

DELIVERABLE 3.1

CREATIVE AND PRODUCTIVE HUBS JOURNAL

Submission date: 29/4/2021

Project start date: 01/09/2020

Duration: 42 Months



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 869595

DELIVERABLE FACTSHEET

| | |
|---|---|
| Work Package | WP3 Fab City Hubs as Network Activators |
| Deliverable | D3.1 Creative and Productive Hubs Journal |
| Due Date | M8: 30 April 2021 |
| Submission Date | M8: 30 April 2021 |
| Dissemination Level | <input checked="" type="checkbox"/> P – Public <input type="checkbox"/> CO – Confidential |
| Deliverable Lead | ECHN |
| Author(s) | Davide Amato (ECHN), George Kalathas (ECHN), Chryssa Vlachopoulou (ECHN), Francesco Cingolani (VOL), Carlotta Fontana Valenti (VOL), Wolf Kühr (VOL), Kate Armstrong (IAAC), Tomàs Diez (IAAC), Jessica Carmen Guy (IAAC), Pablo Muñoz Unceta (IAAC), Nanne Brouwer (WAAG), Frenzi Ritter (META). |
| Point of Contact | Chryssa Vlachopoulou (chryssa@creativehubs.net) |
| Reviewers | Dick van Dijk (WAAG), Vincent Guimas (FCGP). |
| Status | <input type="checkbox"/> Plan <input type="checkbox"/> Draft <input type="checkbox"/> Working <input checked="" type="checkbox"/> Final <input type="checkbox"/> Approved |
| Abstract (for public dissemination only) | <p>The deliverable presents a detailed review of existing creative and productive hubs based on the most relevant experiences around Europe in the last 40 years of history of makerspace, hackerspace, fab labs, third spaces, coworking and other hubs for creative industries.</p> <p>The review was conducted based on specific criteria in order to classify different typologies of hubs eventually providing a user-oriented tool aiming to shape a common vision of what a Fab City Hub is.</p> |
| Keywords | CENTRINNO; Creative Hubs; Productive Hubs; Fab Labs; Makerspaces; Third Places; Fab City Hubs; Hub Portraits; |
| Statement of Originality | <p>This deliverable contains original unpublished work except where clearly indicated otherwise.</p> <p>Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.</p> |

REVISION HISTORY

| Version | Date | Author(s) | Organization | Description |
|---------|------------|--|--------------|--|
| 0.1 | 07/04/2021 | Davide Amato, George Kalathas, Cryssa Vlachopoulou | ECHN | First draft |
| | | Francesco Cingolani, Carlotta Fontana Valenti, Wolf Kühr | VOL | |
| | | Kate Armstrong, Tomàs Diez, Jessica Carmen Guy, Pablo Muñoz Unceta | IAAC | |
| | | Nanne Brouwer | WAAG | |
| | | Frenzi Ritter | META | |
| 0.2 | 14/04/2021 | Davide Amato | ECHN | Additional contributions by partners |
| | | Carlotta Fontana Valenti | VOL | |
| | | Pablo Muñoz Unceta | IAAC | |
| 0.3 | 14/04/2021 | Dick van Dijk | WAAG | Peer review |
| | | Vincent Guimas | FCGP | |
| 0.4 | 20/04/2021 | Davide Amato | ECHN | Final draft |
| 0.5 | 22/04/2021 | Armend Duzha | IAAC | Quality check |
| 1.0 | 30/04/2021 | Davide Amato | ECHN | Final version by the consortium to be submitted to the EC. |

Disclaimer

This document contains information, which is the copyright of CENTRINNO consortium, and may not be copied, reproduced, stored in a retrieval system or transmitted, in any form or by any means, in whole or in part, without written permission. The commercial use of any information contained in this document may require a license from the proprietor of that information. The document must be referenced if used in a publication.

The European Commission is not liable for any use that may be made of the information contained herein.

EXECUTIVE SUMMARY

The Creative and Productive Hubs Journal articulates a thorough study of Creative and Productive Hubs (CPH), examining their rise and development in Europe in the last forty years and their current remarkable experiences. The outcomes of this report will represent valuable inspirations for CENTRINNO's pilot cities.

CPHs are at the forefront of the transformation undergone in European cities in the last decades, where new urban models combined with digital fabrication technologies fostered new ways of production and knowledge sharing within cities. The term “creative and productive hubs” reflects the synergy between the makers movement and creative hubs, giving birth to an umbrella concept that encompasses a huge variety of typologies and activities. The fluid and diverse nature of CPHs implies a constant evolution of the term, which reflects the hubs' multidimensionality.

Through a historic lens, this report acknowledges CPHs as the initiators of a local and global networked ecosystem, offering hybrid and distributed spaces where different subjects collaborate and broaden their impact to whole communities and neighbourhoods. This historical perspective is backed up by a thorough analysis of fifteen CPHs that reflect a heterogeneous panorama of good practices, which indicate the possible developments of Fab City Hubs (FCH) in Europe. With an iterative approach, the hubs review included FCHs and communities of disparate nature, size and background, highlighting how each of them articulates the five key concepts of CENTRINNO, namely circularity, inclusion, education, innovation and heritage. This scrutiny has produced ten main principles that illustrate how to envision future FCHs, including the communities and the facilities that come along with them.

In particular, the main outcomes revealed that each hub needs to meet the specific needs of the context they are embedded in, which vary from city to city. If there is no universal method to implement a CPH, it is unequivocal that each hub acts as a powerful focal point that caters different communities and nurtures a broad urban ecosystem. By facilitating innovative practices, new production systems and an enhanced flow of knowledge, CPHs emerge as platforms for community building and playgrounds for new innovative urban actions. This vision brings to light important political connotations, alongside the need to acknowledge each city's historic background. In this way, new FCHs will be able to align to local productive, social and cultural traditions. The result would be a joint collaboration among different actors towards CENTRINNO's vision of more innovative cities, where citizens are at the core of sustainable transformation

Ultimately, the Creative and Productive Hubs Journal gives a comprehensive picture of the current developments of CPHs in Europe, taking into account their historic evolution and their local peculiarities. The first takeaways of this report are going to play a crucial role in the next steps of CENTRINNO, offering the pilots in-depth insights, inspiration and a clear framework.

TABLE OF CONTENTS

| | |
|--|-----------|
| REVISION HISTORY | 3 |
| EXECUTIVE SUMMARY | 4 |
| 1. INTRODUCTION..... | 9 |
| 1.1. Purpose and Scope | 9 |
| 1.2. Contribution to other Deliverables | 10 |
| 1.3. Structure of the Document..... | 10 |
| 2. BACKGROUND..... | 12 |
| 2.1 Definitions and Glossary..... | 12 |
| 2.2. Fab City Global Initiative | 14 |
| 2.2.1 From Fab Labs to Fab Cities | 14 |
| 2.2.2 The Structure of Fab City Global Initiative | 15 |
| 2.2.3 Fab City and CENTRINNO..... | 15 |
| 2.3. Creative and Productive Hubs in the last 40 years | 16 |
| 2.3.1 Creative and Productive Hubs as sites of renewed meanings of production, knowledge and innovation..... | 16 |
| 2.3.2 The subjects. Everyone is a contributor? | 17 |
| 2.3.3 Spaces of complexity: the physical, the social and the political dimensions are overlapped. | 19 |
| 2.3.4 Physical and digital networked ecosystems..... | 21 |
| 2.3.5 Future trajectories for Fab City Hubs | 23 |
| 3. METHODOLOGY..... | 26 |
| 3.1. The Iterative Methodology of the Hub Portraits..... | 27 |
| 3.2. Hubs' Criteria in CENTRINNO | 29 |
| 3.2.1. Hubs and Circularity | 30 |
| 3.2.2. Hubs and Inclusion..... | 31 |
| 3.2.3. Hubs and Education | 32 |
| 3.2.4. Hubs and Innovation | 33 |
| 3.2.5. Hubs and Heritage | 34 |
| 4. Creative and Productive Hub Portraits..... | 36 |
| 4.1. Starred portraits | 39 |
| 4.1.1. Fab Lab Barcelona: a Fab Lab that expands beyond the walls of the lab | 42 |

| | |
|--|-----------|
| 4.1.2. Every One, Every Day: the hub as a distributed infrastructure in the city and for the citizens..... | 47 |
| 3.1.3. Darwin: a large-scale hub based on a collective and ecological governance..... | 52 |
| 4.1.4. Lottozero: a creative hub but also a consultancy centre for revamping traditional skills..... | 57 |
| 4.1.5. Tzoumakers: super small, super specific, super connected..... | 62 |
| 4.2. Lesson Learned from the Hub Portraits..... | 66 |
| 4.2.1 Fab City Hub Vision | 67 |
| 4.2.2. Fab City Hub and Community | 71 |
| 4.2.3. Fab City Hub and Infrastructure | 73 |
| 5. CONCLUSIONS | 76 |
| REFERENCES | 78 |

