

CENTRINNO Framework

About this GitBook

An iterative document on the CENTRINNO Framework, updated during the project's life

CENTRINNO is a research project that aims at demonstrating how industrial historic sites could adopt innovative, sustainable and inclusive urban transformation processes. The **CENTRINNO Framework** attempts at creating a common language for all the project partners to understand each other and share our findings with a wider research audience, being able to explain what, why and how things are done in CENTRINNO.

This GitBook is a living document where the different pieces of the project come together, building *on the fly* this common language and reporting and sharing it during the project's life. This document target audience are CENTRINNO pilot cities and project partners, but also policymakers, local governments, or researchers who are interested in following and applying the CENTRINNO approach, methods, and tools in other cities.

Based on [Fab City](#)'s approach towards resilient and productive cities and regions, **CENTRINNO supports experimentation in nine European cities to transform historic industrial sites into productive and creative hubs**. The project started in September 2020 and last until February 2024. This present gitbook has been updated and iterated, based on CENTRINNO's experience.

The Gitbook has five parts:

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CENTRINNO Project

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A quick introduction to the [CENTRINNO project](#), its [vision](#), its [approach](#) and [the connection with Fab City](#).

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CENTRINNO Framework

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This is the main contribution of this Gitbook to the project and to other cities that want to experiment with the Fab City's approach. It includes **(1)** a description of the [Innovation Framework](#), in which you can learn how to apply tools to support a sustainable, productive and inclusive urban transformation, **(2)** a chapter dedicated to explain the [Fab City Hub](#) concept, including links to the Fab City Hub Toolkit for cities to implement their own creative and productive hub, **(3)** an introduction to the [Impact Assessment Framework](#) used in CENTRINNO, **(4)** a brief description of the [CENTRINNO Platforms](#), developed during the project's life to support pilot cities in their journey.

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CENTRINNO Handbook

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The Handbook entitled "Regenerative Neighbourhoods in the Making" was designed at the end of the project to present the CENTRINNO Framework and its main lessons learnt. In this book, we want to bring

readers into the intimacy of the design research processes that the partners experienced during the project. Instead of digging into the narratives of each pilot individually, for details of which we encourage readers to look through other project resources such as the [CENTRINNO Blueprints](#), we conversely chose to consider the project through the lens of the project's key concepts. Five chapters will depict the practices developed for each concept from Circular Economy, Heritage, Innovation Spaces, Social Innovation and Learning Ecosystems.

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Policy recommendations

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Partners worked on policy recommendations that they shared in two main reports presented in the section.

This Gitbook also includes [a glossary](#) and [a bibliography](#) with all references and authors that helped and inspired us to construct the CENTRINNO Framework.

Disclaimer: This is a project working document, owned by IAAC (Fab Lab Barcelona), one of the CENTRINNO partners. This GitBook is open for public consultation during the project's life, while its content is updated and adjusted according to the work developed. The European Commission is not liable for any use that may be made of the information contained herein. The information in this document has been used to develop the CENTRINNO Handbook.



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CENTRINNO Project

New CENTRAlities in INdustrial areas as engines for inNOvation and urban transformation

CENTRINNO is a EU [Horizon 2020](#) funded project. It aims to test and demonstrate strategies, approaches and solutions for the regeneration of industrial historic sites as creative, locally productive, and inclusive hubs to:

- Shape new socio-economic and sustainable identities of industrial historic sites
- Foster social inclusion through craftsmanship culture and heritage
- Rethink the way cities govern their material resources

CENTRINNO is based on project-based learning, focusing on the role of heritage and vocational training, including digital fabrication tools and soft skills connected to local challenges and needs, and, at the same time, producing social and environmental impact by adopting the principles of circular economy in new urban transformation processes. Ultimately, CENTRINNO tests and assesses innovative strategies, approaches and solutions for alternative urban regeneration processes in different European sites.

CENTRINNO involves 9 European pilot cities very different in nature and scale. The focus area in some cases is a neighborhood, whereas in other cases is a block or a delimited industrial site, or a single building. Some cities are focused on one type of craftsmanship or material, and others combine several such as fashion, gardening, media production, wood, wool, food, and more. From cities with a population of 2 million people to just 7 thousand inhabitants towns, including [Amsterdam](#), [Barcelona](#), [Blonduòs](#), [Copenhagen](#), [Geneva](#), [Milan](#), [Paris](#), [Tallinn](#), and [Zagreb](#).

In the following sections, you will read what's the [CENTRINNO vision](#) for industrial historic sites, how the [project's approach](#) is connected to five key concepts, and what are the connections between [CENTRINNO and the Fab City](#) vision for a new sustainable industrial revolution. Finally, we explain the [Fab City Hub](#) concept, core infrastructure for the deployment of the Fab City vision, and key piece of the CENTRINNO project

You may check the latest project's activities and all the resources developed during the research on the [CENTRINNO website](#) and the [CENTRINNO blog](#)!



Centrinno - Industrial Citizen Revolution
CENTRINNO



2-year Anniversary - CENTRINNO



CENTRINNO vision

Transforming industrial sites into productive and creative hubs

Two centuries ago, Europe ignited the Industrial Revolution, and economic benefits at regional and national scales became abundant. More recently, globalisation, which was foreseen to strengthen global markets, has led to substantial losses for the manufacturing capacity of European cities. Europe's forced transition to a knowledge economy has resulted in a decrease in manufacturing jobs, a lack of appreciation for these jobs, and the neglect of industrial areas. Subject to decay or exploitation by extractive economic activities, historic industrial areas are disconnected from local knowledge or value generation. Cities are currently facing huge challenges that demand new solutions.

The current model of massive consumption and extraction contributes to the acceleration of the climate crisis. Automation and Industry 4.0 present great potential but also challenges, such as the loss of jobs, the polarisation of the workforce, or the social exclusion of vulnerable populations. Coronavirus pandemic has drastically exposed the fragility of the current system and our own vulnerability in cities. We are at a moment in history in which we need to make a change. CENTRINNO experiments with alternative urban regeneration processes which will be welcomed as opportunities in this context, leaving no one behind as we transition toward a sustainable future.

CENTRINNO supports cities creating local impact by enabling productive processes at post-industrial historic sites and hubs, that

- Use heritage as a catalyst for innovation and social inclusion
- Boost a diverse, inclusive, and innovative urban economy
- Hold true to the ecological challenges of our time

You may read more about this in the [CENTRINNO Whitepaper](#):



WHITEPAPER

CENTRINNO

A new industrial revolution that puts citizens
at the core of sustainable transformation



This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 869595

CENTRINNO
Whitepaper

VISION

- 1. Vision
- 2. Background

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main
objective is to
Europe to foster a more inclusive and sustainable productive

CENTRINNO approach

Heritage, Circular Economy, Social Inclusion, Education and Innovation Spaces

CENTRINNO is based on conceptual background of [Fab City](#). Nevertheless, it develops a specific approach for post-industrial sites, based on the five CENTRINNO key concepts: Heritage, Circular Economy, Social Inclusion, Vocational Training, and Innovation Spaces. Stemming from the project's vision for industrial historic areas, they are the conceptual foundation of all experimentation developed in CENTRINNO.

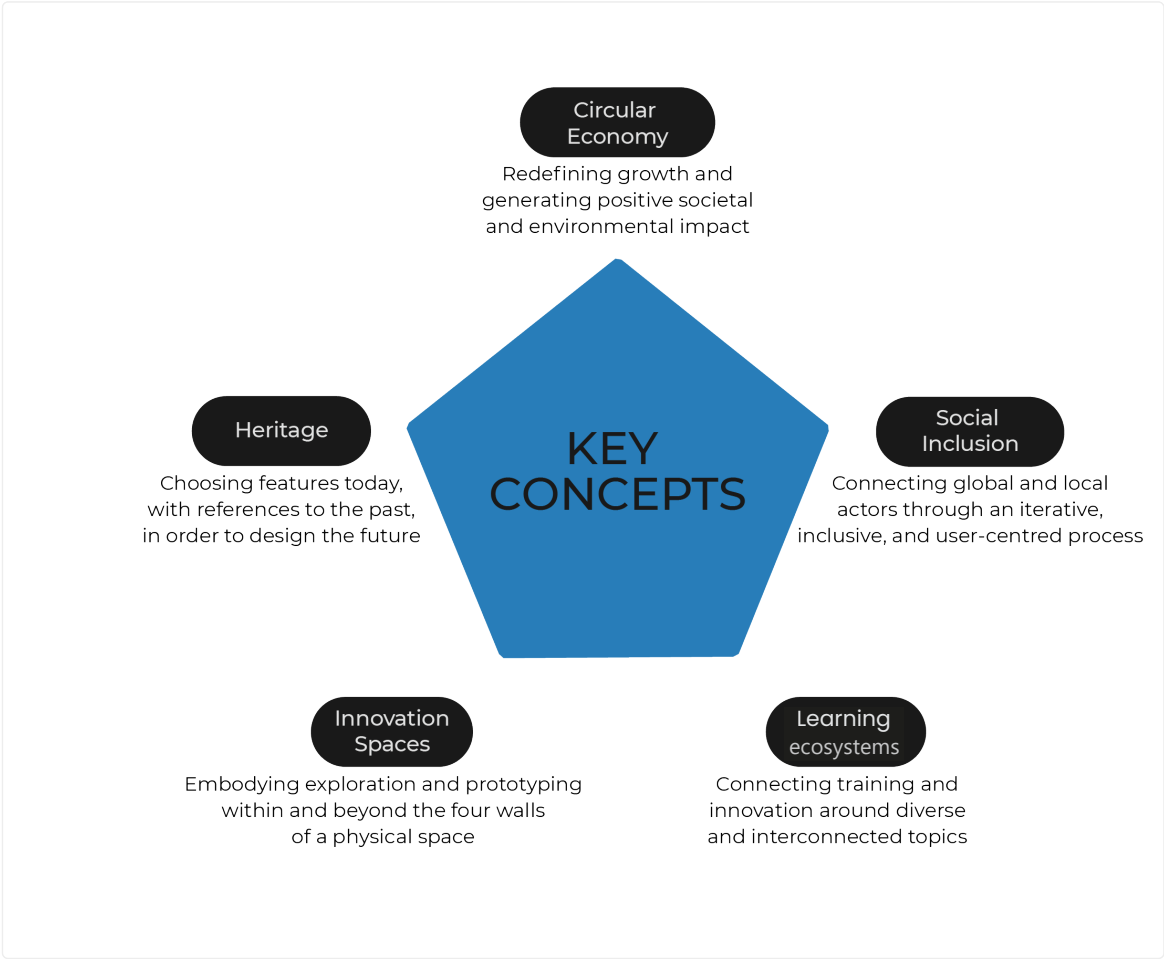
Heritage responds to the need of taking into account the material and immaterial past of industrial historic areas, in order to reflect about the present and discuss what we want for their future.

Circular economy: new productive activity in productive areas needs to consider alternative and circular resource flows that move away from the dominating consumption patterns, based on extraction and depletion of resources, pollution and generation of waste on a massive scale.

Social inclusion: current transformation processes in historic industrial areas, often in central or strategic metropolitan locations, usually increase land value and bring new land uses, producing drastic changes in the physical and social fabric of the city. Urban transformation process in CENTRINNO should consider existing population in decision-making processes, as well as foster social inclusion of disadvantaged or vulnerable groups.

Learning Ecosystems: the new economy at the core of the sustainable and inclusive transformation of historic industrial areas will need new professionals and jobs. Programs at the intersection of hands-on and theory, as well as open and accessible knowledge, play a key role in training this new working force, connecting tangible urban issues with local organizations and companies.

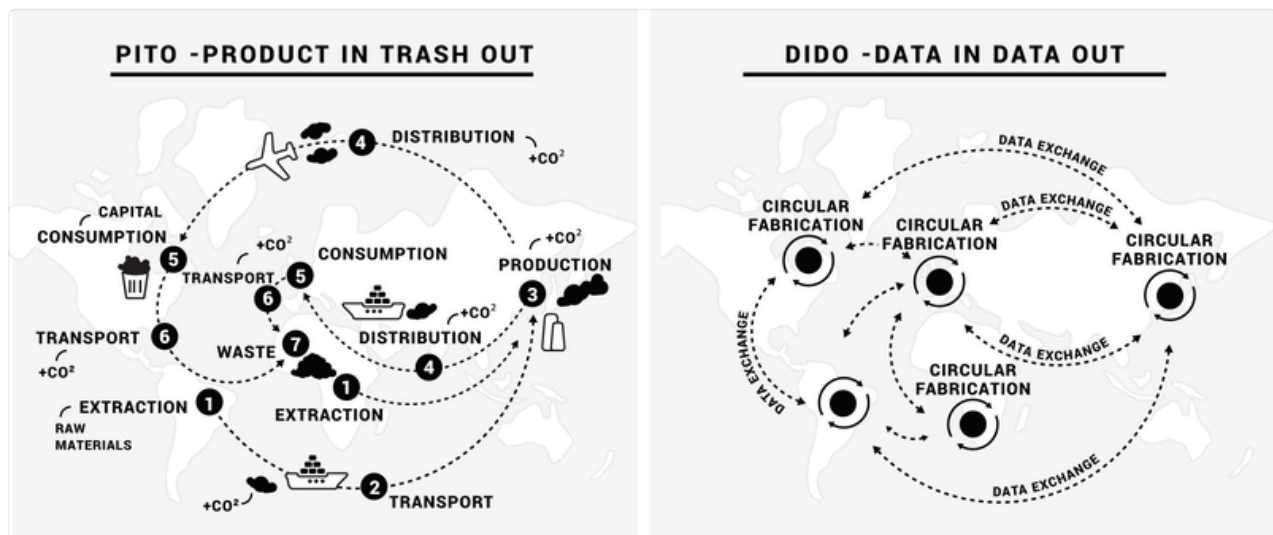
Innovation Spaces: physical and hybrid spaces in which innovative productive activities are experimented from the bottom-up, based on the collaboration between different stakeholders and a democratic access to technology and knowledge. CENTRINNO is based on situated and contextualised action by new constellations of stakeholders, productive activities, economy, and urban space.



CENTRINNO & Fab City

CENTRINNO, a Fab City experiment in historic industrial areas

Emerging as an alternative approach to the current urban model, [Fab City](#) aims at fostering more sustainable, globally connected, and locally productive cities and regions. CENTRINNO builds on the Fab City vision to explore the potential of a “new industrial revolution” that has citizens at its core, focusing on the role of industrial historic areas, and the potential to reintroduce manufacturing in urban areas using a circular economy approach.



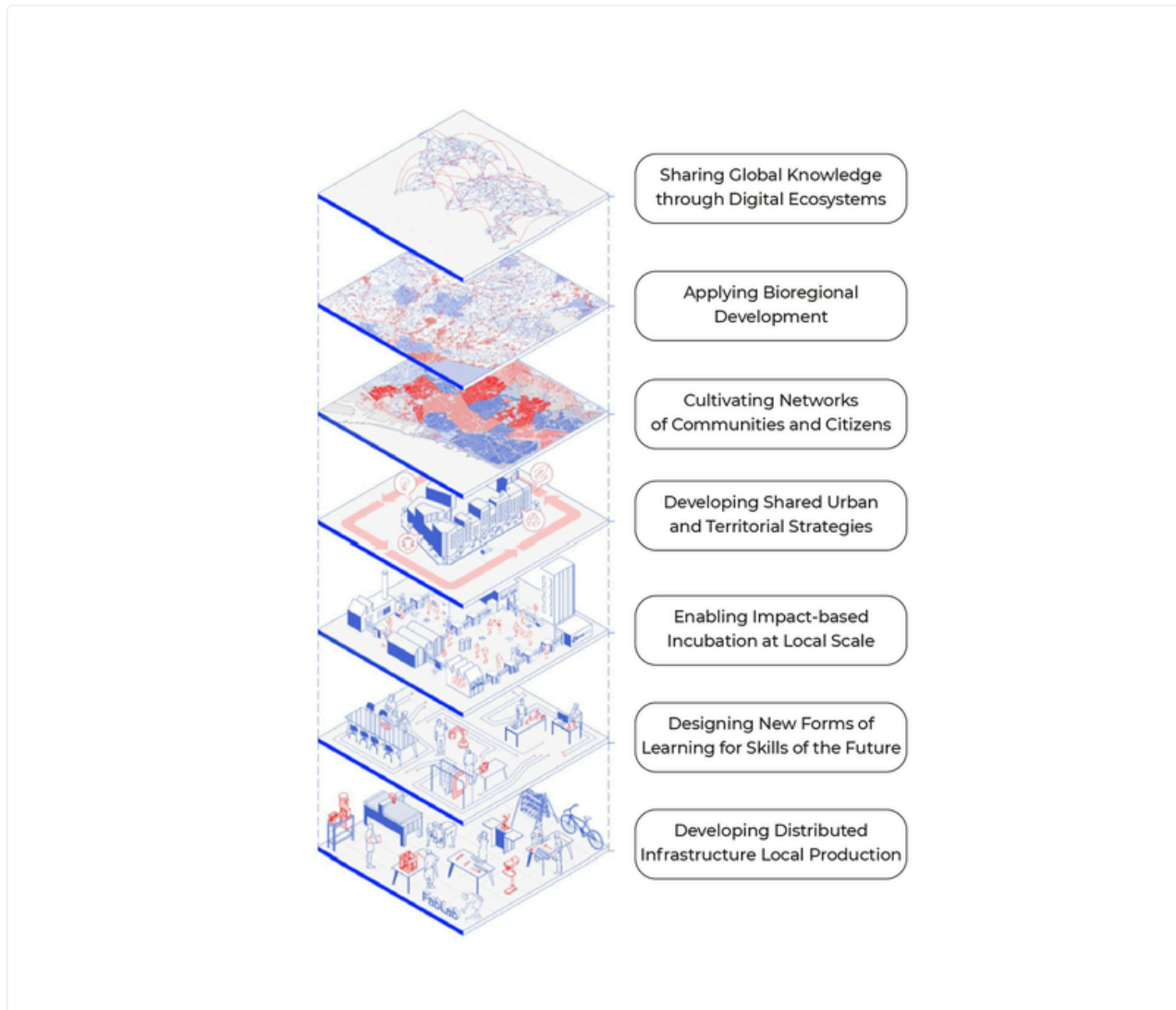
Pito to Dido approach by Fab City Global Initiative

Cities are complex systems, each of them with a different past and potential futures, influenced by different interrelated groups of people and interests. Even though many of these cities are nowadays interconnected, [each urban area had a specific development process with its own specific characteristics, influenced by the local culture, its society and past events](#). Fab Cities develop local strategies suited to their own context while partially adapting specific initiatives that they learn through a global network for knowledge sharing. [CENTRINNO works on of nine cities: Amsterdam, Barcelona, Blönduós, Copenhagen, Geneva, Milan, Paris, Tallinn, Zagreb](#).

