a customised dashboard to create a space for other users i.e. in the context of WebLyzard's dashboard a space to set filters and timelines or to even further decide how and what kind of visualization and search tools others might use on a collaborative project for greater agility, accessibility, and clarity.

7.3 Setting up a test lab Visual Analytics Dashboard. Methodological approach

The inDICEs Visual Analytics Dashboard is developed in T4.3, which commenced in Month 6 of the project. The dashboard follows an approach that coordinated multiple perspectives to synchronise an ensemble of customisable data visualization tools. It presents the data in an interactive format and enables users to navigate the knowledge repository within multiple context dimensions.

The main goal is the creation of a highly scalable knowledge repository for storing (i) documents, (ii) statistical observations, and (iii) WP4 data that results from the Observatory Participatory Spaces processes, together with (iv) automatically generated metadata such as sentiment, entities and relations. This metadata will enrich and structure the various content items and align them with the evolving inDICEs knowledge graph.

Working together with WP1, gathering data feeds has been defined in terms of sources to include and the whitelist terms to monitor in discussions happening on third-party social media platforms. In addition to a Web crawler and API connections to various social media platforms, the Observatory API will support the ingestion of documents as well as statistical observations (time series data, optionally with geolocation).

Figure 7.3 below shows a screenshot of the latest dashboard version. In the portal header, the text input box in the upper left corner represents the currently active global filter ("*" indicates that the filter is turned off, <advanced> that a complex query is being used). The main menus of the dashboard include configuration, data export (which provides access to the PDF generator) and advanced filter options. Two drop-downs allow selecting the date range and content sources (news media, social media, etc.) for the analysis. The line chart previews the results matching the global filter over a longer time span. Below, the info bar either shows context-aware help texts, or a list of the most frequent sources or named entity references to persons, organizations or locations.

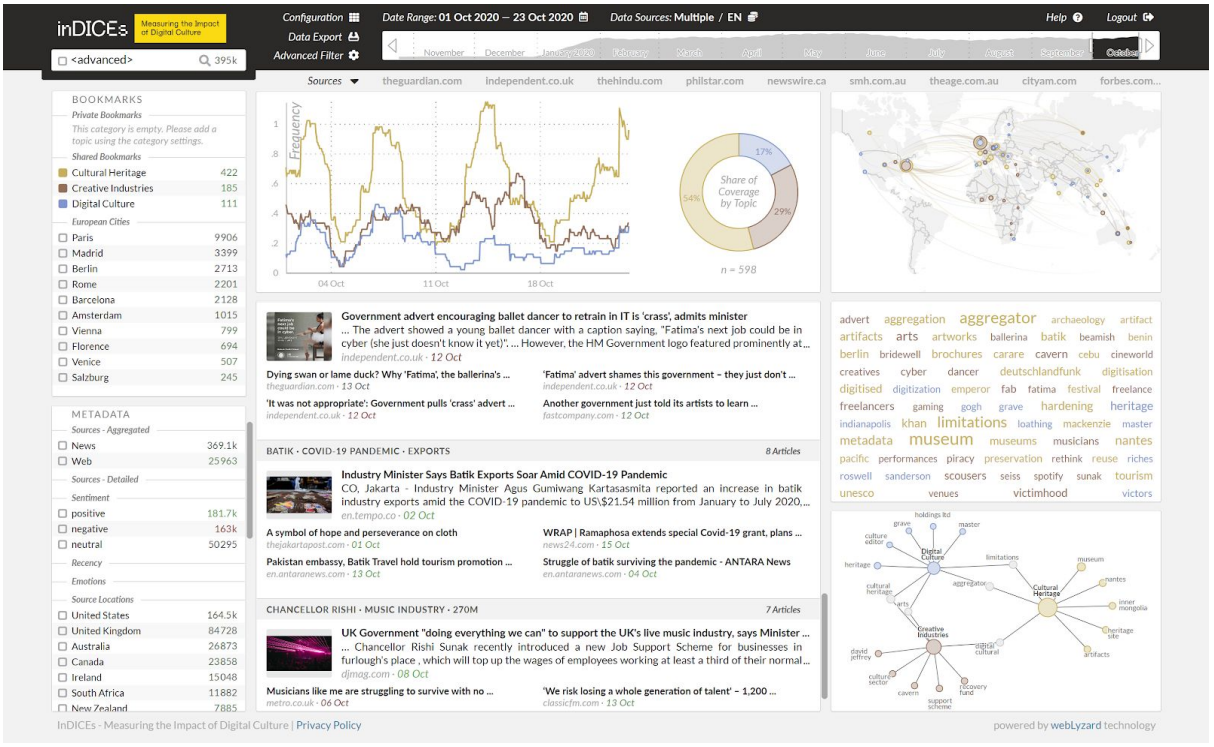


Figure 7.3. Screenshot of the inDICEs Visual Analytics Dashboard: Bookmarks and metadata attributes (left sidebar), trend chart and main content area (center) and color-coded visualizations along multiple context dimensions (right sidebar)

The left sidebar includes the Bookmarks section, offering separate categories for private and shared bookmarks. The latter category contains predefined topics that are used as the default setting ("cultural heritage", "creative industries" and "digital culture"), as well as a list of European cities sorted by decreasing frequency. On hover, a gear symbol appears for accessing the overlay menu to view, configure, rename or delete bookmarks, or to define email alerts. Below, the Metadata section classifies the coverage by source, sentiment, recency, emotion and source location. Users can click on the check boxes to select those bookmarks or metadata attributes that should be included in the set of search results.

The main content area contains the trend chart to explore longitudinal trends and the story view that displays groups of related document clusters, similar to aggregators such as Google News. For each story the top three keywords and a lead article including a thumbnail are shown, followed by related articles or postings from other sources.

The right sidebar is reserved for maps and visual analytics tools to explore the underlying knowledge base along multiple semantic dimensions (these visualisations will also be provided as embeddable widgets for the Participatory Space of inDICEs). The geographic projection renders the regional distribution of search results (together with the origin of coverage by means of "trajectories"). The tag cloud (alphabetical) and keyword graph (hierarchical) allow exploring semantic associations, color-coded by the selected bookmarks and attributes on the left.

The next steps in the development process are the ingestion of content from the Decidim platform, the provision of a mobile application to complement the desktop version shown in Figure 7.3, and the embedding of selected visualization components into the inDICEs Participatory Space to enrich the user experience via context-aware information services (the next Section will provide additional details on the planned data sharing). WP4 will also generate a dashboard tutorial and organize training sessions with test users to gather feedback and guide the further development process.

7.4 Proof of Concepts

In the inDICEs project, two pieces of software were used to accomplish different goals. On one side there is the inDICEs Participatory Space, which incorporates all the user interactions and content creation. The other is the Visual Analytics Dashboard (simply “dashboard” from now on), capable of providing feature rich data analysis and links from external sources as well as a tool to analyze the Participatory Space itself. Each platform is different in nature, the Participatory Space is open source and community developed, multiple new features are incorporated periodically and is easy to personalize through extensions developed by Platoniq and others. The dashboard is a product of the WebLyzard company and changes in it can only be made by its owner as it has not been open sourced.

Therefore, the main challenge is to integrate both platforms in the most transparent way for the end user, allowing to use and combine features from each one to produce high quality content.

User journeys described in chapter 4 provide the main source of data in order to establish what areas need to be improved in both platforms. However, it would be optimum to continuously improve the platform during the duration of the project, a permanent assembly has been established where any partner can propose additional features (Figure 7.4.1) or amend existing ones.

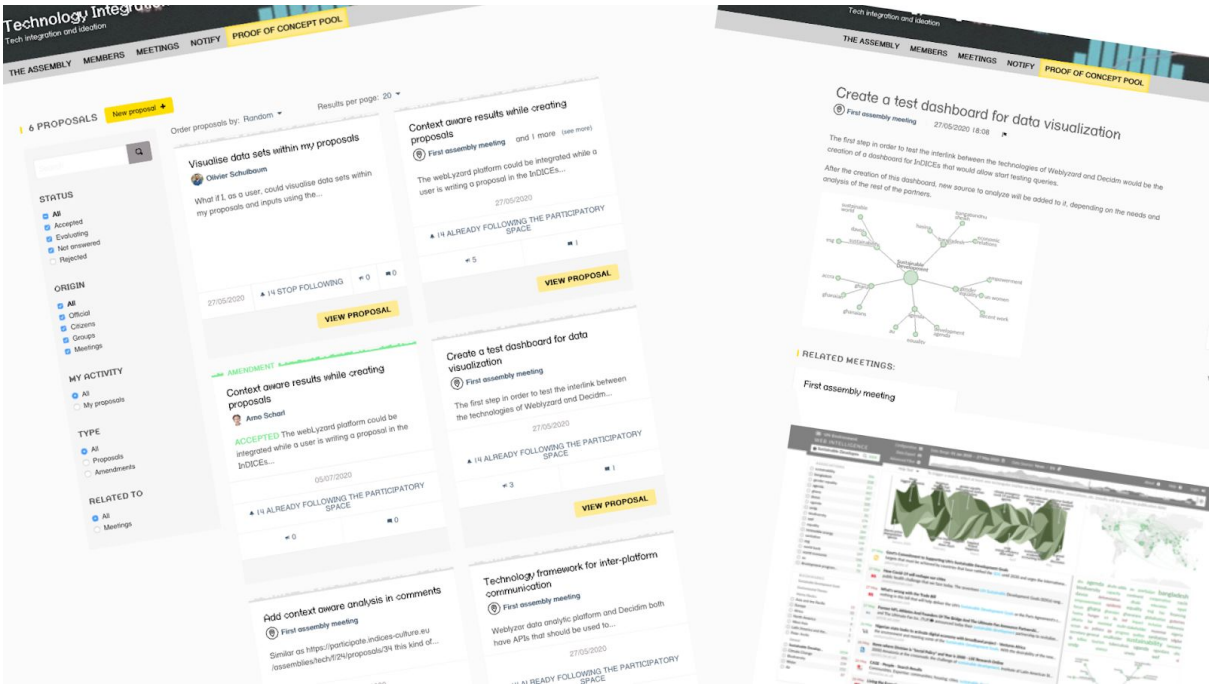


Figure 7.4 demonstrates the pool of concept proposals within the tech and integration assembly

All gathered proposals have been labeled as "proof of concept", then validated in order to determine if they are technically feasible within the project. Others might not be technically related at all and require a methodological approach instead. Nonetheless, the ones accepted have been transformed in tasks as is described in chapter 7.5. In the end, four main areas have been identified as the key to integrate both platforms. These are:

- The technology framework for exchanging data, transparently to the user
- The creation of tools to improve the user experience while creating proposals or debates by using real time context results
- Tools to incorporate widgets with graphs and other content that facilitates the creation of debates around it
- Use the dashboard to analyze the Open Observatory Platform itself.

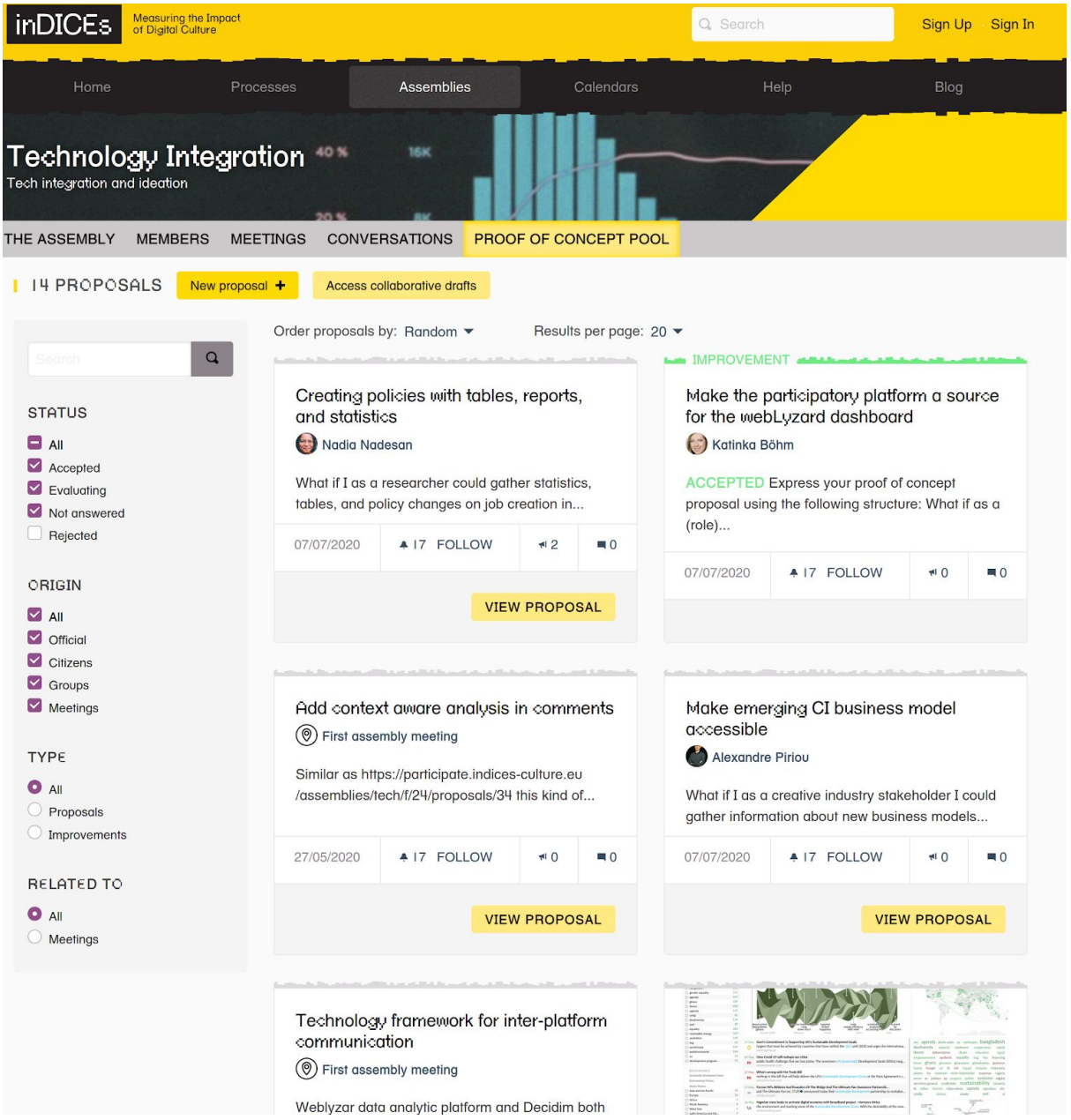


Figure 7.4.1 - The Technology Integration assembly with ideas contributed by different partners.

7.4.1 Technology framework for inter-platform communication

In order to establish a robust communication between the two platforms it is necessary to define the framework for the interaction between them. The nature of this interaction will determine the best approach to pursue. In this case, the Open Observatory Platform will concentrate all the created data by the participants while the dashboard will analyze it. The flow of information, therefore, will go from the platform to the dashboard and will come back in the form of processed data visual blocks (Figure 7.4.2). In addition, the dashboard will also extract information from external sources and incorporate it in these visual blocks which can be graphs, lists of articles or links. The Open Observatory Platform will incorporate the blocks in some parts of the user interface, providing a sense of integration.

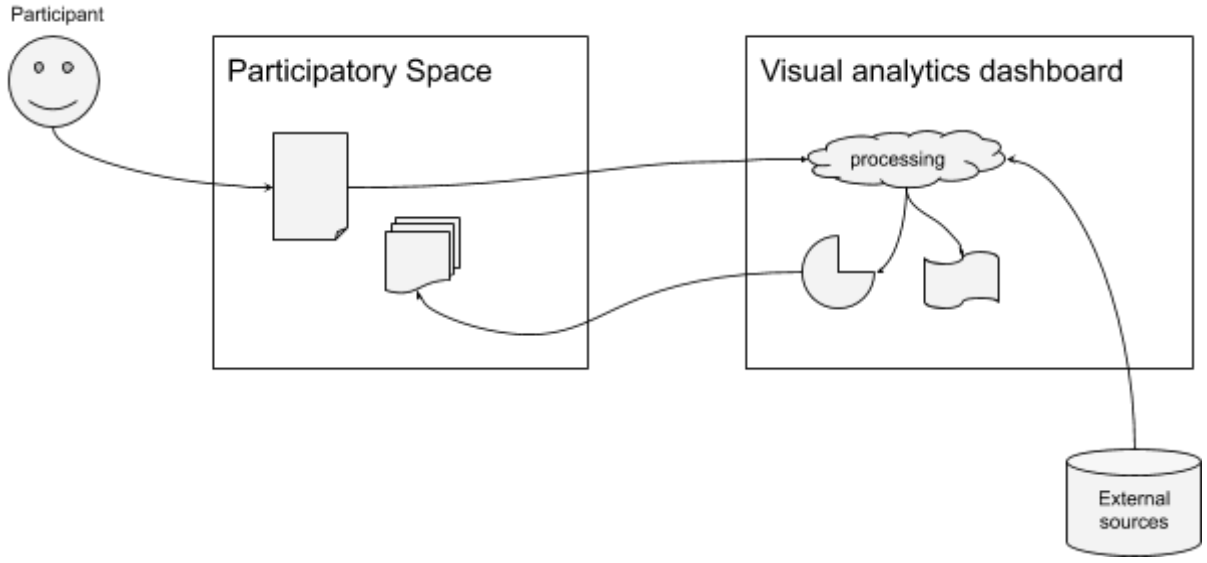


Figure 7.4.2 - Flow of information from the Open Observatory Platform to the dashboard and return

Two approaches have been proposed in order to build this workflow, the “pull” approach and the “push” (from the perspective of the Decidim Participatory Space). In both cases the API’s present in the platform are:

- **The pull approach**: Create a poll service in the WebLyzard platform that would query the Decidim API on a periodic basis. For this, it would be the responsibility of the dashboard to program these queries according to the capabilities of the Decidim platform. This has the disadvantage of not having all the content synchronized the same moment it is produced and it also can be potentially inefficient as some information could be repeatedly sent more than once.
- **The push approach**: In this case, it would be the responsibility of Decidim to inform the external dashboard whenever there is some relevant change. The main advantage is that only the content produced will be sent and at the same time it is produced.