LIST OF TABLES

| | |
|---|----|
| Table 1 - Fact Sheet Fab Lab Barcelona..... | 44 |
| Table 2 - Fact Sheet Every One Every Day..... | 49 |
| Table 3 - Fact Sheet Darwin..... | 54 |
| Table 4 - Fact Sheet Lottozero..... | 59 |
| Table 5 - Fact Sheet Tzoumakers | 63 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1 - FCH as sites of renewed production, knowledge and innovation..... | 24 |
| Figure 2 - CENTRINNO's five key concepts..... | 27 |
| Figure 3 - The iterative methodology | 28 |
| Figure 4 - Measures for Hubs and Circularity | 31 |
| Figure 5 - Measures for Hubs and Inclusion..... | 32 |
| Figure 6 - Measures for Hubs and Education | 33 |
| Figure 7 - Measures for Hubs and Innovation | 34 |
| Figure 8 - Measures for Hubs and Heritage | 35 |
| Figure 9 - Typologies and Production Facilities of the Portrayed Hubs..... | 39 |
| Figure 10 - Hands-on learning experience at Fab City Hub Barcelona | 42 |
| Figure 11 - Every One, Every Day platform: a representation of a hub with a distributed approach..... | 47 |
| Figure 12 - Darwin hall dedicated to skate activities. | 52 |
| Figure 13 - Textile laboratories at Lottozero. | 57 |
| Figure 14 - The facilities of Tzoumakers..... | 62 |
| Figure 15 - Conceptual structure of the Fab City Hub principles..... | 67 |

ACRONYMS AND ABBREVIATIONS

| ACRONYM | DESCRIPTION |
|------------------|---|
| CBD | Central Business District |
| CENTRINNO | New CENTRAlities in INdustrial areas as engines for inNOvation and urban transformation |
| CPH | Creative and Productive Hub |
| EOED | Every One, Every Day |
| DIDO | Data In, Data Out |
| DOA | Description of Action |
| FCH | Fab City Hub |
| FLB | Fab Lab Barcelona |
| ICT | Information and Communication Technologies |
| NHS | National Health Service (UK) |
| PITO | Product In, Trash Out |
| PPL | Policy and Program Landscape |
| WP | Work Package |
| WP-L | Work Package Leader |

1. INTRODUCTION

1.1. Purpose and Scope

The purpose of this document is to provide inspiration for pilot cities in the CENTRINNO project and other cities beyond the consortium, to develop their own approaches for the implementation of Creative and Productive Hubs (CPH) within their industrial historic areas.

For this purpose, this report is built upon a detailed overview and analysis of existing CPHs in Europe. It includes examples from different European geographic contexts, located in cities of different sizes and considering different approaches to creative and productive hubs. This involves different types of management (community-based, privately-oriented, publicly run), scopes (makerspaces, bio labs, educ labs, etc.) or related productive activities (agriculture and food, digital fabrication, wood making, textiles, etc.).

This report covers experiences from the last forty years. This timeframe was chosen due to different factors that led to the emergence of creative hubs since the 1980s. Firstly, during this period, the development of the global economy has greatly impacted urban development in European cities, fostering changes in demographics and new trends on urban growth ([Haase, Kabisch, and Haase, 2013](#)). Urban models such as the compact city ([Dempsey, 2010](#)) have shifted focus towards the redevelopment of abandoned central areas, including former industrial sites and urban brownfields¹. Redevelopment of central areas has led to the implementation of different land uses, such as new Central Business Districts (CBD), high-end residential developments, tech-oriented business areas or CPHs. New urban transformations came hand in hand with new economic approaches, often considering the creative sector as a generator of jobs and innovation ([Romein, Nijkamp and Trip, 2013](#)), which could at the same time influence urban regeneration.

Secondly, the digital transformation and the development of digital fabrication technology have advanced greatly since the 1980s. This has, on the one hand, given birth to initiatives such as the maker movement or the Fab Labs network, which aim at influencing production, logistics and supply chains in cities and, more importantly, to democratize technology. A key objective of these initiatives is to enable people's potential to grow, develop themselves and influence their future in a society dominated by technology. On the other hand, these changes are not only reconfiguring the relationship between producers and consumers ([Unterfrauner et al, 2018](#)), but also deconstructing previous understandings of education and knowledge sharing. Peer-to-peer exchanges, open-access knowledge or distributed collaborative networks are reshaping the educational landscape globally. Their transformative nature often puts Fab Labs and makerspaces at the core of new creative hubs or districts ([Daldanise and Ceneta, 2019](#)).

A key CENTRINNO project contribution, to which this report provides a solid background, is the FCH model, central to the Fab City approach. The latter, considered part of the background of this report, is an initiative that connects the two previous trends. The Fab City Global Initiative proposes a new urban model to bring back and support productive activities in cities, giving centre stage to digital fabrication technologies ([Diez, 2020](#)). The content of this report, as well as the CENTRINNO project, are therefore closely connected to the FCH model, sharing common principles and approaches to transforming cities, including fostering CPHs².

¹ Some examples of this are Canary Wharf (1988) in London, or the IJ waterfront in Amsterdam (ongoing transformation since 1991).

² https://centrinno.eu/wp-content/uploads/2021/02/Centrinno_WHITEPAPER_2.0_EUproject.pdf

1.2. Contribution to other Deliverables

The most relevant contribution of this report to the project is the analysis and review of hubs in Europe in order to provide inspiration to pilot cities. Its content will also lead to the creation of an online curated journal on European CPHs, which will be made available through the CENTRINNO website, as part of the tasks of WP3 and WP6 in terms of the project's knowledge dissemination.

Nevertheless, there are several interconnections between this deliverable and other resources and tasks in CENTRINNO. Firstly, this report builds on the basic approach described in the Description of Action (DOA), which was summarized in deliverable *D1.1 CENTRINNO Whitepaper*. The main concepts that support the CENTRINNO vision (circularity, heritage, social inclusion, vocational training and Fab City Hubs) provide a lens for the categories of hub portraits, and their subsequent analysis.

Secondly, this journal will be key for the implementation of the specific hub approaches in every CENTRINNO pilot city. This will be carried out in WP4, but supported by WP3 in Task 3.2 *Co-Design of Local Creative and Productive Hubs Models, Approaches and Activities*. This report will be relevant for Tasks 4.1, Task 4.4 and Task 4.5. Therefore, deliverables D4.3, D4.4 and D4.5, which will document the outputs from pilot sprints, may draw connections to different FCH approaches.

Next, this report will inform and inspire the development of the CENTRINNO Cartography (Task 2.3) - the project's tool to implement circularity in CENTRINNO hubs. The inspiring portraits for existing Circular Economy hubs presented in D3.1 can become a starting point for CENTRINNO hubs to explore how circularity can be integrated into a CPH, and scope out which potential resources should be mapped in the Cartography.

Lastly this report also provides frameworks and examples that could be useful to consider in other deliverables, such as D1.2 *CENTRINNO Framework*, D1.3 *CENTRINNO Handbook*, the different iterations of the *Fab City Hub Toolkit* (D3.2, D3.3 and D3.4), D5.1 *Evaluation Methodology* and the two governance-related reports in CENTRINNO: D3.5 *Fab City Hubs Governance* and D6.7 *Blueprints and Policy Development Guidelines for Replicability and Wider User*.