Focusing on industrial historic sites is a strategic decision. These areas once hosted productive activities and, even though society and technology have changed through time, understanding the past of productive areas is key to foresee the potential for productive activities in the future. Moreover, many of these areas have been under deep transformation processes in European cities, becoming places where industrial fabric has led to the coexistence of many different land-uses nowadays. This offers a great potential to experiment with the future of productive activities in cities, overcoming [the modern paradigm of land use separation](#) and moving towards a more mixed city.

The Fab City Full Stack is the operational and strategic framework of the [Fab City Global Initiative](#). It is an experimental work that the Fab City Global Initiative constantly updates for cities and regions within the Fab City network to test and experiment activities towards a more productive and sustainable urban future. The Fab City Full Stack is organized in seven layers, from *Distributed Infrastructure for Local*

Production to Knowledge Sharing Global Digital Ecosystems. These layers offer simultaneous opportunities to deploy the Fab City vision in the territory, with a strong focus on bottom-up processes.



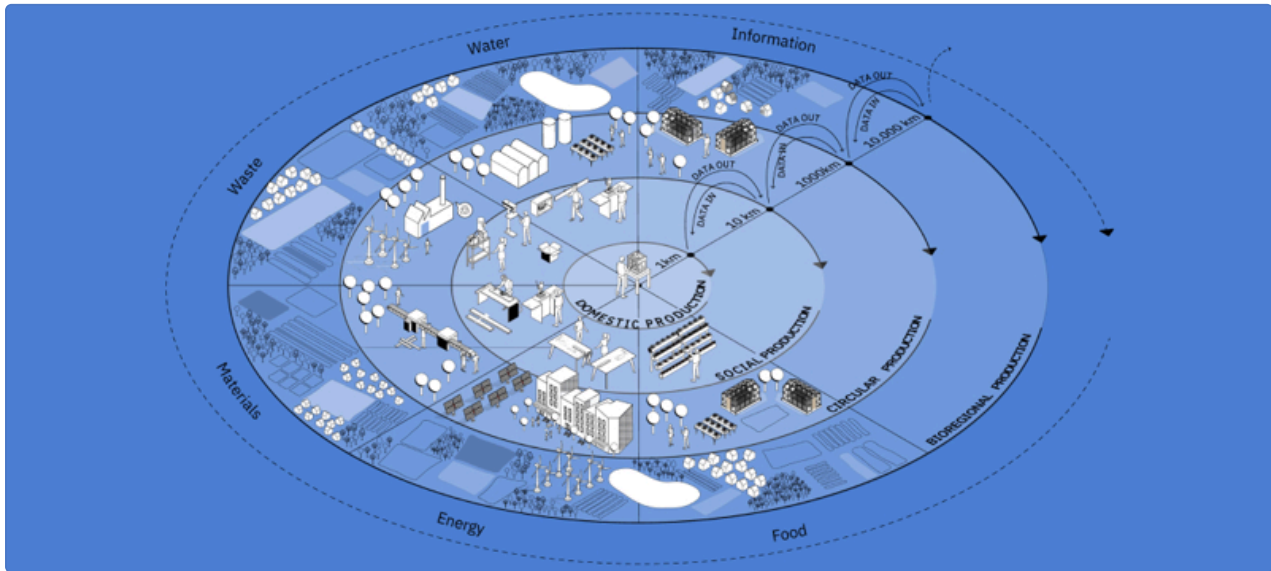
Fab City Full Stack by Fab City Global Initiative

Fab Cities use the Full Stack to plan initiatives towards an inclusive and sustainable shift in their production-consumption patterns. It is based on a platform-understanding of cities, each platform containing different sets of actors, technologies, spaces, and tools, and at the same time interrelated with each other. The Fab City Full Stack aims at providing guidelines to structure initiatives to understand what resources a city already has, which resources would need to develop, and which existing resources could be used in a different way to foster productive, sustainable and manufacturing activities.

CENTRINNO's pilot cities activities can also be framed under one or several of these layers. The [CENTRINNO Framework](#) has in mind this layer structure, devising connections between the different resources developed in the project with the different layers of the Fab City Full Stack. Most of the action in the project takes place between the development of *distributed infrastructure for local production* and *shared urban and territorial strategies*, being the main interface to achieve this the [Fab City Hubs](#). Nevertheless, the project also experiments with *new forms of learning for skills of the future* ([CENTRINNO School](#)), or new *networks of communities and citizens* ([CENTRINNO Network](#)). Finally,

some of the projects overarching outcomes, such as the [Cartography](#) and the [Living Archive](#), will become *knowledge sharing digital ecosystems* that support other cities in the future.

The Fab City Full Stack is constantly evolving and expanding itself towards complementary frameworks, such as the Fab City Strategic Action Plan (SAP), also devised by the Fab City Global Initiative. Due to the experimental status and changing nature of the Full Stack, CENTRINNO works under an [specific approach](#) within the Fab City vision and the Full Stack layers.



Fab City Strategic Action Plan for bioregions by Fab City. Found at <https://fab.city/about.html>

CENTRINNO partners are in constant contact with the Fab City Global Initiative, fostering exchanges between the project's pilot cities and the cities within the Fab City Network, making sure that the experimentation within the EU project can be exploited later in other cities, both in Europe and in all over the world.

Fab City Hub

At the core of the experimentation in Pilot Cities

The [Fab City Global Initiative](#) coined the term Fab City Hub (FCH) to describe the main urban interface that expands the impact of the maker movement to local communities to foster resilience and more sustainable cities. Fab City Hubs are a permeable space for citizens and organisations to experiment together with makerspaces or Fab Labs on productive and circular practices connected with their local reality, involving key stakeholders from industry, the public sector, or policy makers. Fab City Hubs operate in an interconnected global network of knowledge sharing, both on physical and digital spaces. If you want to know more about the Fab City Hub concept, you may have a look at the work on the [FCH Toolkit](#), or directly read the [FAQ developed by Volumes](#) in its gitbook version.



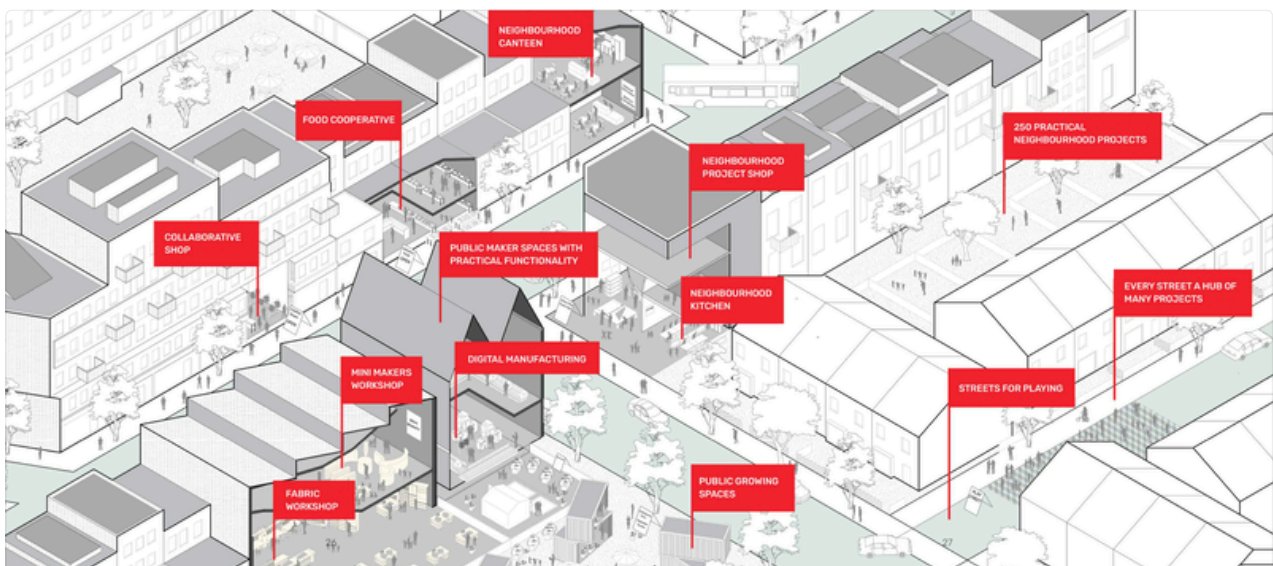
Frequently Asked Questions
Fab City Hub Toolkit



One of the main goals of CENTRINNO is to support the emergence of this new typology of hubs from a landscape of previously existing experiences of creative and productive hubs in Europe. Within the CENTRINNO Framework, Fab City Hubs represent the physical embodiment of the [5 key concepts](#) developed in CENTRINNO, becoming the test-bed for cross-stakeholder collaborations on productive practices. Fab City Hubs connect and unpack the main [CENTRINNO platforms](#) to the physical world.

Pilots will have three main resources that support the development of their own Fab City Hubs:

- The **Online Journal**, [an online series of events](#) on diverse and inspiring hub portraits that cities who want to implement their own FCH may learn from. The online journal features [Fab Lab Barcelona](#), [Lottozero](#), [Medialab Prado](#), or [Fab City Milan](#), among others. The hub portraits include both hubs from outside CENTRINNO and project's pilot cities. This live and dynamic resource complements the static content developed for the official deliverable [Creative and Productive Hubs Journal](#). Have a look at Online Journal to see examples of hubs!



Every One Every Day, hub portrayed in the [Creative and Productive Hubs Journal](#). Source: [Participatory City](#)

- The [Exchange Platform](#), an online platform intended to work as a sharing platform to foster collaboration between established and emerging Fab City Hubs developed within CENTRINNO and in the Fab City Network. The platform is currently being tested as part of the [CENTRINNO Network](#) strategy.



Screenshot of the CENTRINNO exchange platform

- [The FCH toolkit](#) is devised as a cohesive and contextualised collection of activities, tools and methods that will support the nine CENTRINNO's pilot cities to implement, maintain and sustain their own Fab City Hubs. It will be based on previous toolkits (e.g., the [ECHN Creative Hub Kit](#), the [Reflow Collaborative Governance Toolkit](#)) and it will be framed under the CENTRINNO Framework. The Fab City Hub toolkit will be developed through three iterations, building interconnections with resources developed and used in the project. Its final version will be a practical support guide for bottom-up initiatives to implement their own Fab City Hub. More information will be shared during 2022.

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Fab City Hub Toolkit



Developed within the CENTRINNO project, **Fab City Hub's ten principles** are group three elements [The FCH vision](#), [the FCH community](#), and [the FCH infrastructure](#):

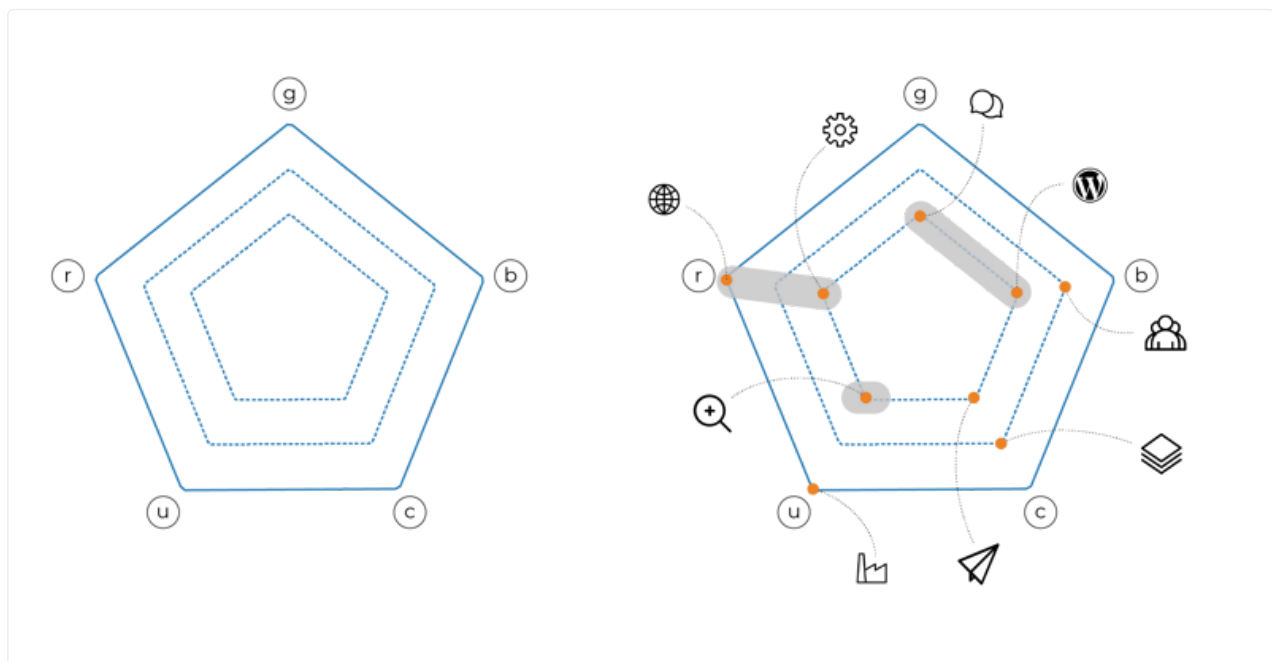
- 1 [Fab City Hubs are local ecosystem activators](#)
- 2 [Fab City Hubs are physical interfaces to access local and global distributed ecosystems](#)
- 3 [Fab City Hubs are complex organisms that foster resilience](#)
- 4 [Fab City Hubs are extensions of traditional institutions](#)
- 5 [In Fab City Hubs, community comes first, space comes after](#)
- 6 [Fab City Hubs give voice to citizens](#)
- 7 [Fab City Hubs focus on facilitating and empowering communities](#)
- 8 [Fab City Hubs adopt an incremental approach, and avoid over-design](#)

- 9 Fab City Hubs do not replace factories
- 10 Fab City Hubs are multi-layered spaces, both physical and digital

CENTRINNO Framework

The project's experimentation framework, including the analysis of tools and methods

The CENTRINNO Framework is an overarching common structure for experimentation that enables sharing, exchanging and discussing the project's findings on the urban regeneration of historic industrial areas and the development of Fab City Hubs. It is more a living dictionary than an instructions manual. Its two main ingredients are a common research structure ([The Framework](#)) based on the [CENTRINNO approach](#), and a series of resources developed in the project that operationalise the framework. Even though CENTRINNO will experiment with a great variety of tools, methods or platforms, this section describes the key resources developed in the project, including the [Fab City Hub Toolkit](#), the [CENTRINNO Platforms](#), and the [Impact Assessment](#) methodology. This section finally includes [the initial collection of tools](#) used at the beginning of the project. These tools were the departing point of the project's experimentation, being later updated and transformed in specific CENTRINNO tools and included in the [Fab City Hub Toolkit](#).



An overarching structure to test the CENTRINNO approach through tools and methods

The Framework

Research on cities' micro missions

The CENTRINNO Framework operationalises the [project's vision](#). Urban regeneration processes are long in nature and often moved by powers and actors that are difficult to reach or negotiate with. In order to explore the potential of alternative, resilient and sustainable approaches, CENTRINNO experiments how to change existing organisational practices through the implementation of a Fab City Hub. These actions and, especially, the changes tested in existing practices, will enable the participation of citizens and local organisations in the urban regeneration, process, reinforcing different aspects that enable a wider urban transition:

- Reconnection of local productive economies with their regional and local biophysical environment, thus, fostering socio-ecological interactions, awareness and interdependencies in which urban communities play an active role.
- A maker culture that fosters an active role of citizens in the production model, thus increasing local capacity to produce goods, changing mindsets towards non-consumerism, and increasing local community's resilience and adaptability to global challenges.
- Data exchanges and open knowledge are accessible to citizens and provide opportunities for updating and acquiring new skills, creating new job opportunities in sectors such as education, agriculture, health, banking, etc.

The Framework is organized on three different action areas that guide pilot cities' journeys towards the transformation of their industrial historic areas and the implementation of their Fab City Hub. Each area has associated a series of organisational practices that have been derived from the [FCH ten principles](#) in the [Impact Assessment Framework](#). Each city chooses its own path and selects and adapts the most appropriate tools and methods to change those practices. Each city develops a different journey towards the development of its Fab City Hub and the transformation of their historic industrial area.

As we mentioned in the [glossary](#), a micro mission is a commitment to address a specific challenge, set according to a pilot city's local context and CENTRINNO's general objective and one or more organisational practices. A micro mission may have one or several specific objectives and may include several activities that support achieving them. Using [Paris pilot](#) context as an example, a micro mission could be "developing a working group with existing organisations involved in urban food systems". This micro mission **activate interactions and facilitate connections and collaborations among the different actors active in urban environments** or would even **facilitate community action, while orchestrating a common vision** in a later stage. Several activities would compose the micro mission, such as organizing an [Emotion Networking](#) workshop to discuss the historic gardening ecosystem of the city and explore a common understanding of urban agriculture in Paris, setting up a [Make Works](#) region focused on urban food systems, or applying [surveys](#) to specific stakeholders to understand the resources available in the network.

