



inDICES

# Measuring the Impact of Digital Culture

## Deliverable 4.4

### Collaborative environment and custom participatory space builder

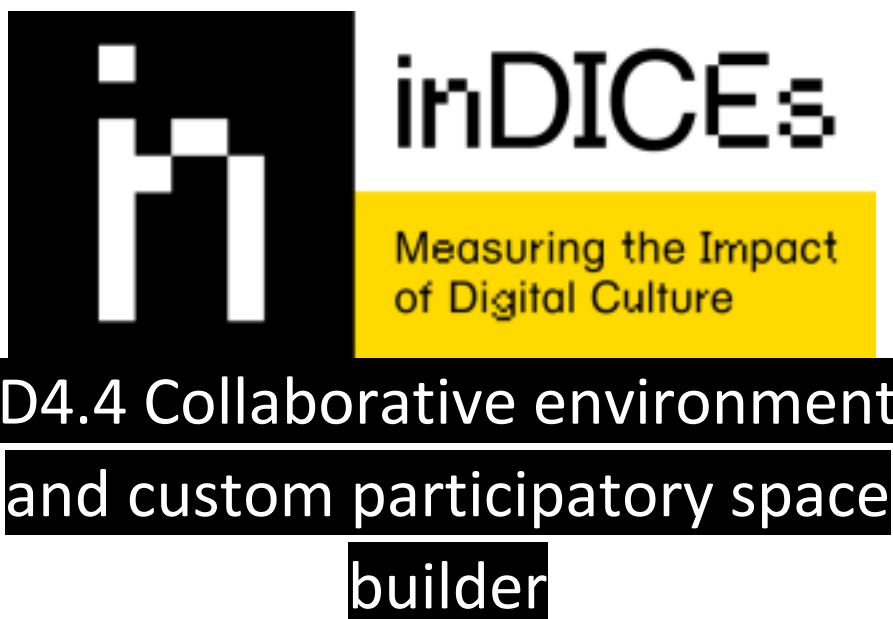
---



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870792.

The sole responsibility for the content of this publication lies with the authors. It does not necessarily represent the opinion of the European Union. Neither the EASME nor the European Commission is responsible for any use that may be made of the information contained therein.

The research leading to these results has received funding from the European Community's Horizon 2020 Programme (H2020-DT-GOVERNANCE-13-2019) under grant agreement n° 870792.



**Final Version**

**29/07/2021**

<b>Grant Agreement number:</b>	<b>870792</b>
<b>Project acronym:</b>	<b>inDICEs</b>
<b>Project title:</b>	<b>Measuring the impact of Digital Culture</b>
<b>Funding Scheme:</b>	<b>H2020-DT-GOVERNANCE-13-2019</b>
<b>Project coordinator name, Title and Organisation:</b>	<b>Simonetta Buttò, Director of the Central Institute for the Union Catalogue of the Italian Libraries (ICCU)</b>
<b>Tel:</b>	<b>+39 06 49210425</b>
<b>E-mail:</b>	<b>simonetta.butto@beniculturali.it</b>
<b>Project website address:</b>	<b><a href="http://indices-culture.eu/">http://indices-culture.eu/</a></b>

Author: **Nadia Nadesan, Platoniq**  
**Ivan Vergés Pascual, Platoniq**

Reviewers **Katinka Böhm (WLT)**  
**Artiza Elozegi (WLT)**

#### **Document History**

- 1.06.2021 - Structure of the document
- 23.06.2021 - Draft Version 0.1
- 10.07.2021 - Draft Version 0.2
- 22.07.2021 - Shared Draft with Reviewers
- 29.07.2021 - Final Document

# Table of contents

<b>1. Executive summary</b>	<b>3</b>
<b>2. Acronyms</b>	<b>4</b>
<b>3. Introduction</b>	<b>5</b>
3.1 The Modular Approach	5
<b>4. Methodology</b>	<b>7</b>
<b>5. Implementation: inDICES as a Participatory Space</b>	<b>9</b>
5.1 Centering Participation: Decidim	9
5.2 Implementing Decidim in InDICES	9
5.3 Legacy	10
Decidim Community Expansion during COVID-19	10
Conference of the Future Europe	11
<b>6. Developing Custom Fields to Share Hypotheses</b>	<b>12</b>
6.1 Sharing Hypotheses: Developing the Practice of Collaborative Research	12
6.2 The Development of Custom Fields	14
<b>7. Visual Analytics Dashboard Integration</b>	<b>17</b>
7.1 Creating a Dashboard Basic / Dashboard Lite Space	17
7.2 A real case combining the use of the participatory platform and the visual analytics dashboard.	19
7.3 Capacity Building. Testing within a Bootcamp	21
<b>8. Self Assessment Tool Conceptualization</b>	<b>22</b>
8.1 Developing the Questions and Framework	22
8.2 Wireframes	22
<b>9. A Data Policy in Progress</b>	<b>25</b>
Protecting Participant Privacy	25
Opt-in measures	25
Right to be Forgotten	26
9.1 Developing an Accessible and Responsible Data Policy	26
<b>10. Concluding Remarks: InDICES Development Roadmap</b>	<b>27</b>
<b>Annex 1: Dashboard Lite Wireframe</b>	<b>28</b>
<b>Annex 2: Accessible Participant Privacy Statement</b>	<b>29</b>

# 1. Executive summary

This deliverable focuses on the process of developing a usable, accessible, and participatory digital platform that allows consortium partners and eventually a larger audience of participants to autonomously create and engage in digital collaborations and processes to forward the InDICEs agenda. In previous deliverables there has been extensive description of the partners on boarding journeys that has enabled them to assume administrative responsibilities and tasks as well as how outside cultural, heritage communities have been incorporated onto the platform.

Therefore, this deliverable will explore more of the technical developments and adaptations to innovate the Decidim platform and the process to engage partners in driving the design. For example, salient features that make this platform unique are the Self Assessment Tool (SAT), the exploration of participatory research, and the implementation of webLizard technology (WLT) widgets. All of these features have prominently involved partners in the conceptualization, design, and development and this deliverable will discuss how partners have been integrated so that the platform reflects the collective force of the consortium partners. Finally, this deliverable will also explore the customizations, use of Github in the development of the project and the road ahead for 2021.

Ultimately, this deliverable aims to highlight the progress towards developing a free and open digital platform for participatory engagement that is practiced in not just the execution but also in the collaborative design of the platform and its tools and resources.

## 2. Acronyms

<b>API</b>	Application Programming Interface
<b>CH</b>	Cultural Heritage
<b>CHI</b>	Cultural Heritage Institution
<b>REST</b>	Representational State Transfer
<b>SAT</b>	Self Assessment Tool
<b>VAD</b>	Visual Analytics Dashboard
<b>WLT</b>	webLyzard technology

## 3. Introduction

The main piece of software used in this project is the participatory platform. It is open source and based on Decidim, which in turn is based on Ruby on Rails. The way a Decidim site works is by creating a new Ruby on Rails application that consumes the Decidim piece of software (aka delegates most of the work to it). In this way an entirely new project is created that is isolated from the original Decidim code, an approach that has several advantages. Traditionally, the other way is to just fork (i.e., make a copy) the original software and change any part of the source code to adapt to a new behaviour. The main disadvantage, however, is that the original code and the fork tend to diverge with time which makes it difficult for the developer to incorporate new features into the fork. The instance of Decidim implemented by the InDICES project will be highly specialised with customised tools and participatory spaces such as the SAT and the dashboard lite space. This deliverable aims to explain the technical development and design process for these various customizations and how they support the framework of the InDICES Participatory Space.

### 3.1 The Modular Approach

As has been introduced, in order to use Decidim it is necessary to create a new Ruby on Rails application. Initially, with nothing in it but the delegation to the Decidim module to perform all the tasks that this platform can do. This provides a bare and tidy place to introduce new functionalities, no different from any other Ruby on Rails application. New features are incorporated in two main ways: by implementing it in the newly created application or by adding some external module where the work is delegated to (exactly as the Decidim module itself). The decision on how to proceed depends on a variety of factors, mainly related to the specificity of the feature itself. For instance, a feature very tightly coupled with the InDICES project will be developed in the application code base but a feature that might be useful for other applications or communities can be extracted into a module.