The push approach seems the most efficient way to proceed and it also gives more flexibility to the Participatory Space for the control of this communication. It basically means that the platform will be a source for the dashboard (chapter 7.4.4) and it will involve pushing content to the WebLyzard's dashboard API.

On the other hand, the journey back from the dashboard to the platform will consist of extracting the processed data and placing it in relevant places in Decidim for the participant to consume. Processed data will consist mostly of graphs or lists of links so the best approach here is simply to embed such content as html blocks (Figure 7.4.3). For this, the only requirement is that the dashboard provides URLs with endpoints for each html block shared.

Finally other aspects should be taken into account, for instance the integration between the login of both platforms. It would be desirable that the user can have an account in the Participatory Space and login into the dashboard directly using "single sign-on" type of login. This is described in the tasks #1, #2 of the roadmap (chapter 7.5).

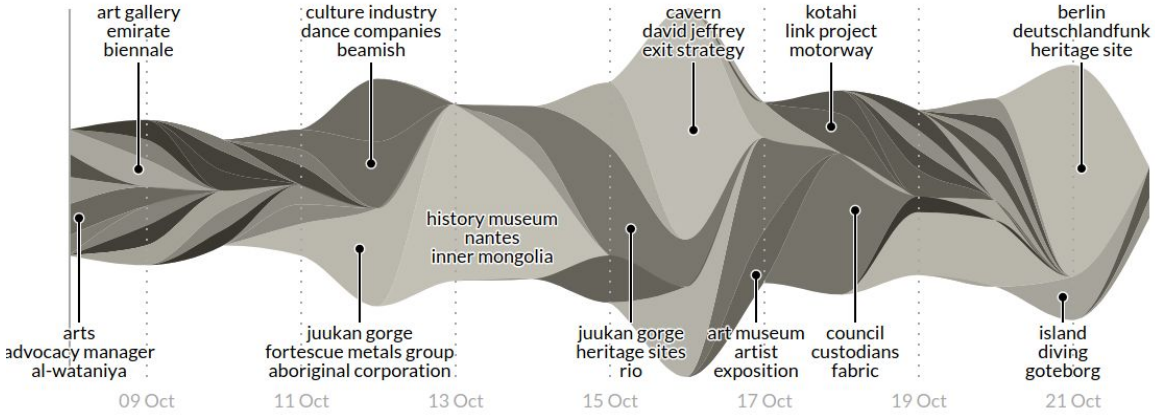


Figure 7.4.3 - Example of data processed visualization in the Data Analytics Dashboard

7.4.2 Context aware results while creating proposals

One of the places in the Open Observatory Platform that could benefit from the integration of the html blocks is when users are creating content. In particular, the aim is to explore the possibility of displaying suggestions and related content when writing proposals or debates. This would provide a navigable tag cloud and links to related content that could help the author to make its own content more relevant (recommendations are based on a real-time analysis of what is being written). The Open Observatory Platform will integrate this as a sidebar widget (Figure 7.4.4) in those places where the users creates new content, for instance a new proposal or a new debate.

Note that this widget provided context will also include content from the same inDICEs Open Observatory Platform, useful e.g. to detect duplicates or relations between proposals.

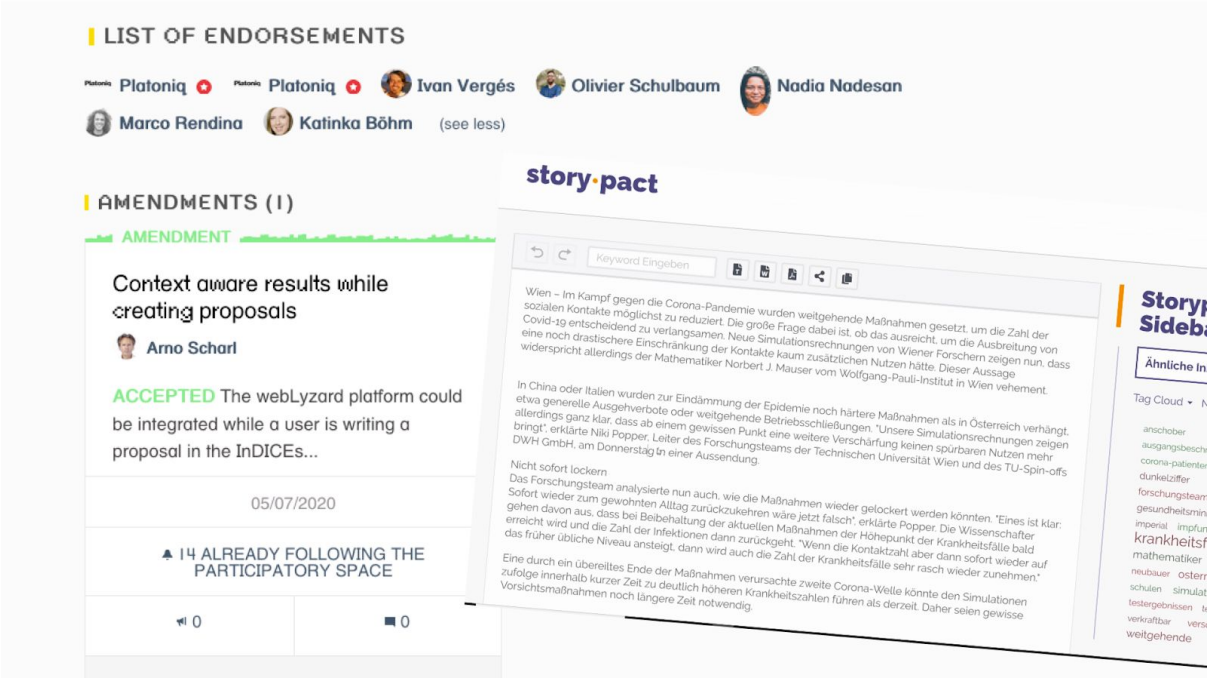


Figure 7.4.4 illustrates the proposal within the pool of concepts for context aware results using WebLyzard technology from the Tech and Integration Assembly

This specific feature requires development work by the both partners Platoniq and WebLyzard. Tasks #6 and #7 in the development roadmap (Table 7.5.1) describes and assigns it to the responsible as well as establish an expected date for its completion.

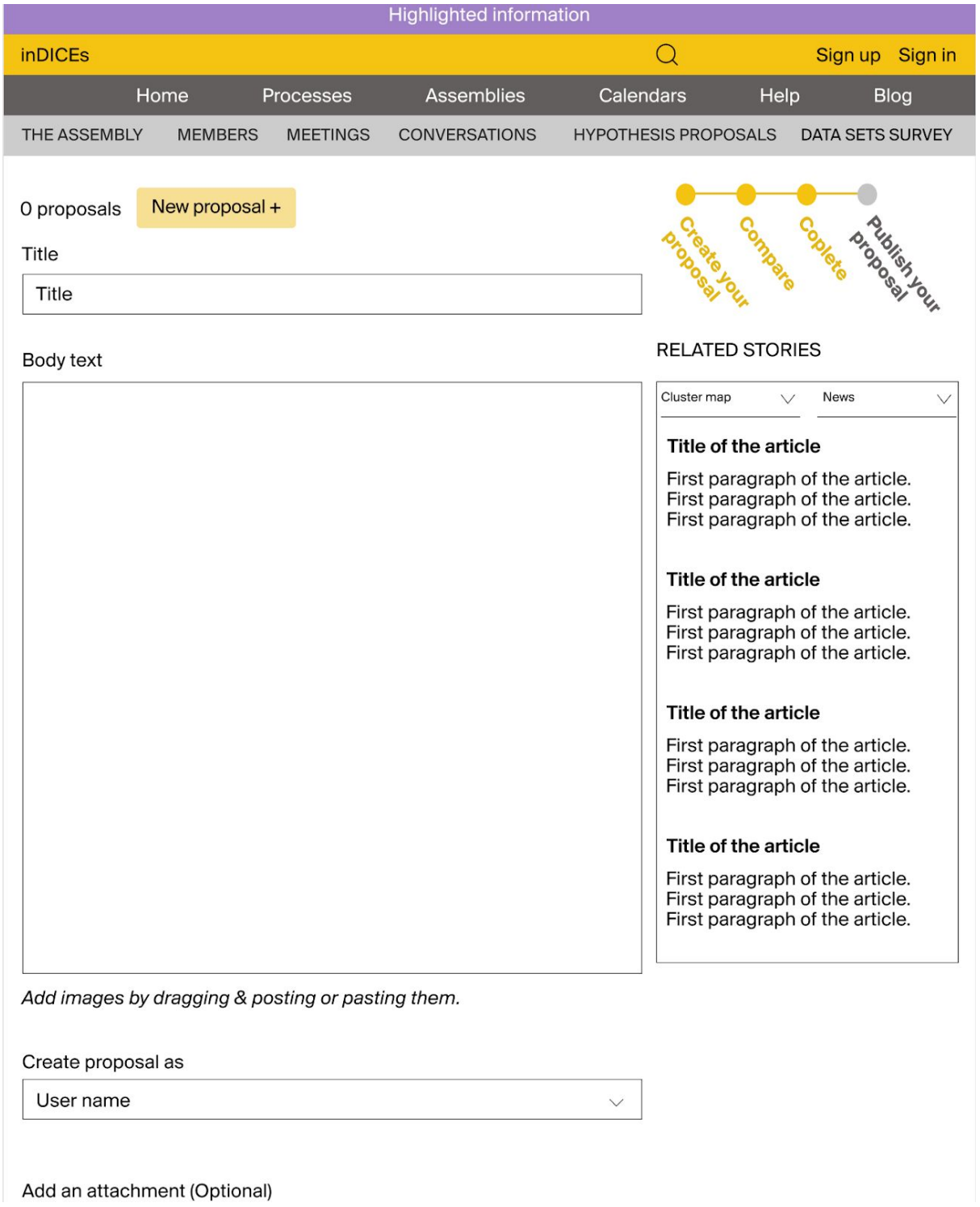


Figure 7.4.5 - Wireframe for the integration of real-time suggestion widget in the proposal creation form

Participants within the tech and integration assembly were able to give their comments about how users might react to these settings. One strong idea that may be incorporated was to create a

streamlined process with little distraction until the user is in the last step and wants to publish and then show more context.

7.4.3 Widget integrations for data driven proposals and debates

The other way where the integration of widgets can add value and context after the new content is created (Figure 7.4.5). In this case individual widgets would be picked up by the creator of the proposal (or debate) and embedded directly into the text. In addition, the Open Observatory Platform will add a placeholder where to specifically embed any widget that will appear in a sidebar or after the text.

This procedure will require that the participant access the dashboard and curate some visualizations in there, the dashboard will provide for each generated widget a specific code to share it with external platforms. The user will have to copy this code in the Open Observatory Platform either inside the text or in a specific placeholder.

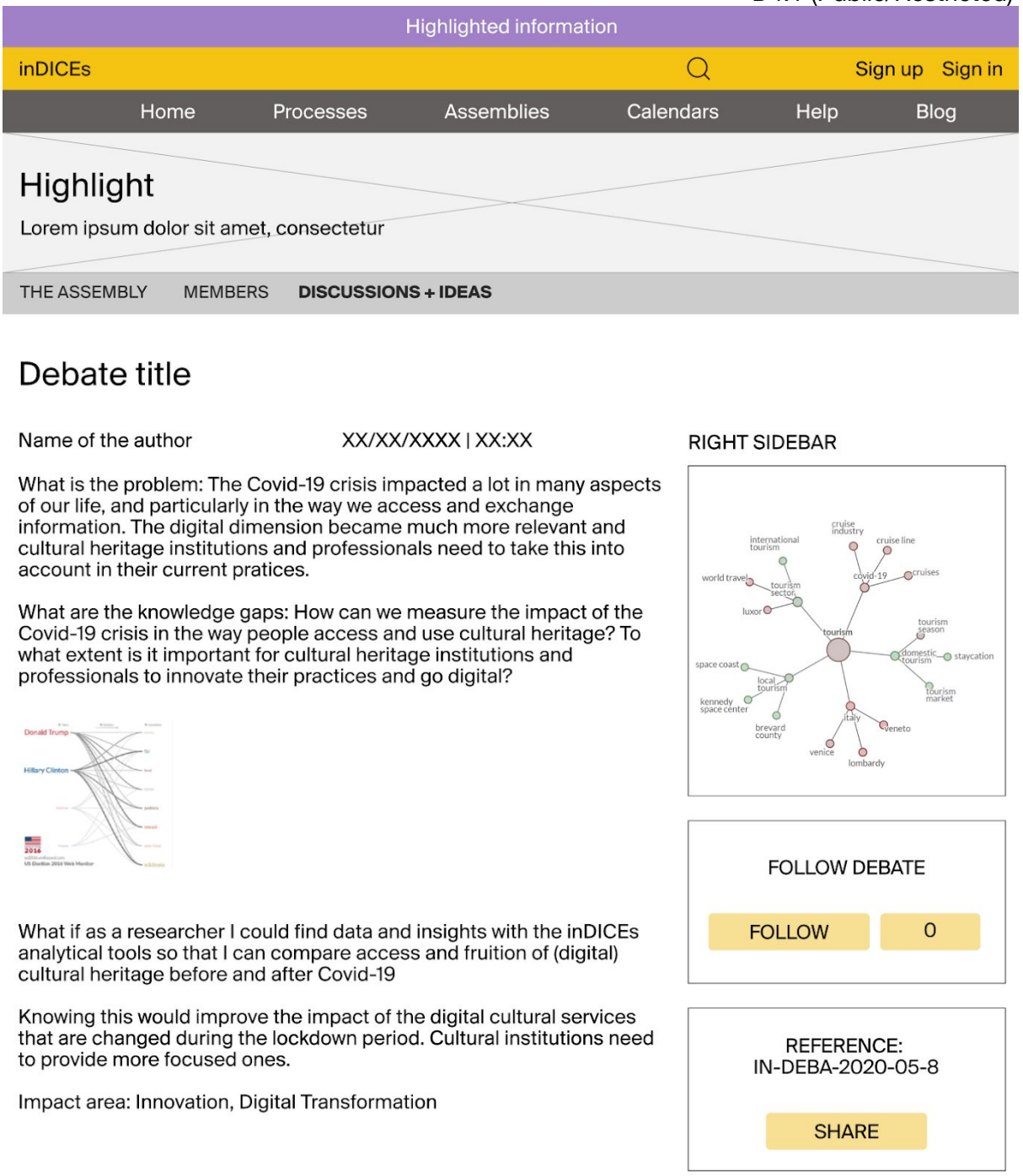


Figure 7.4.6 - Wireframe for integrating dashboard widgets into the a new debate

Tasks scheduled to achieve this kind of behaviour are #3, #4 and #5 from the table specified in the roadmap (Chapter 7.5).

7.4.4 Make the InDICEs Participatory Space a source for the Visual Analytics Dashboard

As described in 7.4.1, the Participatory Space will send content to the dashboard everytime it is generated. This content will include new proposals and debates as well as the public comments created by any participant.

This development has already started and some tests have been done with successful results. This communication is transparent to the user, it is performed by the backend of the Participatory Space every time new content is added. The way to send this data to the dashboard is by using its API which receives data in the JSON format (see Figure 7.4.6 as an example).


```
{
  "content": "<p>There have been a variety of responses to COVID 19 by CHI workers,
institutions, artists, policy makers, researchers and so many more. This discussion or space is
for us to share work that we should consider or get inspired by in work in InDICEs</p>",
  "content_type": "text/html",
  "repository_id": "indices.weblyzard.com/api",
  "uri": "https://participate.indices-culture.eu/assemblies/COVID19/f/12/debates/2",
  "title": "Inspirations 🌱",
  "meta_data": {
    "published_date": "2020-08-31T15:52:43Z",
    "user_name": "Nadia Nadesan",
    "language_id": "en"
  },
  "features": {
    "category": "COVID19 Observations, Ideas, Adaptations"
  },
  "relations": {
    "sioc:has_container": "https://participate.indices-culture.eu/assemblies/COVID19/f/12/"
  }
}
```


Figure 7.4.7 - JSON formatted text sent to the dashboard for its processing

Tasks #9 and #10 in the roadmap (chapter 7.5) details and schedules this feature.

7.4.5 Other planned developments and features

Apart from the integration of both the inDICEs Participatory Space and the Visual Analytics Dashboard, there is also a set of tasks concerning the improvement of the Open Observatory Platform itself. The development process will follow the community roadmap that is used to release a new version of the Decidim platform every 3 or 4 months. The inDICEs Open Observatory Platform will be updated shortly after each release, incorporating new features and bug fixes. Some of these future features are already planned to be used as the base for custom improvements specific to inDICEs.

Tasks #8, #11, #12, #13, #14 from table 7.5.1 (chapter 7.5) describe those additional features:

- Tasks #8 and #12 will allow the creation of proposals with structured content. This means that the creation of proposals could be tailored with specific fields depending on the process. The administrator would be able to create templates of proposals, participants will

fill them following the desired criteria. Finally, the final collection of proposals will be able to be exported in tabulated data for further analysis.

- Task #11 will add the possibility of having custom spaces for different communities to organize processes and highlight specific content according to their needs.
- Task #13 will be dedicated to add improvements to the debates component.
- Task #14 is for improving comments, by incorporating the latest additions made by the Decidim community and adding the ability to add emotions to a conversation. This will be done by the use of emoji symbols as a reaction to a comment.

7.5 Development roadmap

The current capabilities of the Open Observatory Platform and the data analysis dashboard are not enough to satisfy the requirements for the presented user stories. Therefore a plan has been established in order to identify and schedule the modifications that each platform needs to incorporate. Each modification corresponds to a specific task that must be fulfilled by the responsible partner, Platoniq in case of the Open Observatory Platform and WebLyzard in case of the Visual Analytics Dashboard. As some tasks depend on others and there is a limited time available to its completion, they have been calendarized in a Gantt chart diagram (Figure 7.5.1) and listed in a table (Table 7.5.1) with implementation details. Note that the task is preceded by a capital letter indicating the partner in charge of the task (P for Platoniq, W for WebLyzard). Time units are weeks and the calendarization starts by assigning week zero to November 1, 2020.

It is important to notice that this roadmap reflects a slightly different situation than the one that was planned in the DOW. The COVID-19 pandemic has demanded remote work and Platoniq has taken this as an opportunity to speed up some developments and deployments. This means that the whole inDICEs team has been using the platform and detecting where to improve it in several ways. From all the contributions, the final roadmap is what has been decided to be implemented looking to the next technical deliverable (D4.2).