1.3. Structure of the Document

This document is structured in four chapters. After the introduction, in chapter 1, the following chapters are as follows:

Chapter 2 includes the research background of the hub's review. After an introduction to the main terminology used in the research, including description of diverse types of hubs, a general overview of CPHs during the last forty years is included. This overview is used as background to understand the evolution of hubs since their initial days. This chapter has a special focus on the Fab City Global Initiative and the FCH concept, being the latter a key contribution of the CENTRINNO project.

Chapter 3 explains the methodology followed for the hubs' review and analysis, as well as the theoretical framework used to select the hubs and to shape the methods, tools and type of information analysed for each of them. This chapter contains a quick overview of the fifteen hubs analysed and a detailed description of the five "starred" hubs (see Section 3.1), including a brief analysis of good practices. All these fifteen hubs were initiated during the last 15 years, which allows to draw conclusions and recommendations more connected to the current situation of pilot cities, rather than those found in previous experiences.

Chapter 4 includes the main conclusions of the hub review, addressing the key points pilot cities should have in mind when implementing their own creative and productive hubs.

Lastly, the report also includes a list of the references used in the research and two annexes. Annex 1 contains the raw data gathered for each hub included in the journal, as well as the templates used to organize the research data. Annex 2 contains the analysis on the policy framework and landscape of CENTRINNO pilot cities. This information, gathered through a detailed form from pilot cities, provides a lens to highlight existing potential and obstacles to implement different hub approaches in CENTRINNO cities.

2. BACKGROUND

This chapter is articulated according to three main parts: the first one (Section 2.1) *Definition and Glossary*, the second one (Section 2.2) *Fab City Global Initiative* and the third one (Section 2.3) *Creative and Productive Hubs in the last 40 years*.

2.1 Definitions and Glossary

This section aims to provide a comprehensive definition of the different typologies that have been identified and reunited under the broad classification of *Creative and Productive Hubs (CPH)*. The term *creative and productive* intends to merge the culture of makers and fabrication laboratories to the one of creative hubs, blurring the boundaries that could exist between production and creativity to identify possible synergies and cross-pollination of those cultures. It is intended as a research tool, incremental and evolutive, that points out differences and specificities, and showcases the complexity and variety of these typologies. In fact, the language and the definitions around CPHs are very broad: they keep evolving with time and they overlap concepts. CPHs are physical structures strictly entangled with the physical and digital communities that run, sustain and attend these spaces. Such heterogeneous aspects should be seen as valuable insights about the very nature that characterises these structures, as predominantly hybrid, fluid and evolutive. In order to navigate into this complexity, the following glossary aims to set up a common and shared language around hubs typologies. The complexity derives from the multidimensionality of these structures. They are in fact simultaneously physical, digital, social and political spaces. They also evolve and transform over time, according to their specific context and the interactions they establish locally and globally with their communities.

Creative Hubs

Creative hubs are places that provide space to work, participate and consume. Diversity is in the DNA of the hubs and establishing a one-size-fits-all definition would not be appropriate ([Dovey et al., 2016](#)). Hubs may differ in size, scale and activities and they may contain Fab Labs, makerspaces, cafes, meeting rooms, shared working spaces, exhibition spaces and other facilities to be used commonly. They bring creative people together and they support networking, cross-sectoral collaborations, business development, innovation and community engagement within the cultural, creative and tech sectors.

Third places

This term, coined by the American urban sociologist Ray Oldenburg in his book *The Great good place* ([Oldenburg, 1999](#)), indicates those hybrid places that are neither home nor work, situated in between the public and the private space. According to Oldenburg, these places play a key role in the definition of civil society, democracy and civic engagement. Today the term is used as an umbrella concept to identify hybrid spaces that enhance collaboration between heterogeneous actors, as well as places of innovation and productivity, adapted to the knowledge and digital economy era ([Burret, 2015](#)).

Coworking spaces

The rise and spread of coworking spaces have been inspired by open-source software and the internet boom, resulting from the evolution of work into the so-called knowledge economy. Coworking offers independent workers, freelancers and entrepreneurs flexible workspaces and access hours, a broadband connection, amenities (e.g. cafeteria and shared kitchen) as well as an inspiring environment that favours interaction and collaboration with other

independent workers. These spaces can be considered as productive, due to the social relations they enhance. In coworking spaces, “microbusinesses and freelancers deploy new production opportunities in non-hierarchical situations” ([Gandini, 2015, p.196](#)). In a more conceptual dimension, they are the expression of a philosophy based upon four main values: collaboration, openness, community and sustainability ([Reed, 2007 in Gandini, 2015](#)). In terms of organisational models, coworking could be publicly owned by local municipalities or privately owned by a company, independent and often open to different communities of interest. Coworking spaces are characterised by a high level of hybridity and often associated with other flexible spaces ([Brown, 2017](#)).

Living Labs

According to the definition of the European Union (["European Network of Living Labs", 2021](#)), Living Labs are defined as user-centred, open innovation ecosystems based on a co-creation approach among different actors. They integrate research and innovation processes in real life communities and settings. Citizens are placed at the centre of innovation, and are recognised as agents capable to mould the opportunities offered by new technologies to the specific needs and aspirations of local contexts, cultures, and creativity potentials. Local Innovation, following the Living Lab approach, is generated thanks to the interaction with different actors and different sources of knowledge ([Chronéer, 2019](#)).

Fab Labs

The concept of the Fab Lab was created at the Massachusetts Institute of Technology (MIT) at the end of the 1990s ([Gershenfeld, 2007](#)). A Fab Lab comprises a group of standard, professional level, inexpensive and digitally controlled machines ([Eychenne, 2012](#)). Fab Labs are places where innovative models of production, consumption and distribution of goods disrupt traditional forms of economies, for example promoting an economy based on contributions ([Le Roux, 2015](#)). In 2009, the Fab Foundation was created with the mission to facilitate and support the growth of the international Fab Lab network as well as the development of capacity-building organizations. Furthermore, the Foundation aims to spread a culture of making through a global distributed academy for everyone: the *Academy*³. This open access learning system offers courses and events in digital fabrication, synthetic Biology and new technology applied in textile. In this way, they provide an interesting model to reframe politics and societal relations as networks of cooperation and collaboration ([Le Roux, 2015](#), [Bianchini, 2014](#)).

Makerspaces

Typically, independently owned, a makerspace is a community centre or a space sometimes included in creative hubs. It provides access to a series of tools and light equipment for fabrication. Some makerspaces also provide mentors and a community of interest around the makers movement or DIY (do-it-yourself) fabrication and prototyping. The term *making* emphasizes the active and open nature of the subject, trying to capture the broad range of creative production ([Holman, 2015](#)). It is interesting to notice that in the context of makerspace and other fabrication spaces, the figure of the maker reunites under the same person the designer, the producer, the trader and the consumer, subverting traditional division of the industrial productive system ([Le Roux, 2015](#)).

Hackerspaces (also Hacker Lab or Electro lab)

A hackerspace is defined as a workshop and a physical space where a community of interest around technological subjects (computers, machining, science, digital art, or electronic art) meets, socializes, cooperates, shares and expands its knowledge, and makes things. Similar

³ <https://academy.org/>

to other community-operated spaces such as Fab Labs, coworking space or makerspaces, hackerspaces are objects of interest as they are the manifestation of an “intertwined networks of institutions and communities” ([Söderberg & Maxigas, 2014, p.46](#)).

Educ Labs

This term indicates a concept and an approach towards education, rather than a specific space. In fact, it could be applied to different labs and spaces that, in addition to their production activities, aim to take an educational role exploring innovative and open methodologies. These labs focus on activities such as learning by doing, open workshops for training and skill sharing. They organise specific events and engagement activities to facilitate knowledge in subjects such as circular economy, sustainability, education about food consumption and waste.

Food Labs

The concept of a food lab applies the practice of prototyping and making, inherited from the Fab Lab, to the food culture. It is physically defined by a professional kitchen, but it is also a place to exchange and test new approaches to food production, transformation and consumption. Different cultures could gather around food and share their knowledge. One pioneering place that has embedded this concept within its walls is the CPH Volumes based in Paris, which opened its food lab⁴ in 2015. Since then, Volumes and the food lab have organised and hosted a growing number of events, festivals and training courses around food, becoming a platform to connect different actors around innovative food culture.