In addition to custom features, InDICES also uses the webLyzard VAD as an external tool that is integrated with Decidim in various ways. The webLyzard VAD is not an open source platform and does not use the same technology; therefore, it cannot be integrated at the software level (as usually done by using the modular strategy) but rather using a higher level of data interoperability. In this case, the integration is done using the available APIs of both platforms and through the consumption of individual widgets when applicable.

In summary, a user interacting with Decidim InDICES is seamlessly traveling through the different layers of the application and being served by the one that provides the specific characteristic needed at that moment. Fig. 1 illustrates this concept by following the sequence:

1. User wants to perform certain action in the platform
2. Is it a custom feature provided by the platform code? Respond to the user if positive.
3. If not, look at any external module and check if it provides the feature. Respond if positive.
4. If not, look at the main Decidim module. Respond if positive.

5. If not, see if this is a standard Ruby on Rails feature. Respond if positive.
6. If everything else fails, this usually means a “not found” message.

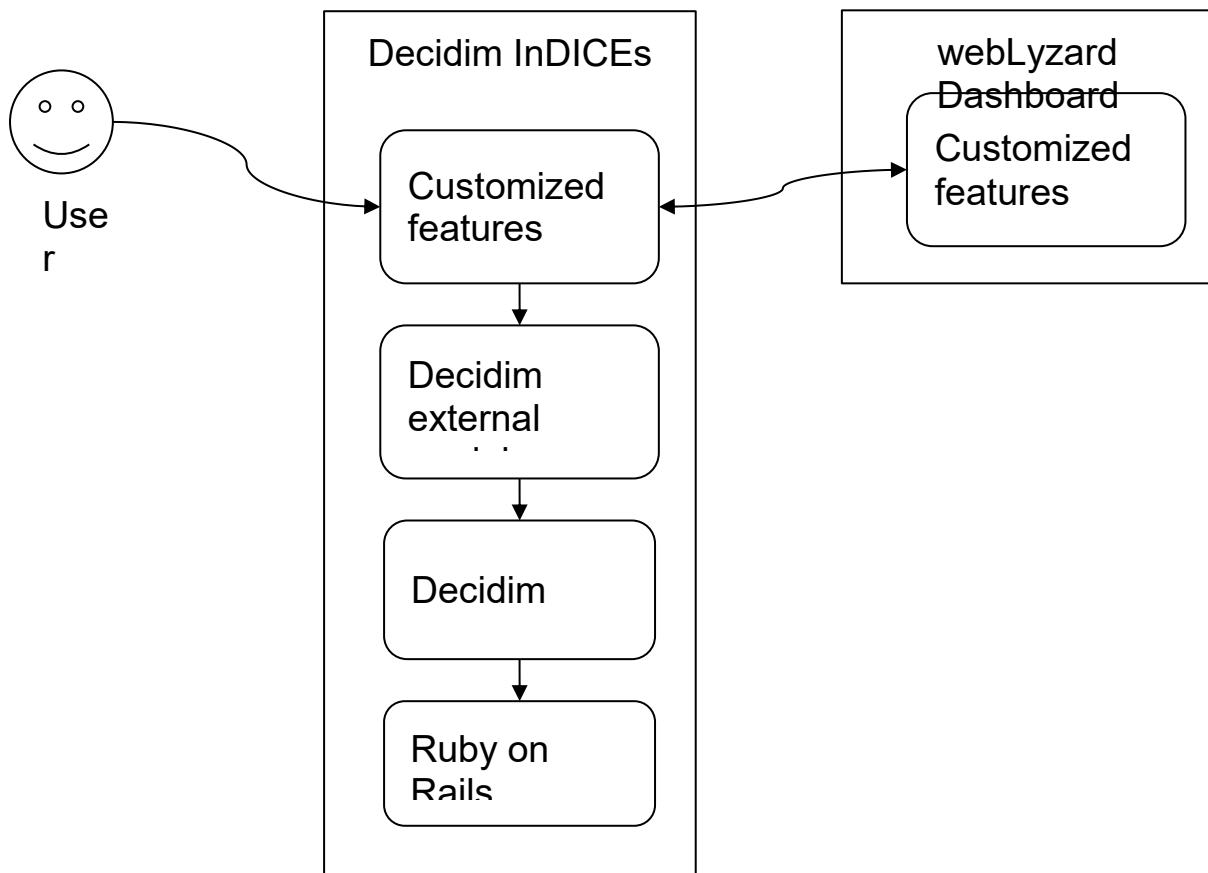


Figure 1. User interaction through the different application layers in Decidim InDICES.



## 4. Methodology

As a consequence of the multiple pieces that comprise the whole InDICES platform, the development strategy is conditioned by the modular approach. On one side, it means that development is distributed through different repositories, mainly in different GitHub accounts/folders.

Those that can have contributions as a result of the work in the project are:

1. <https://github.com/Platoniq/decidim-indices> Main Decidim InDICES source code. Here is where all the customized features are developed.
2. [https://github.com/Platoniq/decidim-module-decidim\\_awesome](https://github.com/Platoniq/decidim-module-decidim_awesome) This module is being maintained by Platoniq and it holds all the code produced for InDICES that it is also reusable for other projects. Anyone can use it in their own Decidim applications (as a matter of fact, this is a very popular plugin for Decidim).
3. [https://github.com/Platoniq/decidim-verifications-direct\\_verifications](https://github.com/Platoniq/decidim-verifications-direct_verifications) This module provides a simple verification method that is occasionally used to limit participation in certain areas to certain people.
4. <https://github.com/Platoniq/decidim-module-notify> Another module developed in the context of InDICES, but with reusable functionality that can also be used by other Decidim instances.
5. [https://github.com/mainio/decidim-module-term\\_customizer](https://github.com/mainio/decidim-module-term_customizer) A 3rd party module (developed by the Helsinki Decidim instance) that allows for customization of selected application interface texts.
6. <https://github.com/decidim/decidim/> The source code for the Decidim module. As InDICES, some work can be derived to this repository if it is strictly related to the Decidim generic platform itself (which in practice means bug fixes ).
7. webLyzard privately-hosted GitLab: Specific changes made for the InDICES project have been incorporated in the webLyzard technology stack but access is not public.

On the other hand, there are two teams of different partners involved in the development of the inDICES platform: Platoniq, which is in charge of all the open source development related to the Decidim platform adaptation, and webLyzard which is responsible for the adaptation and integration of their own Dashboard product. The two teams are physically and conceptually separated, therefore all the coordination is made using online tools.

The main tool for coordinating development is the decidim-indices Github repository (<https://github.com/Platoniq/decidim-indices>). In there, issues are created to keep track of each of the features planned in the Deliverable 4.1 as part of the roadmap. These issues might require some specific sub tasks to be developed elsewhere (depending on the type of feature), according to the different described repositories. In this case, each team in charge of the issue decides how to handle it in their respective final workplaces and reports back when solved.

Project management uses a simplified Agile methodology, using tasks cards assigned to a particular developer placed in a layout with three columns: “To do”, “In progress”, “Done” (see Fig. 2). The

original roadmap (D4.1) is represented by the first column and, as long as the project evolves, cards are being moved to the right until the completion of all the desired features.

It is worth noting that further issues may be created outside of the scope of the defined roadmap that describe new characteristics to be developed as the project evolves and additional work has to be done. For example, the SAT is currently in the process of being defined and will be incorporated as new task cards for future processing.

The screenshot shows the GitHub Project Roadmap for 'Platoniq/decidim-indices'. The interface includes navigation tabs for Code, Issues (19), Pull requests (1), Actions, Projects (2), Wiki, Security (2), Insights, and Settings. The 'Project roadmap' section is updated on Apr 9 and is organized into three columns: 'To do', 'In progress', and 'Done'.