#	Task	Start month	Duration	Details
1	P: OAuth server	M10	2 months	ConFigure the OAuth server in the Open Observatory Platform and handle the keys to WebLyzard.
2	W: OAuth login	M11	3 months	Users can log in the dashboard by "Single Sign-On" button that authenticates users automatically using the authentication mechanism in the Open Observatory Platform. Uses the OAuth protocol.
3	W: Stateless URL sharing dashboard	M11	3 months	Provide a copy & paste link in the dashboard for the current view. Extend number of settings/selections encoded in the URL.
4	W: Simple Iframe widgets sharing	M12	2 months	Export graphs as a widget to embed in 3d parties. Facilitate to the end user the process so sharing an iframe or an static image is clear and easy. This should be possible without enforcing authentication restrictions on the iframe (or at least not when called from the Open Observatory Platform).
5	P: Integrate dashboard widgets	M13	2 months	Ease up for the users creating proposals or debates the integration of widgets from the dashboard.
6	W/P: realtime suggestions API	M13	12 months	Finish development of "tag cloud" feature to add context in real time while writing proposals and provide documentation to integrate it into inDICEs.
7	P: Integrate suggestions widget	M20	4 months	Improve proposal/debate creation textareas with a sidebar widget using the realtime suggestions feature.
8	P: Custom fields for proposals	M13	3 months	Allow to structurate data when creating a proposal by defining arbitrary custom form fields elements to it.
9	P: Platform as a source	M10	7 months	Send content generated by users in the platform to the dashboard API (proposals, debates, comments).
10	W: Exclusive platform dashboard	M12	2 months	Facilitate a simple way to visualize the dashboard using only the source "Decidim" (the Open Observatory Platform). It should allow sharing widgets in this configuration.
11	P: Processes landing page	M16	1 months	Create community spaces with landing pages holding all their related participatory processes.
12	P: Accountability adaptation	M15	2 months	Adapt the accountability module to show the custom fields in proposal (#8).
13	P: Debate improvements	M14	1 months	Improve debate creation with a number of features: Allow endorsements, closing debates, anti-spam flagging, embed debates.
14	P: Comments improvements	M13	4 months	Feature enrich comments with these additions: Allow quotes from other comments, add reactions by using emoji symbols.

Table 7.5.1 - Tabulated development roadmap

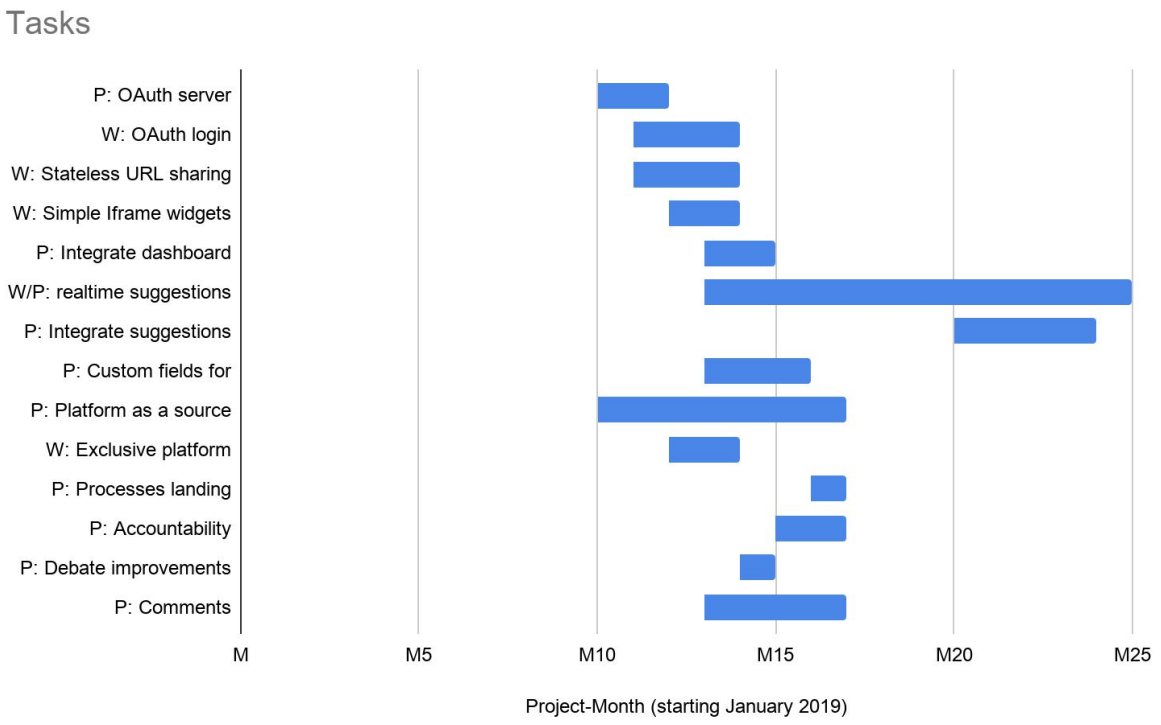


Figure 7.5.1 - Development Gantt chart with WebLyzard & Platoniq contributions. (W: WebLyzard, P: Platoniq)

8 Conclusions and Plan for the next period

The inDICEs Open Observatory Platform is the starting point of what could be a transformative online space for Cultural Heritage Institutions and the processes and assemblies are being designed in consideration of all that might encompass. **It is important for the design to foster strong engagement and participation to start building habits with the consortium first as well as integrate the platform with tasks and deliverables to foster and strengthen the space**. Built into the platform is a more honest and transparent governance that allows the creation of points of reference for other digital communities who can see how the platform co-designs and creates at every step of the way.

The analysis of various user experience studies with the partners, observatory cases, and collaboration so far concerning technological integration lead to the following conclusions: user experiences cannot be assumed and there must be a negotiation between technical practicality and facilitating user experience. As such the integration of the technologies of the platform needs to be more nuanced than combining different partner technologies like legos, and the digital governance of this platform requires further inquiry into digital communities that focus on community guidelines and participation in following with D5.4 inDICEs model for community participation and T5.3. Designing a model for digital community participation as a driver of impact.

Concerning the first conclusion while in the beginning broad ideas of different user needs and patterns were developed, iteration through the creation of user personas, scenarios, and flows unearthed various features and functionalities such as an Visual Analytics Dashboard administrator that previously had not been envisioned. The core of the inDICEs Open Observatory mindset is that users are not mere profiles or passive users of research data, services or processes but rather resourceful and active change-makers whose views and voices are included. The inDICEs Open Observatory Platform thus aims to be more than just a repository but also a dynamic space where different actors and organizations can engage, collaborate, and keep up with digital cultural heritage. The future holds continuing this research and expanding the personas to address artists and creative communities as well as policy makers. **The aim continues to be one towards a structured design for both the rigorous academic as well as "the curious observer".**

This leads to the second conclusion, where the partner's technical collaboration in future plans on a more streamlined integration that takes into account user experience, technical capacity, and goes beyond cutting and pasting the different technological capacities together. WebLyzard has a powerful tool that with the input of data and platform experts could be oriented towards a more tailored fit in terms of scale and sources of their data analytics tools. **The end product of the Open Observatory Platform should empower users with real-time information to carry out impact research and actions in their organizations or the communities they participate in. Making data accessible with a stronger narrative approach.**

Then, for the upcoming deliverables there will be greater detail on the development of the project's community governance as well as further investigation into digital governance and guidelines that can best embed democractic values at the core of the design process. It should be noted that in the

underlying creation of the Open Observatory, Platoniq as the facilitator of the Online Co-Creation Workshop, has paid special attention to co-creating an Observatory that prioritises safety, inclusion through respect for diversity, and accessibility within the process and finished product. Work especially in the digital world has to take into account safety of participants on a platform to both express individual points of view as well as keeping in mind discriminatory attitudes. Additionally, in collaborating, sharing, and giving information an important consideration will be policies around the life, use, and sharing of data especially between and about individuals. Taking all this into consideration the process around constructing the platform has and will also implement attitudes of care and awareness so that it might be better reflected in the observatory and Participatory Space.

Finally, in parallel to the Open Observatory co-design phase, the work in WP4 has generated an atmosphere of collaboration and trust among the different stakeholders (researchers, practitioners and policy-makers). This means that in addition to co-creation activities to build on the platform and strengthening capacity building, partners have also engaged in greater autonomy to test and make use of the space for their workshops and seminars. Autonomy by the partners on the platform also lends itself towards more autonomously run assemblies and even shifting the current structure towards a collaboratively coordinated ensemble of assemblies, processes, and consultations that are envisioned as part of the community takeover. The aforementioned processes and work will be detailed in the following deliverables:

D4.2 Database and service layers architecture (Participatory Space and visual analytics dashboard) (M17, M34). This deliverable will provide interim and final versions of the frontend applications (collaborative environment, visual analytics dashboard) as well as the inDICEs API Framework.

D4.3 Collaborative environment and custom Participatory Space builder (M19). This deliverable will include software release and documentation of the different components (database and API) in a github repository

D4.4 Train the Trainers Methodology (M30). Training curriculum that offers methodologies and activities around the use of the Participatory Space builder and the Visual Analytics Dashboard

9 ANNEX 1 - User Journeys: Adapting Decidim to Participant Needs and the inDICEs Context

A.1 Welcome - First visit to the platform

With an extended amount of content and configuration for the inDICEs Open Participatory, there are many different ways in which an anonymous user could access the platform. Therefore, in this first visit to the platform, the journey of a user is shown which browses the platform for the first time and finds some content of their interest. This example is not exhaustive but shows a path easily replicable if the journey started somewhere else in the platform.

A.1.1 Objectives

An anonymous user visits the inDICEs Participatory Space from an external link and browses its content.

A.1.2 Preconditions

1. The user is not registered or logged into the platform.
2. The user has some basic knowledge about the platform's purpose or contents or might be potentially interested in what is offered.

A.1.3 Steps

1. The user starts by browsing the homepage of the platform. they have a first overlook that allows them to recognize the most important activities that are currently ongoing. As this page is configurable by the administrators, it can change over time to reflect the current and pressing subjects. For instance (Figure A1.1), an omnipresent banner on the top, holds a call to action to answer a survey. The next relevant content is a big “hero” image with a welcome message that suggests participation. The rest is a summary of the different Participatory Spaces, last comments or some statistics of the platform. For those users more experienced, there is always a main menu that presents the different spaces of participation along with some complementary pages, like the help guides or a general blog.

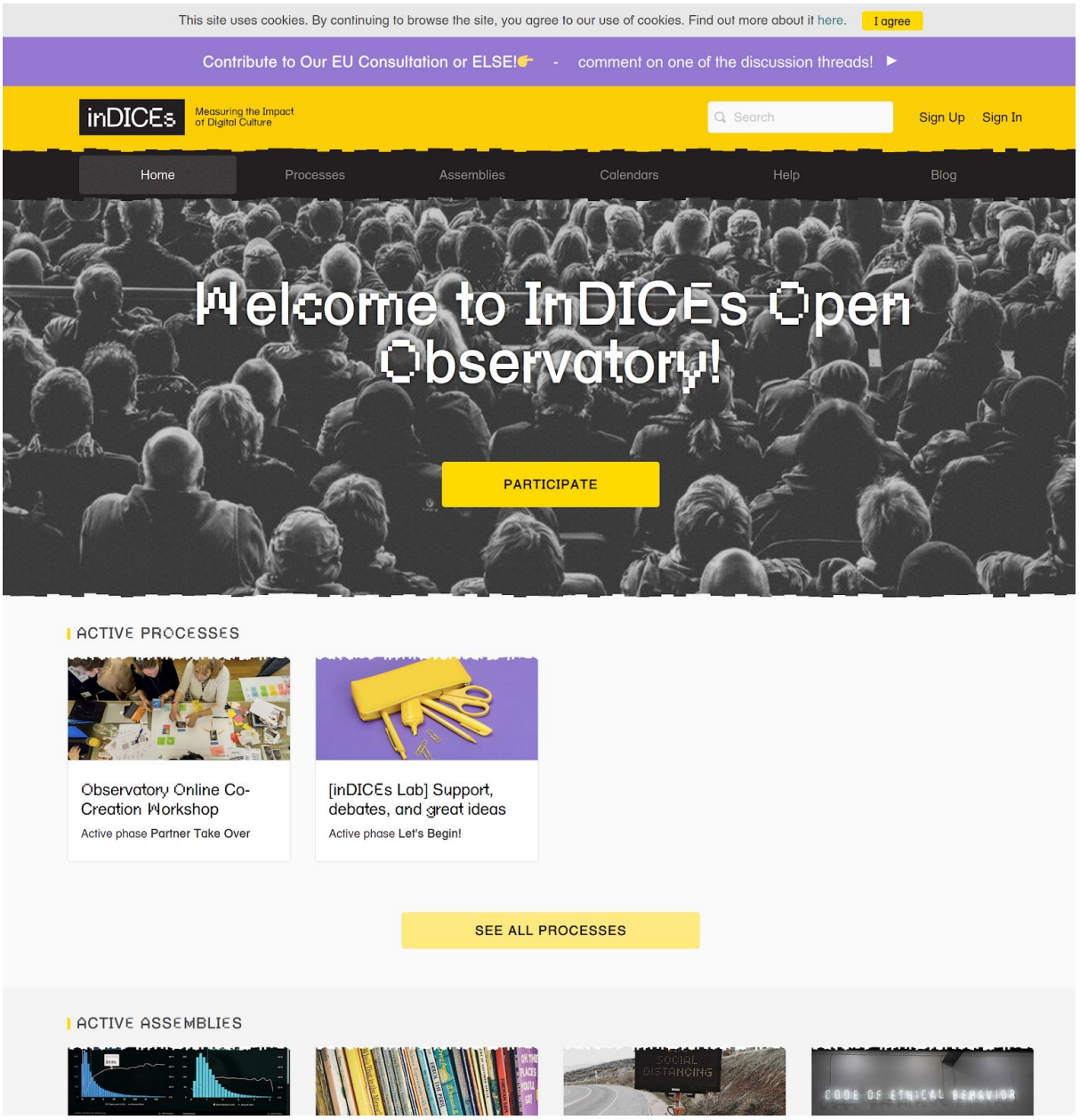


Figure A.1 - Homepage of the inDICEs Participatory Space as conFigured in october 2020

2. The user starts moving around and is interested in knowing more about the areas of work and the people behind it. For that, they click on the assemblies menu item which redirects them to a landing page with the summary of this Participatory Space (Figure A1.2). In this page there is a help text for what an assembly is, the user can dismiss it by pressing a closing button. If they do this, next time they visit this page, the text won't appear anymore. The page shows a list of the current assemblies established in the platform, each of one with an engaging image, summary and a link.

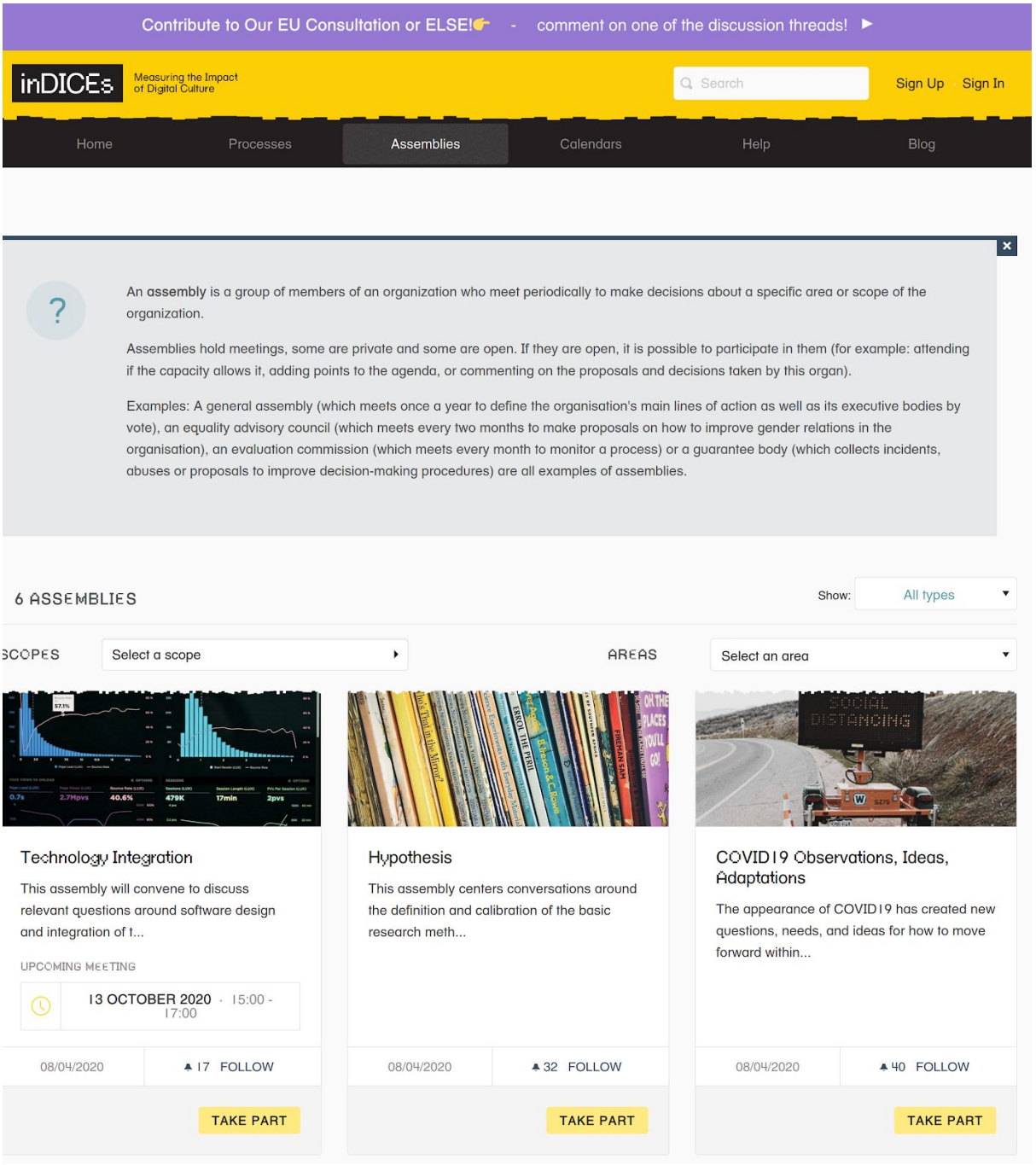


Figure A.2 - Landing page for the assemblies Participatory Space

3. The user is interested in the hypotheses that are being created, so they click on the "Hypothesis" card. they are redirected to the assembly main page. Here they have available a second level menu with different options. One of them calls their attention and clicks on the element "Hypothesis proposals" (Figure A1.3).