Bio Labs

A bio lab is a laboratory that applies the open and collaborative culture of makerspaces and fabrication labs to science, health and biotechnology. *Biohackers* are part of the hacker movement's philosophy; they sustain the idea that biotechnology should break the academic isolation of traditional scientific laboratories, to become part of daily life and be open to the creativity of the young generations ([Chardonnet, E. 2017](#)). In some cases, they could include a coworking space and incubating services, to help innovators overcome the investment of expensive equipment ([Mulas, 2017](#)).

2.2. Fab City Global Initiative

2.2.1 From Fab Labs to Fab Cities

Fab City is a global initiative founded on the idea that Fab Labs could potentially make anything locally. It expands the purpose of Fab Labs to transform communities, societies, and ecosystems by supporting the development of new approaches to innovation, learning and impact at the local level, while articulating global efforts. Fab City aims to connect distributed networks of hyper-local productive ecosystems, which enable the mass distribution of goods and resources globally. This logic is referred to as a PITO (Product-In-Trash-Out) to DIDO (Data-in Data-Out)⁵ paradigm shift. The Fab City Global Initiative supports this shift in cities and their bioregions, so they become more resilient through the re-localization of the production of energy, food and products. It does this through a multi-scale framework referred to as the *Fab City Full Stack*⁶, which aims to make operative the re-localisation of production in cities and the use of digital fabrication technologies at different scales. This model encourages interventions at multiple, interconnected levels locally and globally, including

⁴ <http://volumesparis.org/foodlab/>

⁵ <https://fab.city/uploads/whitepaper.pdf>

⁶ [https://fab.city/uploads/Fullstack\(27sep\).pdf](https://fab.city/uploads/Fullstack(27sep).pdf)

infrastructure, education, digital platforms and bioregionalism. The goal is to amplify and multiply the impact of the revolution in domestic-scale digital fabrication, and scale this important transformation together with government and industry.

The Fab City Global Initiative established a 40-year roadmap, launched in Barcelona in 2014 in the shape of a challenge to cities to develop a new urban model: cities that produce everything they consume locally, while sharing knowledge globally. This challenge has been followed by 37 other cities, regions and countries. Fab City is currently a living project articulated by a distributed network of city planners, designers, creators, innovators, artists, developers, engineers and other professionals and enthusiasts from around the world, representing diverse institutions ([Fab City Global Initiative, 2014](#)), such as the Danish Design Center, the Royal College of Arts and Design, Waag, Pakhuis de Zwijger, Metabolic, Materiom, Open Dot Milano, Fab Lab Berlin, Fab Lab Santiago, Fab Lab Barcelona, Green Lab London, Fab City Grand Paris Association, Politecnico de Milano, Incite Focus Detroit, Dark Matter Labs and Fab Lab Bhutan, to name a few.

2.2.2 The Structure of Fab City Global Initiative

The Fab City Global Initiative is made of three parts:

Fab City Collective: the group of people (urban planners, designers, creators, innovators, artists, developers, engineers and other professionals and enthusiasts from around the world) who contribute to the development of different projects at the local level, with the support of organizations, governments and other actors. This group participates in different projects worldwide, presently concentrated in Europe, but is beginning to have more movement in Asia and America.

Fab City Network: a network of cities that have joined Fab City since 2014, currently 38. This network acts as a knowledge exchange platform and allows the articulation of public policies that can enable Fab City locally in each city. The current list includes: Barcelona, Zagreb, Thimphu (Bhutan), Shenzhen, Georgia, Curitiba, Occitanie Region, Puebla, Mexico City, Auvergne-Rhône-Alpes, Amsterdam, Cambridge, Kerala, Sacramento, Plymouth, Hamburg, Yucatán Region, Belo Horizonte, Ekurhuleni, Brest, Boston, Toulouse, Paris, Santiago, Velsen, Seoul, Oakland, Somerville, Detroit, Kamakura, Sorocaba, Rennes, São Paulo, Recife.

Fab City Foundation: The foundation was established as a legal and organisational structure in Estonia to allow location-independent work for the globally distributed Fab City community. It is empowered by the Estonian e-Residency program, which enables individuals and organizations to function seamlessly across borders and bureaucratic lines.

2.2.3 Fab City and CENTRINNO

Historic industrial sites are key to the productive fabric of cities. They still offer in many cases an opportunity to bring back productive activities in urban areas and, thus, increase resilience and social inclusion⁷). CENTRINNO aims to reveal the potential of industrial historic areas to foster productive cities that put citizens at the core of a sustainable transformation. For that, the project will test innovative transformations and new uses in this specific urban territory, both benefiting from and providing new content to the Fab City approach. Experimentation in historic industrial areas will benefit from using the Fab City Full Stack framework⁸ to separate major challenges into smaller parts. This allows the strategies for the development of

⁷ https://centrinno.eu/wp-content/uploads/2021/02/Centrinno_WHITEPAPER_2.0_EUproject.pdf

⁸ [https://fab.city/uploads/Fullstack\(27sep\).pdf](https://fab.city/uploads/Fullstack(27sep).pdf)

technologies for urban regeneration to be made operational. Each one of the Full Stack scales is connected and articulated to act as a complementary ecosystem for local production. The city experimentation at the neighbourhood scale can enable the articulation of these ecosystems in order to test new forms of value and business generation within the city itself, informed by bioregional indicators.

FCHs are the contribution of the Fab City Global Initiative to the different hub typologies described in Section 2.1. They are a key piece of the Full Stack framework, operating as urban interfaces for Fab Labs and makerspaces, as they are more permeable to citizens and other communities in neighbourhoods. While Fab Labs are a great platform for learning and a source of innovation, they lack a connection with local realities due to their technical environment and the specialised approach of its members. FCHs' aim is to expand the impact of the maker movement to cities and regions, by facilitating the experimentation on productive and circular practices and principles by urban communities. Tests on this concept have already been carried out by the Fab City Network. Both London and Barcelona launched a FCH in 2019. Nevertheless, both experiences have been put on hold during the Covid-19 pandemic. CENTRINNO pilot cities will test different approaches to FCHs, also learning from the findings of those previous experiences. This will expand the FCH concept, using the Fab City Network to share their outcomes.

2.3. Creative and Productive Hubs in the last 40 years

2.3.1 Creative and Productive Hubs as sites of renewed meanings of production, knowledge and innovation.

This review aims to situate a new generation of hubs, the FCHs, into the large spectrum of CPHs in Europe in the last forty years. In this time period, the cities' urban fabric has undergone deep transformations due to a restructuring of the global productive system, leaving behind deprived central industrial areas and neighbourhoods in many European cities. In parallel, the rise of the cultural and creative industry has been seen as a generator of growth and innovation, and CPHs have often played a central role in urban regeneration processes. Thus, this review aims to understand and reflect on the main challenges, gaps and limitations CPHs have faced, and to identify key aspects that can be further be used in the CENTRINNO project.

The historical experience of the Technology Networks workshops, set up in the UK during the 80s ([Smith, 2014](#)), marks a fundamental turning point in the relationship between productive systems and urban communities in Europe. On the one hand, they constituted a reaction to a series of phenomena that had an impact on British industrial urban areas, such as deindustrialization, workers unemployment, containerisation and the neoliberal turn of UK policies, including privatisation of public companies and market deregulation ([Fainstein, 1994](#)). On the other, they became a milestone in the transition between the industrial Fordist era and the beginning of the so-called 4.0 revolution⁹, critically addressing mass production and the intertwined political, economic and social regimes. Starting in London in the second half of the 70s, a group of labour workers and their representatives gave voice and actions to a growing social movement advocating for a more democratic, sustainable and inclusive way of producing ([Smith, 2014](#); [Holman, 2015](#)). From there on, the concepts of production, knowledge and innovation started to be questioned and deconstructed through multiple experiences, materialised in the form of collective workshops and spaces involving different agents.