- To do (5 items):**
  - 3: Stateless URL sharing dashboard (#13 opened by microstudi, tags: M11, dashboard, weblyzard-dev)
  - 6: Realtime suggestions API (#16 opened by microstudi, tags: dashboard, m13, platoniq-dev, weblyzard-dev)
  - 7: Integrate suggestions widget (#17 opened by microstudi, tags: m20, participatory-platform, platoniq-dev)
  - 10: Exclusive platform dashboard (#20 opened by microstudi, tags: dashboard, m12, weblyzard-dev)
  - 12: Accountability adaptation (#22 opened by microstudi, tags: m15, participatory-platform, platoniq-dev)
- In progress (5 items):**
  - 2: OAuth login (1 task, #12 opened by microstudi, tags: M11, dashboard, weblyzard-dev)
  - 8: Custom fields for proposals (2 tasks, #18 opened by microstudi, tags: m13, participatory-platform, platoniq-dev)
  - 9: Platform as a source (#19 opened by microstudi, tags: M10, participatory-platform, platoniq-dev)
  - 13: Debate improvements (#23 opened by microstudi, tags: m14, participatory-platform, platoniq-dev)
  - 14: Comments improvements (3 of 7 tasks, #24 opened by microstudi, tags: m13, participatory-platform, platoniq-dev)
- Done (5 items):**
  - 1: Auth server setup (2 of 4 tasks, #11 opened by microstudi, tags: M10, participatory-platform, platoniq-dev)
  - Decidim Platform upgrade (2 tasks done, #25 opened by microstudi)
  - 5: Integrate dashboard widgets (#15 opened by microstudi, tags: m13, participatory-platform, platoniq-dev)
  - 4: Simple iframe widgets sharing (#14 opened by microstudi, tags: dashboard, m12, weblyzard-dev)
  - 11: Processes landing page (#21 opened by microstudi, tags: m16, participatory-platform, platoniq-dev)

Figure 2. Simplified Kanban style project management board in Github

## 5. Implementation: inDICES as a Participatory Space

### 5.1 Centering Participation: Decidim

The InDICES platform utilizes the Decidim software. Decidim, created by the city of Barcelona, focuses on implementing digital methods and tools for democratic decision-making and participation in a transparent, accountable and traceable way.

InDICES aim in using Decidim software is to create a participatory space for collaboration, sharing, and engagement in the cultural heritage sector. The reasons why the consortium has decided to use Decidim as a platform rather than a private, community-platform-oriented software such as Higher Logic<sup>1</sup>, The Hive<sup>2</sup>, or Tribe<sup>3</sup> are: (1) Decidim is highly hackable; it has been created to be adaptable to various contexts and the code can be generally written over and repurposed as needed. More information is available in the following section. (2) Decidim centers democratic participation and decision-making and as a result it offers a variety of tools and spaces focused on meaningful participant engagement and interaction. The alternative platforms mentioned above generally focus on one or two aspects of participation. They are limited in terms of modes of participation a user can access. Most only incorporate discussion threads or user created proposals whereas decidim incorporates far more; from consultations, to voting, to sortitions - along with digital social contexts to frame them, such as processes or assemblies. (3) Moreover, Decidim is accompanied by a social contract that sets a precedent for an ethical compass and framework that prioritises the social good and privacy of participants. (4) Finally, Decidim is open source and thereby benefits from improvements and tools within the wider Decidim community.

On a software level, Decidim is subject to the Affero General Public License v3 (AGPLv3) (<https://www.gnu.org/licenses/agpl-3.0.en.html>), a derivative from the traditional GPL license that covers specifics of distributed applications such as web sites. In a nutshell, it forces any derivative work to be distributed in the same terms. All the Decidim derivative work follows the same license, modules and the implementation of the InDICES platform itself. Exception is the webLizard VAD, which is not open source; however, the application is served independently and integrated at the user interface level through API data exchange.

### 5.2 Implementing Decidim in InDICES

Platoniq implemented the Decidim instance for the InDICES participatory space 8 months ahead of schedule due to the outbreak of Covid-19. A space was needed for consortium partners to contribute and collaborate replacing the physical travel proposed before the pandemic.

However, spaces on the platform were not organised around work packages but around thematic areas of work. Given that the platform's life will be extended beyond the project duration, it was

---

<sup>1</sup> <https://www.higherlogic.com/>

<sup>2</sup> <https://the-hive.com.au/>

<sup>3</sup> <https://tribe.so/>

decided to shift the paradigm of work packages to themes that would be more accessible to the community that is to gradually grow on the platform (greater detail provided in deliverable 5.6). The first year of the project was primarily focused on onboarding consortium partners to participate on the platform and begin to model and experiment with how future participants might also do so in the future.

The thematic areas were: hypothesis, participation model and ethics, and technology and integration. These thematic areas were made into assemblies or ‘working groups’. Additionally, processes were set up to demarcate the various design processes and phases for the platform’s design and development. However, this year, as the platform evolved, the assemblies have been collapsed into one holistic assembly to address data architecture and platform governance, and the continuing transition to a more outward facing platform that can incorporate new CHI communities. These thematic areas and their framework are discussed extensively in deliverable 4.2. The transition outward and the activities of the holistic assembly are discussed in detail in deliverable 5.6.

### 5.3 Legacy

The legacy and reputation of Decidim as the go-to open source software for transparent, democratic processes has become very popular in the past year.

#### Decidim Community Expansion during COVID-19

During the outbreak of Covid-19 there was an increase in use of Decidim especially in the city of Barcelona. Multiple projects and initiatives were set up during the crisis to provide services, information and organisation.

## Participation in digital platforms after COVID-19. The case of Decidim



Figure 3. Decidim usage due to the COVID-19 crisis

The previous existence and use of Decidim in the city created a resilient digital network of actors that created responsive actions and initiatives. These initiatives ranged from archiving the crisis to resourcing materials and information for frontline medical workers.

## Conference of the Future Europe

Decidim has been adopted by the European Commission for the Conference of the Future of Europe to place people at the center of the processes within the conference and lead the way for how digital platforms support people centered processes in developing the EU's priorities. The platform was adapted to the commission's technical needs in terms of EU log in, and single sign-on service and other components such as custom maps. With these adaptations the conference has been able to implement open source technology as a means to develop innovative practices and create a public digital space with public resources to contribute to an ecosystem that supports transparency and participation.

The above examples highlight the development of more extensive uses of Decidim and the wider acceptance of the platform as a trusted digital space for public engagement and processes. The InDICEs project benefits from this extensive community of open software users as well as contributes to the innovative hacking of the platform through its various modules and specialised features. The InDICEs project aims to develop an extensive online cultural heritage community that shows by example and practice the importance of open and transparent technologies along with communities that promote greater openness and innovation through collaborative work and data sharing and reuse. The legacy of the project has been prioritized through the release of reusable open source components, a framework to create structured open data from project outputs, and creating capacity building for the data analytics tools and resources for prospective participants and users.

## 6. Developing Custom Fields to Share Hypotheses

Since the inception of the InDICES platform there has been constant experimentation around how to share and engage communities around research prompts and ideas. One such test was conducted within the Hypothesis assembly where participants were encouraged to write and submit hypotheses. Their hypotheses helped shape the understanding of what kind of queries, resources, and tools researchers may need on the platform along with how the platform could serve them if they were able to share work in progress or work in which they are interested.

### 6.1 Sharing Hypotheses: Developing the Practice of Collaborative Research

The following image shows the first iteration of experimenting with what a hypothesis on the platform could look like. Submitted hypotheses have served a dual purpose as they have also been a reference for use cases to develop what interests or tasks a prospective participant might want to act out.