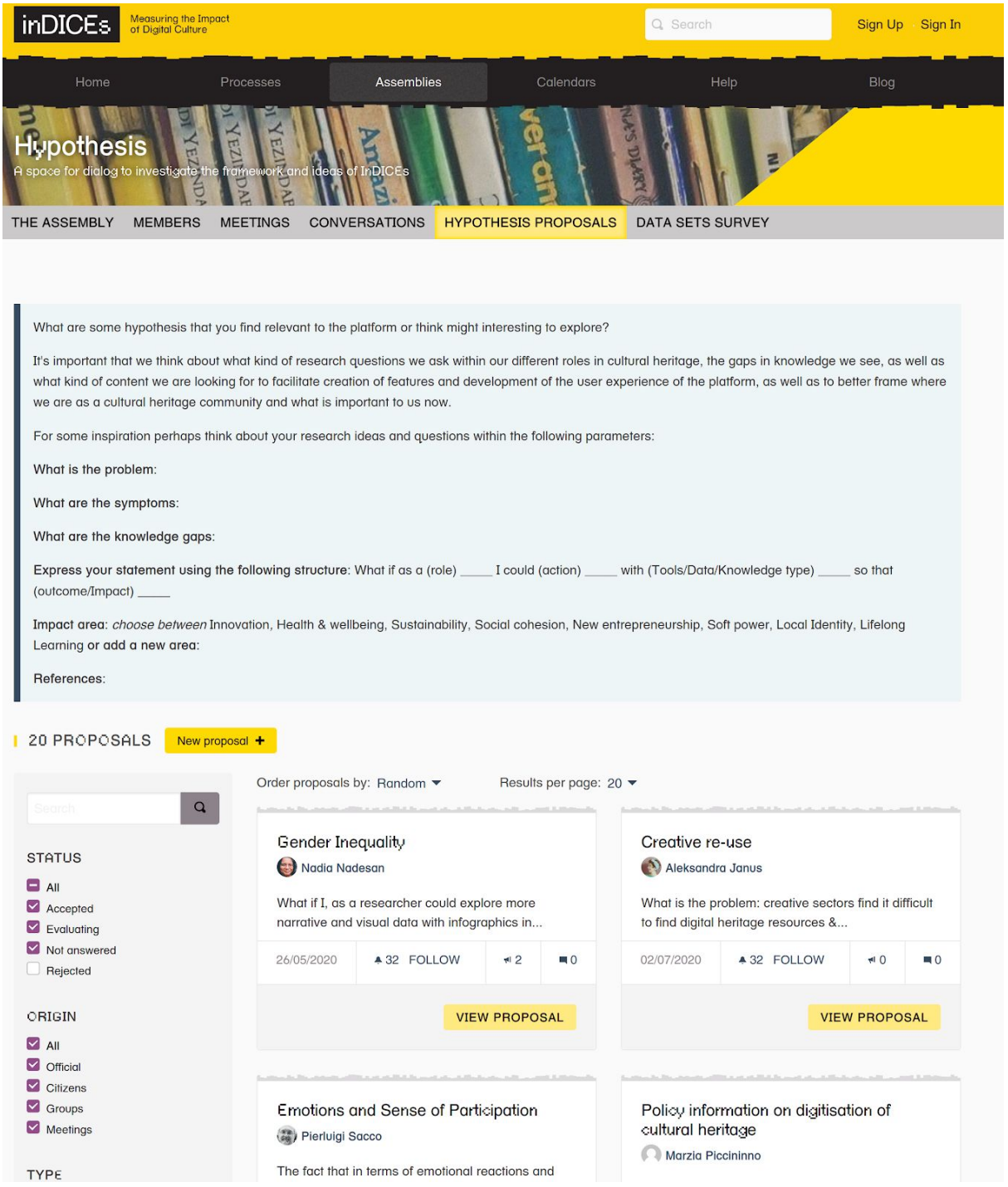


Figure A.3 - Proposals component as is being used in an assembly to collect different hypotheses.

4. This is a page that presents already existing proposals but also encourages participation and the creation of new ones. The user is able to browse between the different cards, each one representing a proposal made by other users of the platform. By default, this page presents the list of cards in a random order, this is done in order to try to give all of the cards the same opportunity to be chosen merely by being the first visible.

5. The user clicks one of the cards to read the full text. they click on the title of the proposal called “Publish open content” and are redirected to the proposal’s page (Figure A1.4).

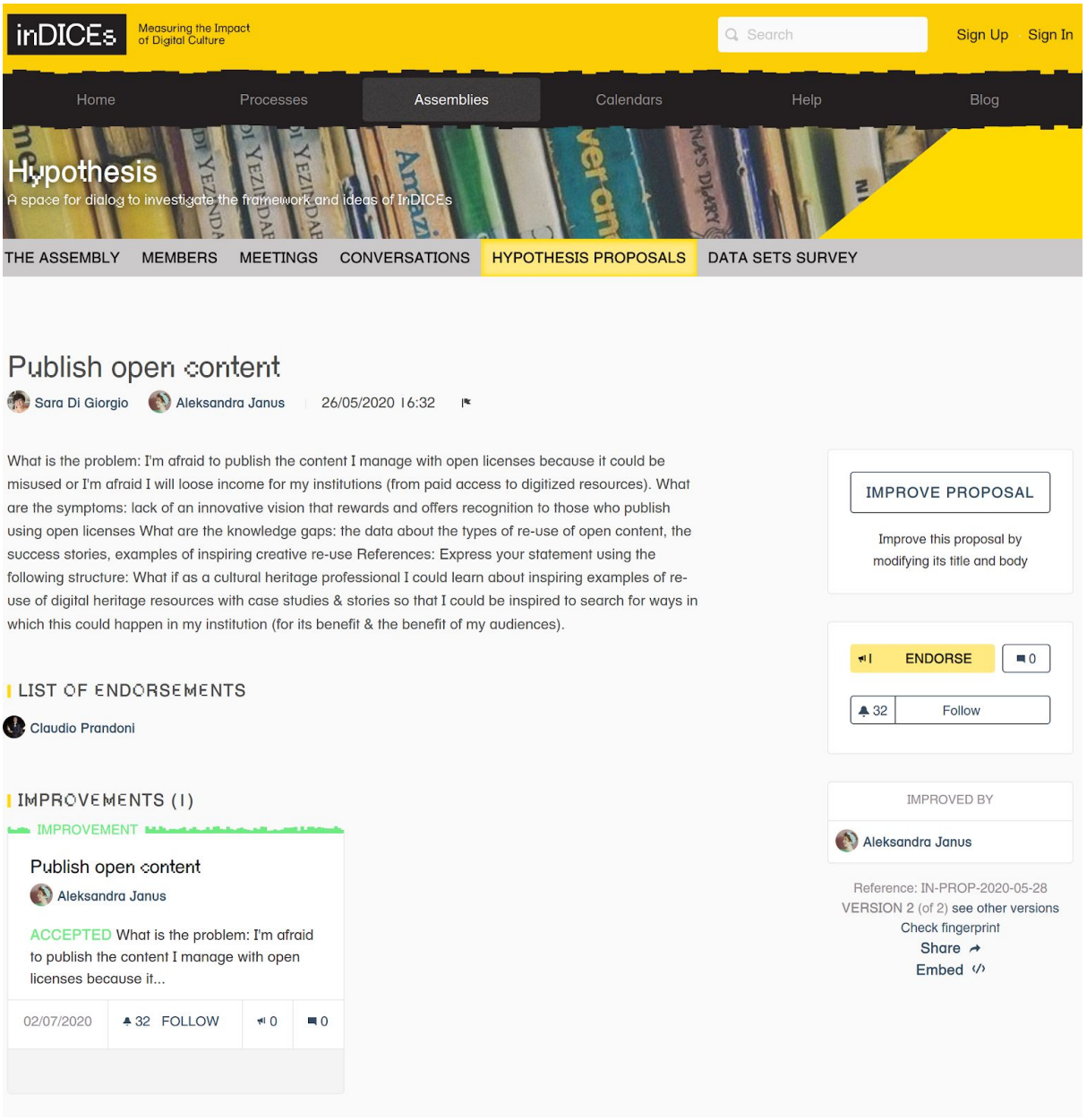


Figure A.4 - Proposal as is presented to the public, with related improvements and participation buttons.

6. Now the user has a complete view of the history of the proposal, they can see that this particular one has been amended by different users. they can see the changes between versions and all the authors involved. Other information is also presented in this page, like a list of people endorsing the same idea or the possibility to also endorse, comment or improve it (but for that the user should register on the platform). As, for the moment, the user is only browsing, they turned their attention into other menu elements for the same assembly. For instance, the “conversations” element, and they click in it (Figure A1.5).

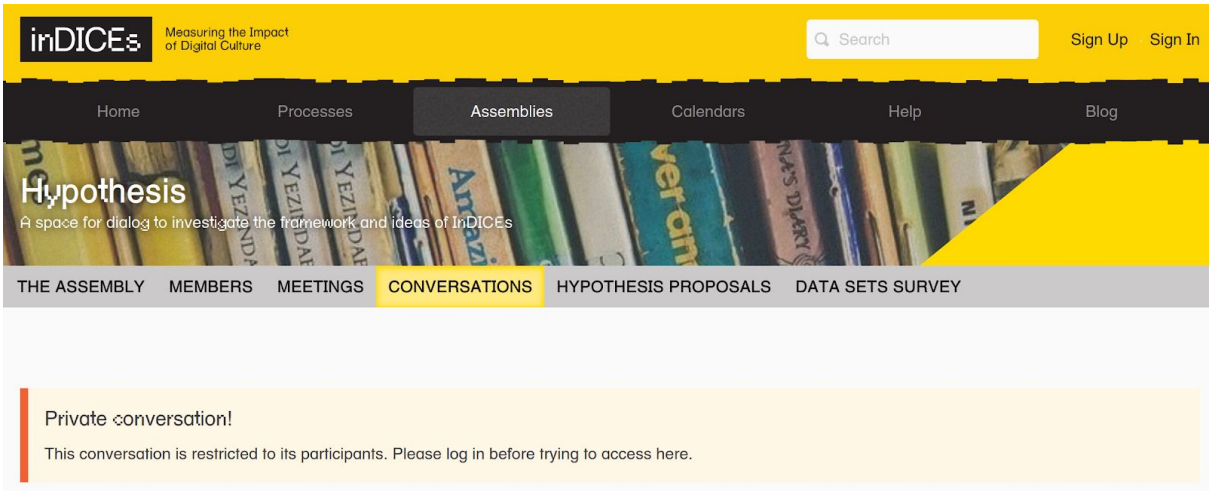


Figure A.5 - A component with access restricted to logged users in an assembly.

7. they find out that this content is restricted to some users and they are not logged in yet. they decide to check the “meetings” element (Figure A1.6) and click on it.
8. The meetings page shows a list of the meetings held by the assembly and, if it is the case, the future ones. Meetings are geolocated and are also displayed visually in an interactive map. Clicking on one of the specific meetings allows the user to obtain more information about it. Similarly as proposals, each meeting allows the user to perform some interactions, such as comment or follow.
9. At this point, the user is realizing that this site may contain a lot of information in many different places. the wonder if there is anything related to a topic of their interest treated in the site. They see a search box at the top of the page and write in it the subject “COVID-19”, then hit the key “Enter” (Figure A1.7).
10. The resulting page returns the list of matches along the whole platform. This page classifies the content according to its nature in a sidebar with the types of Participatory Spaces and components available.
11. From here, the user can continue browsing the site in a similar way. Other components exist and each Participatory Space is conFigured differently depending on its purpose. However, it is not possible for the user to participate in the platform without registering (except for certain specific surveys that might be opened to anonymous answers).

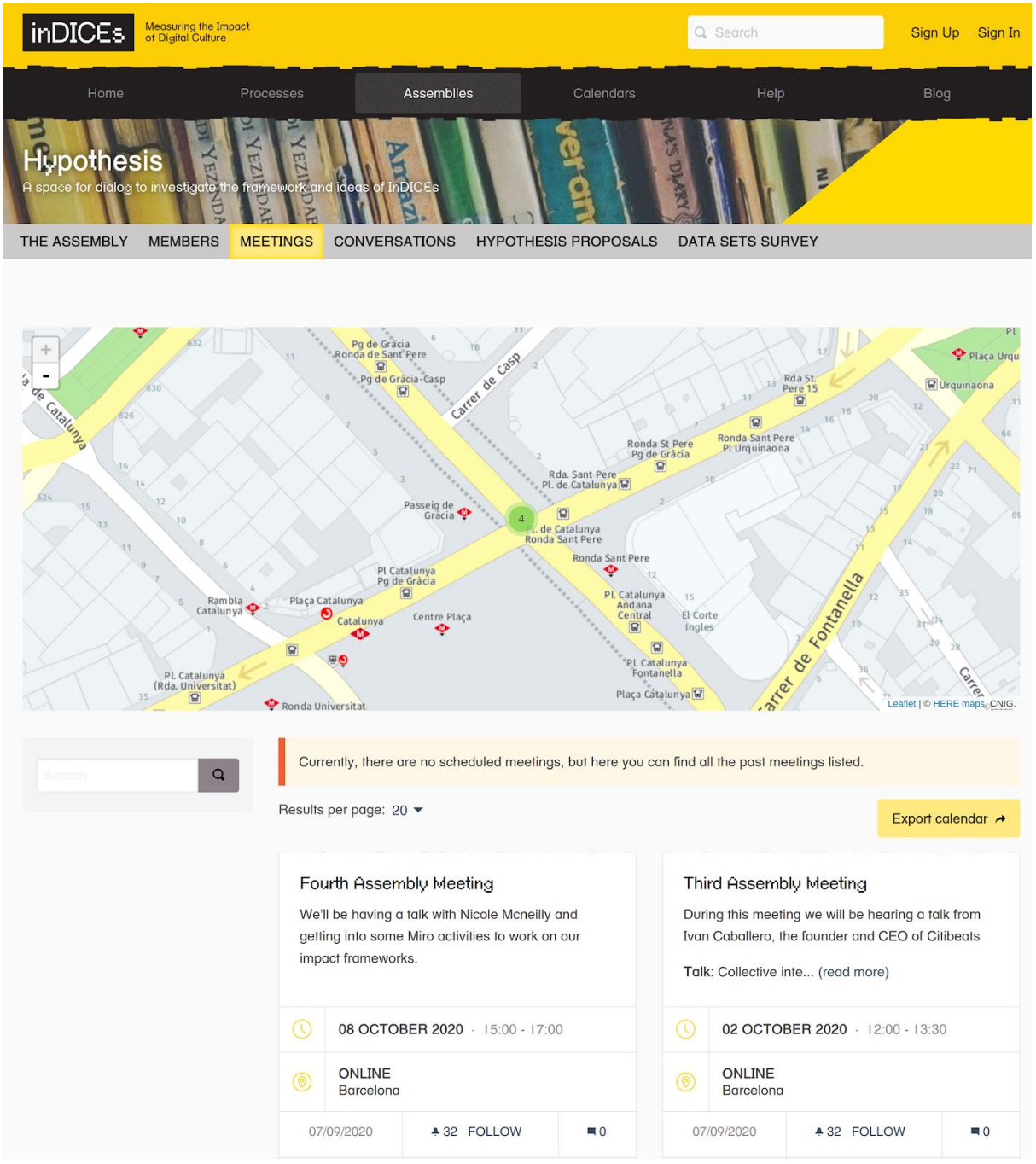


Figure A.6 - The meetings component with geolocation capabilities.

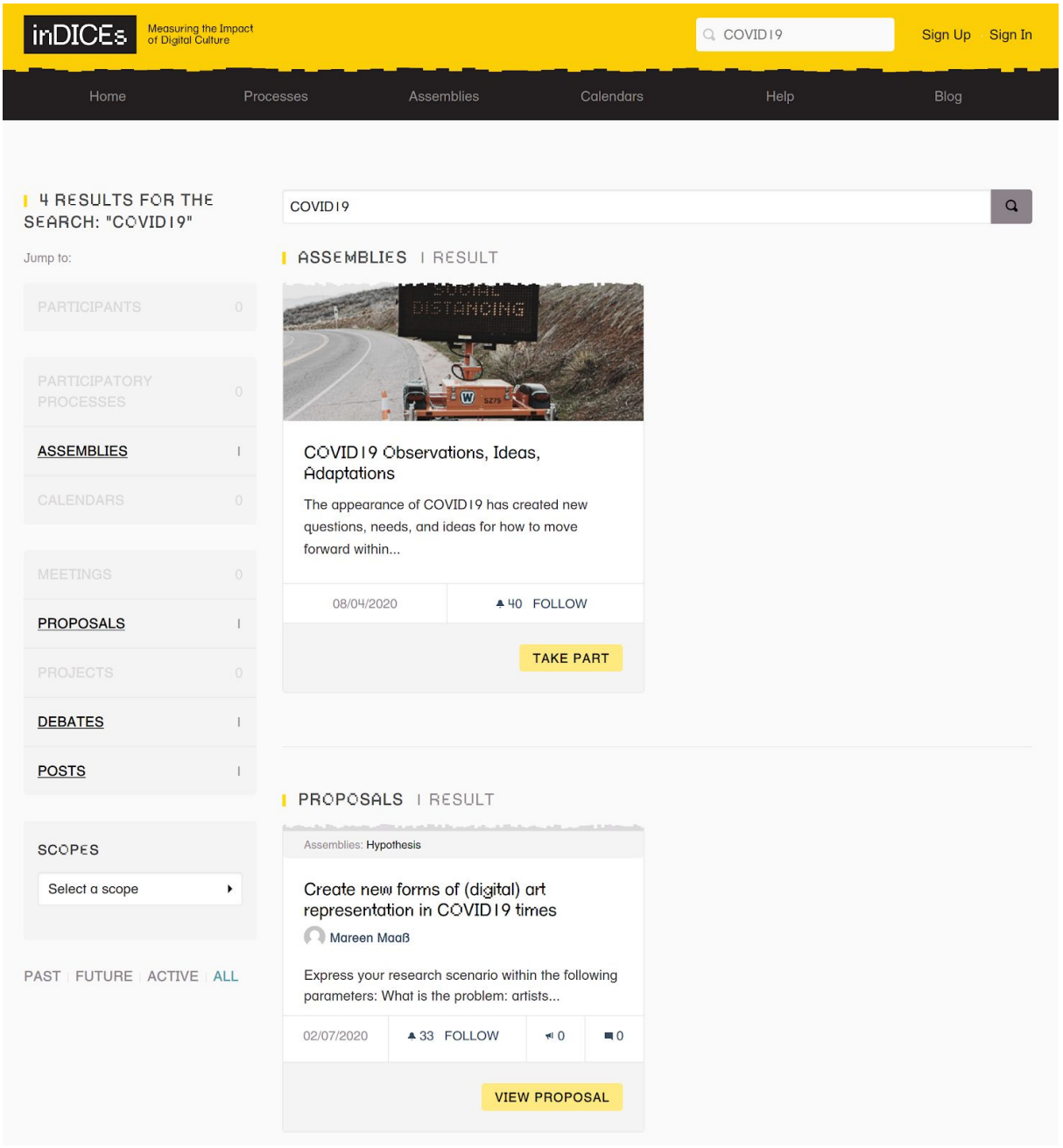


Figure A.7 - The global search results page for the term "COVID-19".