The CENTRINNO Framework proposes three **action areas** to organize micro missions. Action Areas facilitate knowledge sharing between pilot cities, as well as the connection of organisational practices

and resources available in the CENTRINNO Framework and throughout the project to support experimentation activities. The three action areas are:

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Crafting the vision >

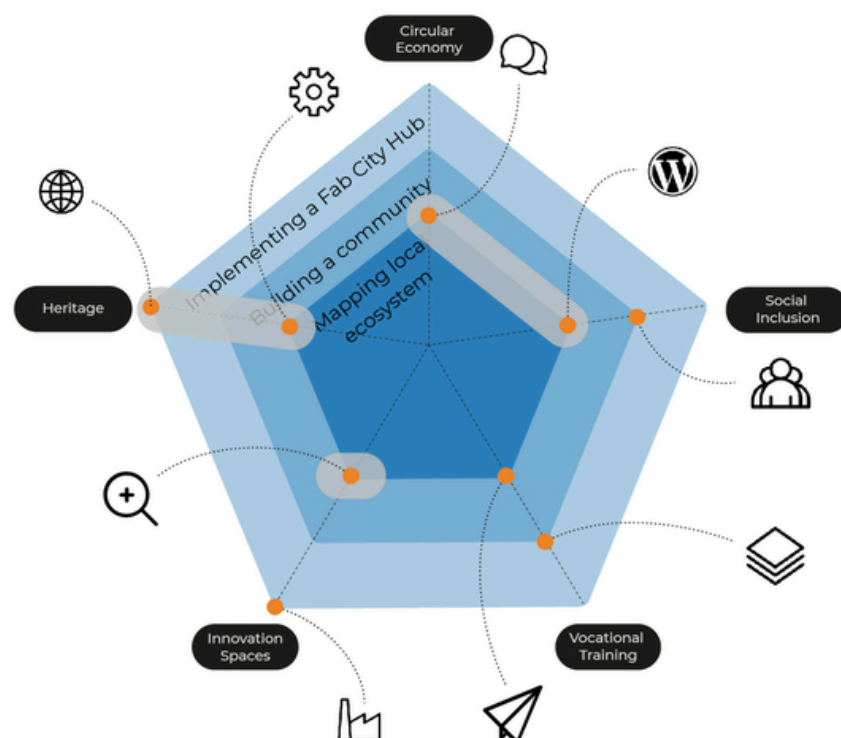
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Building a community >

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Establishing the infrastructure >

These three action areas are interconnected with [the five key concepts](#), resulting in a two-dimension map of organisational practices, activities, methods and tools. The three action areas are not linear and correlative. Micro missions in different action areas will take place simultaneously during the project. Some cities may already have a clear approach to implement their Fab City Hubs and at the same time, co-develop their own community around it, while other pilot cities may start by mapping their local city ecosystem to spot potential to implement both a Fab City Hub, or shape a community of practice around a new topic unfolded by the mapping process.



CENTRINNO Framework 3 Action Areas

In the following sections, you will be able to navigate through the three action areas and get an idea about which type of tools and methods could support your city to [map your local ecosystem](#), [develop a](#)

[community of practice](#) or [implement a Fab City Hub](#).

Crafting the vision

by understanding and mapping local urban ecosystems holistically

Mapping a local ecosystem may involve understanding the material and waste flows of a city, contextualizing people's narratives, or exploring existing knowledge resources. Under the CENTRINNO approach, mapping local resources is key to understanding the productive capacity of an urban area and find the gaps where specific micro missions may enable impactful change.

Mapping the local ecosystem and finding potential gaps and opportunities may create changes by:

- Increasing access and connection to information, communities, projects and initiatives related to the local distributed creative and productive ecosystems.
- Embracing emergence of new needs, projects, and organisations through open and resilient structures amidst rapidly changing and hazardous environments.
- Engaging with and creating new institutions through experimentation and prototyping of diverse assemblages of actors and functions.
- Activating interactions and facilitating connections and collaborations among the different actors active in urban environments.

The main project platform to explore the potential to activate these changes is the [CENTRINNO Cartography](#). Within this platform, you may also find a series of tools and methods that will support your city in identifying gaps and opportunities for citizens and organisations to be part of sustainable urban regeneration processes. Pilot cities' micro missions may include mapping their social, natural and industrial resources. CENTRINNO's understanding of resources includes the interconnections between material availability and flows, the local material and immaterial heritage, local stories and existing knowledge, techniques and processes used in manufacturing activities, or stakeholders and local audiences, among others.

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Cartography

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Narrowing down the scope and lens of analysis may be a good starting point. This may involve selecting a specific type of resource, such as plastics, a type of actor, such as SMEs working on manufacturing activities, or by looking at a specific activity related to a space or community, such as the materials, people and knowledge needed to transform a warehouse into a textile lab, or the food waste generated by local restaurants in a neighbourhood. In the following lines, we present some examples on how tools can be used to change practices.

Practice: Increasing access and connection to information related to the local distributed creative and productive ecosystems.

The [Urban Resources Mapping Guidebook](#) includes several methods and tools to perform activities that could increase access and connection to information. Some of these methods are [Geo-Spatial Analysis](#), [Stakeholder Surveying](#), or [Material Flow Analysis](#). [Material Flow Analysis](#) and the analysis of Material Stocks are key approaches in CENTRINNO to develop initial top-analyses to find gaps and opportunities in our ecosystem. Understanding the movement and availability of materials will unfold opportunities for pilot cities to foster, through new products and companies, circular manufacturing in industrial historic sites. This process is supported by [Metabolic](#), project partner of CENTRINNO. While Material Stock and [Material Flow Analysis](#) focus on materials, [Geo-Spatial Analysis](#) could be used to map any type of resources, and [Stakeholder Surveying](#) is used to map actors and actor-based processes. The latter is also a key method to engage stakeholders if used in combination with other tools.

Collecting, analysing data and sharing it with other partners and stakeholders is key to put topics in the public agenda from the bottom-up, and allows citizens to stirr the public debate of the urban regeneration process, or highlighting potential gaps and opportunities for the circular economy that makers and new productive activities may be able to address.

Practice: Embracing emergence of new needs, projects, and organisations through open and resilient structures

The [Smart Citizen Toolkit](#) is a toolkit thought for participatory environmental maker practices that enables gathering data on a specific topic key to a community, while fostering active intervention in its surroundings. In CENTRINNO, the data managed could be used to map issues around physical transformation of historical industrial sites (noise, pollution, etc.), to draw comparisons between the impact of different economic activities (circular manufacturing, traditional industry, or office spaces), or to show the local potential for new activities (e.g., soil quality sensors to map potential for urban agriculture). Some activities around this toolkit (developing the sensor kits, co-defining the issue to be addressed, or data-sharing events) may also be used to build a community of practice. Activities using the [Smart Citizen Toolkit](#) may involve the [Smart Citizen Platform](#), with more than 9000 registered users and visualized data of more than 1900 unique sensors.

Involving citizens in mapping and managing data is key to develop informed communities that are active stakeholders in the urban regeneration process.

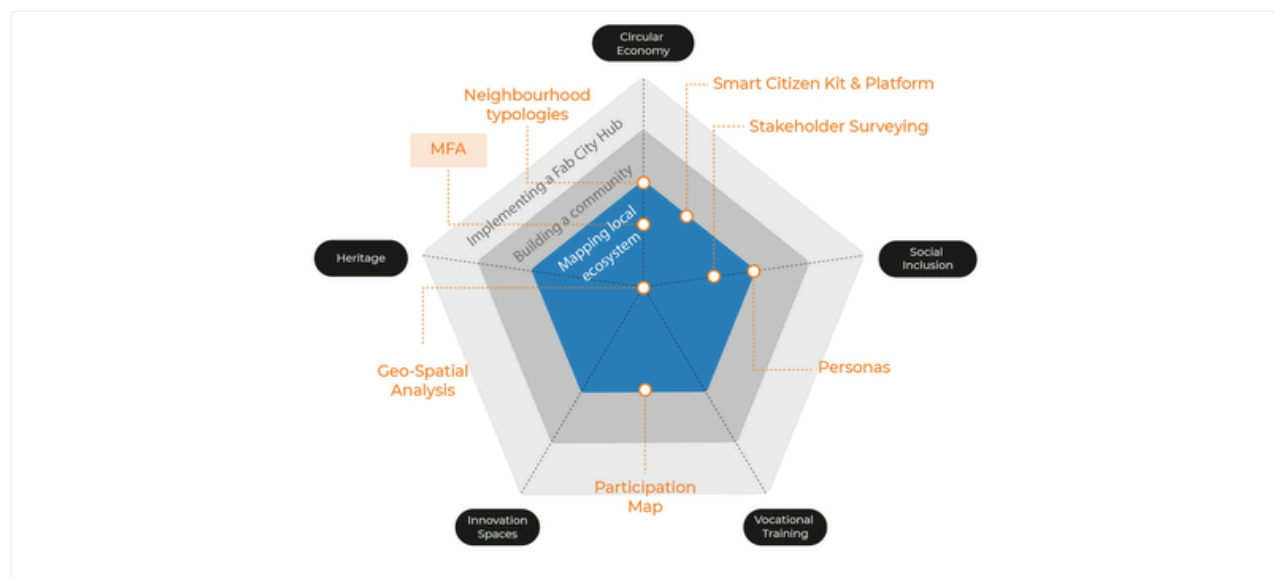
Practice: Engaging with and creating new institutions through experimentation and prototyping of diverse assemblages of actors

Other tools, such as [Personas](#), [Participation Maps](#) or [Neighbourhood typologies](#) may also be used both to have a better understanding of the local ecosystem and co-developing a community of practice. These tools are described in more detail in [the next chapter](#), but they can be used to confront and debate different perspectives on the city's neighbourhoods, or to scope together with other partners different configurations of stakeholders.

The experimentation with new institutions where citizens, local organisations and produces play a role, will showcase innovative governance assemblages for alternative urban regeneration processes.

Practice: Activating interactions and facilitating connections and collaborations among the different actors active in urban environments

The previous actions, aiming at changing the three first practices, lay the ground to experiment with new interactions and connections between information, needs and new institutions. These interactions are referred as **Synergizing, convening and connecting** in the [CENTRINNO Cartography](#) and they are part of the final step pilot cities enable through this platform.



Tools and methods to map your local ecosystem

Building a community

Inclusive communities of practice and collaborative decision-making

[Mission-oriented research harnesses social movement and citizen participation to achieve social change.](#)

Co-creation processes are at the core of CENTRINNO to facilitate conversations and discussions among local stakeholders and steer the research process towards alternative solutions that are socially and environmentally sustainable, but also locally significant.

Developing a community of practice and collaborate with your partners and other stakeholders in co-creation processes may produce changes by:

- Fostering bottom-up deliberation for defining the needs and conditions for a community coalescing around a physical space
- Enabling participation in expression and debate through inclusive approaches that give space to citizens and local communities
- Facilitating community action, while orchestrating a common vision

The [Living Archive](#) is the key CENTRINNO platform that supports the development of communities of practice, using heritage as a catalyst for social innovation and stakeholder engagement. Within this platform, you will find different approaches and tools that will help you to adopt a participatory and inclusive approach to building your network of stakeholders. Co-creating a diverse and cohesive community is key to implementing action from the bottom up in any urban regeneration process.

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Living Archive

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In the following lines, we describe different tools and methods that could be used to create and nurture a local community of practice and co-define its focus interest. These tools are also connected to change in specific practices.

Practice: Fostering bottom-up deliberation for defining the needs and conditions for a community coalescing around a physical space

[Neighbourhood typologies](#), included in CENTRINNO's [Urban Resources Mapping Guidebook](#), is a method used to categorize urban areas according to top-down collected spatial data. This categorization needs to be discussed among different stakeholders and may also support or influence the co-definition of the pilot city's focus. Making this sort of choice, or sharing the results after the categorization, could be a sensitive process, for it may affect or clash with how communities self-perceive themselves. This method requires an open mind and an inclusive approach.

[Personas](#) is a tool used in design-driven development processes for design anthropologists to document and map users' behavior. [Personas](#) translate this knowledge into a form that is simpler and easier to grasp and thus serve as a good basis for the development of new solutions. In CENTRINNO, [personas](#)

could be used to collectively map and understand the target audience, and adapt the stakeholder engagement and co-creation activities accordingly.

The [Participation Map](#), or Stakeholder Map, is a tool that comes from the [EU project SISCODE](#) and could be used to map and classify local stakeholders of the local pilot city network according to the role they play either in a specific pilot city activity or in its whole experimentation process. The [CENTRINNO School](#), supported by the project partner [Onl'fait](#), will foster the use of [Participation Maps](#) to understand the local actors' ecosystem and develop a community of practice around training activities in each pilot.

Practice: Enabling participation in expression and debate through inclusive approaches that give space to citizens and local communities

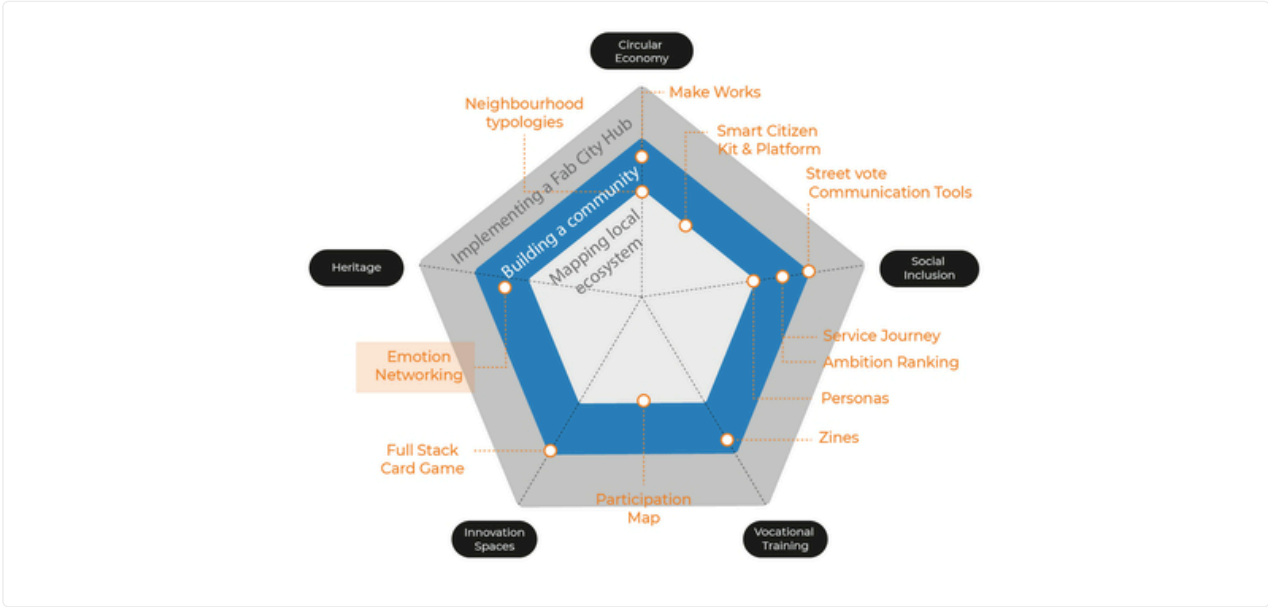
[Street Vote](#) is a playful way to connect with citizens in an easy, low-cost, and data-driven way by making interactive interventions in the public space. Passers-by can respond to enticing and inspiring questions through polls displayed in the urban space while at the same time, certain topics are publicly positioned to position or foster a narrative. It may be used as an engagement tool to build up a community of practice, or as a part of a plan to implement a [Fab City Hub](#) (FCH). [Street Vote](#) and other 'community tools' can be found in [Waag's co-creation navigator](#). Other examples of these tools are the [Lego Challenge](#), a team building activity, the [Stakeholder Trust Map](#), used to classify and analyse collectively the relationship with stakeholders, the [Circles of Connection](#), which provides an overview of the organizations needed to involve in order to reach specific goals, or [Ambition Ranking](#), which is a useful tool to prioritize decisions in a collaborative way and, thus, co-define the focus of a wider community through a very easy set-up.

Practice: Facilitating community action, while orchestrating a common vision

At the core of all co-creation processes in CENTRINNO lays the [Emotion Networking](#) method , developed by [Imagine IC](#) and the [Reinwardt Academy](#), also a project partner. The [Emotion Networking](#) method will facilitate conversations and discussions around the transformation of historic industrial areas, putting heritage items at the centre of the discussion. Each pilot city develops its own way of implementing this method. Discussions about heritage items will ultimately support the recognition of different views, and will contribute to approaching views that may in the future enable collaboration through shared values. This method will also facilitate the collection of qualitative information related to the other [CENTRINNO key concepts](#), including knowledge on traditional practices (vocational training), missing stakeholders (social inclusion), perceptions on materials and resources (circular economy), or opportunities to collaborate and pressing local issues (innovation spaces).

Other resources specifically aimed at co-defining common interests and supporting the development of a community's vision are the [Full Stack Card Game](#) (to devise potential activities aligned to the [Fab City vision](#)) and the [Service Journey](#) (to visualize user's experiences). They can be easily applied in short activities and sessions by pilot cities' teams to co-define with their local communities both the focus and

the implementation process of their [Fab City Hub](#), often falling in the middle of community and FCH micro missions. [Reflection Journals](#) or Zines (collective reflection on a common experience in a short self-published book or text) may also be used to orchestrate a common vision.



Tools and methods to develop your community of practice

Establishing the infrastructure

Fab City Hub as test-beds for a resilient urban transformation of industrial historic areas

CENTRINNO pilot cities are developing its own specific approach to a local [Fab City Hub](#) during the project. Each [Fab City Hub](#) is activated through programs of workshops, events, or trainings that have productive and creative activities at their core and foster collaboration between the local communities of practice and other key stakeholders, such as Municipalities, entrepreneurs, policy makers, industrial actors or educational institutions.