⁹ <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

This review focuses on three main concepts - *Production*, *Knowledge* and *Innovation* - and tries to unpack their complexity across different scales, through the analysis of selected case studies of CPHs.

The chapter is organised in four main sections:

- Section 2.3.2: the subjects and the communities that gravitate around CPHs.
- Section 2.3.3: the spaces intended as multidimensional and analysed in their complexity and overlapping aspects.
- Section 2.3.4: in which hubs are analysed in their potential to interact locally and globally with city networks.
- Section 2.3.5: a discussion on the main takeaways of this analysis that will help imagine future trajectories for FCHs.

The selection of case studies has been driven by a principle of heterogeneity, with the purpose of showcasing the variety of spaces and approaches that the broad category of CPHs could encompass.

2.3.2 The subjects. Everyone is a contributor?

In 1976 a group of workers and shop stewards from Lucas Aerospace in the UK published an alternative and innovative plan to save their company. As many other industries in the country, Lucas Aerospace was threatened to close “in the face of industrial restructuring, international competition, and technological change” ([Smith, 2018](#)). As a reaction, Lucas’ employees drew up a radical and innovative managerial plan, The Lucas Plan, based upon a less hierarchical organisation, connecting tacit knowledge and participatory prototyping to the political economy of technology development ([Smith, 2018](#)).

The industrial workforce and unions fought against the conventional assumptions on innovation and production, which considered workers as obsolete. According to these assumptions, the workers’ involvement was not needed to achieve technological advances. Instead, workers wanted to demonstrate with their proposal that productivity and innovation can only be achieved by enabling the creative power of ordinary people through participation and the promotion of a human-centred technology ([Smith, 2014](#)). The Lucas Plan, in a revolutionary manner, showed how workers can reinvent themselves as agents of knowledge production and as a community “committed to innovation for purposes of social use over private profit” ([Smith, 2018](#)).

As a consequence of the Lucas Plan’s ideas, Labour politicians formed during the 80s a new administrative body, The Greater London Enterprise Board (GLEB), which set up five Technology Networks workshops. Those facilities became a platform for committed activists to promote ideas and activities of socially useful production. Antecedents to modern makerspaces and Fab Labs, these facilities “were shared machine shops that aimed to democratize the means of production and access to education for unemployed manufacturing workers” ([Holman, 2015](#)). During Technology Networks workshops, people “developed various prototypes and initiatives; including electric bicycles, small-scale wind turbines, community computer networks, and a women’s IT co-operative” beside the creation of an “open access product bank of innovations” ([Holman, 2015](#)). Interactive participants took on a central role in the productive process. These workshops encouraged creativity and innovation through participatory design methods, open discussions and hands-on experiences ([Suire, 2016](#)). Practical bottom-up initiatives for socially useful and innovative production emerged in different places, such as shop floors, polytechnics and local communities ([Smith, 2014](#)).

Differently from the Fordist model that framed production and knowledge as hierarchical, competitive and close ([Le Roux, 2015](#)), Technology Networks demonstrated that production happens in a diffused and horizontal way and is entangled with different forms of knowledge, produced and shared by communities.

After only three years, the experience of Technology Networks came to an end due to the lack of political support in restructuring contextual political economies and in overcoming differences among classes and cultures ([Smith, 2014](#)). However, this experience demonstrates how democratized access to technology and prototyping can be a practical means to engage a political debate: the ‘workshop approach’ is an example on how to challenge the cultures of innovation ([Smith, 2014](#)).

Today in Fab Labs, makerspaces and hackerspaces participants embody the role of the contributor “who works to distribute and acquire knowledge” ([Béraud, Cormerais, 2011 in Le Roux, 2015](#)). The creative and productive process is collective and its value is determined by the level of interaction of participants within an activity, called by Le Roux ([2015](#)) *the principle of regulation by participation*.

Despite the growing number of Fab Labs and makerspaces popping up around the world ([Diez, 2020](#)) and their role in spreading sustainable and inclusive practices of making, Holman ([2015](#)) underlines some important challenges still to come for these grassroots initiatives. He reports a lack of diversity in the movement, which remains predominantly male, well educated, affluent ([Holman, 2015](#)) and technical-oriented; he also points out the precariousness of individual makers compared to more traditional employment, in terms of social security. This means that, from a social perspective, these movements are still excluding certain social classes.

The analysis of Technology Networks and of makerspaces and Fab Labs is relevant for this research for two reasons. Firstly, it suggests an innovative reframing of knowledge and production, which are open and collaborative instead of closed and competitive. In this frame, knowledge is not detained by few (intellectual property in the industrial system), but it stems from synergies among different actors, the “untapped skill, creativity and sheer enthusiasm” of local communities and the “reservoir of scientific and innovation knowledge” ([Smith, 2014](#)). Secondly, this analysis highlights the relevance of strong multi-actor partnerships in achieving broader political and economic changes in the long run. In the past, Technology Networks failed due to political headwinds. Today an important challenge for CPHs “to become similarly ubiquitous and sustainable platforms” is the need for “institutional stability” that “will support meaningful community programming, educational opportunity, and grassroots economic growth” ([Holman, 2015](#)). Strong partnership among different actors at city and regional level combined with collaborative governance ([Martelloni et al., 2019](#)) could be one of the ways CPHs would reach the next level. This would entail building “a deeper maker economy that can sustain makerspaces, and makers themselves, on a broader scale” ([Holman, 2015](#)).

While Fab Labs and makerspaces questioned the very idea of production facilities in relation to subjects, it is also important to discuss other initiatives where citizens are active agents in reframing more broadly what knowledge, production, creativity and design are. The project Dreamhamar¹⁰ by Ecosistema Urbano is a notable example of production of a public space.

Dreamhamar was a participation and network design process led by a design consultancy, Ecosistema Urbano, to redesign the Stortorget Square in Hamar, Norway. The city council

¹⁰ <http://www.dreamhamar.org/about/>

endorsed a pioneer approach to the construction of the new Stortorget Square. Instead of handing a finished square to citizens, they were involved in a collective brainstorming process that would determine Stortorget's new configuration. The project kick-started with the setup of a temporary hub on the square (called the Physical Lab) that functioned as working space for the team, but also as a meeting place for citizens. In the case of the Hamar Square, the production of the space happens as a collective and artistic practice reframing traditional assumptions about creative practices ([Ecosistema Urbano, 2014](#)). Dreamhamar inverted the common top-down dynamics of public space production: usually given to the community (users) by architects (experts). Conversely, here different communities (i.e., neighbours association, private sector, municipality) gathered together and initiated a process, facilitated by architects, that enhanced new forms of ownership (urban commons) and developed active citizenship through the construction of a place. Producing and making are re-defined as social practices.

Similar to the process of open prototyping in Fab Labs and makerspaces, the participatory process and the prototyping approach of the Stortorget square were fundamental steps for its realisation. This experience demonstrates how knowledge and decision-making power circulate among different agents. This case represents a shift from an expert perspective to a citizen perspective, by reframing creativity and production as open and collective practices ([Ecosistema Urbano, 2014](#)).

The story of the Dreamhamar process recalls Adrian Smith's words about Technology Network: "shared projects were about crafting solidarities of resistance, confronting power relations, and insisting upon a right to be involved in decisions about design and production" ([Smith, 2014](#)). The degree of participation into a process determines the degree of ownership and stewardship over a place.

2.3.3 Spaces of complexity: the physical, the social and the political dimensions are overlapped.

The Post-Fordist economic model ([Badham, 2008](#)) and the more recent economic crisis (2008) have profoundly changed the nature of work in the last 40 years. On the one side, European cities have lost a large volume of manufacturing capacity¹¹ as a consequence of globalisation and delocalisation of mass production elsewhere. On the other side, they have shifted towards new productive systems that are interpreted as *intangible economies* ([Le Roux, 2015](#)).