A.1.4 Results

The user has been navigating between the public content of the platform. they have had the opportunity to discover the richness of contents and the different possibilities of participation in the platform. They have seen interactions between people, and other users generated content and they are also aware that there is more content available for those who are registered.

A.2 Registration & login

A.2.1 Objectives

An anonymous user wants to be a part of the inDICEs Participatory Space, tries to interact with a proposal by supporting it but finds out that only registered users can do it. The user decides to register and finishes their initial intention.

A.2.2 Preconditions

- The user is not registered in the platform
- The user has an interest to register into the platform
- The user is using a mobile device to access the platform
- The user has an email account

A.2.3 Steps

1. The user has discovered a proposal while browsing a social network of a friend. they found an interesting link (Figure A1.8) and followed to read the full proposal.

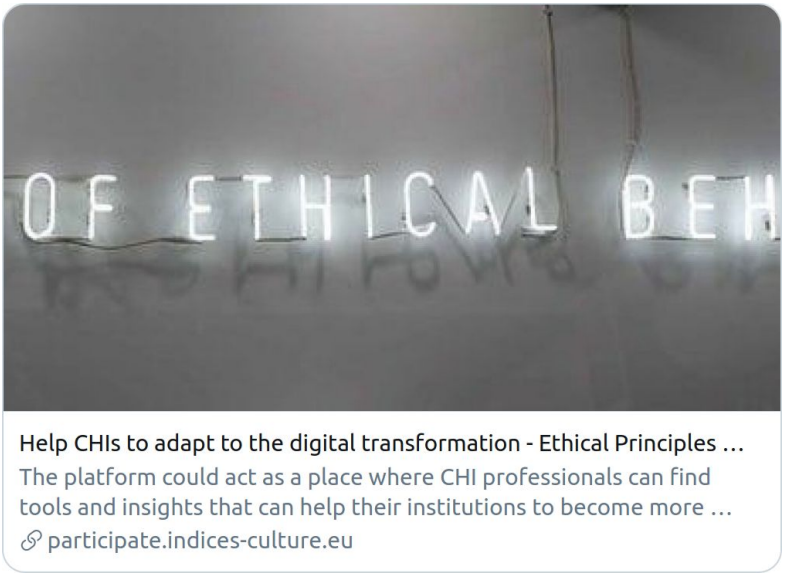


Figure A.8 - Sharing a proposal in Twitter appears as a card with the image and summary

2. The user lands on the proposal page and reads the full description, the content they like and would like to endorse it as it describes an area of their interest.The user tries to click on the “endorse” button. However, a login form appears (Figure A1.9) asking to login or sign up first.

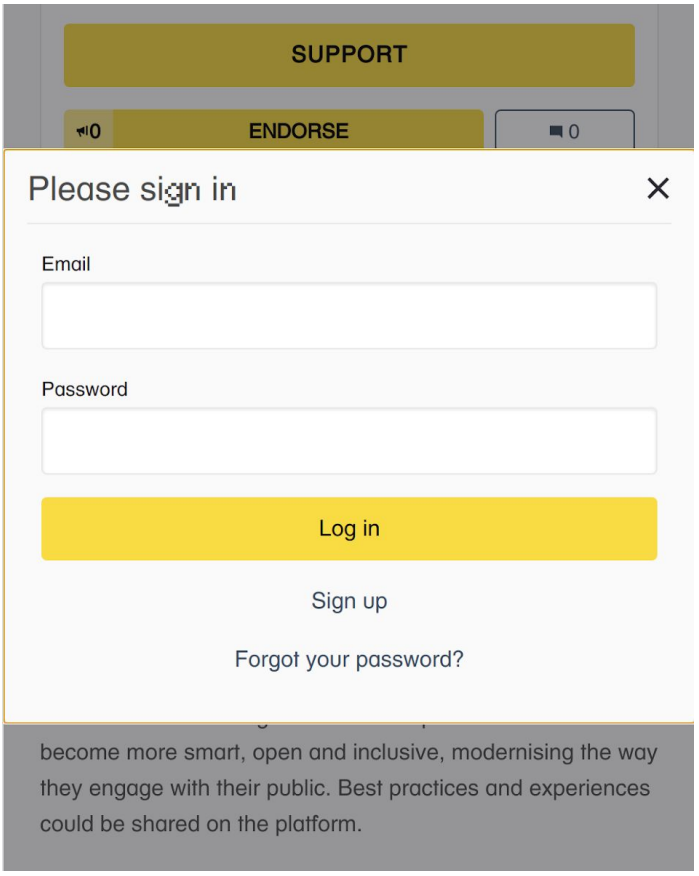


Figure A.9 - Mobile view for the signing form when trying to support or endorse a proposal

3. As they don't have any account on this platform, they decide to register by clicking on the "Sign up" button. A new form (Figure A1.10) appears with additional fields asking to introduce the Name, email, a nickname or alias and a password. Also, in compliance with the GDPR regulations, the page asks to accept the terms and conditions and suggests to register to the newsletter (which is an opt-in checkbox).
4. After filling out all the fields and clicking on the "Sign up" button, the user is registered and redirected to the same page where they start (Figure A1.11).
5. The user clicks on the "Endorse" button as that was their initial intention (Figure A1.11). theynow appear in the list of people endorsing this very same proposal.
6. At this point the user is registered on the platform, but they haven't confirmed their email yet. The platform will let them interact for a limited period, two days by default. After that, if they haven't confirmed their email, they will be logged out and asked to perform this action before continuing. This is a compromise between a security measure to avoid spam registrations and the easiness to register and quickly interact for the first time without too many steps.
7. The user receives an email in their account asking to confirm the email they introduced in the sign up form (Figure A1.12). they click on that link and the platform informs them that now they have finalized all the required steps.

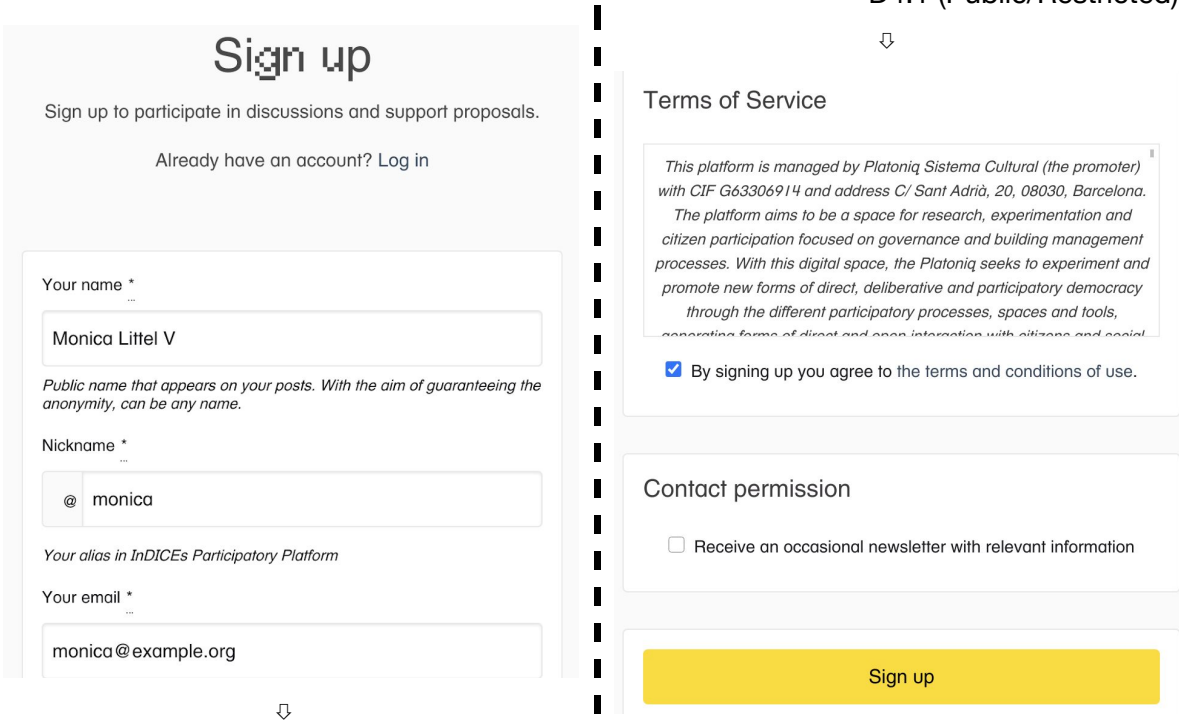


Figure A.10 - Sign up page for new users (Splitted)

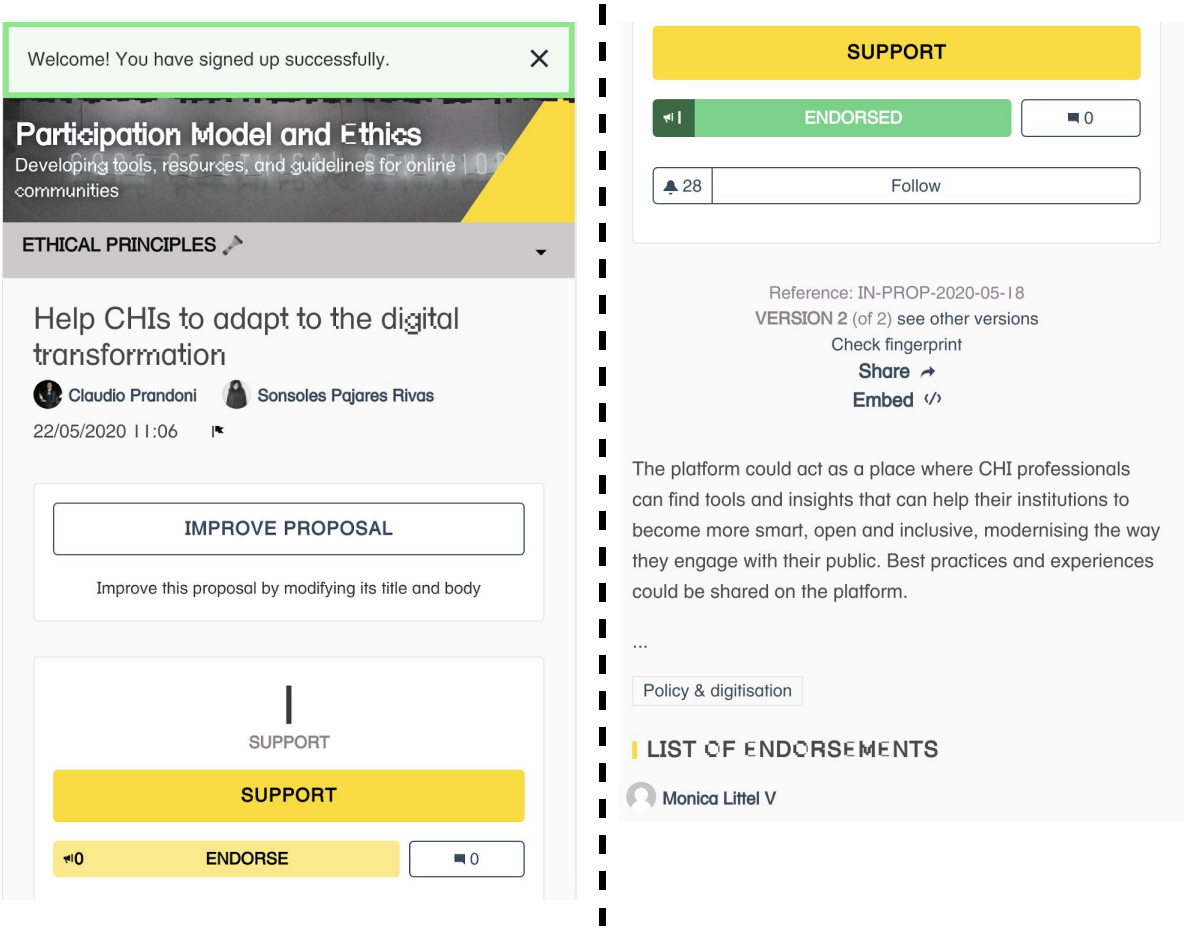


Figure A.11 - Successful sign up message (left). After endorsing (Right).

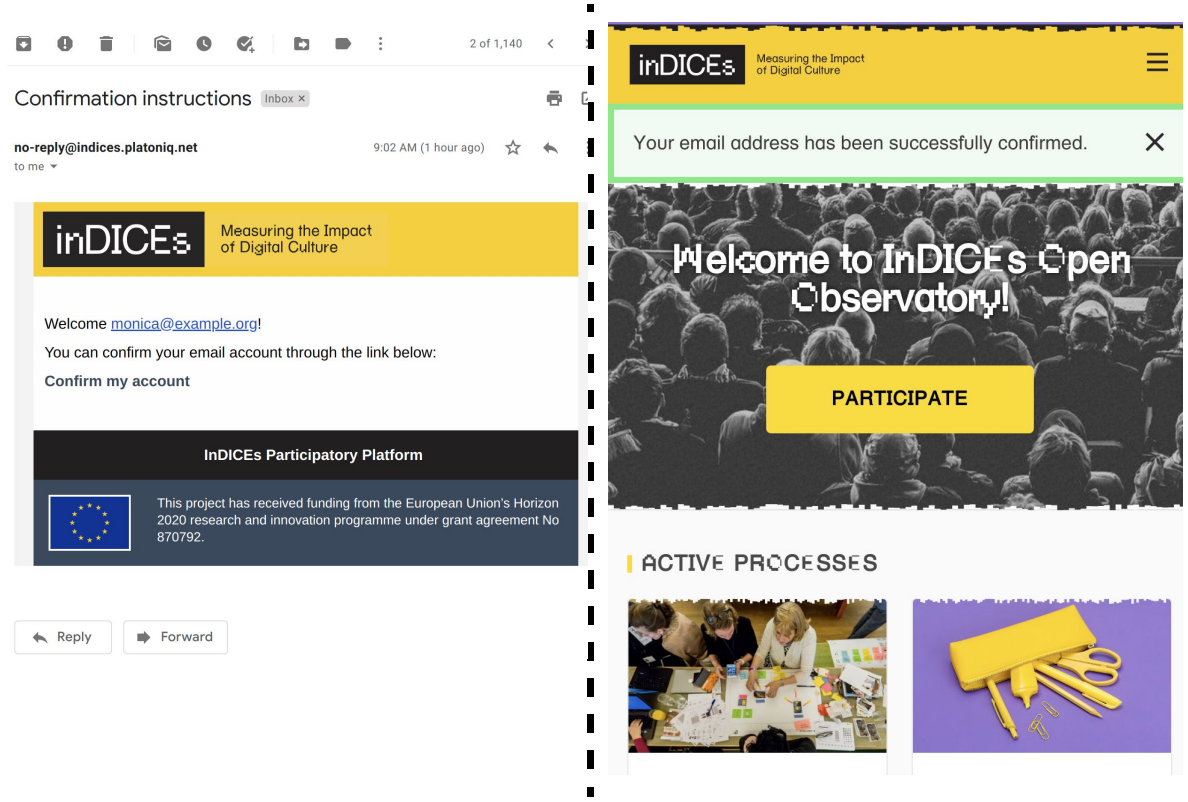


Figure A.12 - Confirmation email received by the new registered user (left). Successful confirmed message in the platform after clicking the link (right).

A1.2.4 Results

The user has successfully registered in the inDICEs Participatory Space and they have been able to participate with a simple action by endorsing a proposal.

A.3 Researcher + hypothesis framework

A.3.1 Objectives

A participant on the platform creates a new proposal to share their hypothesis with the rest of the project. They open a new debate and improvement space for it.

A.3.2 Preconditions

- The user is registered and logged into the platform
- The user knows about the inDICEs project and has basic knowledge about its Participatory Space and how it works.

A.3.3 Steps

1. The user points their browser to the Participatory Space, lands in the main homepage. They are active members of the “Hypothesis” assembly and want to post a new one. They click on the upper main menu “Assemblies”.
2. The user is redirected to the landing page where all assemblies are listed as cards (Figure A1.13). The user clicks on the card called “Hypothesis”.
3. The user is redirected to the main page for this assembly (Figure A1.14). They see the description for this assembly and are able to navigate in a second level menu. They click on the “Hypothesis proposal” item of this second level menu.
4. The user arrives at the proposals page (Figure A1.15) and sees all the previous posted content by other users. As they want to create a new hypothesis, they click on the “Create proposal” button.