Implementing a Fab City Hub as an experimental facility in your local environment involve to put effort in setting up the infrastructure and fosters changes by:

- Developing incremental design of space to create room for real and situated needs to emerge from the community
- Creating awareness around convivial forms of innovation, manufacturing capabilities, creative citizenship and social connections
- Combining physical spaces and facilities with digital communication for diverse communities through multi-layered coordination

The [Fab City Hub Toolkit](#) supports cities in their implementation of their own Fab City Hubs. Contextualised tools, examples, roadmaps, and a lot of detailed information in the toolkit guide interested organisations and citizens in deploying a Fab City Hub in their local environment.

PAGE

Fab City Hub Toolkit

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Even though the Fab City Hub Toolkit is the main resource to implement your own productive hub, we include here some examples of resources that cities could use to implement their own FCH, connecting them also to the CENTRINNO framework and the organisational practices. Nevertheless, if you are interested in exploring the implementation of a FCH in your city, please see [FCH Toolkit](#).

Practice: Developing incremental design of space to create room for real and situated needs to emerge from the community

A [Fab City Hub](#) (FCH) offers a permeable space for citizens and groups to experiment together with other actors on productive and circular practices connected with local challenges. Some cities organize [Fab City Camps](#) to spread the word locally and organize a local Fab City Hub Community.

It is key to have a spatial strategy. Square meters in cities are a very precious asset, especially on central and accessible areas. Owning or managing a space is a great start, but if you don't have access to a space yet, you may put in a place a strategy to find one. The [Communications Handbook for Projects](#) is a comprehensive resource where cities can find useful resources to raise awareness around your FCH concept or its specific approach. Platforms such as a Blog, social media or YouTube channels will also be

useful for pilot cities to continuously co-develop and share the narrative of its own FCH, reaching and engaging their target audiences.

Think of your FCH as a test-bed, aiming at increasing impact to the city scale. You may co-create the concept and the spatial approach with your community, and be sure of leaving always room for situated needs of the community. Specific tools and resources are available for this purpose depending on the approach a FCH may adopt, such as the [Full Stack Card Game](#) or [Street Vote](#), already described in [the previous section](#). Have also a look at [this blog post that narrates how the Fab City Hub in Milan](#), which has not yet a defined space to operate, is approaching an incremental approach.



A Fab City Hub for Milan: a collaborative challenge for systemic change – CENTRINNO



Practice: Creating awareness around convivial forms of innovation, manufacturing capabilities, creative citizenship and social connections

Collaborative activities are at the core of the FCHs, including collaborative fabrication activities and workshops focusing on collaborative design and fabrication of tools and artifacts that cover specific community needs and support the development of better conditions of life. This type of activity will benefit from adopting an [Open Design Documentation](#) method by creating simple and detailed how-to guides for community designed and manufactured tools that can be later shared to raise awareness around them. These guides can break language and cultural barriers and allow local communities to scale-wide, through the sharing of knowledge and practices. Tools, processes and designs work better when integrated and adapted to the local context.

[Oral History Methods](#) are interviews with key figures in the local context that could be done, not by experts, but by peers or collaborators of the FCH community. This could contribute to building the narrative of the FCH around the views and perceptions of the local ecosystem at the same time that the ideas influence the public debate and reach a broader audience. These stories could also enrich the [CENTRINNO Living Archive](#) or may be connected with the [CENTRINNO School](#) curricula, thus bringing heritage or education to the core of FCH activities. For the latter, the [Open Schooling Framework](#) may support FCHs to work as mediators in their local communities, positioning training programs as spaces for collaboration between families, universities, research institutes, companies or civil society organisations. Also, methods such as [Gradual Release of Responsibility](#), frameworks such as [Constructivism](#), or specific tools such as [Service Journey](#), also mentioned in [the previous chapter](#), may be useful for FCHs implementing training activities.

Practice: Combining physical spaces and facilities with digital communication for diverse communities

In some cases, FCHs will host [CENTRINNO School](#) activities, interconnecting FCH with vocational training and learning experiences. For this, the [Fab Academy Distributed Model](#) offers a great source of inspiration as well as key resources to adopt a distributed approach to learning, based on both physical and digital spaces.

For FCHs focused on Circular Economy, digital platforms such as [Materiom](#), or the [Circular Material Library](#) developed by [Metabolic](#), could be used as a source of inspiration to access recipes and specific resources for developing biomaterials or products from waste with their local communities. The [DRIVEN x Reflow](#) is an online distributed incubation program developed by [Volumes](#), which aims to embed advanced computational design strategies in early-stage entrepreneurship for a circular economy. The program includes an online training workshop to apply digital technologies to the circular economy that may be useful for some pilot cities.

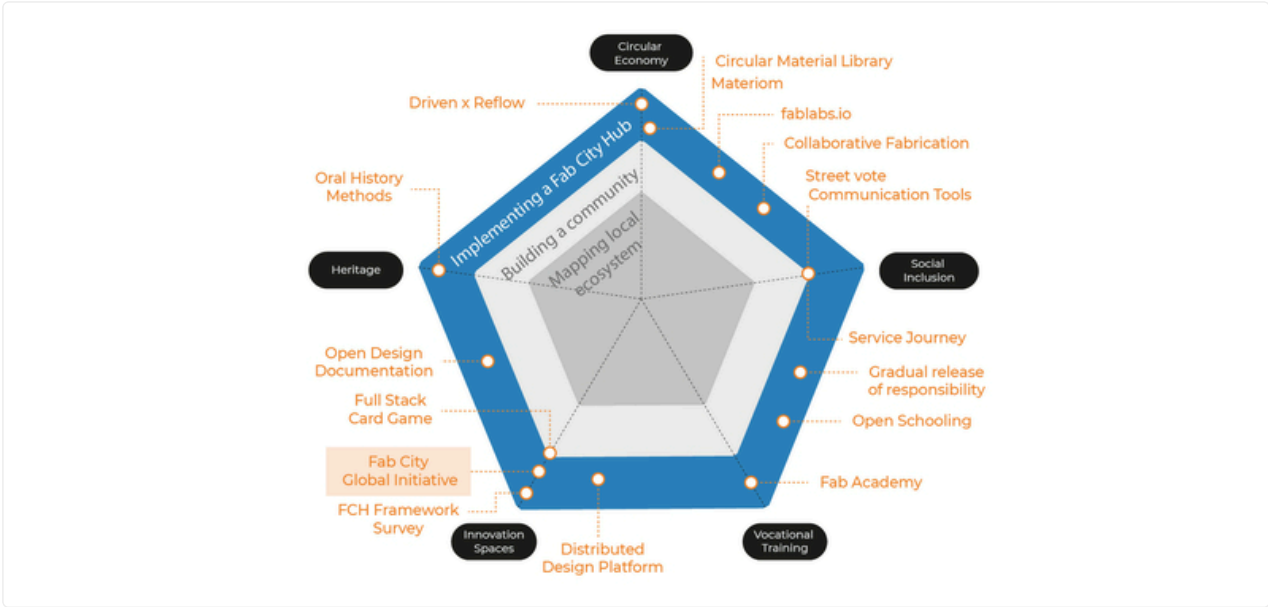
Fostering manufacturing activities and communities of practice around manufacturing will be key to devise alternative paths to transform industrial historic sites. [Make Works](#) online platform is a useful resource for pilot cities to manage and foster this type of communities. So far, in CENTRINNO it has been used as a resource to map manufacturers in different cities and regions worldwide, including Paris and Barcelona. Nevertheless, combined with offline activities, such as gatherings or debates, it has a great potential to enable FCH participatory communities around manufacturing activities.



Manufacturing in cities – CENTRINNO
CENTRINNO



Global platforms are a key resource for cities to expand and develop their own approach in their [FCH](#). The [Fab City Global Initiative](#) provides cities with tools and resources to foster manufacturing in cities, together with the yearly [Fab City Summit](#), an opportunity for pilot cities to discover and join the initiative. The [Distributed Design Platform](#), a networking hub for the European maker movement, or [fablabs.io](#), which aims at sharing principles, tools, and philosophy to democratize access to technology, may be also interesting resources for cities to exchange knowledge on manufacturing and Fab City Hubs globally and collaborate between online and offline spaces. [FCHs](#) operate locally and share knowledge globally.



Tools and methods to implement your own Fab City Hub

Fab City Hub Toolkit

to support the emergence and implementation of Fab City Hubs

The FCH Toolkit aims to become one of the key elements of the CENTRINNO's legacy to allow the network of FCHs to grow and expand beyond the 9 Pilot cities, with new Hubs in Europe and all over the world. The first version (alpha) of the FCH Toolkit was included in [the project's official deliverable 3.2](#). Two more releases (beta and final) will be developed during the project, but you may find the latest update of the [FCH Toolkit](#) in the online gitbook developed by Volumes:



About this GitBook
Fab City Hub Toolkit

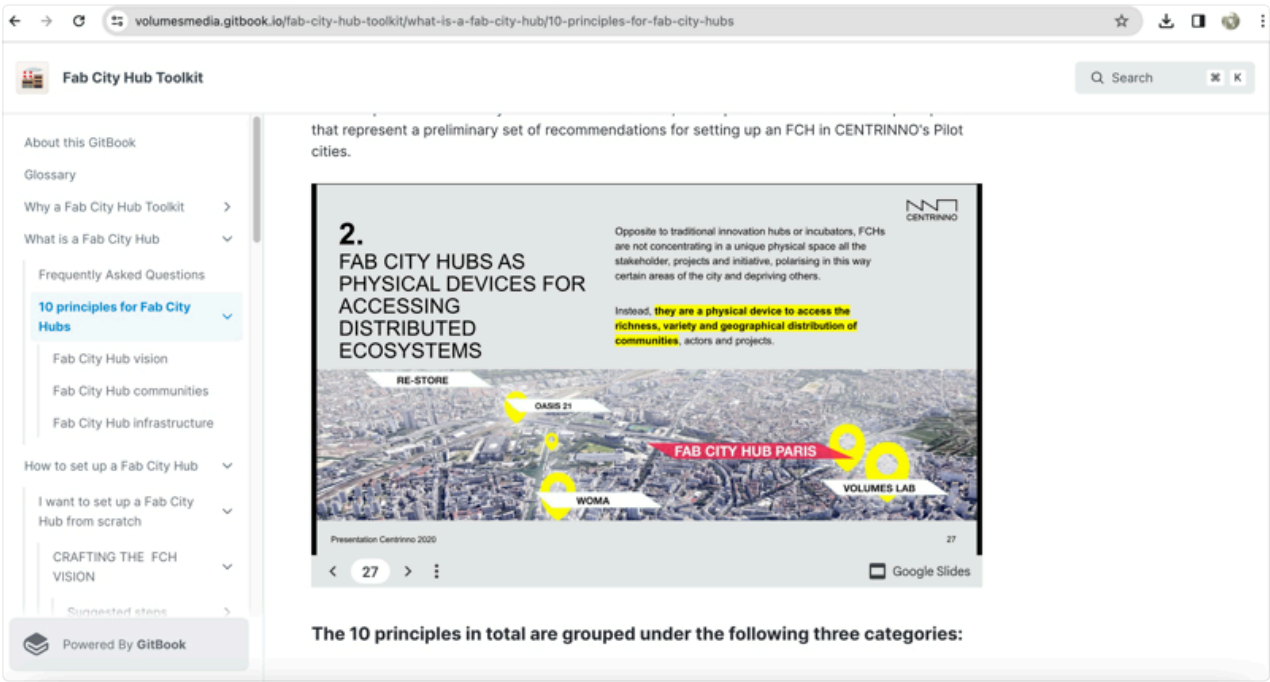


The FCH toolkit is a hands-on and living manual for hub managers, local communities, or institutions that want to set up their own Fab City Hub and open a new space to foster local resilience in urban regeneration processes through cross-sectorial and cross-stakeholder collaboration on productive practices. It includes different resources, from the FCH ten principles, to hands-on tools and methods tested and ready to be implemented in your local hub. The FCH Toolkit scope's lays within the [CENTRINNO approach](#), but it is a resource that will be later iterated and shared within the [Fab City Global Initiative](#).


The FCH Toolkit includes key information about:

- **The context** where the FCH toolkit was originated and its expected impacts.
- **What is a Fab City Hub**, including key terms, the ten FCH principles, and the FAQ.
- **The FCH Toolkit approach** and its iterative development
- **How to set up a Fab City Hub** in your city, both if you start from scratch, or you want to tackle one single challenge already identified locally.

[The Fab City Hub Toolkit](#) operates as a platform where you can navigate and explore different types of content. It is non-linear, which means there are many different ways of reading it and using it to implement your local hub. [Do you want to have a look?](#)



The FAB CITY HUBS Toolkit BLUEPRINT is available here :



270KB

fch toolkit blueprint.pdf
pdf

A dedicated chapter in the [CENTRINNO Handbook](#) has been dedicated to Innovation Spaces and Fab City Hubs.

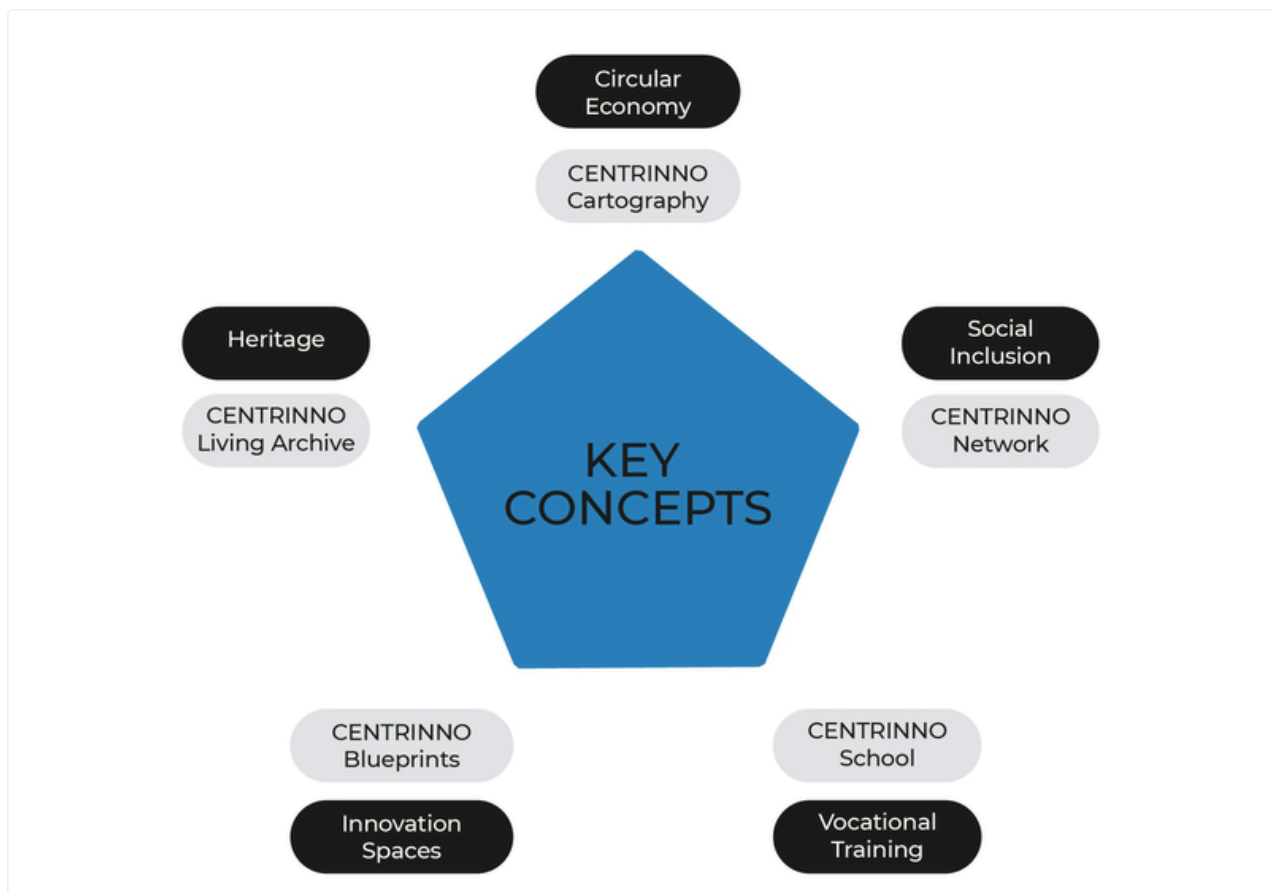
CENTRINNO Platforms

Interfaces between the cities' activities and the CENTRINNO framework

Each city may choose its own path to develop its Fab City Hub and its own urban transformation process to foster a sustainable and inclusive economy.

To achieve this, each city implements their own context-driven micro missions, supported by specific platforms and resources developed during the project. Each platform is focused on different aspects of the [CENTRINNO approach](#) and may be used by other cities that want to test and adjust the framework to their own reality.

The [CENTRINNO Cartography](#) allows visualisation of the tangible and intangible resources around pilot cities' sites, unfolding the potential for new **circular** management of urban resources. The [Living Archive](#) enables cities to 'make **heritage**' on and around their urban sites in ways that it inspires and supports them to build inclusive, circular, sustainable hubs. The [School](#) supports work on training activities, including **vocational training**, to bridge the gap between learning programs and the societal challenges outside the classroom. The [Network](#) supports the development of interconnected **socially inclusive** communities, both on the local scale to collaborate and address the city's challenges, and on the global scale to exchange knowledge with the wider community. The [Blueprints](#) outline the project's findings and unpacks them into policy development guidelines for their replicability through new **innovation spaces** in other cities.



CENTRINNO key concepts and platforms

Living Archive

Unravelling the potential roles of heritage in urban regeneration

The [CENTRINNO Living Archive](#) is an open access platform containing stories stemming from pilot cities' (post-)industrial sites, collected locally with participatory heritage methods. Its purpose is to help communities imagine what can be broadly described as a new '**critical heritage of making**', and enable the creation of inclusive and circular Fab City Hubs. The Living Archive has three parts:

- 1 Local offline co-collection efforts and exhibition space
- 2 An online network visualisation exploratory tool which provides access to shared and annotated/tagged local content.
- 3 A series of online publications (dossiers) which provide analysis and reflections on the co-collection and curation process and the emergent network of content.