These non-materials economies are based on exchanges of information and knowledge. The creative process is decentralised and connections are established, "not between machines, but between human minds" ([Le Roux, 2015, p.106](#)). This gave birth to new forms of work, like the creative labour market ([Florida, 2002](#)), and boosted the market of service providers. Starting from the early years of this century, *knowledge workers* ([Gandini, 2015](#); [Le Roux, 2015](#)), helped by digital technologies advances, were free to work from everywhere with flexible use of time and space. Their work could be deployed outside the walls of the office or outside of the traditional factories in distributed micro laboratories ([Bianchini et al., 2014](#)). The workplaces, the social relations and the spatial patterns reflected in the urban environment became fluid and hybrid.

At the beginning of the 21st century, a series of hybrid and fluid spaces, such as creative hubs, third places and coworking spaces, started flourishing in many European cities, often

¹¹ https://centrinno.eu/wp-content/uploads/2021/02/Centrinno_WHITEPAPER_2.0_EUproject.pdf

occupying neglected industrial areas within the city centre. Innovative urban regenerations programmes sought in the creative economy and in creative hubs a solution to repopulate and repurpose derelict industrial space (Dovey et al., 2016). Schraubenfabrik in 2002, for example, was the first community centre for entrepreneurs that opened in an old factory in Vienna, and further expanded to “architects or PR consultants, cooperatives, freelancers or micro-enterprises working with laptops and cell phones” (A brief history of coworking, n.d.).

Within the umbrella terms of CPHs, coworking spaces are described as hybrid places able to trigger knowledge-sharing among users (Migliore et al., 2021). In fact, coworking spaces offer users, beside the shared workspace facilities and resources, a series of intangible assets and an inspiring environment to work in and to connect with others. These spaces are often equipped with informal areas (cafeterias, collaborative kitchens, makerspaces) where users share moments of conviviality (Illich, 1973). It is in those moments that professionals from different fields have the opportunity to exchange ideas and open up possibilities to new forms of collaboration and partnership.

A pioneer example of these collaborative spaces, combining work with conviviality, is Betahaus in Berlin. In 2009, a group of six students in a 250m² warehouse in Kreuzberg created a place that was intended to reinvent the “future of work”¹². For the founders the space was conceived as an ecosystem of relations, events and knowledge exchange practices. Working at Betahaus means collaborating and sharing ideas with others.

Such collaborative spaces enhance new forms of productive work. In other words, “(work) assumes an immediately cooperative dimension, it requires new knowledge. The work presents itself as an activity that goes well beyond the mobilisation of individuals’ physical and intellectual abilities” and “appears even more to be a powerful way to socialise the workforce” (Azaïs et al., 2001, p.23). Thus, knowledge derives from a hybridisation of working and personal knowledge and from cross-pollinations among different professionals.

As previously explained, with the coming of intangible economies, work and workplaces have become more flexible, diverse, multifunctional and, consequently, complex phenomena to analyse. Hybridity is a crucial concept to explore to better understand these transformations. In *Beyond Coworking: From Flexible to Hybrid Spaces*, Migliore et al. (2021) provide an interesting conceptual framework to define hybrid space through the analysis of coworking spaces. Their reflection on levels of hybridisation (Migliore et al., 2021) is useful for the sake of this research, because it could be used as a criterion to analyse CPHs in general. For the authors (Migliore et al., 2021), hybridisation is seen as an emergent strategy to face contemporary challenges, such as the current pandemic crisis and economic and political precarity. Hybrid coworking spaces are considered as an “intermediate territory endorsing distributed organisational practices, made of physical and digital connections or formal and informal interactions” (Kingma, 2016 in Migliore et al., 2021, p.19), configuring them as “complex territorial entities enabling a more environmentally, economically, and socially sustainable future for all” (Migliore et al., 2021, pag.20)

This hybridisation is one of the main reasons why the spatial development of independent coworking spaces is necessarily fluid and organic. The level of hybridity depends on a high number of variables: the available local resources and the number of synergies the hub establishes with the surrounding context and its communities. According to Migliore et al. (2021), coworking spaces are generated by a layering process that evolves overtime. Merkel (2015) defines them as “urban social practices, that emerged as a bottom-up solution to

¹² <https://www.betahaus.com/>

reclaim and re-appropriate urban space” ([Merkel, 2015 in Migliore et al. 2021, p.4](#)), nurturing a sense of local place and community ([Garret et al. 2017 in Migliore et al. 2021](#)).

In Ceinar ([2019](#)) coworking spaces are described as resilient structures, due to three main factors:

- a) they participate to the urban regeneration of abandoned building and deprived neighbourhoods;
- b) they house diversified types of workers, which contribute to stimulate synergies between local communities and newcomers;
- c) they establish partnership and collaborative relations with local communities and administrations as well as attract new investments.

It is worth to stress that the resilient aspect of these hubs is linked to their hybrid nature as previously expressed by ([Migliore, 2021](#)), “as the co-presence and co-existence of multiple buildings types, functions, users and partnership.

Thanks to the partnerships and collaborative relationships these spaces establish with local key actors, they demonstrate that the regenerative effect of CPHs goes beyond the building they occupy. In fact, they support activities that range across a variety of local institutions and networks distributed across the city ([Dovey et al., 2016](#)). Nevertheless, they should not be perceived as a solution *per se*, but as a triggering action which should be part of a wider strategy for inclusive and sustainable local urban regeneration ([Ceinar, 2019](#)).

CPHs, as described so far, uncover a new concept of production and productive structures, that refers to those new social relations and forms of governance that hubs should negotiate with different communities and with their local environment, in order to make their model sustainable and to be part of effective urban strategies for common challenges. Independent collaborative spaces create a new concept of production, “at the intersection of three dimensions: networks, institutions, and local relationships” ([Azaïs et al., 2001, p.25](#)).

2.3.4 Physical and digital networked ecosystems.

In this chapter, CPHs will be analysed from a larger perspective, focusing on the links they establish with the city, its actors and the territory at large. In particular, it will present the Living Lab approach and the role digital networks platforms play in the construction of a collaborative city, enhancing participation of local and global actors. Cities are intended here both as physical places and as “dense relational networks and complex systems of interaction, connection and transaction” ([Batty, 2013; European Commission 2016 in Martelloni et al., p.13](#)). They represent also “major sources of innovation and growth, catalysing knowledge, energies and creativity from all walks of society and economy” (*ibid.*, [p13](#)).

Besson ([2017](#)) in his article *Role and Limits of Third Places in the Fabrication of Contemporary Cities*, drives attention to third places that focus on urban issues, analysing the experiences of few Living Labs in France and of Laboratorios Ciudadanos in Spain. Living Labs are defined as hybrid and productive third places ([Besson, 2014b; 2017; Azam et al., 2015; Liefvooghe, 2016 in Besson, 2017](#)) that generate new forms of work and innovation, adapting to the era of the knowledge and digital economy ([Besson, 2017](#)). These labs follow the logic of open and collaborative urban laboratories ([Chronéer et al. 2019](#)), and make use of open innovation methodologies, creative workshops and forums hackathons. In this way, they reach out public organizations, private sectors, universities, and citizens ([Bergvall-Kåreborn et al., 2009; Ståhlbröst, 2008 in Chronéer et al., 2019](#)) to prototype future scenarios for their city or to test new technologies ([Besson, 2017](#)).

The city is thus seen as a laboratory, but also as a place of knowledge production ([Juujärvi & Pessa, 2013](#)). Ultimately, Living Labs perform the function of *middle ground platforms*, spaces for dialogue and co-creation between the upper ground of researchers and experts and the underground of citizens and artists ([Besson, 2017](#); [Cohendet et al. 2011](#)).

It is interesting to point out that the language used in the literature referring to Living Labs ([Besson, 2017](#); [Juujärvi & Pessa, 2013](#); [Chronéer et al. 2019](#)) tends to underline their immaterial aspect too. They are described as interfaces, innovation platforms or network hubs ([Besson, 2017](#)). In broader terms, Living Labs could also be defined as “a political act (...) since their activities need to be supported by politicians” ([Chronéer et al. 2019, p.60](#)).

Urban planning is thus reinterpreted as an open access and collaborative process, activated by physical and virtual interactions with a diversified range of actors. This “Tactic Urbanism” ([Jimenez, 2014](#)) reverses the traditional process of designing and implementing urban spaces, opposing a bottom-up and small-scale testing approach to a top-down large-scale planning in the long term. The city is thus reconfigured as the site of a new social productivity based on cooperation and interaction between different actors ([Baudouin, 2006](#)).