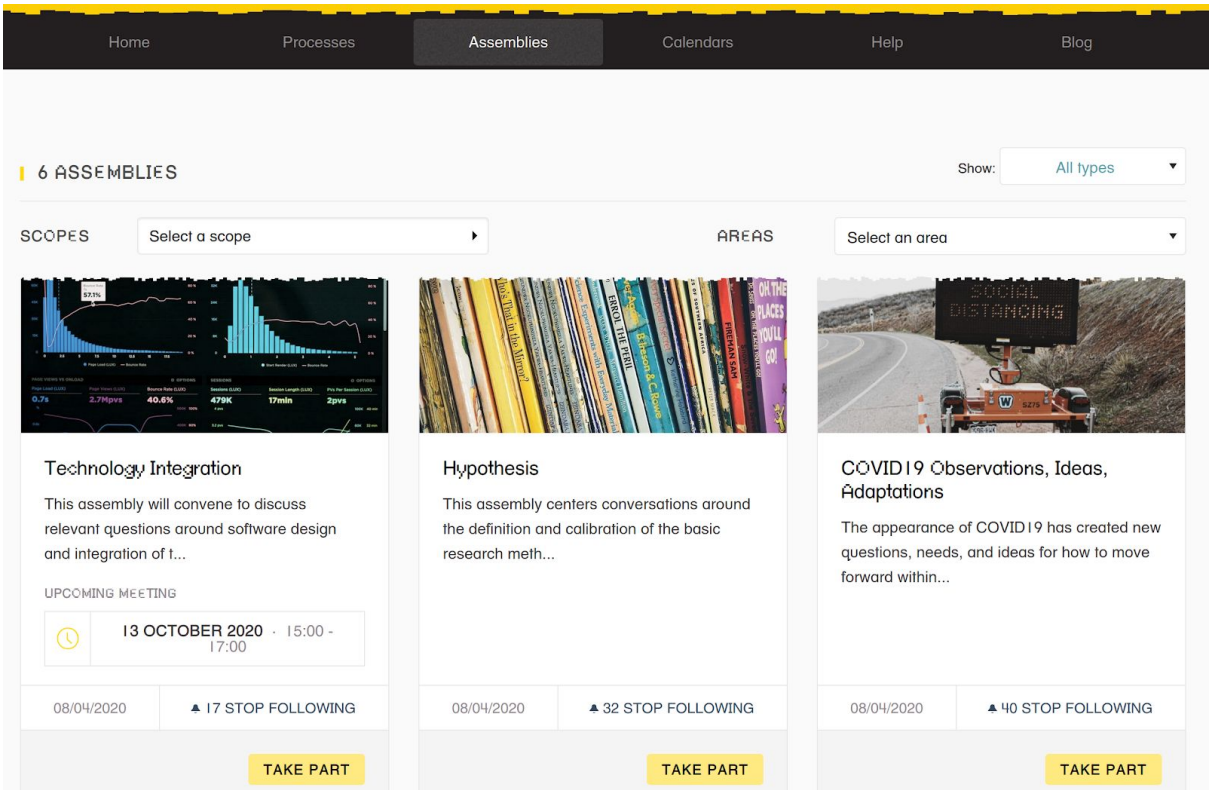


Figure A.13 - Landing page listing all the Participatory Spaces of type “Assembly”.

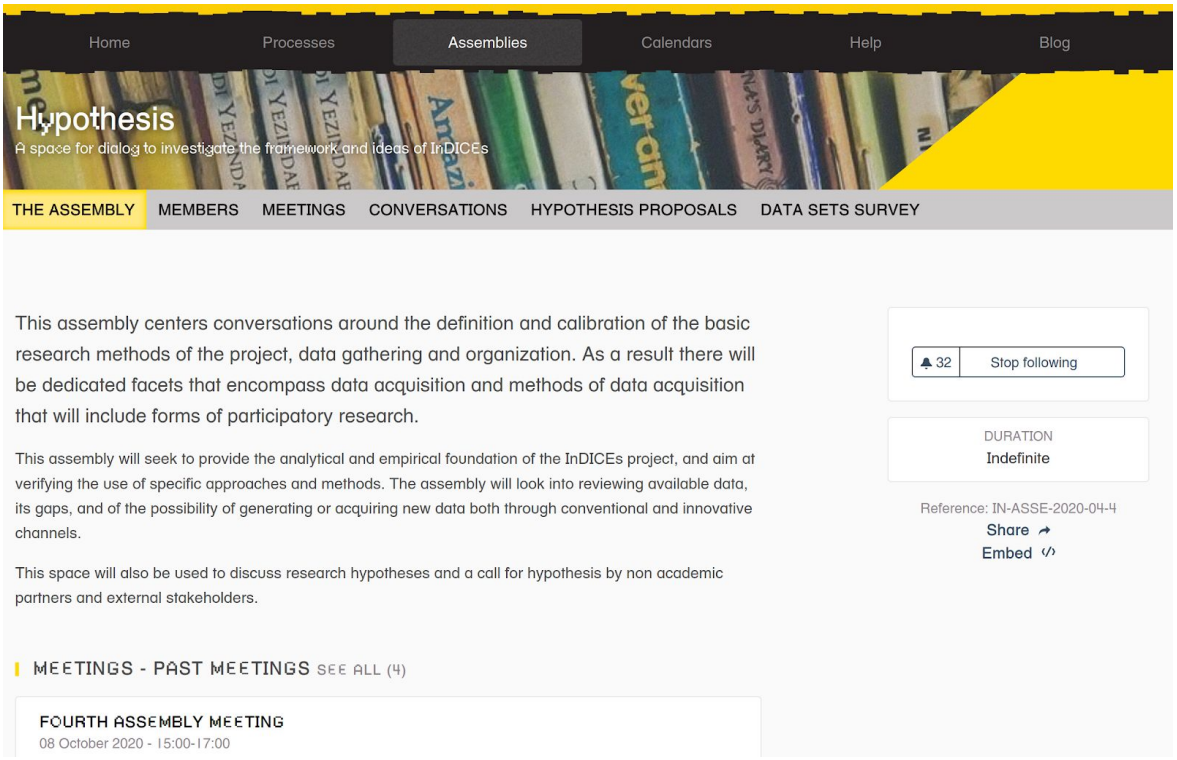


Figure A.14 - Assembly Participatory Space initial page

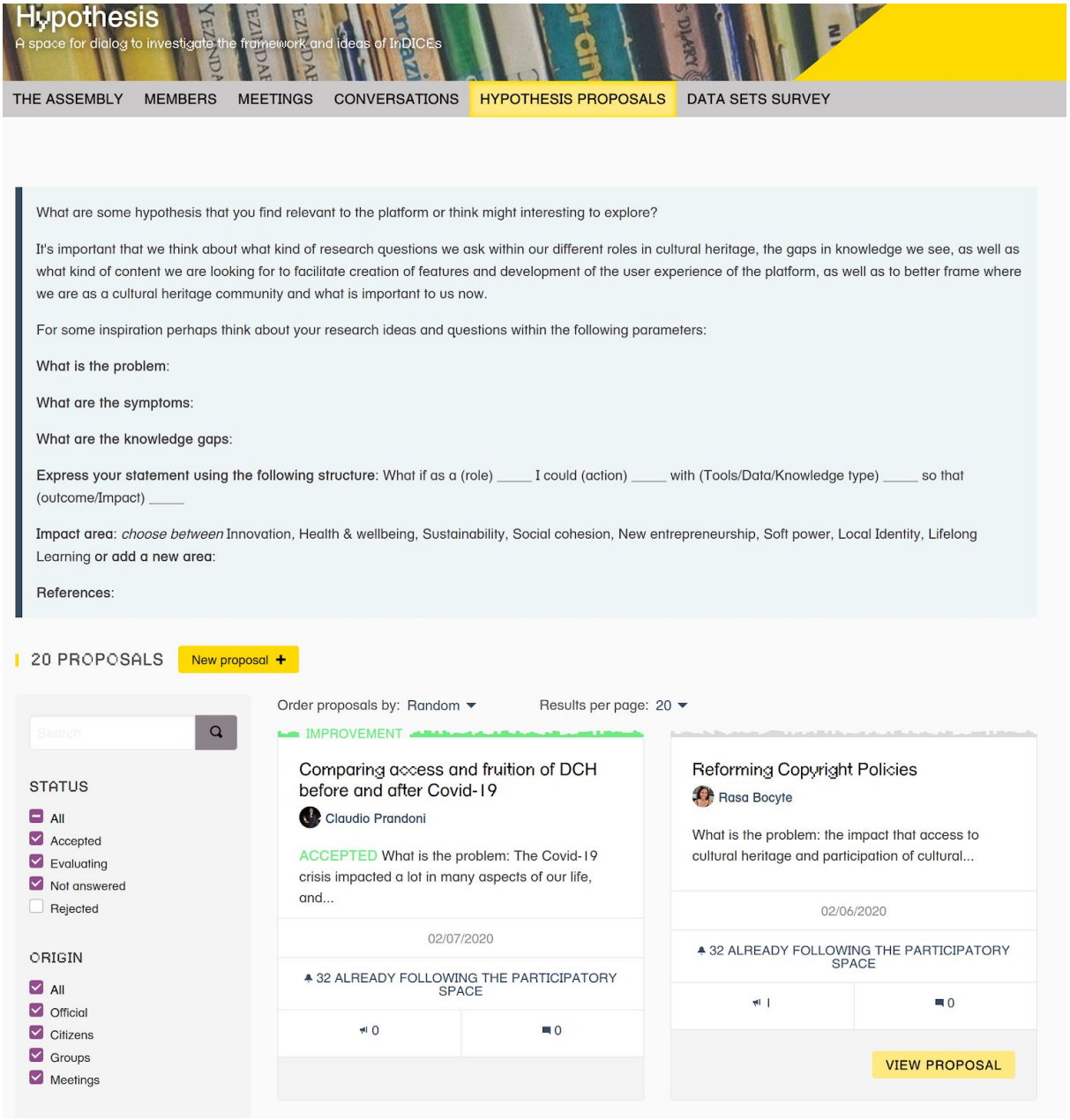


Figure A.15 - Proposal creation page in the hypothesis assembly.

5. The user is now able to create a proposal, however data is not structured yet in the separated form fields that would allow a standardization in the data collection. For that, a wireframe is provided (Figure A1.16) with the desired result.

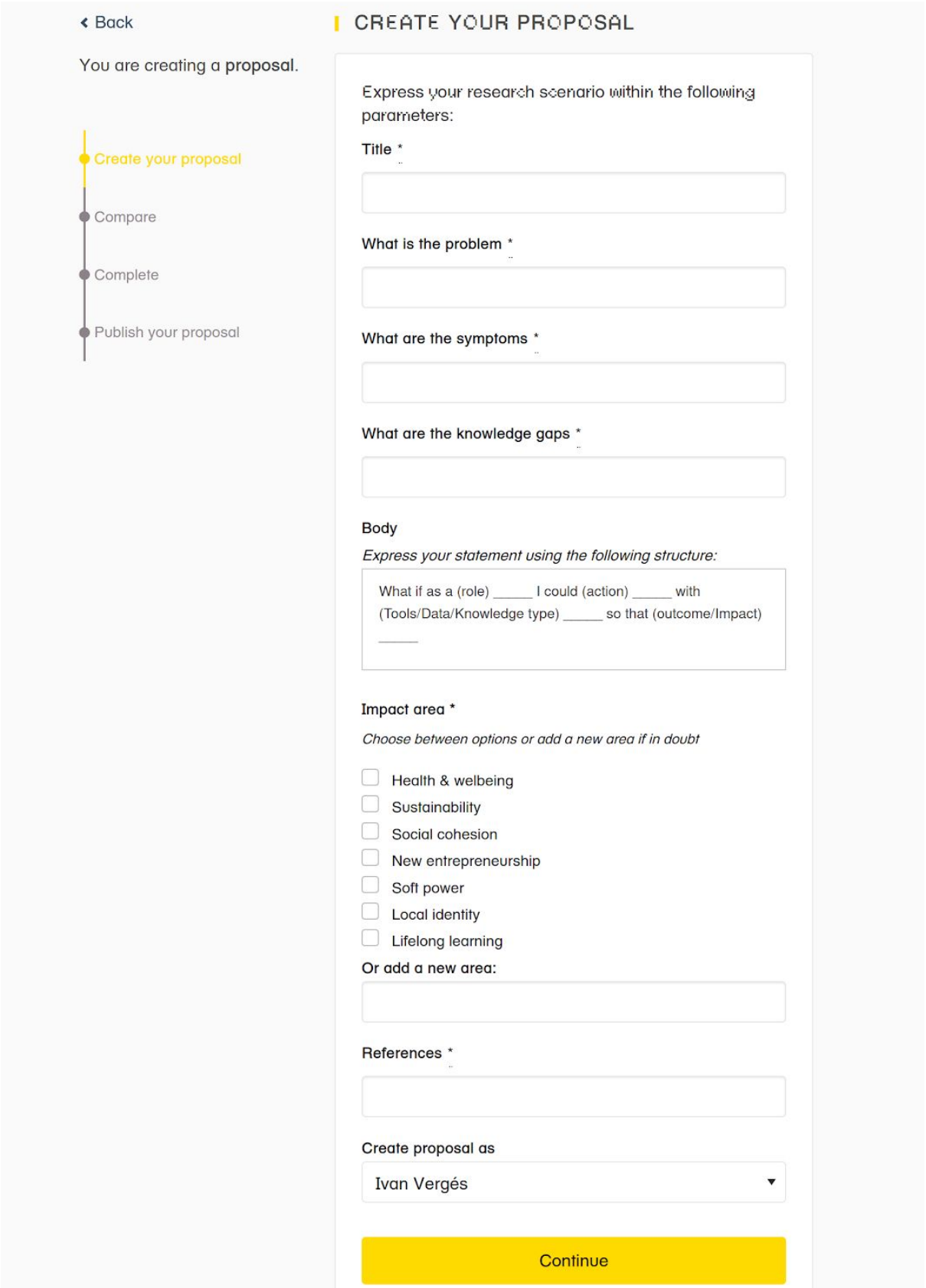


Figure A.16 - Wireframe for the creation of a new hypothesis

6. After filling the proposal, the user clicks on the “Continue” button which leads him to the next step. This is a step dedicated to compare this proposal with others already existing in the same component space (Figure A1.17). This page is created by the backend using an algorithm that compares the similarity of the current text with the others. In here, the user has the opportunity, by choosing another proposal, to improve that proposal instead of creating a very similar one. In this case, the user decides to continue as a new proposal instead of improving anything existing. They click on the “Continue” button.

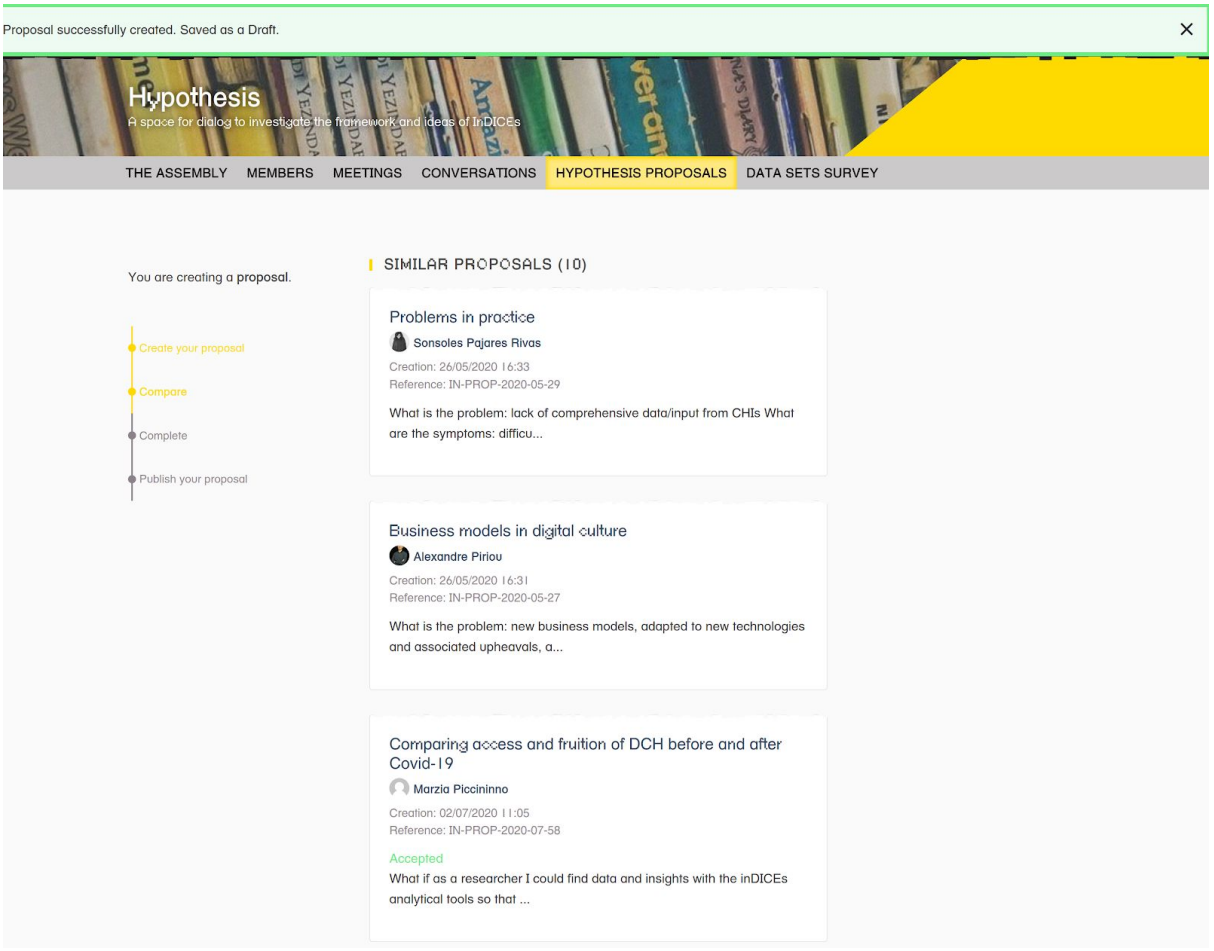


Figure A.17 - Compare to similar proposals before publishing a new one

7. The user lands in the 3rd step, where they have to complete their proposal by choosing a category that will fit the proposal. they can also add complementary information, like attachments or images (Figure A1.18).