The CENTRINNO Living Archive serves as a manifestation of how the concept of heritage, and people's interactions in which it is made (or unmade) can (or cannot) function as a catalyst to accelerate and sustain the transition toward a more circular and inclusive society in European cities and beyond.

[Heritage here is approached as a curated way of dealing with the past in the present towards the future.](#)

Tangible and intangible items are labelled as heritage in interaction. An item of heritage might evoke very positive emotions, a desire to celebrate it and even a claim to elevate its presence and value. Negative feelings towards the same item of heritage, on the other hand, can provoke and generate disgust or even hate. Practices of archive and heritage making are in fact very much part and parcel of the living fabric of everyday life, or the way in which people live together. In order to explore a "new industrial revolution" and a post-industrial urban regeneration model for a sustainable and resilient economy, may be worth it to discuss the previous Industrial Revolution, and the different and often contested values associated to it (technological change, progress, but also extractivism and exploitation). CENTRINNO recognises the value in looking back, to see where we've come from, and discuss which values we want to be part of our future.



Different Values in and of Industrial Space – CENTRINNO



Novel approaches enable people to explore, research, discuss, decide about archives and "heritage".

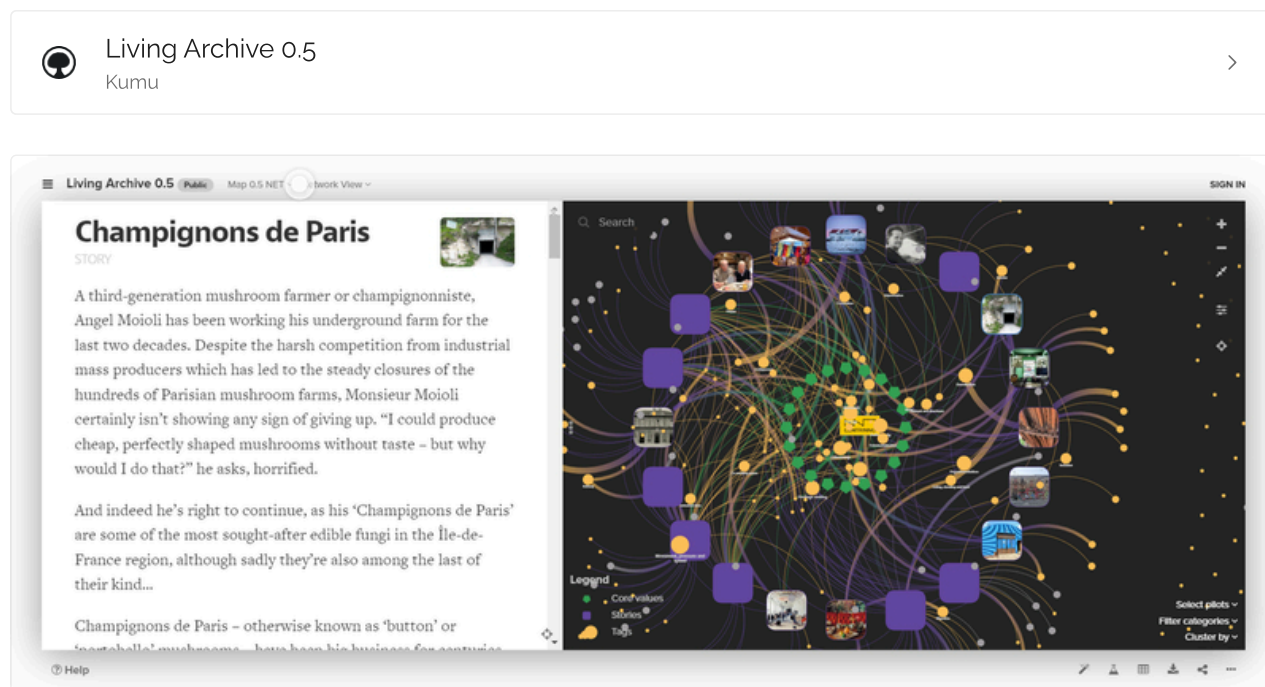
Thus, the process of design and development of our Living Archive is collaborative. The [Reinwardt Academie](#) is responsible for the open dialogue with all nine CENTRINNO pilot cities and other partners to move in unison in both the building and design of the Living Archive, as well as its usage, replication, adaptation and change at the pilot sites.

The main purpose of the Living Archive is to help communities imagine a new 'heritage of making' through the memories, experiences and traces of (former industrial) places, practices and the related interactions with materials, with contents about:

- Practices of making (the acts, skills, modes, devices, tools, words and methods);
- Human interactions with each other and with the materials used (in the practices of making);

- Effects of the environment (energy, animals, materials, products, etc.) on these human and non-human interactions and vice versa.

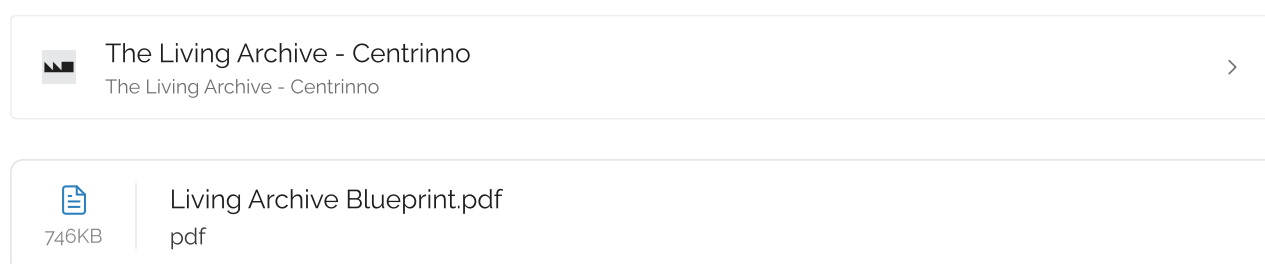
The online network visualisation of the Living Archive was first tested [in a Kumu map](#) including different interconnected stories collected by the nine CENTRINNO cities.



A story visualised in the Living Archive alpha version

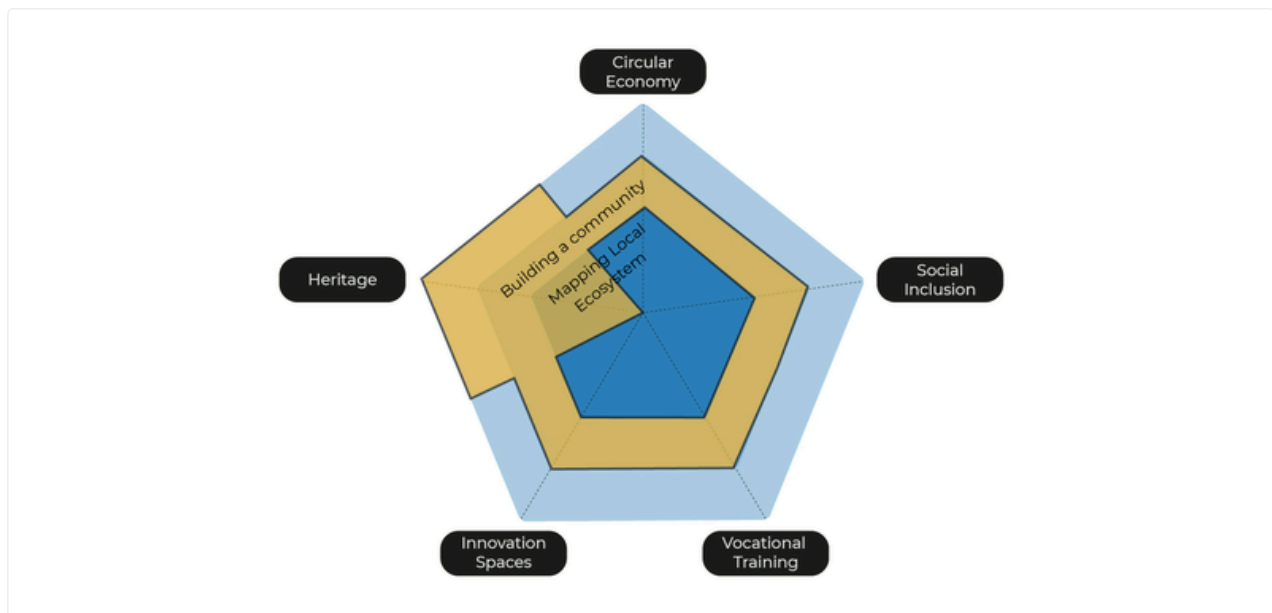
The [Reinwardt Academie](#) team developed a [Living Archive tutorial for Kumu](#) for the CENTRINNO cities to upload and manage their stories using the online platform.

During the second period of the project, partners developed the online webplatform for the Living Archive:



The CENTRINNO Living Archive is a key resource for the [development of communities of practice](#), around, but not exclusively, heritage. [Emotion Networking](#) is a key method used in CENTRINNO to feed the Living Archive and it may support 'co-defining the focus' of the local community. Participants are able to reflect on the (shaping of the) 'Emotion Network' surrounding a (prospective) item of heritage, and collaboratively explore how to 'make it heritage', and whose voices are heard, unheard, missing or needed. CENTRINNO cities are able to identify people with specific knowledge, memories and/or perspectives which may help other stakeholders get inspired by the past. This allows pilots to uncover

the potential to 'make heritage' and go deeper into tensions between: Tradition & Innovation, re-use & new making, as well as different usages and conceptions of place and time.



CENTRINNO Living Archive within the Framework

Many articles in the CENTRINNO website tagging "heritage" can be found: <https://centrinno.eu/blog/>

You may also read the detailed report of the Living Archive Alpha official deliverable below, containing an explanation of the context, the structure, the methods and tools associated to heritage 'collection and making', and the development process of the platform:



3MB

CENTRINNO_D2.5_Living Archive - Beta Version_v1.0.pdf
pdf

A dedicated chapter in the [CENTRINNO Handbook](#) has been dedicated to Heritage and the Living Archive.

Cartography

The CENTRINNO exploratory mapping journey

The CENTRINNO Cartography is a platform for finding, mapping and connecting resources in local neighbourhoods into circular & regenerative local economies. It is an outcome of ongoing work with nine pilot teams working on neighbourhood regeneration strategies as part of the CENTRINNO Project. As an outcome of the cartographic journey, pilots facilitate the creation of industrial symbioses between local industries, or find opportunities and needs for commoning, pooling or sharing tools and equipment required for sustainable production. In a wider sense, mapping of expertise (or the lack thereof) to apply circularity thinking to the design, production, delivery and recovery of goods and services, allows pilots to feed training programs of the CENTRINNO School curriculum with content that is rooted in already existent local knowledge, while also addressing critical gaps to unleash a circular economy.

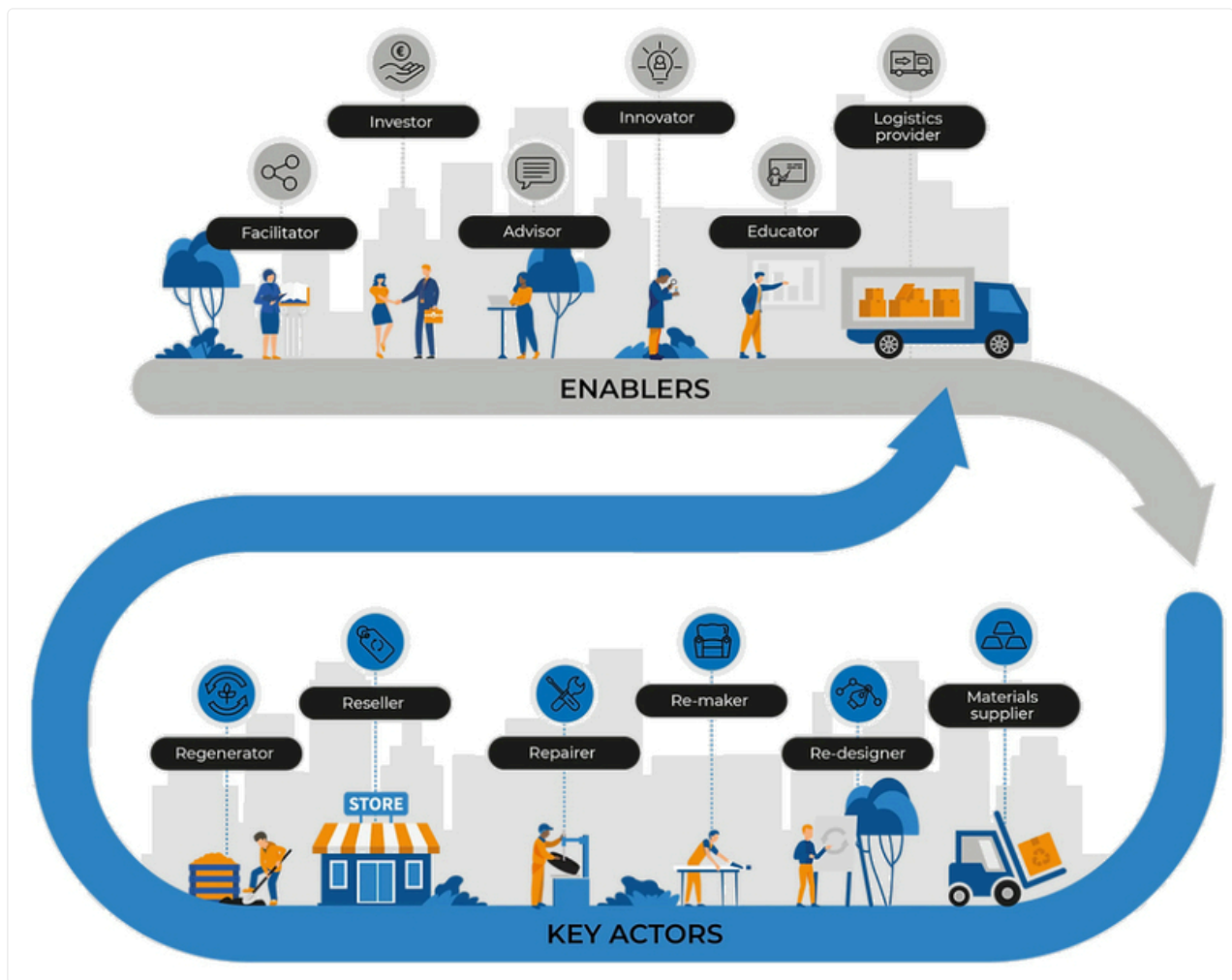
Former industrial areas give way to redevelopment projects that are set to extract maximum value from "underutilized" urban spaces. Often with profound consequences for local communities who currently live and work in these areas. We need better methods and strategies for regenerating neighbourhoods. Making neighbourhood regeneration truly regenerative means that we start considering locally available materials, skills, knowledge and human resources as the point of departure for the future vision of a circular, inclusive and sustainable city.



Seizing the hidden opportunity of recycling wood waste – CENTRINNO
CENTRINNO



As remnants of an old, extractive economy, the nine historic industrial sites participating in the CENTRINNO project possess a broad range of resources and opportunities that can set us on track for building towards the city of the future. CENTRINNO envisions locally productive and circular cities in which everyone has a role to play. From local makers and recyclers to schools and public institutions.



Enablers and key actors in a circular and productive city. Source: [Metabolic](#)

Our partners at [Metabolic](#) are currently developing the [Cartography Platform](#) that includes the structured action plan developed in the project for community initiatives, innovation hubs or any other project to build a circular economy rooted in local urban ecosystems.

Home | My Site
My Site



Every mapping journey is unique. Some parts will be more relevant to future [Fab City Hubs](#), while others may be more useful for municipal governments. The Cartography includes a four steps methodology for cities, associating resources, tools and examples from the CENTRINNO cities to each stage:

- **Adopt a system-view on cities:** The [Urban Mapping Ecosystem Guidebook](#), also led by Metabolic, is the key CENTRINNO resource to support understanding cities ecosystems.

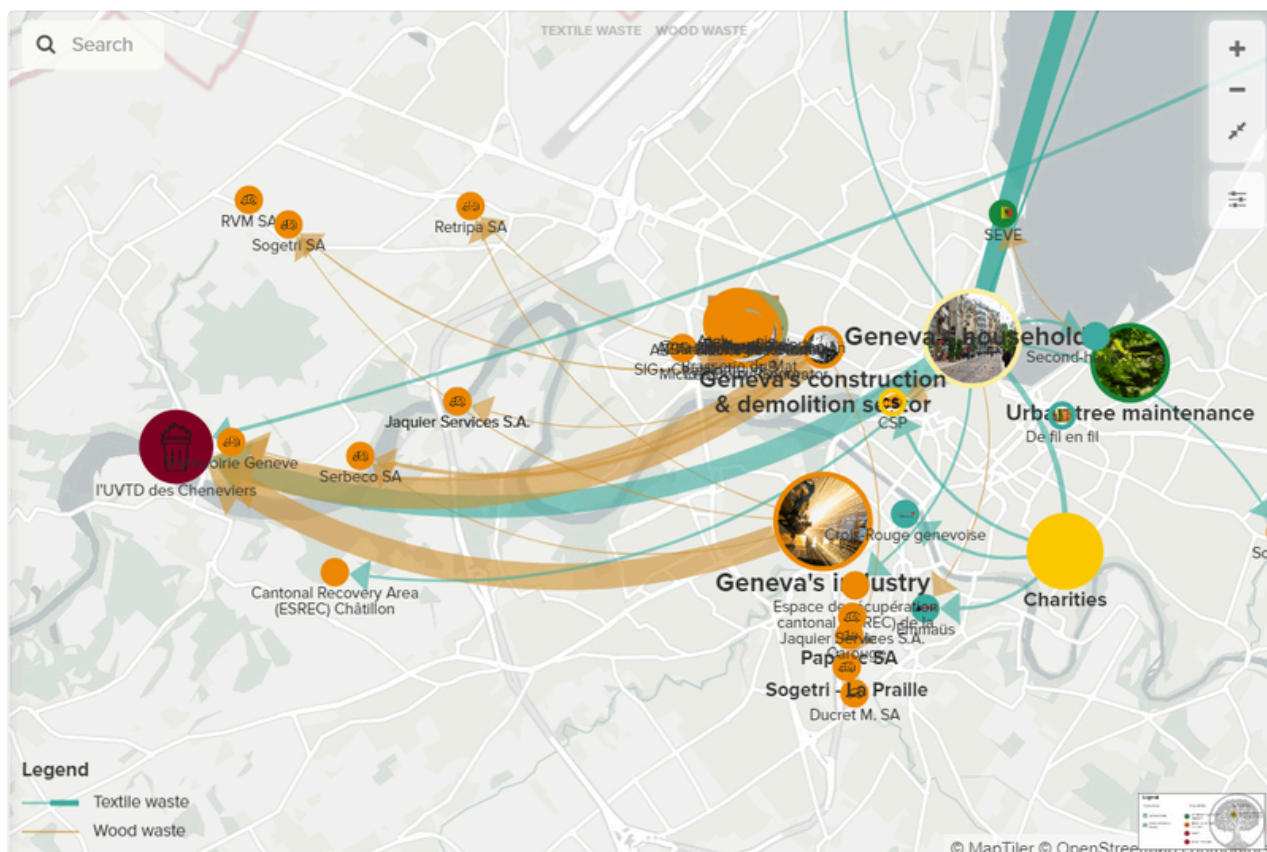


A guidebook to map urban ecosystems (and their resources) – CENTRINNO



- **Map the local context:** In CENTRINNO, cities are mapped through the flows of materials, socio-economic and environmental conditions, land use and cultural assets, amongst others.