Despite being a growing urban phenomenon in European cities¹³, Living Labs and CPHs in general did not demonstrate yet technical and financial capacity to deploy their prototypes and their innovative scenarios at the city scale. Additionally, they found difficulties in establishing strong connections between relevant local actors and communities ([Besson, 2017](#)). Thus, a question emerges: what do CPHs need to scale up their local impact as well as to address contemporary global challenges that cities and communities are facing?

According to different authors ([Besson, 2017](#); [Chronéer et al., 2019](#)), appropriate urban policies are still missing to potentially strengthen the scale of impact of Living Labs. Simultaneously what should be taken carefully into account by policy makers is to not institutionalise third places and to avoid undermining their ascendant, reticular and inclusive character ([Besson, 2017](#)).

Ascendant, reticular and inclusive are also the characteristics of multiple online networking platforms that connect CPHs to each other in order to enhance their visibility and circulate knowledge locally and globally. Some of these examples could refer to the Network of Laboratorios Ciudadanos de Media Lab Prado or the Ecoscience Reseaux sustained by Casamate in Grenoble ([Besson, 2017](#)). Similarly, specific platform projects, such as *Inteligencia Colectiva*¹⁴, a free database of traditional construction practice for the diffusion of horizontal learning systems, or the Fab Lab Network¹⁵, work as a horizontal and immaterial structure for co-creation, implementation, diffusion and support of projects and communities of makers worldwide. These networks trigger collaboration and knowledge sharing despite the physical boundaries; besides, they enhance circulation of insightful practices at local and global level. The Fab City Global Initiative itself is built upon the ability of these networks to enhance the circulation of data and knowledge globally, shifting from the PITO model to the DIDO one.

Local initiatives and virtual platforms working as open, hybrid and horizontal organisations are challenging inefficient traditional forms of governance and ownership of urban infrastructure ([Besson, 2017](#), [Jiménez, 2014](#)). They are seen as the manifestation of an emerging concept:

¹³ <https://enoll.org/about-us/>

¹⁴ <http://www.inteligenciascolectivas.org/>

¹⁵ <https://fabfoundation.org/global-community/>

“the right to infrastructure” as the expression of “new ecologies of urban relations and the rise of open-source urbanism” ([Jiménez, 2014](#)).

For the sake of this research, these are valuable practices to observe. In fact, CENTRINNO tests new approaches to a productive city in a specific territory. Jimenez ([2014](#)) in his reading *The right to infrastructure: a prototype for open source urbanism* presents an interesting conceptual figure: “the prototype, an emerging socio-material design whose main quality is its permanent ‘beta’ condition, the entire city is reinterpreted as an “open infrastructural being: source for on-going com-possibilities” ([Jiménez, 2014](#)). Therefore, the city is a playground to test new urban assemblage through prototypes, created by citizens at large. City making emerges as a collaborative and inclusive practice made possible by alliances and by the circulation of knowledge globally, while relying on local networks of spaces and citizens.

2.3.5 Future trajectories for Fab City Hubs

In the previous three sections, selected experiences have been analysed within the large panorama of CPHs according to three different scales, that are expressions of different perspectives and temporalities.

Starting with the subjects, this review sought to understand who are the people, the professionals and the communities attached to these places. Historical changes in production and pioneering initiatives such as the Technology Networks have contributed to shift the role of these subjects from executors to contributors. This led to the acknowledgment that valuable knowledge and creativity reside in each subject. Such knowledge is shared, cross-fertilized by interactions and made available to others. Technology Networks, but also recent trends such as the maker movement and Fab Labs, demonstrate that open workshops and participatory prototyping are tools to connect tacit knowledge to the political economy of technology development ([Smith, 2015](#)). Therefore, production refers not only to material goods delivered by machines, but also to shared knowledge and social values that are produced by the interactions, collaborations and participations of different actors.

The second section highlights how production, knowledge and innovation are also reframed thanks to specific spaces. A hybrid, fluid and non-standardised spatial organisation multiplies and facilitates interactions among people in an open and collaborative manner. It happens in places such as independent coworking, third places and creative hubs that host a multitude of functions and subjects. By embracing hybridity, these hubs have gone beyond their walls and have developed projects that reach the scale of the neighbourhood. Because of this larger spectrum of influence, CPHs could be seen as “lighthouses for forgotten areas of the city, gathering people in unused spaces and connecting previously invisible communities” ([Dovey et al., 2016](#)). For these reasons, “private and public life dwell within coworking, making it a constantly living space” ([Fernández et al., 2014 in Migliore, 2021, p. 4](#)) and a public arena for civic engagement.

The third section explains how subjects and spaces could interact with the city at large, establishing links with global and local communities. Such interactions give birth to new urban models that are produced by local collaborative practices. Shared knowledge and learning processes are enriched by local and global interactions, and sustained by inclusive and horizontal collaborations. Living Labs and the experiences of tactic urbanism transform the city as an assemblage of resilient networked ecosystems.

For the sake of this research, and keeping in mind the corpus of reading and cases analysed so far, a series of possible trajectories and challenges for FCHs is presented.

Past experiences of CPHs have challenged traditional assumptions on production, knowledge and innovation. Fab Labs and the maker movement have largely contributed to promote a collaborative and open-source approach to knowledge and production; however, they still need to expand their influence beyond technological communities. Creative hubs and coworking spaces have demonstrated that to be resilient they should embrace hybridity and openness, to be embedded in local contexts and contribute to urban regeneration processes. Lastly, the Living Labs approach and digital platforms network provide a good example to re-imagine the city as an open-source playground for prototyping common spaces and shared values.

FCHs are emerging within this framework by approaching the three concepts of production, knowledge and innovation in a holistic way and from a multi-layered perspective. If Fab Labs, coworking spaces, Living Labs and creative hubs all challenged those concepts separately, FCHs are concentrating them in the same physical space, creating interactions and hybridisations among them.

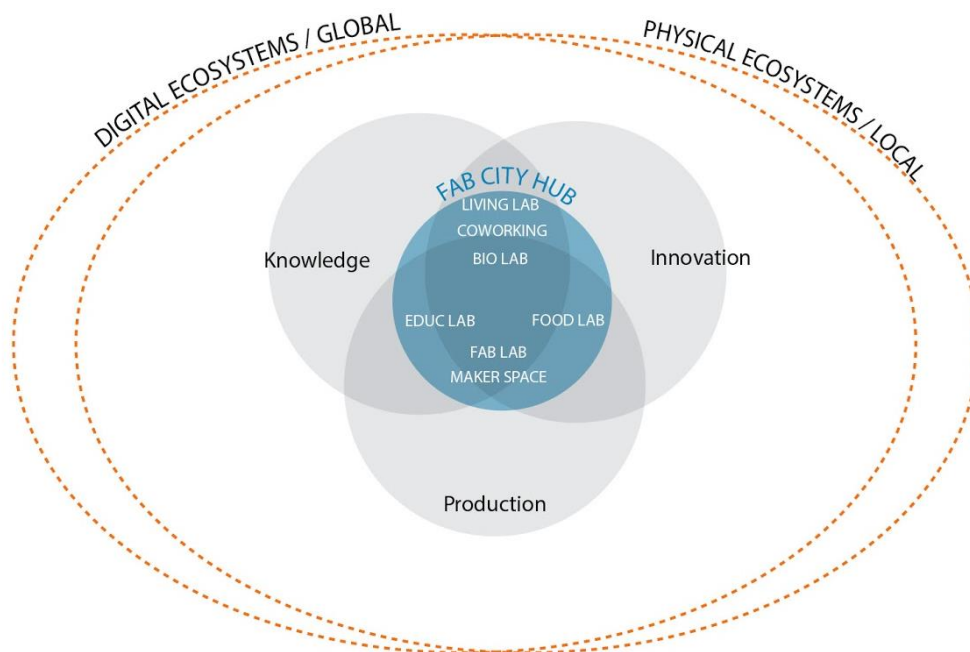


Figure 1 - FCH as sites of renewed production, knowledge and innovation

From a spatial and functional perspective, these hubs have the potential to offer spaces and activities to a large number of actors. At city level, they conceive themselves as nodes of a diffused network of micro-production, knowledge exchange and innovation. This may, in turn, influence transformation processes from the bottom-up, by articulating different local agendas and providing a sense of place to the involved actors ([Fish, 2016](#)). Nevertheless, it is important to critically analyse bottom-up initiatives since they could sometimes be co-opted by political purposes or neoliberal practice for urban regeneration and lead to gentrification processes as well ([Rabbiosi, 2016](#)).