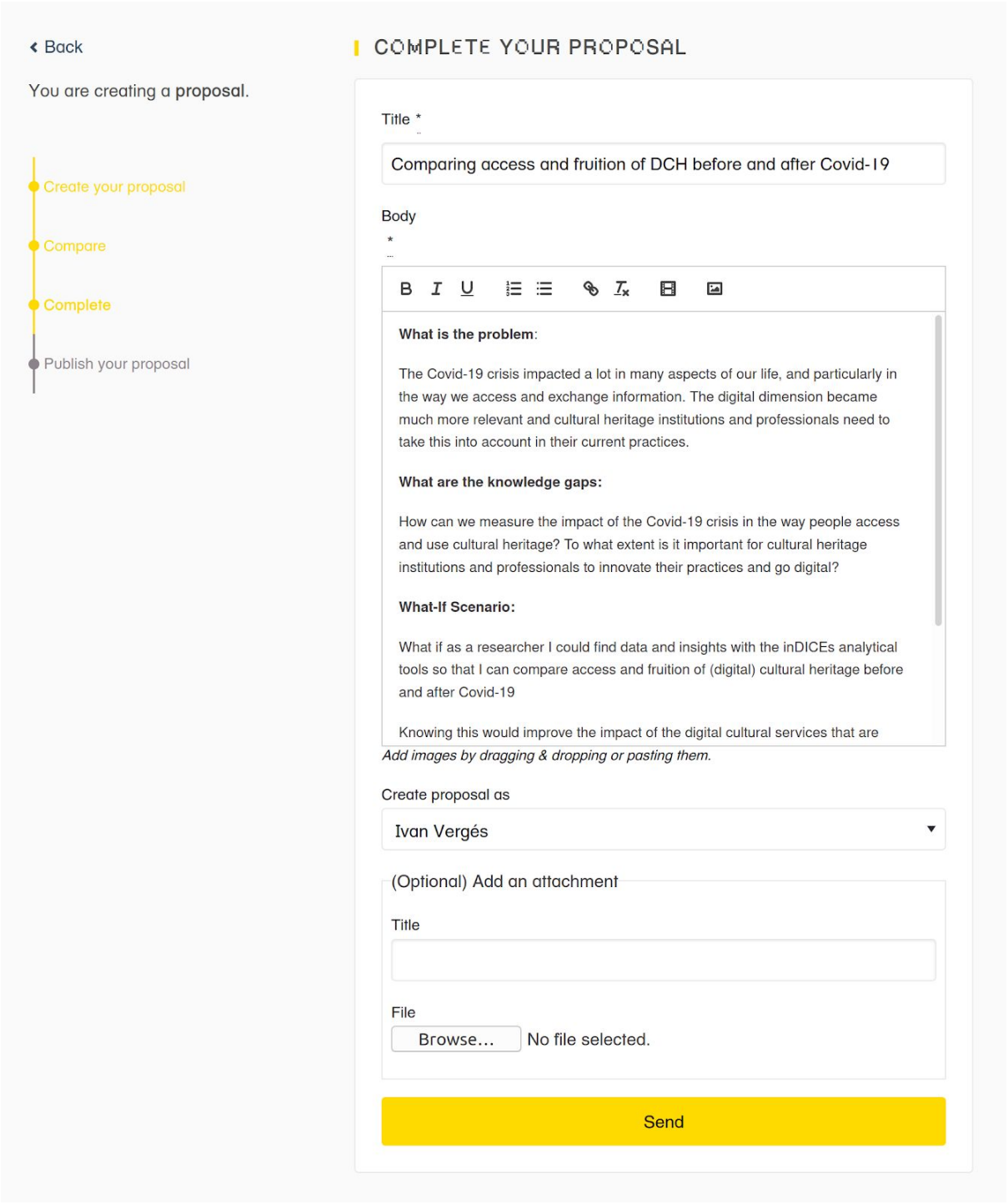


Figure A.18 - Proposal completion form that allows the user to choose the category and add some attachments or images to it.

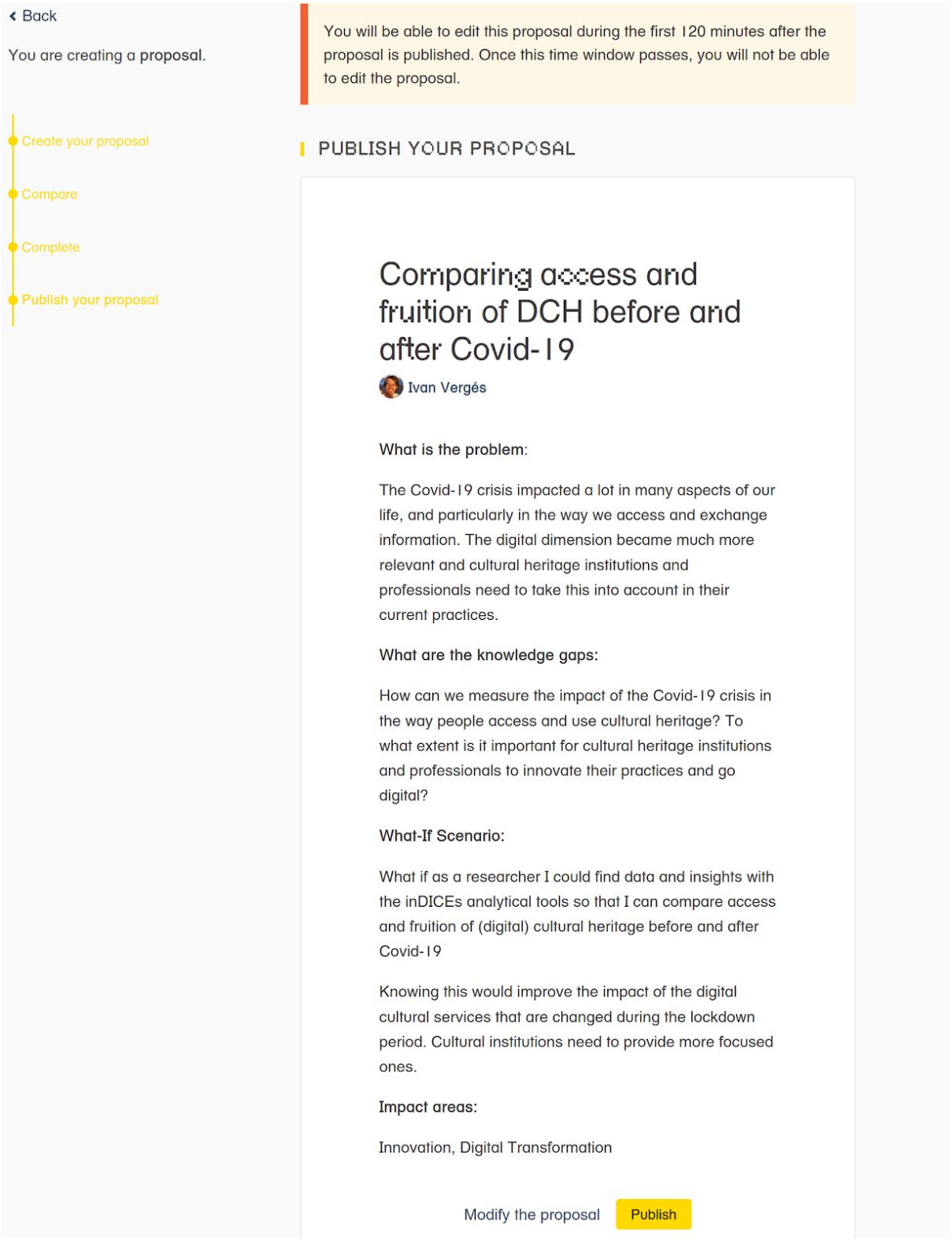


Figure A.19 - Final preview before publishing that allows the user to go back and correct anything if necessary.

8. Finally, after completing the step 3, the user is redirected to the final page before publishing their contribution (Figure A1.19). This page shows a preview of the proposal and the user still has the opportunity to change some content by going back if necessary. By clicking on the "Publish" button, the proposal is released. Note that the platform can still conFigure some time to allow the user to "correct" some aspects of the proposal (e.g. 15 minutes after publishing).
9. Once the proposal is published, a notification is created for the other users participating in the same assembly or simply interested in the same kind of content (this is decided by using categories and user preferences).

A.3.4 Results

A participant on the Hypothesis assembly has successfully contributed by creating a new proposal and the other participants on the same Participatory Space have been notified.

Now, the rest of the participants can improve or simply comment on the proposal. As this proposal is now public, it can be reutilized in the future in other processes or components for the same or different Participatory Spaces. For instance, the proposal could be selected as a relevant item to be worked on and to be posted on a specific page, along with other selected proposals.

A.4 Setting up Processes

This chapter describes an example of how Decidim is managed from the administrator's backend. The task of the administrator is to set up the environment for where the users can participate. In this example, there is a participatory process with the objective of gathering information in the form of surveys. The procedure to create different scenarios by using other types of Participatory Spaces (such assemblies or consultations) can be easily extrapolated as it follows the same logic.

A.4.1 Objectives

A user with administrative rights on the platform, wants to create a new space of participation. they want to set up a new participatory process with different phases where different participation actions will take place.

A.4.2 Preconditions

- The user has administrative rights and knows how to access the admin backend.
- The user has some training in the specifics of Decidim and knows about the Participatory Spaces and components (See chapter 5.2).

A.4.3 Steps

1. The user logs in the Participatory Space as any other normal user would do.
2. The user accesses the admin panel by clicking on the menu item "Admin dashboard" (Figure A1.20).

Figure A.20 - Users with admin rights have access to the admin backend.

3. The user is redirected to the admin dashboard (Figure A1.21).

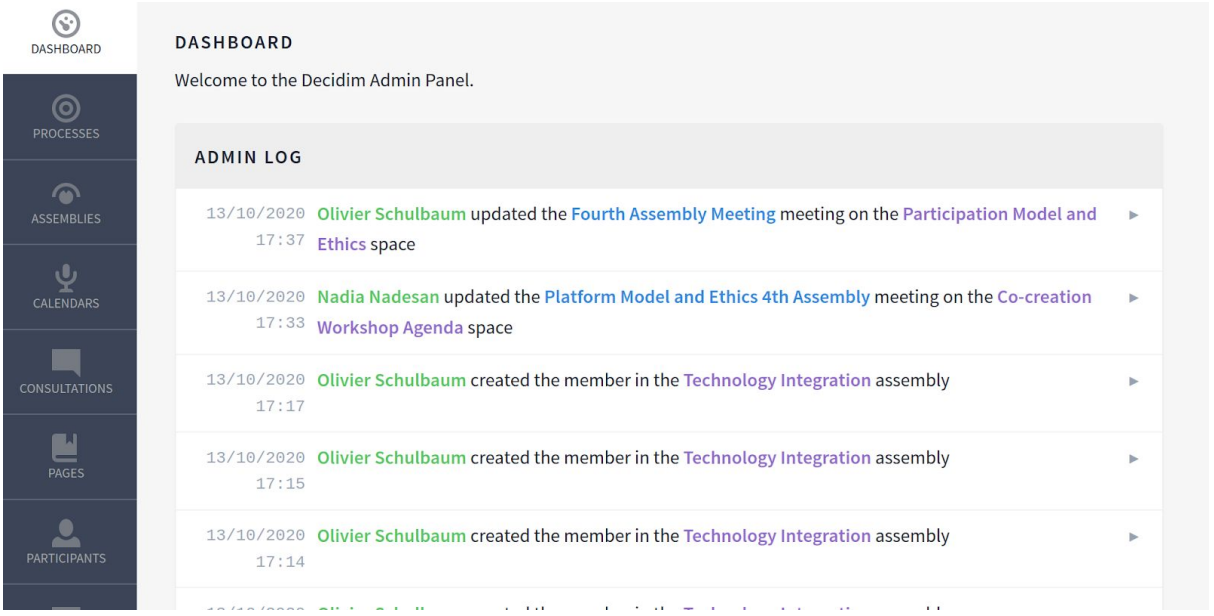


Figure A.21 - Admin first landing page with the last actions performed by other admins.

4. The user goes to the processes section by clicking on the sidebar menu in its corresponding item. they are redirected to the process admin page (Figure A1.22). This page shows a list of all the processes currently available and its characteristics. They might be published or in "draft mode" (which means they are not visible in the frontend website). They can also be private (meaning that users must be specifically invited to that process in order to participate).
5. The user clicks on the button "New process".

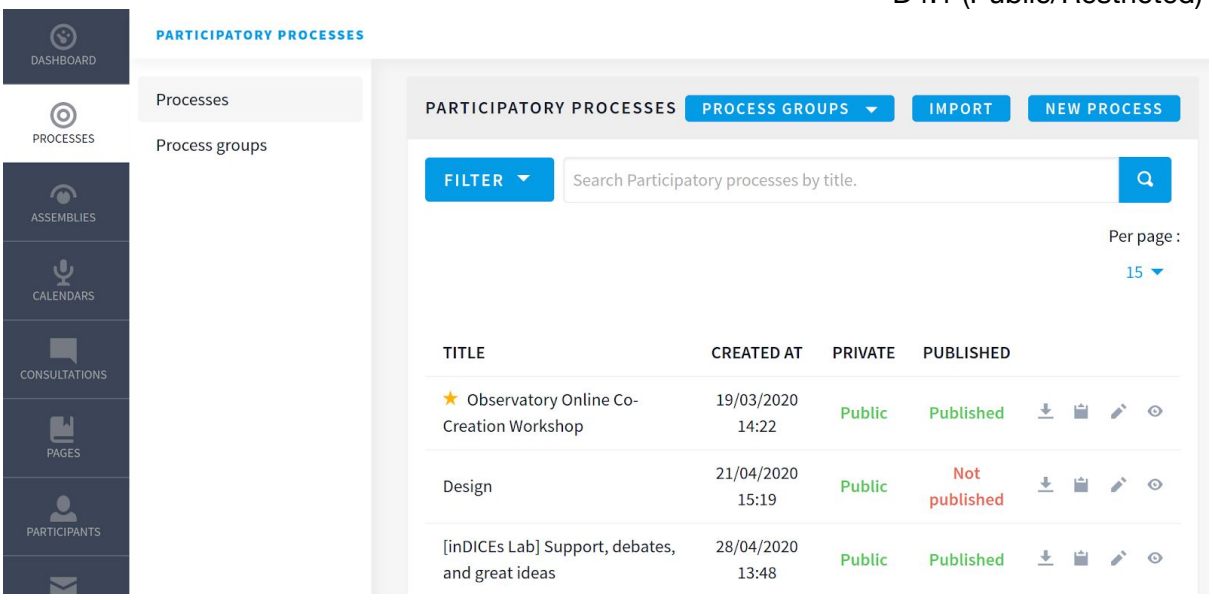


Figure A.22 - Admin page for all the participatory processes in the platform.

6. The user is presented with a form with mandatory and some optional fields. The most importants fields are: the title, the url slug (the fragment in the URL that will identify the process), a short description (a summary), the complete description and a main image to make it more appealing (Figure A1.23).
7. The user fills the form and presses the button “Create”. This action creates a new entry in the list of processes by adding a new process with the status “Not published”. At this point, the admin can complete the set up by editing again the process and adding extra features to it. One of the key features of a process is the ability to have phases.
8. The admin edits the process they just created by clicking on the pencil button of the list of processes (Figure A1.22).
9. They are redirected to the same form as before, but in this case, the create button is being replaced by two buttons: “Update” and “Publish”. The user, however, still does not perform either of these actions but goes instead to the submenu “Phases” in the left sidebar of the form (Figure A1.23).
10. The user is presented with a page where to manage the different phases for the process (Figure A1.24). In this page there is a button to add a new phase, a list with buttons to edit or remove them and a button to select which one of them is currently active.
11. The user adds all the phases they think are necessary for this process.
12. Now the process is ready to be presented to the public but still needs to have sections where the participation will take place. This is done by adding components into it.
13. The user clicks on the submenu item “Components”.
14. The user is directed to the components administration page (Figure A1.25). In here, there is a list of the different components already created for this process and their status (published or not). Each component in the list has a button section where to edit, conFigure, publish, assign permissions or destroy it.

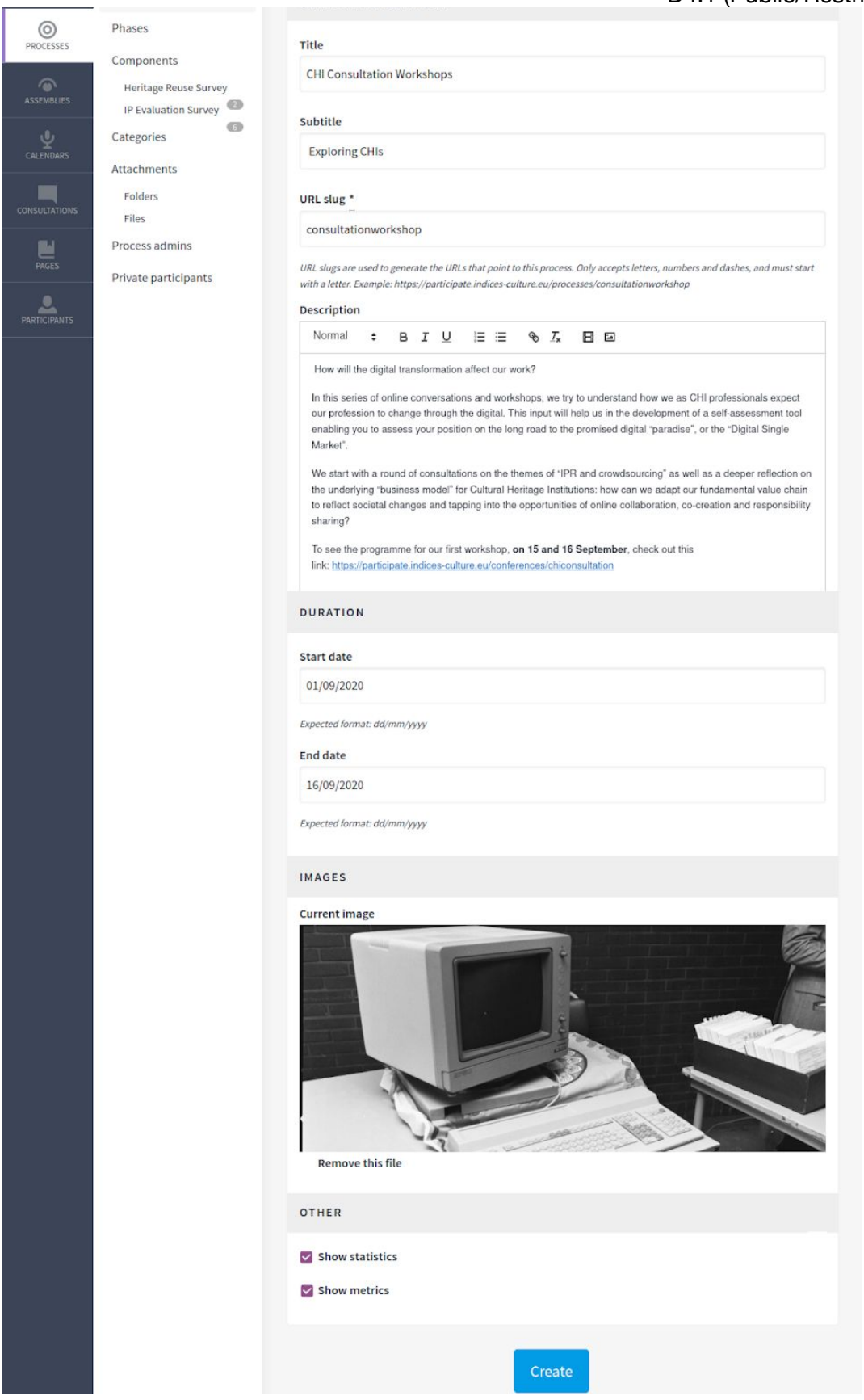


Figure A.23 - Form for creating a new process.