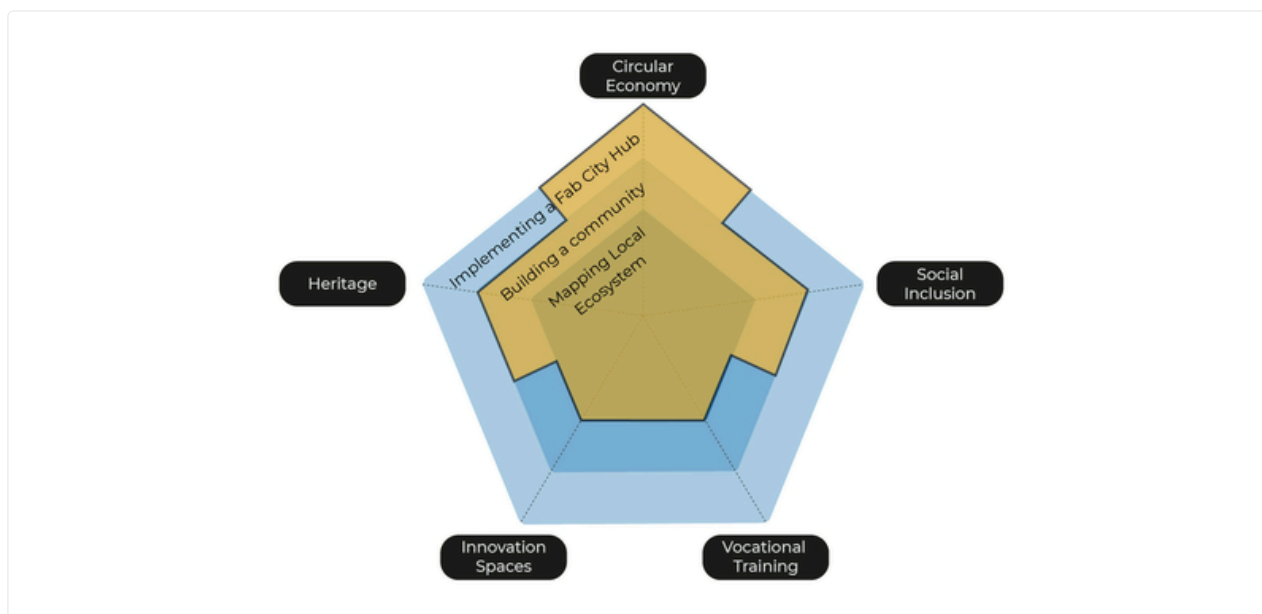
- **Identify stakeholders and local resources:** Long-established residents and newcomers, innovators and traditional craftsmen, old and young - all bring along different skillsets, practices, values and (im)material cultures.
- **Synergize, convene and connect:** The resource inventory process forms the starting point to identify opportunities for more self-managed, locally productive and commons-based neighbourhoods.



Mapping urban waste flows in Geneva.

The Cartography's main objective is connected to Urban Resource Mapping and the understanding of the local environment, but it may also be used for other purposes connected to the [CENTRINNO Framework](#), including to:

- 1 Enable pilots' future innovation hubs and spaces to communicate and promote the value of locally productive urban ecosystems of citizen-driven innovators, makers and SMEs. The Cartography will support this objective by providing a platform that portrays these productive urban makers and the resources they can bring to the transition to a circular and inclusive economy. The Cartography will become the central resource that makes accessible the results of [urban resource mapping](#) to a wider audience.
- 2 Build local capacity to spot opportunities for material symbioses, networking and learning. The platform provides the basis for pilot cities (and their communities) to identify opportunities for implementing circular and socially inclusive value chains. This objective is addressed by mapping stakeholders and their resources to identify materials, infrastructure and machinery that are candidates for "industrial symbioses", and highlighting gaps that are needed to implement circular economy and inclusive production models.
- 3 Support the implementation of activities in [Fab City Hubs](#) related to circularity, such as repair programs or recycling campaigns.



CENTRINNO Cartography within the Framework

You may read an example about how the Paris is implementing its journey in mapping their local ecosystems in CENTRINNO in [the blog post below](#):



How to gather a consistent alternative food system in Paris – CENTRINNO



The Cartography blueprint is available here:



249KB

cartography blueprint.pdf
pdf

A dedicated chapter in the [CENTRINNO Handbook](#) has been dedicated to Circular Economy and CENTRINNO Cartography

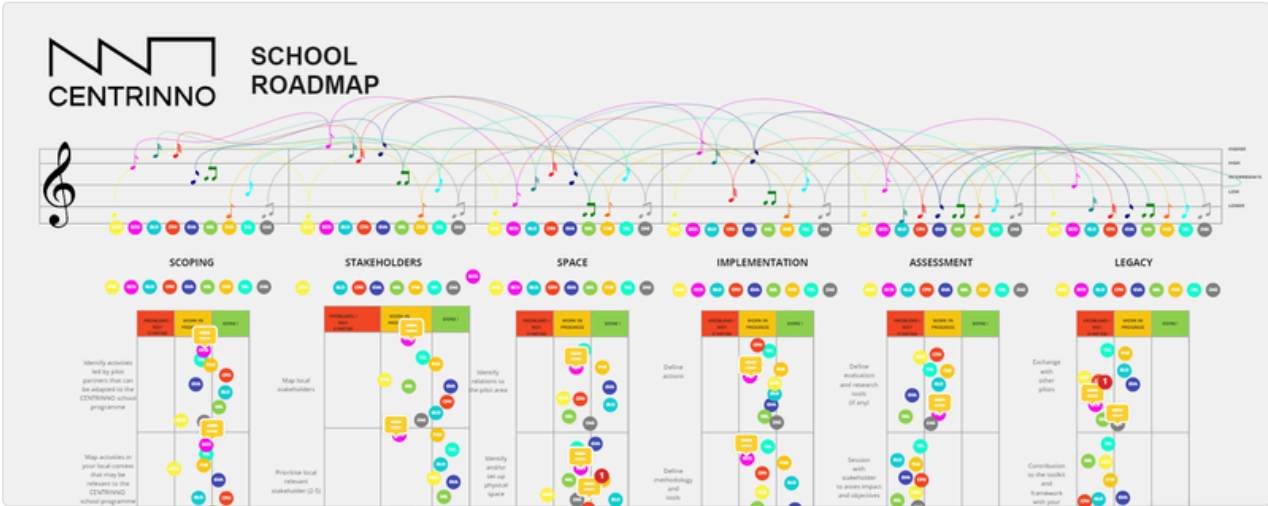
School

Lifelong learning to meet the new professional challenges of the 21st century

The CENTRINNO School comprises all CENTRINNO cities' training activities focusing on lifelong learning to create a better fit between vocational and post-vocational training, and the needs of an inclusive and sustainable economy in the 21st century. It supports pilot cities to fill the gap between formal and informal learning, as well as between existing and upcoming skills and jobs. The strategy and implementation of CENTRINNO School is progressively built hand-in-hand with pilot cities to:

- 1 Redefine and re-establish the value of being a craftsman
- 2 Ensure a better fit for vocational and post-vocational training with the needs of economy
- 3 Foster innovation by introducing digital technologies in artisanal processes and creative industries, based on previous experiences by Fab Labs and makerspaces

The CENTRINNO School doesn't use a specific platform or resource to support pilot cities activities on vocational training. Each city uses its own approach, all supported by [Onl'fait](#), the project partner who will foster exchange and crosspollination across cities. [The CENTRINNO School Roadmap](#) (only accessible to project partners) provides a documentation framework to understand, share and learn the progress on educational activities developed in each of the CENTRINNO nine pilot cities. It comprises six aspects to reflect upon, namely: scoping training activities, mapping local stakeholders connected to them, identifying where they take place, defining how they are implemented, assessing their impact, and exploring how to disseminate and further exploit them in other cities.




CENTRINNO School Roadmap documentation tool

Besides the roadmap, cities in CENTRINNO have been clustered in three groups to facilitate exchanges and collaborations across geographies. Each group has a different approach to training programs, based on their target audience and the partners involved.

Adults & Professional Lifelong Education	Vocational & Formal Education	Community & Informal Education
Blönduós	Barcelona	Amsterdam


Adults & Professional Lifelong Education	Vocational & Formal Education	Community & Informal Education
Geneva	Copenhagen	Tallinn
Milan	Zagreb	

Within these clusters and using the CENTRINNO School roadmap, pilot cities have implemented different types of training activities, from hackathons based on design thinking to foster collaborations between students and companies to informal training programs on the combination of traditional crafts and cutting edge technologies. In [the link below](#), you may have a look at the description of a hackathon implemented in Barcelona:

 Bridging the gap between vocational training and the world outside the classroom –
CENTRINNO

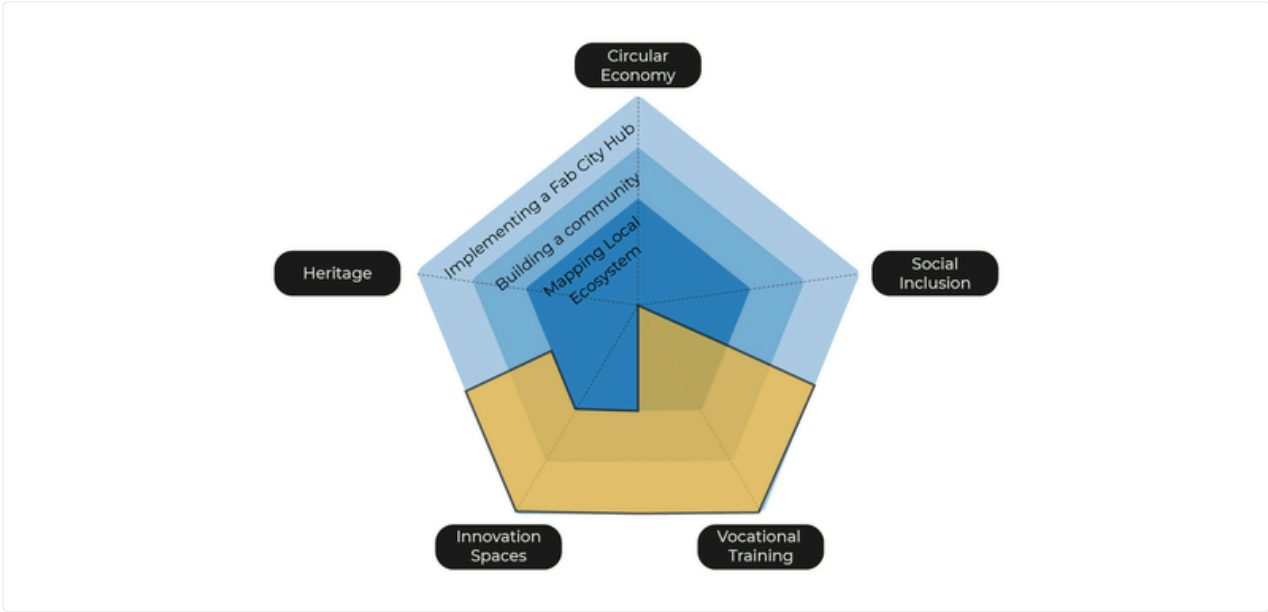
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The CENTRINNO School doesn't use its own specific platform and it is neither reported in a specific deliverable to support pilot cities activities on vocational training. Nevertheless, all tools, approaches and frameworks developed for the CENTRINNO School are included in the Fab City Hub Toolkit, under the step "[build my Fab City Hub as learning ecosystem](#)".

 Build my Fab City Hub as learning ecosystem
Fab City Hub Toolkit


>

Within the framework, the CENTRINNO School is a key platform to enable all practices potentially connected to vocational training aspects, from mapping the knowledge and knowledge gaps of the local ecosystem, to co-creating a community of practice around education, and implementing FCH training programs, fostering cross-sectorial and cross-stakeholder collaborative innovation spaces.



CENTRINNO School within the Framework

The CENTRINNO School blueprint is available here:


266KB

CENTRINNO's SCHOOL blueprint.pdf
pdf

A dedicated chapter in the [CENTRINNO Handbook](#) has been dedicated to Learning Ecosystem and the CENTRINNO's School

Network

Fostering a socially inclusive and commoning approach in cities activities

The Network supports the development of interconnected socially inclusive communities. It has two different scales where interactions take place: The **local hubs' networks** where different actors will collaborate to tackle urban challenges, and **the global knowledge-exchange network** across the nine CENTRINNO cities and beyond.

The two main objectives of the CENTRINNO Network are fostering a socially inclusive approach in pilot cities activities and supporting a "commoning" approach to pilot cities management of resources. The CENTRINNO Network will have different characteristics in each pilot city based on the activities, events, digital exchange systems, or decision-making spaces that are more suited to its local context. Nevertheless, the CENTRINNO Network development will focus in four dimensions:

- 1 Adopting an inclusive governance model to make decisions at pilot city level and in the [FCHs](#)
- 2 Developing or adopting tools to manage interactions between the local hub network and other actors
- 3 Reflecting upon activities and networking events with a socially inclusive lens to find gaps, engage missing actors, or explore new spaces to disseminate the pilot's findings
- 4 Devising innovative ways to collaborate with other actors in and across Fab City Hubs

Local hubs' networks

CENTRINNO pilot cities focus on the local scale to explore inclusive governance models and implement tools to manage interactions between the local hub network and other actors. This work is supported by our partner [IAAC-FLB](#), who fosters the discussion at each pilot city around five key governance aspects:

- Polycentric & collaborative frameworks
- Decision making processes
- Public participation
- Conflict resolution
- Glocal interactions

Adopting an inclusive [governance model in FCHs](#) is a key step towards any hub implementation strategy. To support this, the CENTRINNO Network doesn't use a specific platform or resource to support pilot cities on building their socially inclusive communities. Nevertheless, all tools, approaches and frameworks developed for the CENTRINNO School are included in the Fab City Hub Toolkit, under the step "[get my governance right](#)".



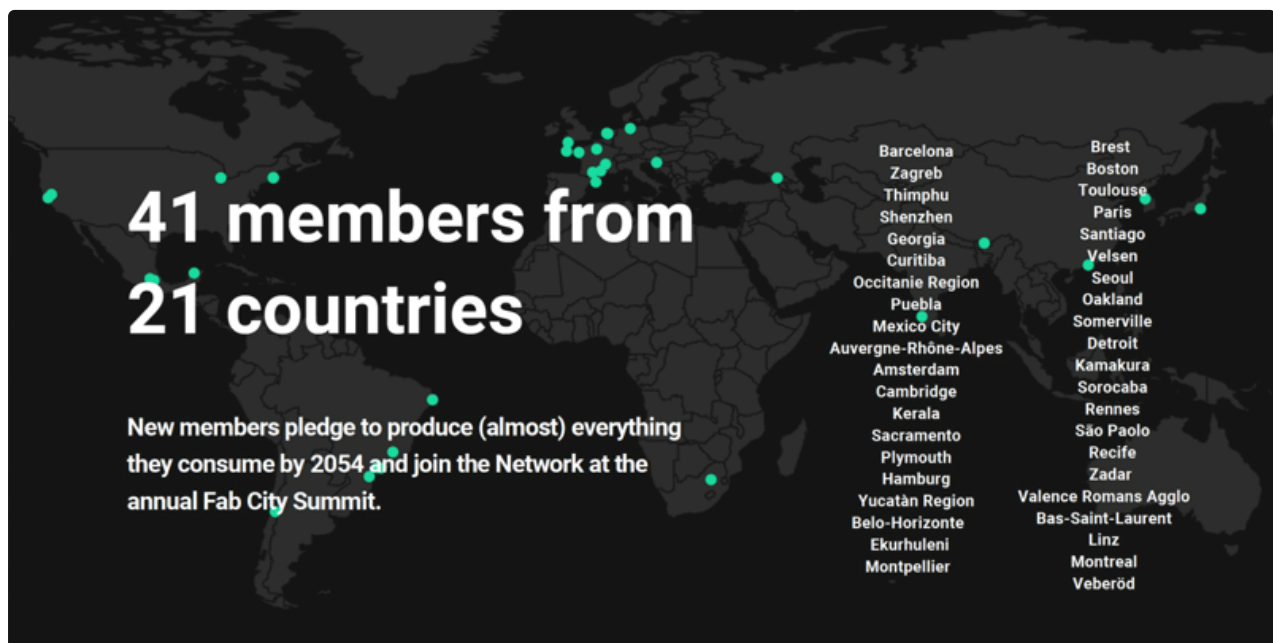
Get my governance right
Fab City Hub Toolkit



A global knowledge-exchange network

The implementation of the CENTRINNO Network relies heavily on the exchanges and interactions across cities. These bottom-up learning process is achieved by reflecting upon ongoing activities, engaging missing actors, or exploring new spaces to disseminate the pilot cities' findings. It also enables innovative ways to collaborate with other actors in and across Fab City Hubs.