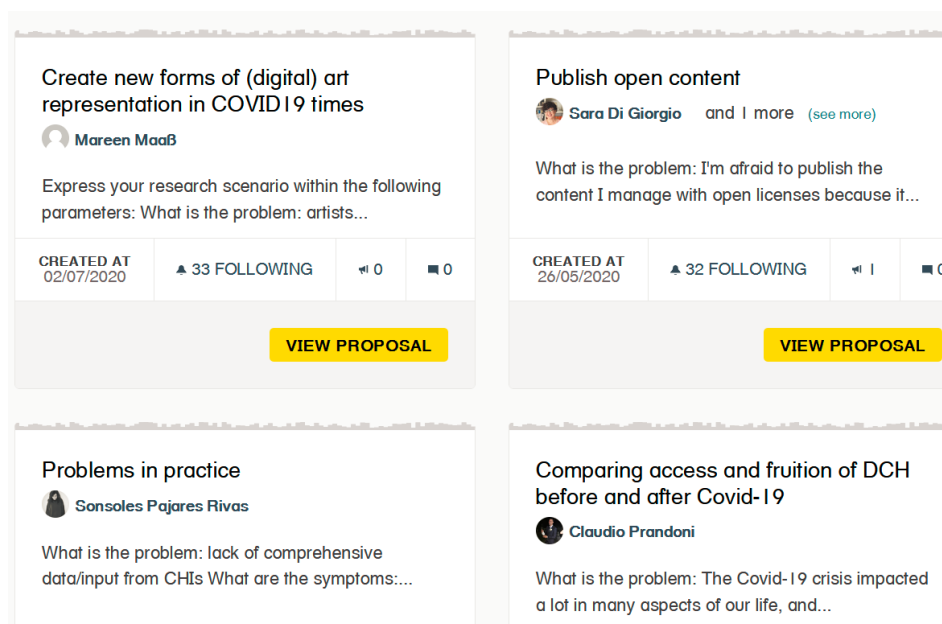


Figure 4. Examples of hypothesis

The participants were given the following parameters for writing a hypothesis:

- What is the problem:
- What are the symptoms:
- What are the knowledge gaps:
- Express your statement using the following structure: What if as a (role) \_\_\_\_\_ I could (action) \_\_\_\_\_ with (Tools/Data/Knowledge type) \_\_\_\_\_ so that (outcome/Impact) \_\_\_\_\_
- Impact area: *choose between* Innovation, Health & wellbeing, Sustainability, Social cohesion, New entrepreneurship, Soft power, Local Identity, Lifelong Learning or add a new area:
- References:

On the platform this was done through a textbox that had a prefilled template:

**CREATE YOUR PROPOSAL**

*\* Required fields are marked with an asterisk*

**Title \***

...

At least 15 characters, 150 characters left

**Body \***

...

**B I U** ↺ ☰ ☷ 🔗 *I<sub>x</sub>* 📄 🖼️

- Hypothesis/ Problem Statement:
- Gaps in knowledge/ data you want to address:
- What if as a (role) \_\_\_\_\_ I could (action) \_\_\_\_\_ with (Tools/Data/Knowledge type) \_\_\_\_\_ so that (outcome/Impact) \_\_\_\_\_
- Impact area: *Innovation, Health & wellbeing, Sustainability, Social cohesion, New entrepreneurship, Soft power, Local Identity, Lifelong Learning*
- OR add a new impact area:
- References:

*Add images by dragging & dropping or pasting them.*

At least 15 characters, 49522 characters left

Figure 5. Form to create a hypothesis

However, this was not the most accessible or intuitive user interface. As an advancement custom fields have been developed to address the usability issues of creating a hypothesis or a proposal with various components and fields, with specific formats for each field.

As an Open Observatory the hypothesis development serves to target the type of research that is open to sharing knowledge and engaging with research subjects to put collaboration, openness, and dialog at the center and innovate how various CHI communities around Europe engage and connect with each other. The continued experimentation will consider the interface as well as the different styles of participatory research from participatory action research to citizen science that aim to

break with more traditional hierarchies in research to instead be more collaborative and open to experimentation. It should be noted that the data generated in the processes deployed in the Participatory space, such as surveys and queries, will be exportable in different formats to be processed by WP1, WP2 and WP3, and integrated into the dashboard through APIs to contribute to the development of a more open platform with shareable insights and data.

## 6.2 The Development of Custom Fields

Changing some of the original ways that Decidim offers to present content (such as proposals in this case) can be challenging. There are many parts of the system involved and the decision to, either create a new functionality from scratch or just override some parts of the original code, has to be calibrated carefully. In this case, we wanted to have custom fields in proposals while maintaining all the other features related to it. Creating a new component from the get-go would have forced us to maintain a huge amount of code that is already implemented (such as voting, endorsements, comments, etc). So the final decision fell into hacking the current proposal system selectively. The main motivations for this decision were:

1. Changes are reversible: if the feature is removed the content should still be presentable to the final user as standard Decidim content.
2. Do not tie the development to Decidim InDICEs platform exclusively: by separating the functionality it can be reused by other Decidim implementations and benefit from external contributions (which have already happened).
3. Keep an exhaustive track of all the overrides and implement functional tests on all of them to facilitate future upgrades.

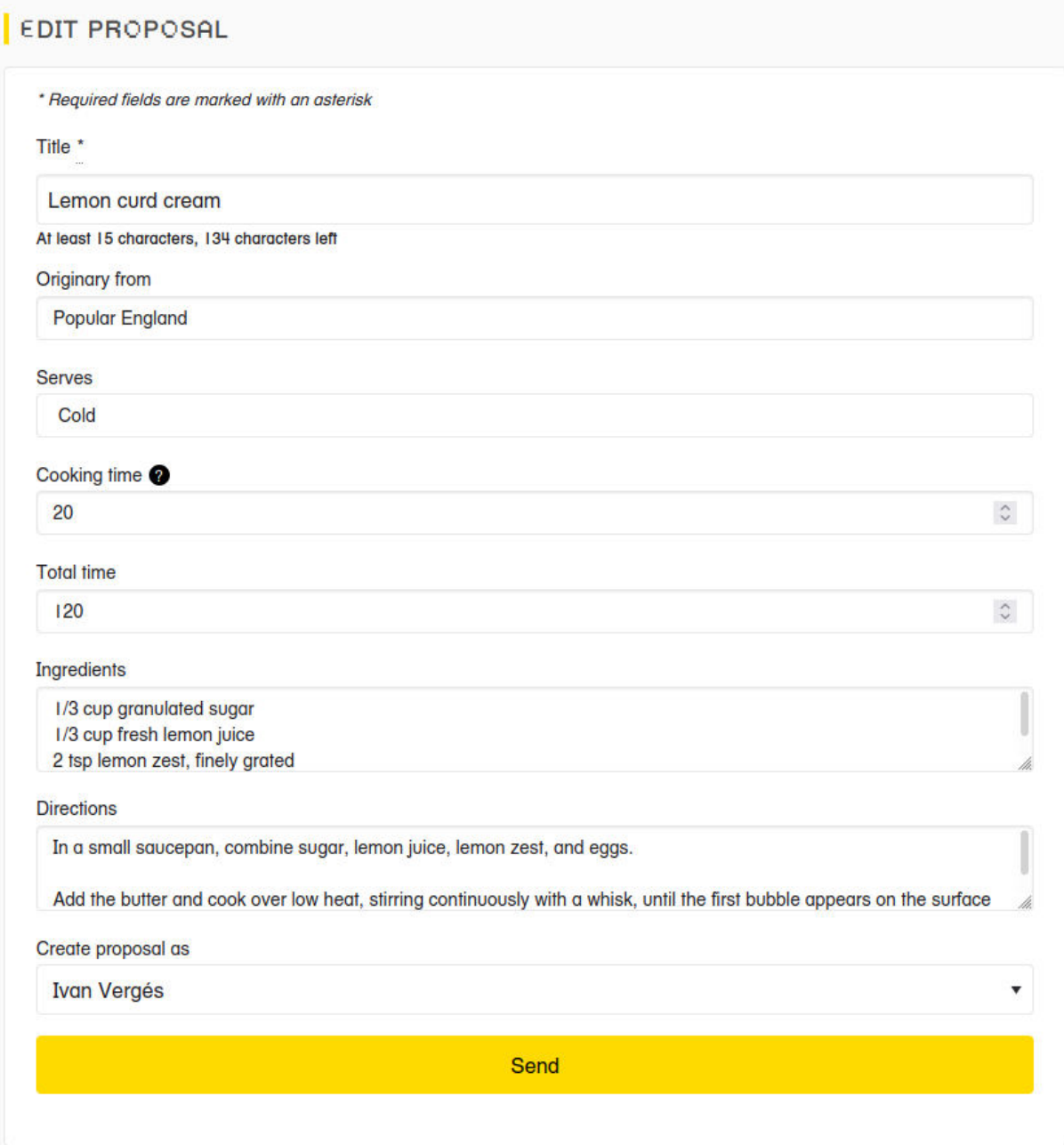
Points 2 and 3 have been addressed by delegating the development to an external module (Decidim Awesome, see [https://github.com/Platoniq/decidim-module-decidim\\_awesome/pull/74](https://github.com/Platoniq/decidim-module-decidim_awesome/pull/74)). All the implementation has extensive tests that cover much of the designed user interaction. In addition, this feature has been tested in external Decidim instances in real world scenarios. As a result, some external developers have contributed to improve it and their work has been successfully incorporated into the project.