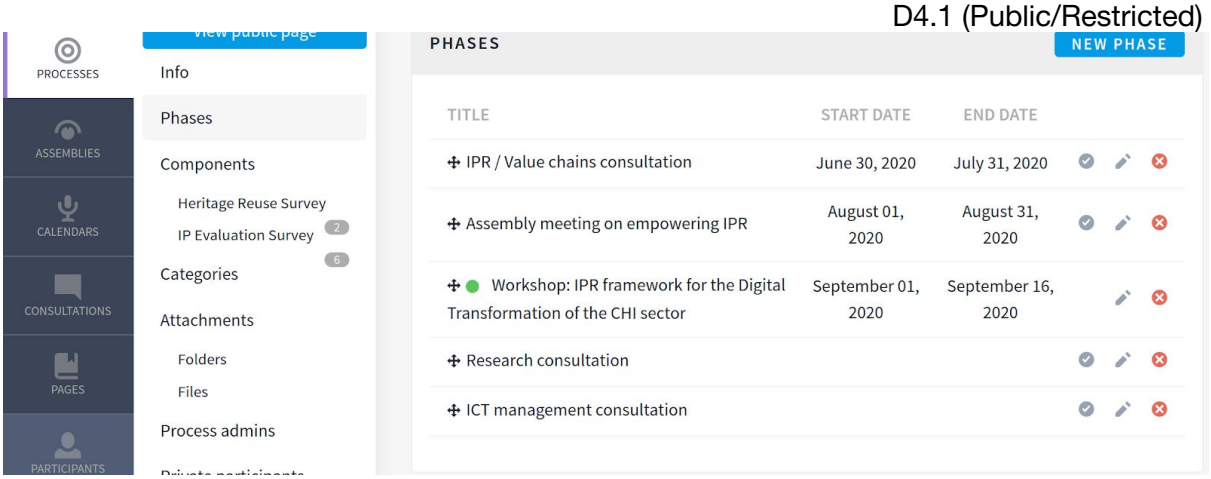


Figure A.24 - Phases manager for a process.

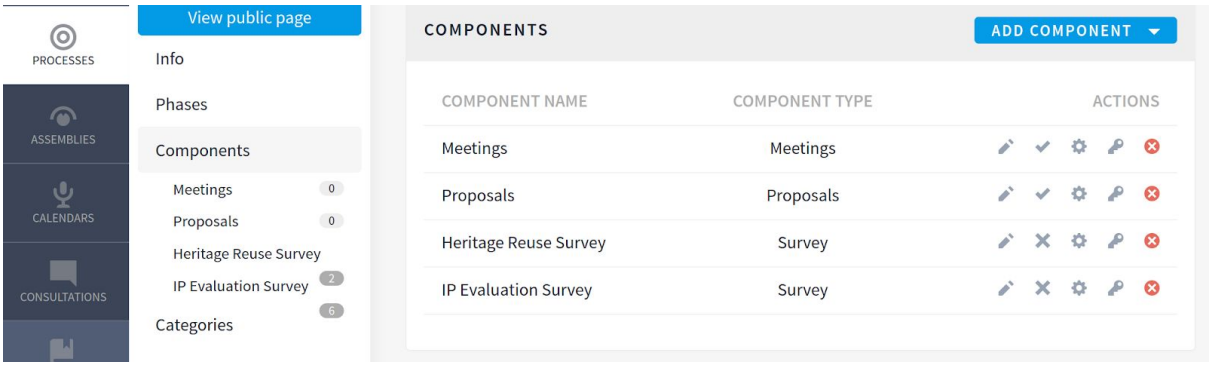


Figure A.25 - Components editor for a process.

15. The user clicks on the “Add component” button and selects “Surveys” from the list of options.
16. A new form appears with configuration settings (Figure A1.26). First the name of the component as it will be shown to the public. Then additional options, for instance an announcement, an optional text that can be displayed at the top of the public page as a highlighted content. Then, depending on the type of component, more options appear in various sections. In particular there is the “Global” section, these are options that apply all the time, independently of the active phase. However, as this is a process, some options can be conFigured with different parameters depending on which phase has been activated. This is displayed as sections in the “Step settings” box and allows the user to tailor the participation according to the nature of the process. When the user is done with this page, clicks on the “Add component” page and they will be redirected back to the components admin page (Figure A1.25).
17. Now, depending on the type of component added, it needs to be personalized and fill in with content. In this case, this is a survey, so the user will have to add questions to it. This is done by editing the component (which contrasts with the previous action of “configuring the component”).

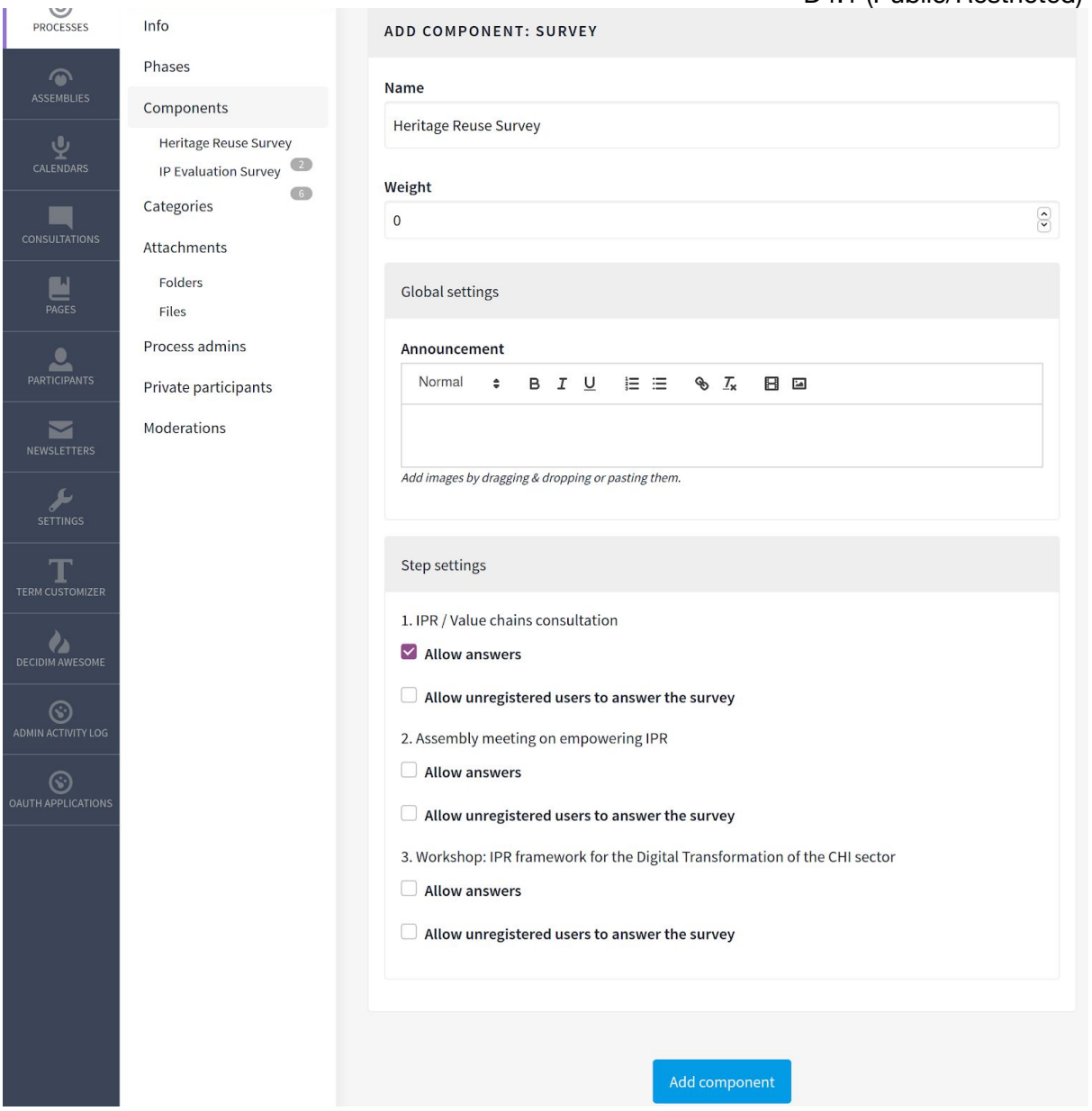


Figure A.26 - Form to add new component

18. The user clicks on the pencil button in the components administration page to edit the recently created survey.
19. Before adding questions, the user has to fill in general information about the questionnaire: the title and the description but also the specific terms of service (that might differ from the ones applying to the whole platform). Participants that answer this questionnaire will have to accept the terms of services before submitting their answers.
20. The user adds questions to the survey in a new form (Figure A1.27). There are several types of questions that can be added, from free text input fields to complex matrix-like selectors. There is also the possibility to incorporate some logic into the questionnaire that will display different options depending on previously answered questions.

21. After the user is satisfied with the questions, they save the questionnaire by clicking on the buttons “Save”. Now they are ready to publish the component and announce it to the world.

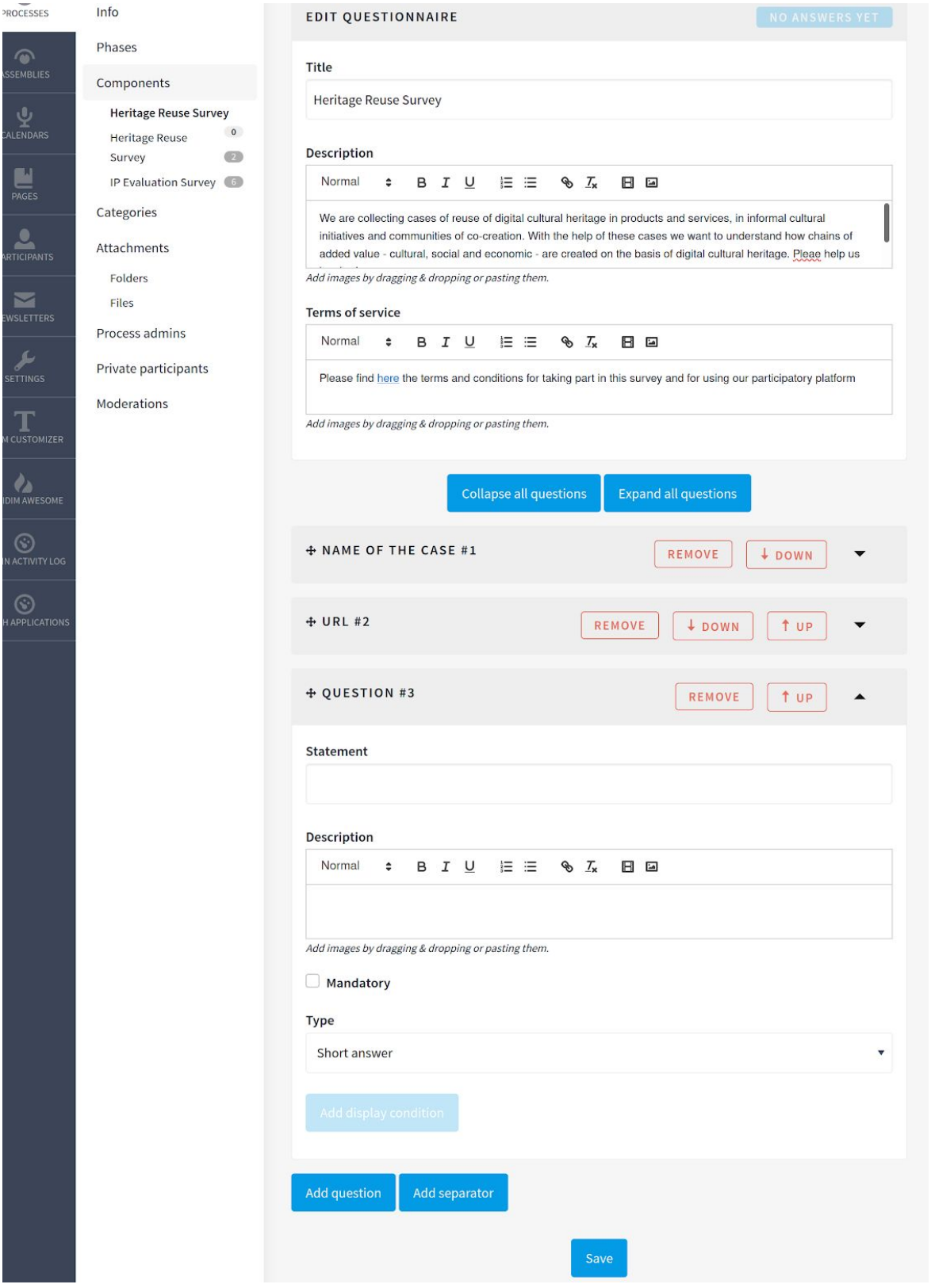


Figure A.27 - Surveys editor page.

22. The user publishes the component by clicking on the publish button in the components list admin page (Figure A1.25). The result is immediately available publicly (Figure A1.28).

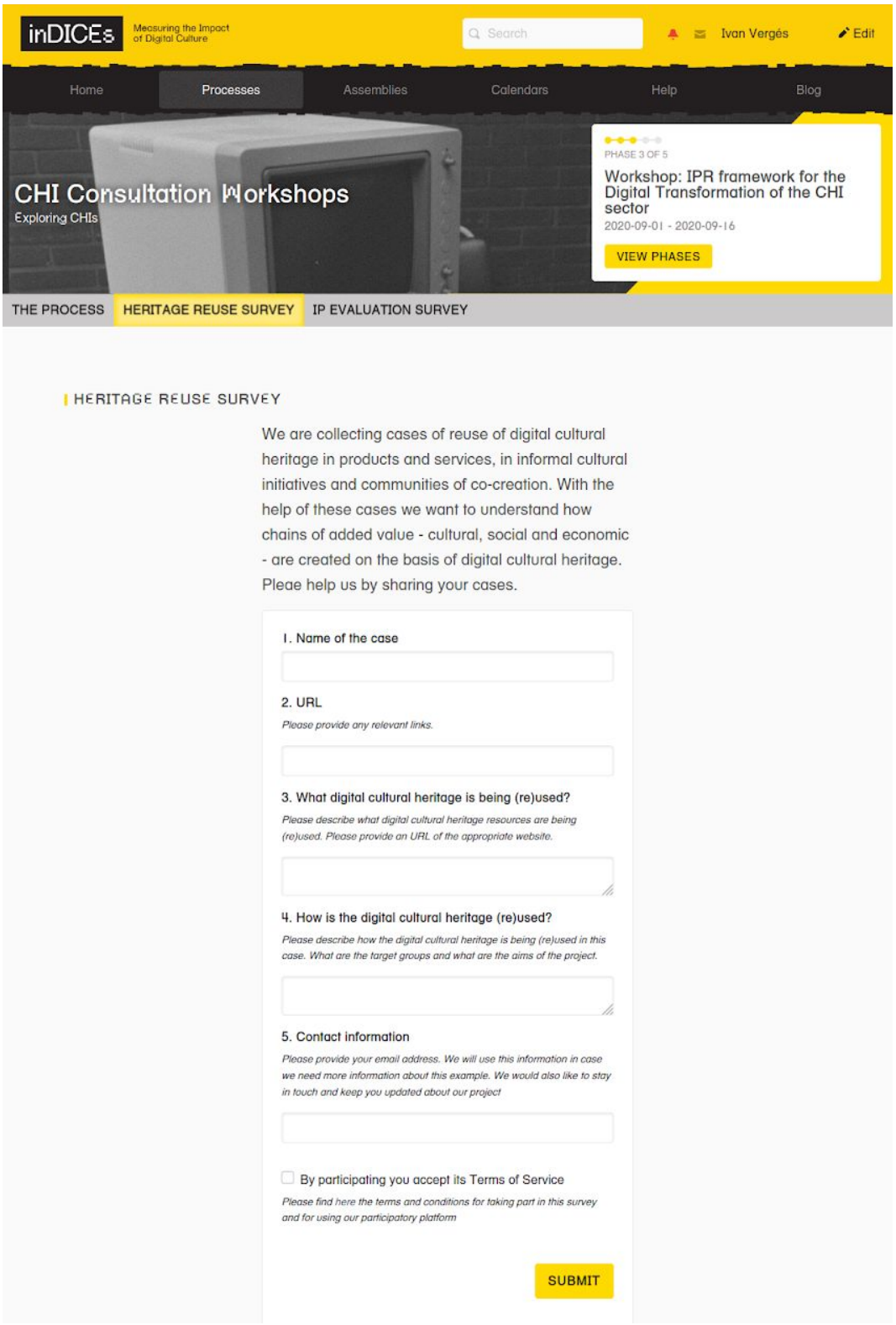


Figure A.28 - Final view of the public interface for the a process, showing a survey component.

A.4.4 Results

A user with admin privileges has been able to set up a new participatory process from scratch.

Now the task will consist of taking all the complementary actions required for this process to be successful. The administrador and others that can help on the task, will have to announce and disseminate the process and the specific survey in external platforms and networks.