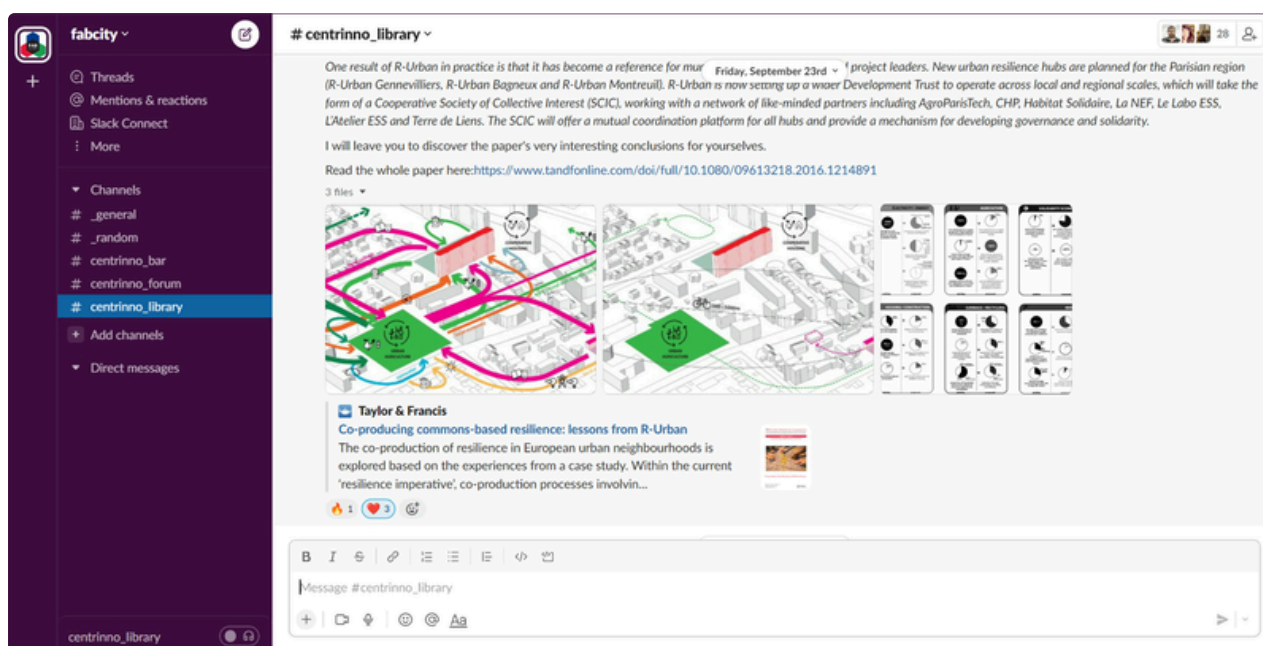
CENTRINNO leverages on the existing infrastructure of [Fab City](#), managing its own experimentation space for CENTRINNO FCHs to work in a small group within the network of 41 exiting Fab Cities.



Fab City Network. Source: [Fab City](#)

The Network uses the CENTRINNO Slack channel as a global exchange platform. This platform lays within the Fab City slack channel and is moderated by our partners at [Volumes](#) together with the [Fab City Foundation](#). This exchange platform is a place for instant communication, collaboration and mutual learning among CENTRINNO community, especially between the nine Fab City Hubs developed during the project's life.

Online exchanges in this platform facilitate CENTRINNO community to feel part of a global movement. The glocal character of the productive and creative hubs is based on a constant connection between the local territory and global economic and cultural dynamics that allow knowledge to travel between different locations. Being part of the larger Fab City community grants the CENTRINNO pilot cities a wider access to people, material and immaterial resources.



The conversation at the CENTRINNO exchange platform takes place in three channels:

- The **centrinno_library** offers a selection of quality content that is extremely useful for pilots. This means that this channel does not promote debates, but essentially only functions as a selection of content published on a regular weekly basis with a tag system to facilitate navigation and searches on specific topics.
- The **centrinno_forum** provide a space to gather and discuss topics of interest to pilots and the Centrinno community. This channel works as a debate space to exchange ideas and points of view.
- The **centrinno_bar** was created with the aim of creating a social meeting point for the Centrinno community. In this channel we promote the free exchange of all kinds of information between all contributors.

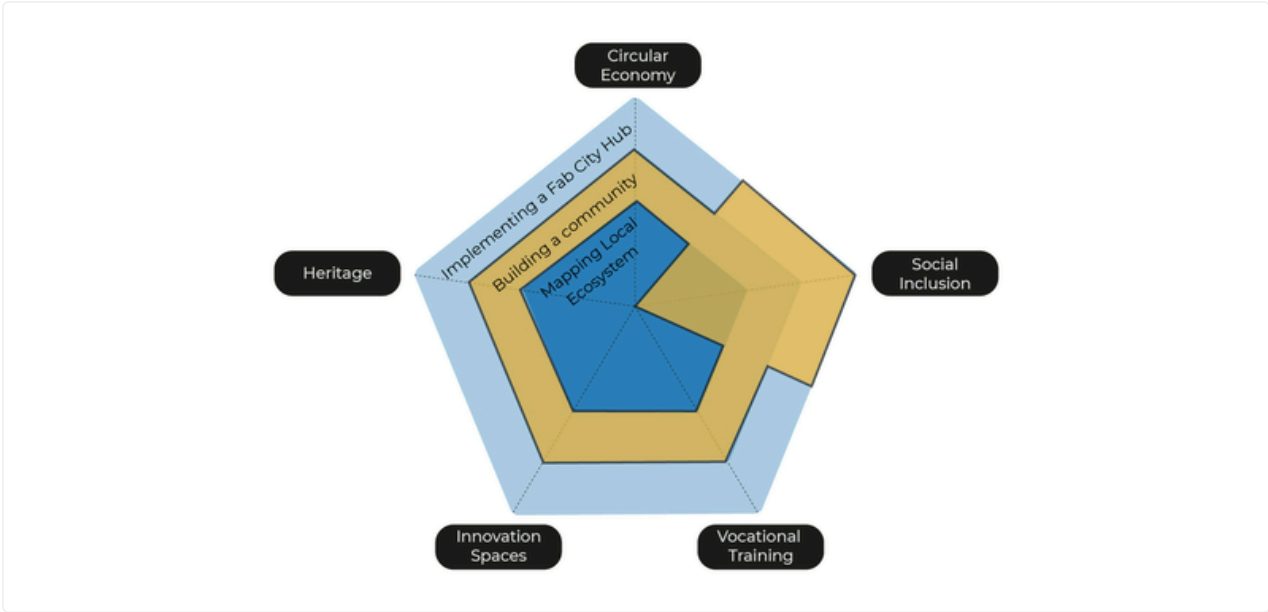
To join the network, [click here!](#)



Slack




Within the [Framework](#), the CENTRINNO Network is a key platform both to enable a reflection on socially inclusive networks locally and to experiment knowledge exchange with a large community that connects local and global scales, connected to all key concepts of the [CENTRINNO approach](#). This platform is also relevant to map potential stakeholder and collaborators gaps, as well to discuss about the configuration of the different groups that are involved in the FCH's activities.



CENTRINNO Network within the Framework

The Network blueprint is available here:


532KB

Networkblueprint.pdf
pdf

A dedicated chapter in the [CENTRINNO Handbook](#) has been dedicated to Social Inclusion and Networks.

Blueprints

Policy development guidelines for replicability and wider use in other cities



2MB

Deliverable 6.7_final - Blueprints and Policy Development Guidelines for Replicability and Wider Use_compressed (1).pdf
pdf

By exploring and assimilating how CENTRINNO resources have been developed and applied in diverse territories, the document presents two levels of blueprints derived from the main projects results: the evolution of its core platforms and the primary outcomes of each CENTRINNO pilot city.

CENTRINNO Platforms' Blueprints

Aligned with the five key concepts – circular economy, heritage, vocational training, innovation spaces and social inclusion – the document brings together the representation of the CENTRINNO platforms creation aimed at supporting a transition of bioregions, cities and neighborhoods towards regenerative, inclusive and productive territories of living and producing.

CENTRINNO Pilots' Blueprints

In a more practical level and drawing inspiration from the CENTRINNO pilot cities – Amsterdam, Barcelona, Blönduós, Copenhagen, Geneva, Milan, Paris, Tallinn, and Zagreb – the document showcases nine distinctive journeys, accompanied by their main outputs for replication alongside a selection of practical tools developed by the local teams. Based on this knowledge, the report also provides potential recommendations for policy making following a peoplecentred approach. The recommendations include strategies for the establishment of distributed and physical Fab City Hubs reflecting on the solution of complex urban challenges Structure of the Document involving stakeholders at various levels in local policy decision-making, ranging from public and private actors and mature and emerging industries to cities and bioregions, Fab Labs, innovation centers and heritage-related organizations. The

recommendations include strategies for the establishment of distributed and physical Fab City Hubs reflecting on the solution of complex urban challenges involving stakeholders at various levels in local policy decision-making, ranging from public and private actors and mature and emerging industries to cities and bioregions, Fab Labs, innovation centers and heritage-related organizations. Within this scope, this document does not intend to cover all the CENTRINNO resources and pilots' solutions as inspiration for policy recommendations, but rather highlight specific best practices connected to the CENTRINNO main areas of intervention. It endeavors to distill the knowledge obtained from the project into an advocacy call, urging for the enhancement of our cities as more livable, productive and inclusive territories.

Impact Assessment

Constant Evaluation of the CENTRINNO Framework

Developed by [TalTech](#), the Impact Assessment methodological approach continuously monitors and evaluates the effectiveness of the CENTRINNO Framework in delivering the desired impact. Impact assessment is an integral part of the project's activities to evaluate impact both in CENTRINNO pilot cities and at the project level.

The main methodological approach employed for the evaluation methodology is **Outcome Mapping**, a planning and assessment methodology applied in projects aiming for sustainable social and structural change. Outcome mapping approaches impact through three interrelated change processes that focus on **(a) outcomes**, reflecting changes in behaviours, actions, and relationships of the people and organisations the project directly interacts; **(b) strategies**, which are employed to achieve the outcomes; and **(c) organisational practices**, which are necessary for the project to remain relevant throughout and after its life-cycle. Respectively, the CENTRINNO evaluation methodology employs outcome mapping to define impact in terms of:

- 1 The achievement of outcomes from the pilot cities' activities related to the [five key concepts](#);
- 2 the relevance of the strategies employed by the project's technical activities to achieve the above outcomes; and
- 3 the effectiveness of the project's approach in developing the organisational practices related to the implementation of Fab City Hubs (see [the FCH ten principles](#)).

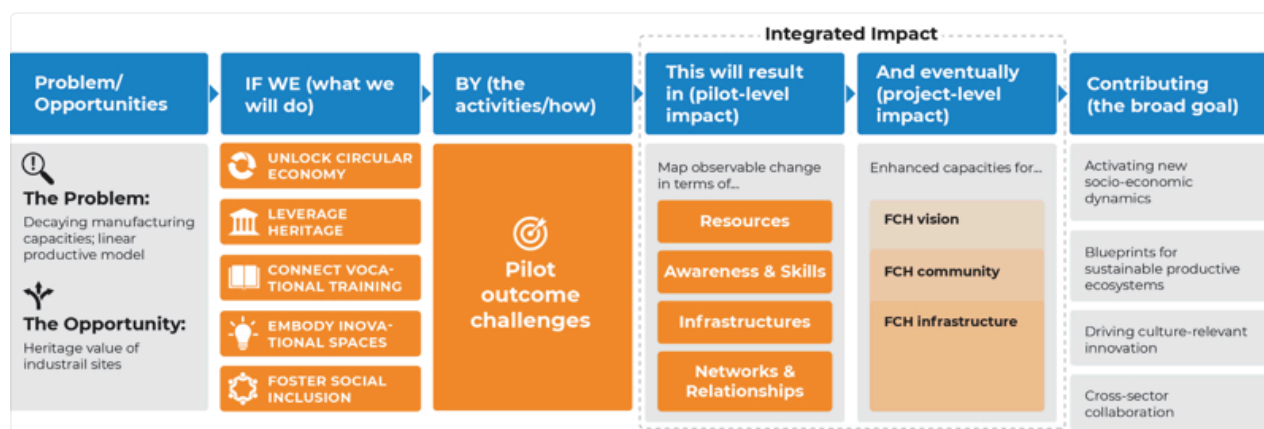
The evaluation methodology is tightly connected with the CENTRINNO framework both conceptually and methodologically. Conceptually, impact assessment aims to provide the means to **understand and evaluate city-level transformation (change) of historic industrial areas and the development of [Fab City Hubs](#)**. The definition of impact following Outcome Mapping aims at demonstrating pathways for this transformation that reflect the pilot participants' values and which they can sustain autonomously. Eventually, making sense of these outcomes, and most importantly why and how they occurred, reflects back into the interpretation of the CENTRINNO Framework and approach.

CENTRINNO Theory's of Change

In order to provide a consistent narrative about the project's envisaged transformation, upon which the evaluation methodology aims to build, impact assessment is employing **a theory of change**.

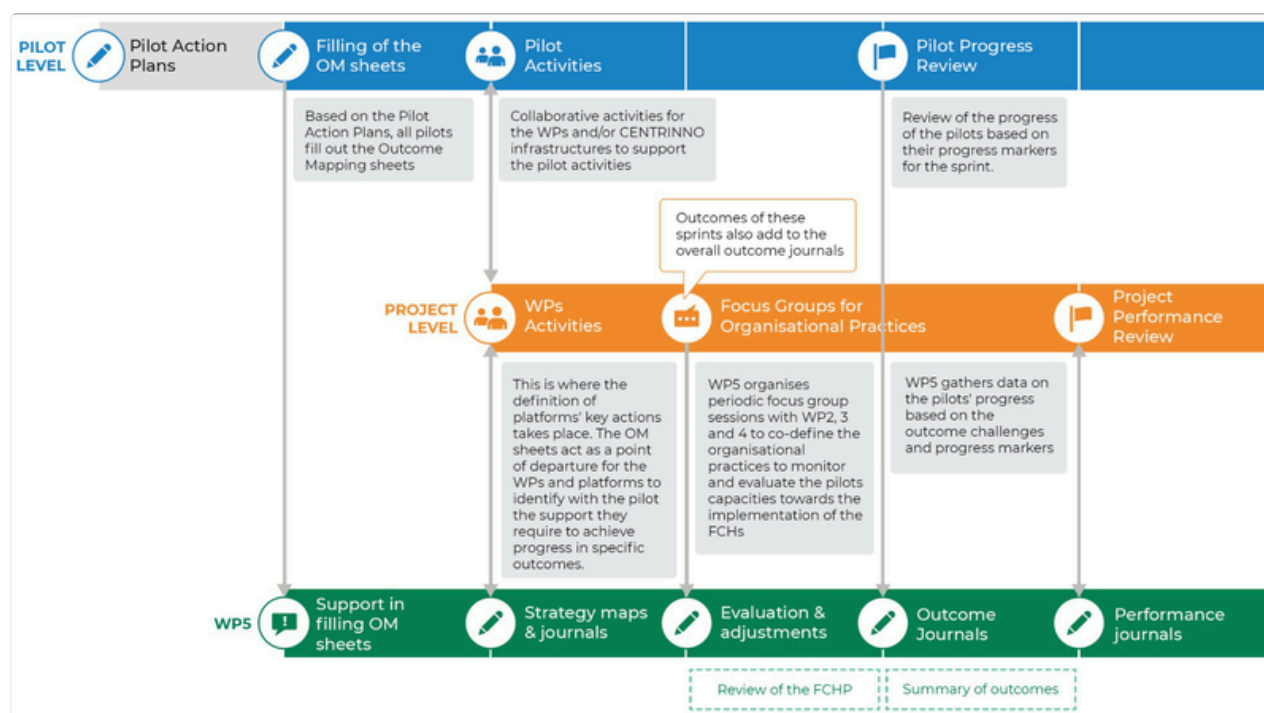
A theory of change provides a clear definition of the project's starting point, assumptions, envisaged activities and ambitions. It helps explain how the project's planned activities contribute to the desired outcomes and, eventually, lead to observable impact. From the perspective of impact assessment, the theory of change provides the main line of narrative upon which the evaluation methodology aims to build, connecting impact with the CENTRINNO framework and approach.

In the context of CENTRINNO, instead of a typical linear model (i.e., inputs - activities - outputs - outcomes - impacts), the theory of change has been developed using [a narrative-based model](#) that is better fit for the purpose of reflecting the change process consistent with Outcome Mapping. The theory of change is composed by six building blocks:



CENTRINNO theory of change. Source: Pazaitis et al (2022)

To monitor and evaluate these processes of change, a continuous and participatory process has been designed. Pilot participants are included in the definition of the desired outcomes based on their values and local specificities. Project partners (WPs) are engaged in the definition of the strategies, including the key actions and tools offered to the pilot cities, as well as in the assessment of the organisational practices for FCHs and the relevant long-term implications. In this process, the evaluation methodology offers a common vocabulary to understand the CENTRINNO impact, and a structured process, including monitoring tools and step-by-step guides on their application, that systematise the project's data and resources. The main outputs of the evaluation methodology will be two impact assessment reports, to be delivered during 2023. The coordination of the relevant processes is planned to synchronise with the development of the pilot sprints, defining specified checkpoints for planning and reflection.