Point 1 is about the specifics of the technology used for storing information in the database. In cases like this, the usual thing to do is to just add some fields to the database and then present it to the user in the user interface. However, this would have made the process not reversible (as removing the feature would leave entries in the database that the original Decidim code would have not understood), and would severely limit the ability to share the code with other Decidim instances. Therefore, the fields are stored in pure HTML, which in turn is a subset of the XML format, a very well-known interoperable data structure. Data in this format is understood by the browser directly, so any content can be presented to the user regardless of the availability of the “custom fields” feature. In turn, it can be easily parsed by the machine to generate a proper user interface in order to introduce and format data in.



Fig 6 and 7 show how a proposal edit using custom fields looks and how it is presented in its final status. Note that all the other functionalities available for the proposal module are maintained unaltered.

This example can be seen at <https://participate.indices-culture.eu/assemblies/tech/f/69/>



**EDIT PROPOSAL**

*\* Required fields are marked with an asterisk*

Title \*

Lemon curd cream

At least 15 characters, 134 characters left

Originary from

Popular England

Serves

Cold

Cooking time ?

20

Total time

120

Ingredients

1/3 cup granulated sugar  
1/3 cup fresh lemon juice  
2 tsp lemon zest, finely grated

Directions

In a small saucepan, combine sugar, lemon juice, lemon zest, and eggs.  
Add the butter and cook over low heat, stirring continuously with a whisk, until the first bubble appears on the surface

Create proposal as

Ivan Vergés

Send

Figure 6. Example of a proposal edit using custom fields. The normal simple formatted text has been transformed into several fields.

## Lemon curd cream

Ivan Vergés | 15/04/2021 15:32 | [Withdraw proposal](#)

**Original from**  
Popular England

**Serves**  
Cold

**Cooking time**  
20

**Total time**  
120

**Ingredients**  
1/3 cup granulated sugar  
1/3 cup fresh lemon juice  
2 tsp lemon zest, finely grated  
2 large eggs, room temperature  
1/4 cup butter, room temperature

**Directions**  
In a small saucepan, combine sugar, lemon juice, lemon zest, and eggs.  
  
Add the butter and cook over low heat, stirring continuously with a whisk, until the first bubble appears on the surface of the mixture and the curd is thick enough to hold marks of the whisk, about 6-8 minutes.  
  
Strain the lemon curd through a fine-mesh strainer if you don't want the lemon zest in the curd. Transfer the hot lemon curd to a bowl or jar and cover the surface with plastic wrap. Refrigerate until cold, then take off the plastic wrap and replace with a lid.  
  
The curd keeps fresh in the refrigerator for about 1 week.

**EDIT PROPOSAL**

0 SUPPORTS

[Support](#)

0 ENDORSE 0

18 Stop following

Reference: IN-PROP-2021-04-124  
Version number 4 (of 4) see other versions  
[Check fingerprint](#)  
[Share](#)  
[Embed](#)

Figure 7. A proposal with custom fields as it is presented to the user. The format is compatible with pure HTML ensuring database compatibility.

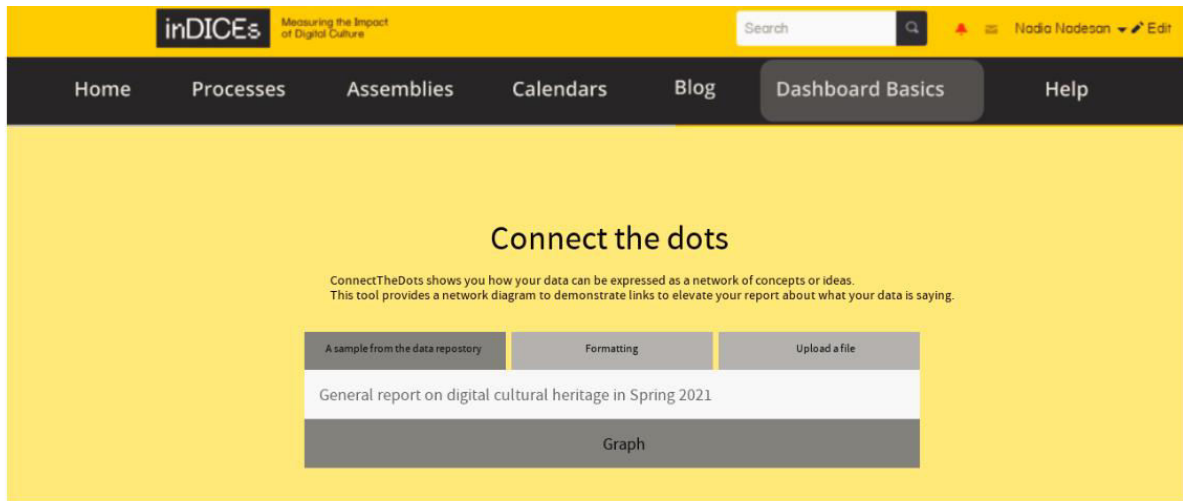
## 7. Visual Analytics Dashboard Integration

From the start of the project Platoniq has implemented various spaces for consortium partners to create proposals or conduct discussions; this includes a space to propose proof of concepts. Through consortium partner dialog within assemblies a proposal was made in mid April 2021 and has, since then, gained greater traction. The initial proposal was titled 'Dashboard Basic' and suggested a simplified display of selected components from the visual analytics dashboard on the InDICES platform with predetermined filters and limited user settings to demonstrate dashboard functionalities with examples. This proposal has been reiterated through by WP3 partners and developed into an actionable feature within the Open Observatory.

### 7.1 Creating a Dashboard Basic / Dashboard Lite Space

While the Visual Analytics Dashboard offers the capacity to analyse and visualise large amounts of data over time, value can be gained by isolating widgets into individual segments or blocks for participants that are using the data repository or developing a hypothesis on the platform. This would enhance their experience by explaining the dashboard in simplified terms and even contribute to the initiative to have a more narrative approach to data. This idea is based on interacting with the following sample data literacy tool: <https://databasic.io/en/> (External link)

Since the analytics dashboard and the platform are two distinct spaces it is important to create a strong integration and link between the two technologies so that participants can easily access and understand it under one streamlined project. A Dashboard Basics component would build a strong connection between both platforms, gradually introducing users to the different visualisations while

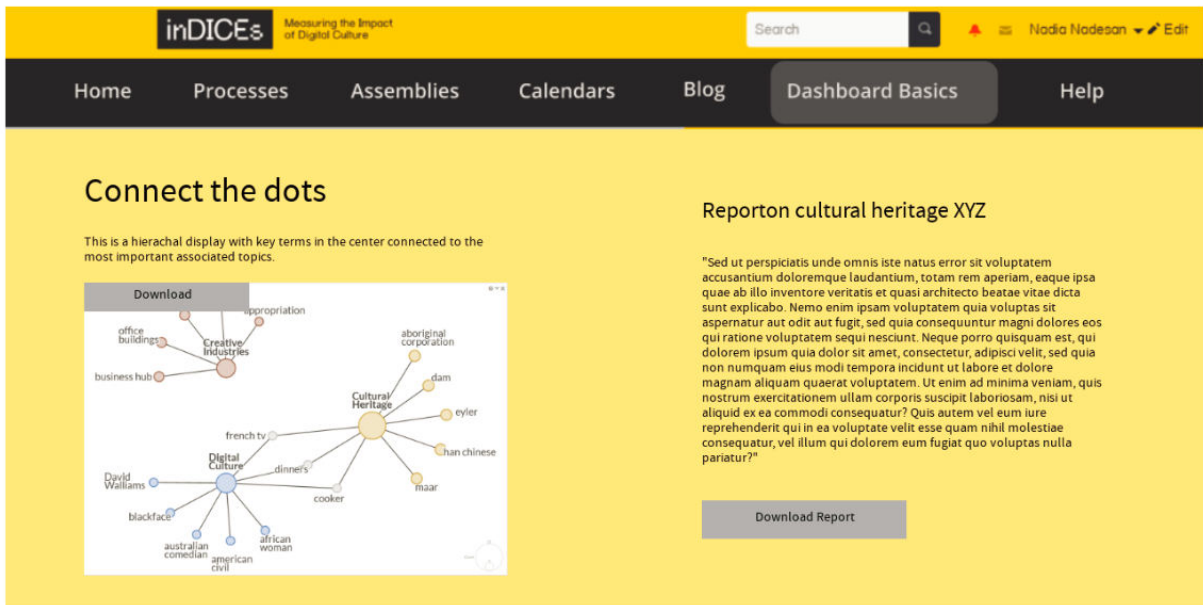


## About Connect the dots and the dashboard

"Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum."

highlighting interesting data. Figure 8 and 9 show the first proposed iteration of this concept.

*Figure 8. Mock up for a basic visual analytics dashboard*



What do I do next?

- Propose a hypothesis
- Propose a data set in the data
- Analytics DashboardRepository

Figure 9. Mock up for a basic visual analytics dashboard

Following this proposal, a member of project partner Sound and Vision took the lead to revise the sketch and provide an alternative wireframe highlighting specific thematic areas important to CHI practitioners titled Dashboard Lite. This second iteration is described in more detail in deliverable 4.2 and extends the first approach by adding a selection to reflect the topic filters that will be further defined for the inDICES visual analytics dashboard. The implementation of the first iteration of the Dashboard Lite on the InDICES platform will take place in the next three months and will include means of participation for direct user feedback. The latest wireframe from deliverable 4.2 is available in the annex for reference.

This feature came into existence as a result of the collaborative and participatory environment cultivated on the digital platform and within the assemblies between partners. Dashboard Lite is not just a demonstration of effective integration of technologies and teamwork but also the product of ensuring an open digital participatory environment where cocreation can thrive. Further iterations will not just focus on the technical aspects but also encourage engagement and take advantage of Decidim components and participatory spaces to create dynamic dialogs that encourage future collaboration and innovation.

## 7.2 A real case combining the use of the participatory platform and the visual analytics dashboard.

At the beginning of the ideation process for designing the platform, a hypothesis was created as part of the user experience research in a scenario where a researcher might pose the basic question of

how gender inequality manifests in CHIs as it relates to leadership roles and decision making in organizations, groups, and projects.

The idea for this hypothesis was ideated using the ‘What if’ scenario exercise that partners did in Rome, January 2020. The ‘what if’ scenario for this hypothesis was ‘What if I could examine the gender gap in CHI leadership with more visual data to provide accessible narrative data for policy makers.

This hypothesis has since been developed. For example, when creating a hypothesis to pose on the participatory platform there are now criteria for each hypothesis to enable meaningful user engagement and interaction along with webLyzard dashboard widgets that visualise associated web content based on a text snippet from the hypothesis. The three integrated widgets are the keyword graph, the geo map, and the tag cloud.

First, the tag cloud<sup>4</sup> displays the most relevant keywords alphabetically in various colors that indicate positive or negative sentiment. Words are also sized according to the number of occurrences with the largest number of occurrences increasing the font size of the word. Then the geographic map<sup>5</sup> shows referenced locations for identified keywords, where larger circles over a country or region correlate with a higher number of mentions. Finally, the tag cloud displays the terms as networked map connecting together the strongest associations<sup>6</sup>.

The mentioned hypothesis has served as a tool to test engagement with the platform and improve interactions. Using the widgets from the VAD did improve querying by using trending terms for further investigation. More reports that had to do with the topic were found by VAD keywords in queries with a search engine. Most of the data found was mostly from large institutions or international organizations. It would be interesting to explore how the platform could facilitate research or support the dissemination of research already conducted at smaller scales i.e. local, national, and regional rather than Europe wide.

---

<sup>4</sup> <https://www.weblyzard.com/tag-cloud/>

<sup>5</sup> <https://www.weblyzard.com/geographic-map/>

<sup>6</sup> <https://www.weblyzard.com/keyword-graph/>

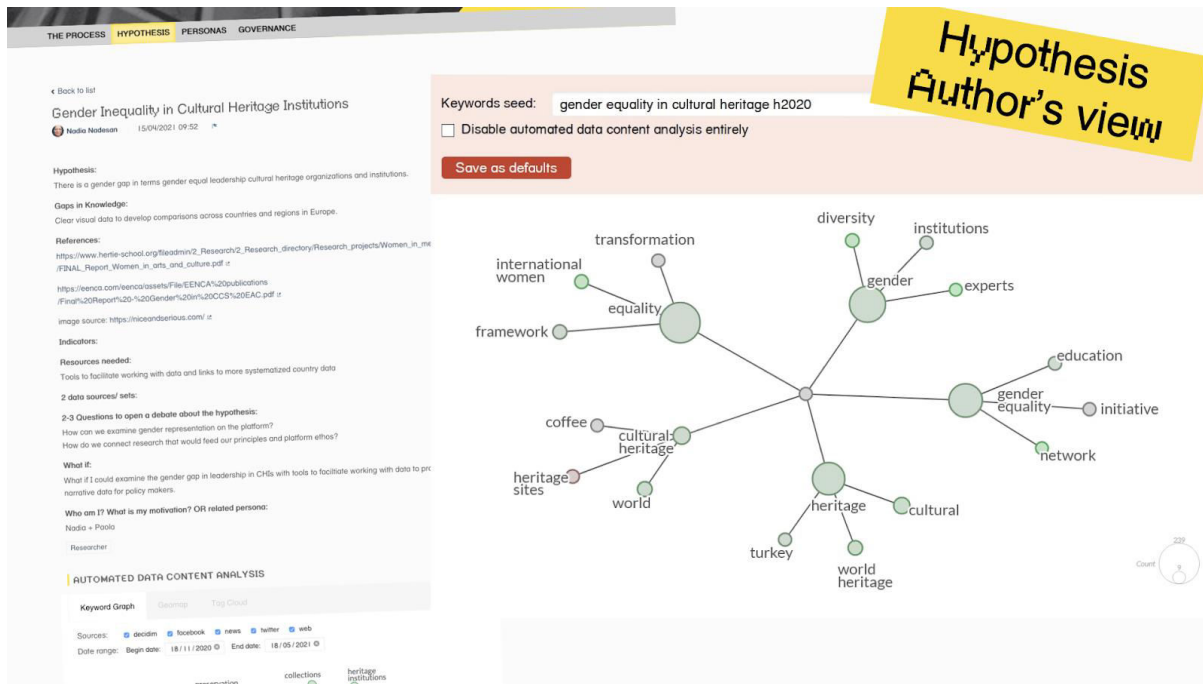


Figure 10. Sharing Visual Analytics Dashboard statuses or configurations in the Participatory Platform



Figure 11. Query results based of terms and phrases in widgets for gender inequality hypothesis

The truth is that the data that exists is often only in large institutional spaces such as UNESCO but more detailed data and information about gender or diversity within CHIs in terms of more formats, data, data repositories, resources, types of interaction, or calls to action are limited or harder to find. The inDICEs open Observatory is here to begin to chip away at the gap between big institutional

reports and a dearth of easily accessible local information and develop spaces for different scales of reporting, data gathering, actions, and interaction.

Using the InDICES platform we can begin to close the gap by pursuing the following lines of action to create a participatory research space:

- Use the reports as a reference to propose a collaboration to develop similar reporting from content and communities on the participatory platform to see if it is possible to innovate and fill gaps where gender related data is scarce.
- Create a discussion forum to share experiences, find advice, and best practices.
- Use the reports to write a list of recommendations for more gender parity on the participatory platform.
- Develop similar studies based on case studies that the keywords have led to using the current audience in the participatory space.

### 7.3 Capacity Building. Testing within a Bootcamp

In November 2021 a bootcamp will be launched to facilitate the onboarding and use of the platform by external stakeholders and CHI communities. The boot camp serves the dual purpose of spreading the word about the InDICES platform and developing a workshop that convenes institutions, researchers, practitioners, and external stakeholders to encourage new community engagement and participation. Local communities, such as DigitalFems (develops projects based on data science with a gender perspective applied to different topics, specially Open Data about the employment gap for women in cinema 2015-2020), DataForGoodBCN (a collective of do gooders that help other not-for-profit, and non-governmental, organizations harness the power of their data) or [research.wikimedia.org](https://research.wikimedia.org) representants, will host “flash task forces” - thematic working groups to share data and ideate opportunities for collaborative research.