Visualisation of the impact assessment processes. Source: Pazaitis et al (2022)

Two public reports was developped during the project.

CENTRINNO Handbook

The book 'Regenerative neighbourhoods in the making' retraces the practices of neighbourhood regeneration through design during the three and half years of the CENTRINNO project, co-funded by the European Union. It aims to make accessible the project's methodology and to supports territorial change-makers, from policy agents and urban planners, to designers and citizens. The book gives to the reader a way to be more familiar with the topic of neighbourhood regeneration while at the same time being more equipped to develop local interventions to transform old industrial sites into locally productive hubs. It questions, opens, illustrates, and culturally embeds emerging practices of collective production in urban spaces as a plausible alternative to reconstruct the relationship between humans and natural resources at the hyper-local, regional and planetary scales.



2MB

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pdf

Regenerative neighbourhoods in the making, is a publication developed as a part of the CENTRINNO project.

Written, edited, and advised in a collaborative process led by Fab Lab Barcelona, Institute for Advanced Architecture of Catalonia, Barcelona, 2024 in collaboration with CENTRINNO partners.

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Contributions A big thanks to all the contributors and CENTRINNO partners:

Design Society - DDC, Departament D'educació - Generalitat De Catalunya, Fab Lab Barcelona/ Institut D'arquitectura Avançada De Catalunya, Fab City Grand Paris, Fablab Zagreb, Haskoli Islands - HI, Kobenhavns Kommune, Manifattura Digitale In Ex Ansaldo Rete Di Imprese, Poblenou Urban District, Sony Europe, Stichting Hout- En Meubileringscollege - HMC, Stichting Pakhuis De Zwijger, Sveuciliste U Zagrebu Arhitektonski Fakultet - UOZ, Textilmioostoo Islands Og Pekkingarsetur A Blonduosi - ITC

Information, comments, and discussions: www.centrinno.eu


To be cited as Real, Marion, Calvo Juarez Milena, Diez Tomas, Ritter Frenzi, Even-Zohar Jonathan, Dibbits Hester, Fontana Valenti Carlotta, Cingolani Francesco, Olivotto Cristina, Pazaitis Alexandros. Regenerative neighbourhoods in the making. Centrinno Handbook. Fab Lab Barcelona, IAAC, 2024. ISBN: 978-84-120886-5-6 This work is licensed under a Creative Commons AttributionNonCommercial-ShareAlike 4.0 International License.

All the daily information of the project are communicated via the [CENTRINNO website](https://www.centrinno.eu). If you want to take part in the discussion, stay tuned and follow the project's channels on [Facebook](#), [Instagram](#), [Linkedin](#), or [youtube](#)!

Policy recommendations

Partners have worked in recommendations for future policies. Two reports were created:

1) Towards innovative, inclusive and creative hubs in European cities



Policy Report – CENTRINNO

CENTRINNO

>

This policy report makes use of the learnings from Horizon 2020 CENTRINNO, T-Factor and HUB-IN projects aiming to provide guidance in the implementation of heritage-driven urban regeneration approaches by making cities more creative, resilient, and innovative.



Manifattura Tabacchi Firenze, photo credits Giovanni Savi

TOWARDS INNOVATIVE, INCLUSIVE AND CREATIVE HUBS IN EUROPEAN CITIES A POLICY REPORT BY CENTRINNO, HUB-IN AND T-FACTOR CLUSTERING ACTIVITIES



CENTRINNO, HUB-IN and T-FACTOR
are funded under Horizon 2020

2) VOICES FOR THE FUTURE(S) OF REGENERATIVE NEIGHBORHOODS: POLICY ADVOCACY FOR EU, LOCAL POLICYMAKERS, AND FAB CITY HUBS

As we navigate the complex interconnections between global directives, local strategies, and innovation ecosystems, CENTRINNO project shared 9 main categories of policy guidelines outlining what the

European Union, local policymakers, and (existing or upcoming) Fab City Hubs can do in the next few years to support cities towards regenerative urban models.

<div>6.</div> <div>VOICES FOR THE FUTURE(S) OF REGENERATIVE NEIGHBORHOODS</div> <div>POLICY ADVOCACY FOR EU, LOCAL POLICYMAKERS, AND FAB CITY HUBS</div>	<p>The future of regenerative neighborhoods and cities stands at the forefront of sustainable urban development. It embodies the vision of vibrant communities thriving in symbiosis with their surroundings, embracing diverse voices and perspectives, adopting circular practices for knowledge exchange and local production, and valorizing their unique local identity and heritage.</p> <p>During the CENTRINNO project, numerous methodologies and micro missions were implemented to devise and showcase strategies, approaches, and solutions for revitalizing industrial historic sites into community-driven innovation hubs. These efforts aimed to address ecological challenges, foster a diverse, inclusive, and innovative urban economy, and leverage heritage as a catalyst for both innovation and social inclusion.</p> <p>In this report, we delve into a series of policy recommendations that emerged from the knowledge gained in nine different European territories as inspirations to propel this vision into reality. Drawing upon statements provided by each CENTRINNO pilot team, these recommendations converge on a shared goal: advocating for a transformative shift towards regenerative urban landscapes that nurture resilience and circularity, while emphasizing local strengths.</p> <p>Working within the bioregion, city or neighborhood contexts offers ample opportunity to enact substantial change on a local scale. Nonetheless, it's evident that the potential for a more profound impact exists when these principles and messages are disseminated more broadly, facilitating the necessary systemic change across the EU and beyond.</p> <p>As we navigate the complex interconnections between global directives, local strategies, and innovation ecosystems, CENTRINNO project shares 9 main categories of policy guidelines outlining what the European Union, local policymakers, and (existing or upcoming) Fab City Hubs can do in the next few years to support cities towards regenerative urban models.</p>
<div>152</div> <div>Blueprints and policy development guidelines for replicability and wider user</div>	<div>Voices for the future(s) of regenerative neighborhoods</div> <div>153</div>

1. THE EUROPEAN UNION SHOULD PRIORITIZE COMPREHENSIVE SUPPORT, INCLUDING **FUNDING, RESEARCH OPPORTUNITIES, AND POLICY INITIATIVES**, TO BOLSTER SUSTAINABLE URBAN DEVELOPMENT WHILE **NURTURING DIVERSE AND RESILIENT COMMUNITIES** ACROSS TERRITORIES.

Funding Support

- The EU should allocate structural and investment funding opportunities for bottom-up initiatives that focus on re-localizing production on the city scale, combining the creative sector with local manufactures.
- The EU should continue to provide long-term funding for action research projects.
- The EU should create more financial, regulatory and infrastructure incentives for local community creation and commons-based community hubs, fostering social networks, local production, and resilience.

Research & Education

- The EU should promote investigation initiatives based on emerging challenges to transform urban landscapes through design to match with the unprecedented need for a fairer and greener future.
- The EU should advocate for EU-level collaborations among vocational training schools to enhance education quality and reputation, fostering trans-European partnerships for improved vocational education standards.
- The EU should launch initiatives facilitating knowledge sharing between cities to manage urbanization while maintaining diversity with room for different income groups and types of businesses.

Circular Economy & Sustainable Urban Development

- The EU should promote the widespread adoption of circular economy practices, such as waste reduction strategies, product lifecycle extensions, digital solutions, and circular design principles offering scientific evaluation methods to assess their effectiveness.
- The EU should articulate specific long-term strategies for sustainable urban development. This involves actively endorsing and providing tangible support for bottom-up initiatives to foster resilient urban communities through policy alignment, data and research support, and seed funding for pilot projects.
- The EU should support initiatives that promote cultural heritage and its transformation instead of demolition.

2. LOCAL POLICY MAKERS SHOULD SPEARHEAD A COMPREHENSIVE STRATEGY THAT EMBRACES **HERITAGE PRESERVATION, MULTI STAKEHOLDER COLLABORATION, AND CIRCULAR ECONOMY PRINCIPLES** TO FOSTER SUSTAINABLE URBAN DEVELOPMENT IN CITIES.

Infrastructure & heritage preservation

- Local Policy Makers should facilitate the transformation of reclaimed industrial heritage buildings into sustainable creative hubs accessible to the community, ensuring city planning regulations and zoning laws account for space requirements.
- Local Policy Makers should focus on preserving industrial heritage buildings for creative purposes, integrating working spaces to maintain diversity in economy businesses, and offering flexibility within urban development plans.
- Local Policy Makers should allocate space within local community buildings for grassroots initiatives, establishing a regulatory framework to implement European best practices around innovation and creative initiatives within the local context.

Stakeholder engagement & networking

- Local Policy Makers should involve and engage local stakeholders in development plans, foster the creation of local networks to enhance the resilience of small businesses, and encourage trustworthy collaborations between makerspaces and schools to promote vocational training and creativity among children.
- Local Policy Makers should invest effort in researching and fostering horizontal collaboration with existing local actors engaged in sustainable development (e.g. universities, civil society, real estate, grassroots organizations), fostering inclusive and resilient partnerships through bottom-up project approaches.
- Local Policy Makers should support networking opportunities of Fab City hubs by encouraging active participation of citizens in training programs and launching campaigns to raise awareness about the benefits of these structures among the local community.

Circular Economy Planning and coherent long-term strategy

- Local Policy Makers should conduct meticulous area-wise assessments to understand the specific needs of makers and their requirements for circular transitions. Emphasize the importance of contextualizing challenges faced by makers rather than employing citywide policies that might generalize issues.
- Local Policy Makers should develop a local plan for circular economy initiatives, involving stakeholders, mapping organizations' activities and needs, and creating an evaluation matrix. Maintain a long-term strategic approach to urban social model transition, avoiding abrupt changes based on short-term events.

3. FAB CITY HUBS SHOULD FUNCTION AS **CATALYSTS FOR LOCAL ECOSYSTEMS**, FOSTERING SYNERGIES AMONG CIRCULAR ECONOMY INITIATIVES, SOCIAL INCLUSION ENDEAVORS, AND LOCAL PRODUCTION NETWORKS.

Ecosystem Facilitation & Synergy Identification

- Fab City Hubs should serve as facilitators and connectors within the local ecosystem, identifying synergies between actors involved in circular economy, social inclusion, and local production initiatives.
- Fab City Hubs should involve relevant local stakeholders, identify their needs, and initiate collaborations with local schools through workshops targeting diverse groups, and fostering a diverse user base.

Emphasis on Local Strengths & Networking

- Fab City Hubs should focus on regional, national, and neighbourhood strengths, building connections, and being open to experimenting with new ideas and approaches.
- Fab City Hubs should forge strong connections by working closely with local producers, creating community, and giving visibility to their ongoing activities. Simultaneously, these hubs should establish a community presence and maintain extensive networks, both locally and internationally, to enhance collaboration and knowledge exchange.
- Fab City Hubs should keep advocating for local production and change, emphasizing the importance of consistently communicating these narratives to reach a broader audience.

Promotion of Circular Economy & Multidisciplinary Approach

- Fab City Hubs should promote circular economy awareness through community-oriented activities such as open workshops, educational programs, collaborative projects and interactive.
- Fab City Hubs should maintain a continuous mindset of openness and cultivate holistic approach and multidisciplinary expertise to adapt to evolving dynamics within the community and surroundings.
- Fab City Hubs should develop sustainable models, experiment with commons-based and social enterprise business models, and create value through complementary infrastructures for testing and innovation.

This work was part of the Deliverable "CENTRINNO BLUEPRINTS: Policy development guidelines for replicability and wider use in other cities" presented [here](#).

Glossary

Trying to avoid confusion and misinterpretation of words!

Circular Economy	Circular Economy is a CENTRINNO Key Concept, that emphasises a transformative approach to resource management, promoting sustainability and reducing environmental impact
Community	Community is one of the main action areas identified in CENTRINNO defined as groups of people that may come together locally or globally and over a period of time form a community based on their interest or shared concerns. The project encourages inclusive communities of practice and facilitates the engagement of local stakeholders.
Emotion Networking	Emotion Networking is an exercise created by Reinwardt Academy, that provides insights into complicated interplays between emotions, interests and different sorts of knowledge, and between items of heritage and people.
Fab City Full Stack framework	The Fab City Full Stack is a framework that helps cities and regions interpret the Fab City challenge and guides them to implement it in a multiscalar and ecosystemic approach.
Fab City Hubs	Fab City Hubs are open spaces for city making. They work as a physical interface to connect actors within a Fab City Prototype (usually a neighbourhood) and foster collaboration and exchange of skills and knowledge between local communities in a given territory. (FCH Toolkit GitBook)
Fab City and Fab City Hubs Network	The (EU) Fab City Hub Network refers to the group of nine European Pilot cities, members of the CENTRINNO consortium, that are currently testing and implementing the first innovative models of FCH in their local regions. Both networks contribute to consolidating the model of Fab City.
CENTRINNO Framework	The CENTRINNO Framework is a resource created during the CENTRINNO project to support partners in consolidating their interventions in local territories. It describes a methodological approach to neighbourhood regeneration composed of three action areas, five key concepts, and associated tools and platforms.
Heritage	Heritage is one of the CENTRINNO Key Concepts, defined as a notion, a label applied to items from the past, in the present, toward the future.
Key Concepts and concept owners	The CENTRINNO Framework defines five key concepts which are Circular Economy, Heritage, Innovation Spaces, Learning Ecosystems and Social Inclusion. For each concept, one organisation partner was responsible to define and operationalise the concept through the design and testing of tools and strategies, during the project. Those organisation partners are called "concept owners".
Infrastructure	Infrastructure is one of the main action areas identified in CENTRINNO focusing on the means and local capacities to achieve transformations towards regenerative neighbourhoods and development of Fab City Hubs.
Innovation Spaces	Innovation Spaces is one of the CENTRINNO Key Concepts, framing physical and hybrid spaces in which innovative productive activities are experimented with from the bottom-up, based on collaboration between different stakeholders and a democratic access to technology and knowledge.

Learning Ecosystems	Learning Ecosystems is one of the CENTRINNO Key Concepts, previously entitled Vocation Training. This Key Concept looks after the importance of learning in regenerative communities and Fab City Hubs by designing training programs to acquire practical skills and a "maker" mindset. Focusing on vocational students, adult professionals and citizens, the overarching goal is to effectively address skills, environmental and knowledge issues.
Maker and craft cultures	CENTRINNO project is led by partners who value the maker and craft cultures, as community of people who design, make, and unmake, share in an open-source way about fabrication processes, questioning the role of art and technology in the current societal transformations.
(urban) Material flow diagrams	Material Flow Analysis (MFA) is a method to quantify the inputs and outputs of physical or non-physical resources (energy, materials, goods) that flow through a predefined system (here - a city). MFAs are used to understand a city's consumption of different types of materials from a higher level, as well as the types of waste it is generating.
Micro-Mission	Micro-Mission is a term used in CENTRINNO as part of the experimentation with the nine pilots' cities as a unit of action regarding each of the five CENTRINNO key concepts. Pilots organized three sprints during the project with dedicated micro-missions for each concept according to their local context.
Neighbourhood	A neighbourhood is generally defined as a geographical area within a city, typically characterised by shared physical proximity, social interactions, and a sense of local identity among its residents. It is a fundamental building block of urban and suburban environments, encompassing a cluster of residences, businesses, public spaces, and community amenities. As intermediate scales between domestic places and the city, they are looked in CENTRINNO as appropriate playgrounds for sharing, synergizing, and experimenting with change.
Organisational practices	Organisational practices were defined in CENTRINNO as skills, competences, and processes necessary for supporting the development of regenerative neighbourhood processes on the long-term.
Platforms	Tools developed during the project supporting pilots in implementing context-driven micro missions for each of the key concept. It counts digital platforms (the CENTRINNO Cartography, the Living Archive, the Fab City Hubs toolkit), an elaborated approach (CENTRINNO School) and the Network.
Pilots (Pilot teams)	CENTRINNO run an experimentation with nine pilot cities and associate pilot teams taking part in the different micro-mission on the project.
PITO-DIDO	"Product In Trash Out towards Data In Data Out" is a terminology used by Fab City to emphasize locally-circular economies that foster data rather than product exchanges.
Post-industrial cities	Post-Industrial cities refer to the cities that are being regenerated after industrial uses of their lands.
Research Diary	Research Diary in this document refer to an essay written by concept owner to situate, illustrate and reflect on their research during the project.
Social Inclusion	Social Inclusion is one of the five Key concepts of CENTRINNO, addressing the dimension of inclusivity in the process of neighbourhood transformations.

(Industrial) Site Area	Buildings or locations in cities that have once been dominated by industrial functions. They can include abandoned brownfields or derelict infrastructure, as well as areas that have found new functions and uses for industrial heritage buildings. Such sites are present in current neighbourhoods in or outside cities.
Territory - Place	Those two words are used in the book to refer to the studied areas (site area, neighbourhood, cities, bioregions) as geographical spaces qualified by natural and cultural particularities and potentially by administrative perimeter defined by their own national context.
Toolkit/Tools	A carefully curated selection of tools designed to meet specific needs. Each tool is described in terms of its potential purposes and/or outcomes and how it contributes to an overall objective. Depending on the context, different combinations of tools can be used to achieve specific goals. It is important to specify that in this context the term "Tool" is a general concept encompassing methods, workshops, digital platforms, various event formats, and school programs, best practice activities and event formats that can be replicated and adapted by others.
Urban ecosystems	In CENTRINNO, industrial and urban ecosystems are understood as complex and interconnected systems that embrace people and their communities, ecological systems, as well as industrial systems. Industrial and Urban Ecology are field of research that observe the metabolism of such ecosystems.
Vision	Vision is one of the main action areas identified in CENTRINNO focusing on defining the common grounds and envisioning the futures of the investigated area within the community. Mapping is one of the shared activities that is recommended by CENTRINNO partners to engage in regenerative processes in the early stage.

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CENTRINNO Publications



Unfolding Centrinno's Project Framework: Co-designing regenerative processes to collectively construct pathways towards productive cities

RSD | Systemic Design Symposium



Fab City Hubs: Interfaces for community building and playgrounds for new innovative urban actions

Zenodo



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