To develop the bootcamp an internal capacity building process will be created that will inform the design and evaluation of the external bootcamp. The bootcamp—through feedback—will explore and test ideas and assumptions about how the platform supports innovative and collaborative research.



## 8. Self Assessment Tool Conceptualization

The concept behind the self assessment tool mostly to be developed by WP3 and WP4 (T3.2, D3.4, T4.4, D4.5) is that cultural heritage practitioners can answer a curated list of questions, then based on their answers an assessment is produced and the participant can also see how different cultural heritage practitioners responded to the question.

### 8.1 Developing the Questions and Framework

WP3 has been diligently working on a series of questions and for the last aggregators forum in June 2021 made the questions multiple choice to receive feedback from the aggregators to better understand which questions are relevant to cultural heritage workers today and what type of feedback they might be interested in receiving.

On the technical side research was performed into services that provide assessments based on user responses to questions which can be seen in medical, insurance, or consulting services. Surveys were generally multiple choice or had a closed set of answers i.e. with predetermined answers. With this benchmark in mind, the self assessment will also only use multiple choice questions or questions with predetermined answers participants can choose from. Open-ended questions would require continuous work of a team to assess and answer each question or a sophisticated AI program which is not being considered, not just because of the complexity, but also because of the problematic biases that may occur. Thus far there have been no conditional questions developed so it has not been marked as a necessary milestone in the self assessment tool development.

### 8.2 Wireframes

In parallel, several sketches and research has gone into the design and development concerning the technical constraints and possibilities of the self assessment tool (greater detail in deliverable 5.6). A first consideration was where to put the self assessment tool within the information architecture of the platform. Considering that the self assessment is a primary value offered within the InDICES project, participants will be able to navigate to the tool from the main navigation bar on the homepage and it will have its own dedicated page. Only users who create a login will be able to access the tool since each unique login will store the answers and assessment for each participant.

The following image shows the prospective interface for the self assessment tool:

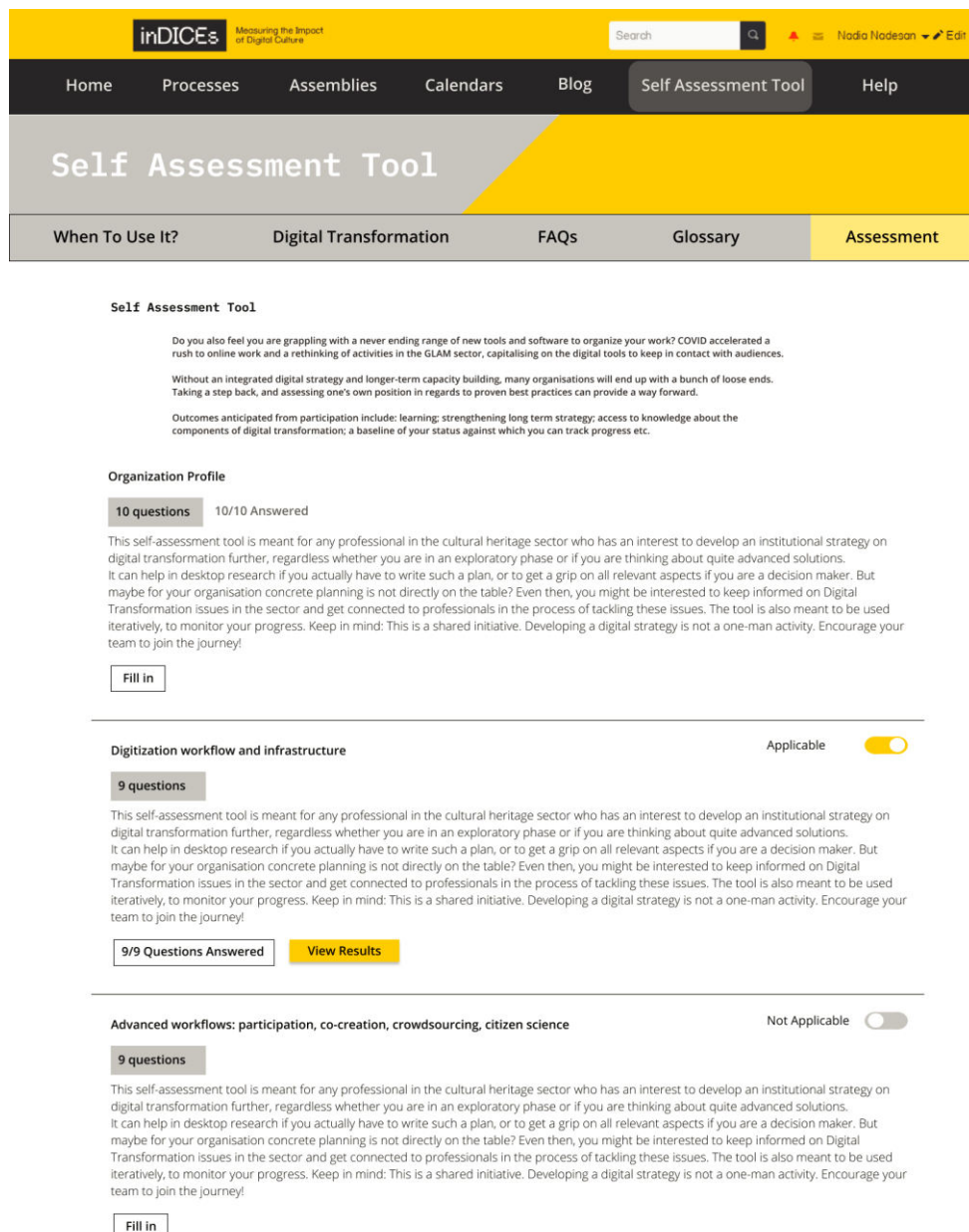


Figure 12. SAT Wireframe

Initially, the idea was that participants could download a PDF file per section answered. However, it may be more feasible for answers to appear as a pop-up or separate page as illustrated in Figure 12 to make it easier for participants to print their results.

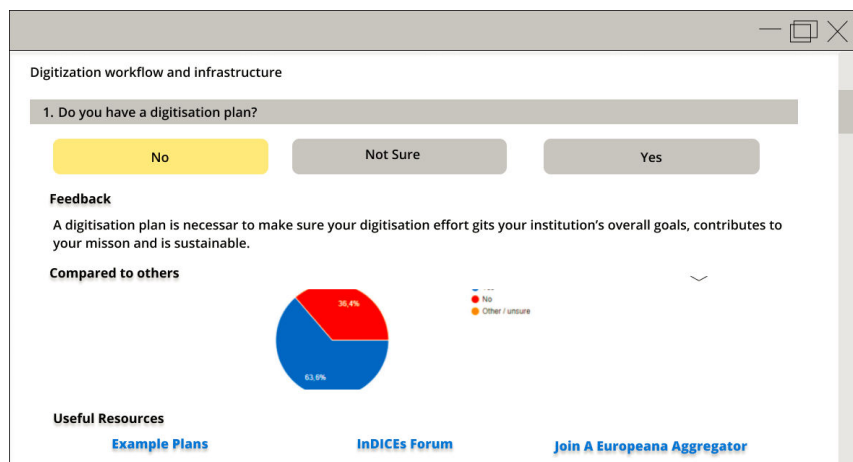


Figure 13. SAT feedback wireframe

## 9. A Data Policy in Progress

A central aim is to develop a data management policy that supports more open technologies and sharing of data on the platform. As a start the whole platform is released under the terms of the license AGPL and is fully available through the official inDICES and Decidim repositories. Decidim exposes a full API that allows a participant user to interactively obtain any public content of the website. Personal user information is excluded though. Also, a standard set of CSV files is generated periodically and made publicly available for anyone to download. Data will be available through HTML user oriented content as any other webpage and also via an API. The API access follows the GraphQL specification and provides a full machine readable access with search capabilities. It is possible that in certain cases data is available in tabulated formats such as CSV. To a certain extent, documentation is provided in the platform itself for those interested in accessing and using the public API. The rest of the content should be self-explanatory or self-documented in the same place where it is to be downloaded.

All content published on the platform will be made public as default with the caveat that select spaces on the platform will be made private according to the discretion of the governance body of the platform. With no formal framework on restricting access to internal data it remains to the discretion of the consortium partners when and how they will make data accessible to the greater public.

In the next year the aim will be to develop a more defined set of rules around the data available on the platform, especially one that is structured specifying the data FAIRication to improve reuse of the outputs and resources provided by the inDICES project. Currently, the data policy is in progress taking into consideration where and if to implement notions around responsible data management<sup>7</sup>, the platform's ethical principles, and Decidim's social contract with the goal of traceability, transparency, and accountability. A fuller examination of the state of the current data policy is available in the inDICES Data Management deliverable.

### Protecting Participant Privacy

#### Opt-in measures

By using the Decidim software, most of the GDPR directives are already implemented. Designed with the principle of a "minimal knowledge", only a minimal amount of personal data is required in order to sign up to the platform (basically, the name and the email). Any verification process in place does not store other personal data that might be needed to check up some credentials, instead, a non-reversible hash representation is kept in the database. Users are not subscribed to any newsletter unless they specifically check the option for it.

---

<sup>7</sup> <https://responsibledata.io/what-is-responsible-data/>

## Right to be Forgotten

Right to be forgotten is guaranteed by allowing users to fully delete their account at any time. In this case, personal data is erased from the database in a non-restorable way (although some backups can be stored separately for a certain amount of time for technical security). The user history of interactions on the platform is maintained but anonymized.

## 9.1 Developing an Accessible and Responsible Data Policy

More than just GDPR compliant, an important facet of developing an open, participatory space is having a responsible, transparent and understandable data policy that prioritizes the interest of the participant and their privacy. With the central focus of making data more accessible to participants, what follows is to make the data policy of the platform more accessible as well. One of the ethical principles of the platform has been 'Access through Narratives' whose definition is 'Making data accessible with a stronger narrative approach to encourage exploration and open access.'

To start, one aspect is re-writing the GDPR compliance in more accessible language to explain how participant data will be used and what services the platform implements (ref.: Annex 2).

Further iterations will be conducted for further feedback to improve clarity, and accessibility of how data is managed and the framework such as the ethical principles that support specific decisions and practices.

## 10. Concluding Remarks: InDICEs Development Roadmap

The road ahead for the inDICEs platform will involve the parallel work of developing the platform for accessibility for users outside of the consortium partners while developing tools and resources internally such as the SAT and the Dashboard Lite, while revisiting the initial proposition of integrating contextualization components from the WLT Storypact tool, and Dashboard Lite.

In terms of developing accessibility for external stakeholders as mentioned in the previous deliverable 5.6 there has been a holistic assembly to create the overarching information architecture of the platform and organise the content, resources, and tools into navigable categories for new users of the platform. An important milestone ahead this fall will be developing the next iteration of the site map with the feedback and approval of consortium partners. While the aim will be accessibility for new users and organizations, a salient issue for the information architecture will be to develop a framework that presents a streamline project and clearly communicates the end goal of improving how cultural heritage institutions and communities improve their digital praxis and transitions.

Moreover, through the development of internal capacity building activities and the bootcamp several assumptions and use cases for participatory and collaborative research will be tested and explored. Both activities of the information architecture and capacity building will inform user experience and generate feedback for the participatory model, tools and resource development, and open data management plan. Especially in terms of the boot camp and internal capacity building a series of methods will be developed based on key learning moments to implement in the future for the platform’s communities. Moreover the bootcamp activities will inform the integrated WLT Storypact module and test Lite Dashboard.

Finally, the rest of the year will also be focused on shaping the SAT tool both from a technical side in terms of developing how and where users will be able to access the assessment, as well as creating assessments for each section of the self assessment survey within WP3.

Tasks	August	September	October	November	December
Compile responses and feedback for SAT questionnaire from aggregators	█	█	█		
Develop assessment per section of the SAT		█	█	█	
Change Decidim Survey interface according to SAT specifications in wireframes		█	█	█	
Develop pop-up window that is accessible in each section of the SAT survey with feedback based on participant responses			█	█	█

Figure 14. SAT development outline

# Annex 1: Dashboard Lite Wireframe

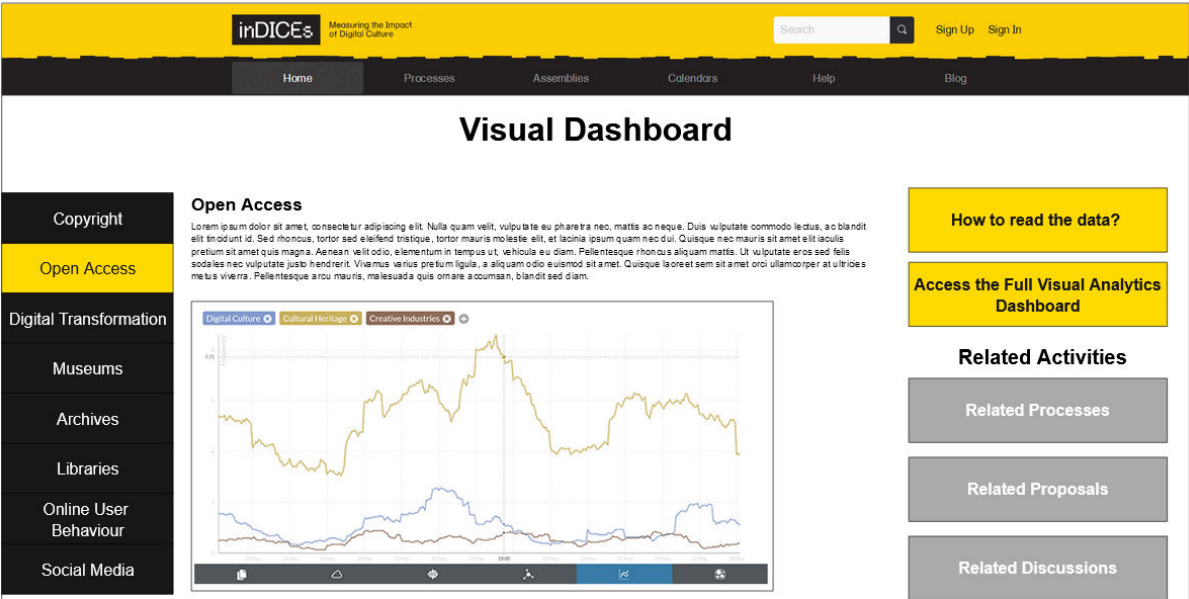


Figure 14. SAT development outline

## Annex 2: Accessible Participant Privacy Statement

### What personal data do we collect and process?

The inDICES Participatory Space may collect and process personal data from participants who are registered on the platform or from those who respond to surveys and provide personal information.

The personal data collected from these people may include: name, email address, age (if under 18 years), and username.

### Why do we collect and process personal data?

Personal data may be collected: to administer the InDICES participatory space; to send out or respond to communications; to carry out partnerships; and for research and project development.

The inDICES Participatory Space does not use this data for any other purpose other than that for which it has been provided and will only process and access personal data when there is a legal basis or obligation for doing so.

The legal basis for accessing and collecting participant data include: when participants have provided consent to use their data; and when we are accessing that data for legitimate interests, for example to administer a website or for the purpose of research or project development in line with the inDICES mission.

Importantly, user generated content is licenced by default as Creative Commons - Attribution - Share Alike (CC-BY-SA), although this does not exclude the possibility for end users to share certain content under their own terms as long as they use a license approved by the inDICES project.

### Services Implemented on the InDICES Participatory Space

- The inDICES Participatory Space uses the open-source platform, self-hosted [Matomo](#) analytics software (formerly Piwik) to track visitors to the platform.
- Currently the inDICES project uses AWS (Amazon Web Services) servers, located in Ireland.
- All components such as surveys i.e. forms, conferences, and proposals utilise the Decidim software of the platform.
- The code for the participatory space is hosted on [Github](#), a platform which allows inDICES to publish code publicly, collaborate internally and externally, and track changes to projects and those of the partners.