From a structural perspective, hubs can operate as non-hierarchical platforms, interfaces and a middle ground to engage a multitude of differentiated actors, representative of the society at large.

Finally, from a governance perspective, the hubs' ability to create meaningful impacts lies in nurturing strong partnerships with municipalities, local communities as well as the private sector.

These steps are fundamental to embed FCHs in the local context and to assure their long-term sustainability. In parallel, their participation in different digital networked platforms assures connections among local and global communities, transforming cities into sites of innovation and taking on contemporary urban challenges.

3. METHODOLOGY

The Hubs' Review for this journal has been performed as the end result of Task 3.1, embedded in the WP3 of the CENTRINNO project. The main goal of this task is to create a detailed review of existing Creative and Productive Hubs. The nature of such review is geographically non-specific, as it is intended to provide a comprehensive picture of European CPH as a diversified phenomenon, tackling local challenges as well as common patterns that will eventually act as models of inspiration for CENTRINNO's pilot cities. The review produced by Task 3.1 is therefore a highly exploratory step towards the forging of a crucial set of information, recommendations, guidelines and tools for those cities facilitating the FCH.

In particular, this task contributes to building a global vision of a FCH and how it operates; in support of this objective, it yielded a detailed collection of portraits of remarkable hubs. The present report has offered a generic historical perspective on the developments of CPHs in the last forty years of European cities, which has been extensively covered in chapter 2.3. The collection of Hub Portraits provides a more specific overview on ongoing experiences of CPHs, in particular those that emerged in the last fifteen years. This focus enables the Portraits to scrutinize those typologies of hubs that are at the core of CENTRINNO's scope. The sample used for the completion of the portraits gathers in total data from fifteen hubs, which are considered to be representative of the richness and diversity of the European scene, as well as to incorporate a first prototyping of the future FCHs.

The development of the Hub Portraits allowed for an observation of existing experiences across Europe and consequently, a definition of a clear vision of what a Fab City Hub might be and the ways of its implementation. The portraits provide actionable takeaways highlighting best practices and relevant experiences of selected remarkable hubs, building up an apparatus of transferable knowledge that fulfils Task 3.1 objectives.

The relevance of a methodological approach to the Hub Portraits lays in the fact that the outputs of the review will be used in the next phases of WP3 to create a Fab City Hub Toolkit, meant as a database of methods and frameworks to be used in each pilot city of the CENTRINNO project. Most importantly, this review has represented a crucial step towards the definition of the Fab City Hub Framework, a tool developed to analyse the hubs' compliance with the Fab City Hub criteria, embedded in the CENTRINNO project. More precisely, the framework corresponds to the development of specific lenses to be employed in order to scan different hubs and monitor their progress in the long run, creating an evaluation tool that can be applicable not only to past experiences but to future cases as well. The need for a framework of this nature raised from the fact that the already-existing examples of Fab City Hubs in Europe at the starting point of this review were at an early prototyping stage; therefore, part of Task 3.1 was also forging the right lenses of analysis and the suitable testing criteria. The Framework came to life concurrently with the devise of the Hub Portraits, in an organic and progressive way, and ultimately it found its roots in the main values expressed in the CENTRINNO Whitepaper, namely: the relationship between hubs and circularity, inclusion, education, innovation and heritage (see [figure 2](#) below).

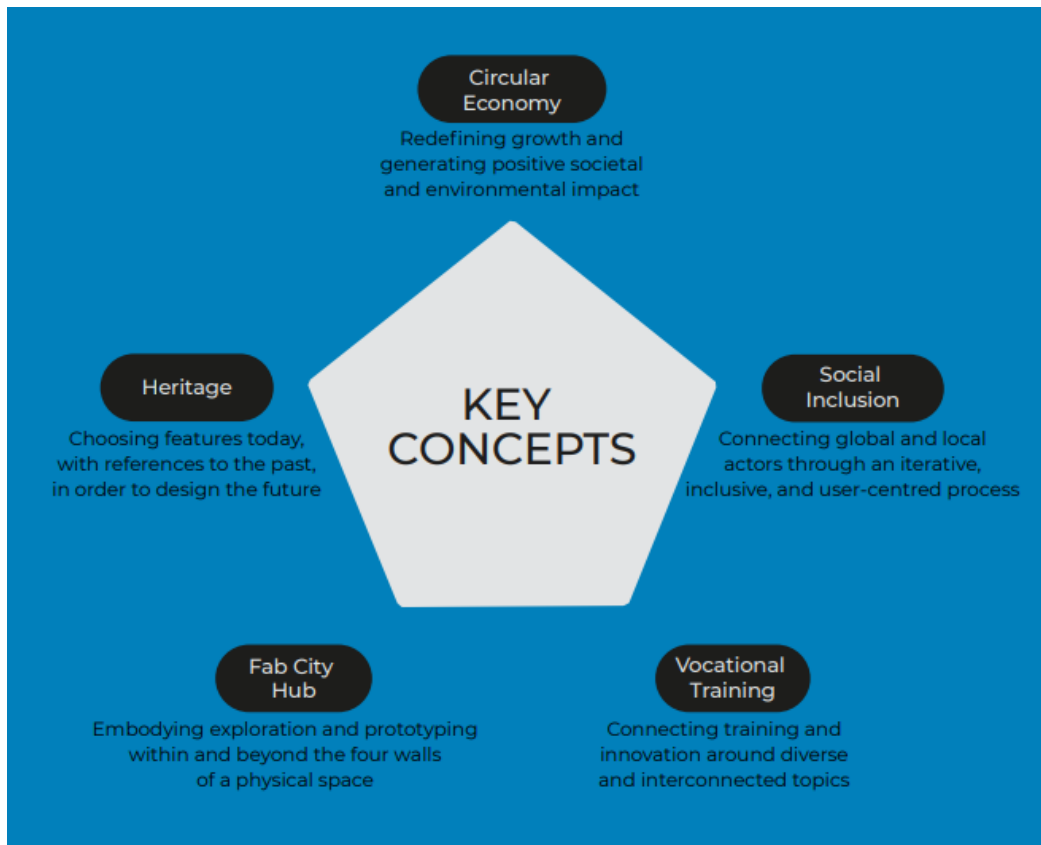


Figure 2 - CENTRINNO's five key concepts

The Hub Portraits template constitutes therefore the core of the framework, as it sums up the main criteria to assess a hub's compliance to CENTRINNO's scope. Eventually, the structure of the framework could also be used to showcase the hubs of the pilot cities of the project.

3.1. The Iterative Methodology of the Hub Portraits

In order to outline a proper Hub Portrait template and to define the Fab City Hub framework, an iterative approach was adopted as the most suitable for this task. Considering the exploratory nature of this phase and the lack of pre-existing ad-hoc frameworks, an iterative approach allowed to build, phase after phase, incremental knowledge and eventually to produce a coherent framework of analysis. According to this model of action, the testing and the development of the portraits' outline are concurrent, favouring an agile ([Agile Vs. Waterfall: Know the Difference Between Methodologies, n.d.](#)), rather than a linear, approach. This way of work assures quality maintenance and development, due to its incremental structure apt to flexibility and cyclical improvement. In fact, testing and evaluating sessions were carried out after every iteration instead of only once at the end of the whole process. Most importantly, such an approach allowed for a constant dialogue between the sampled hubs and the team of WP3, granting a mutual participation and a bilateral flow of information. In order to be effective, this methodology was conducted with a thorough coordination that set specific goals, iteration after iteration, in order not to lose sight of the main objectives.

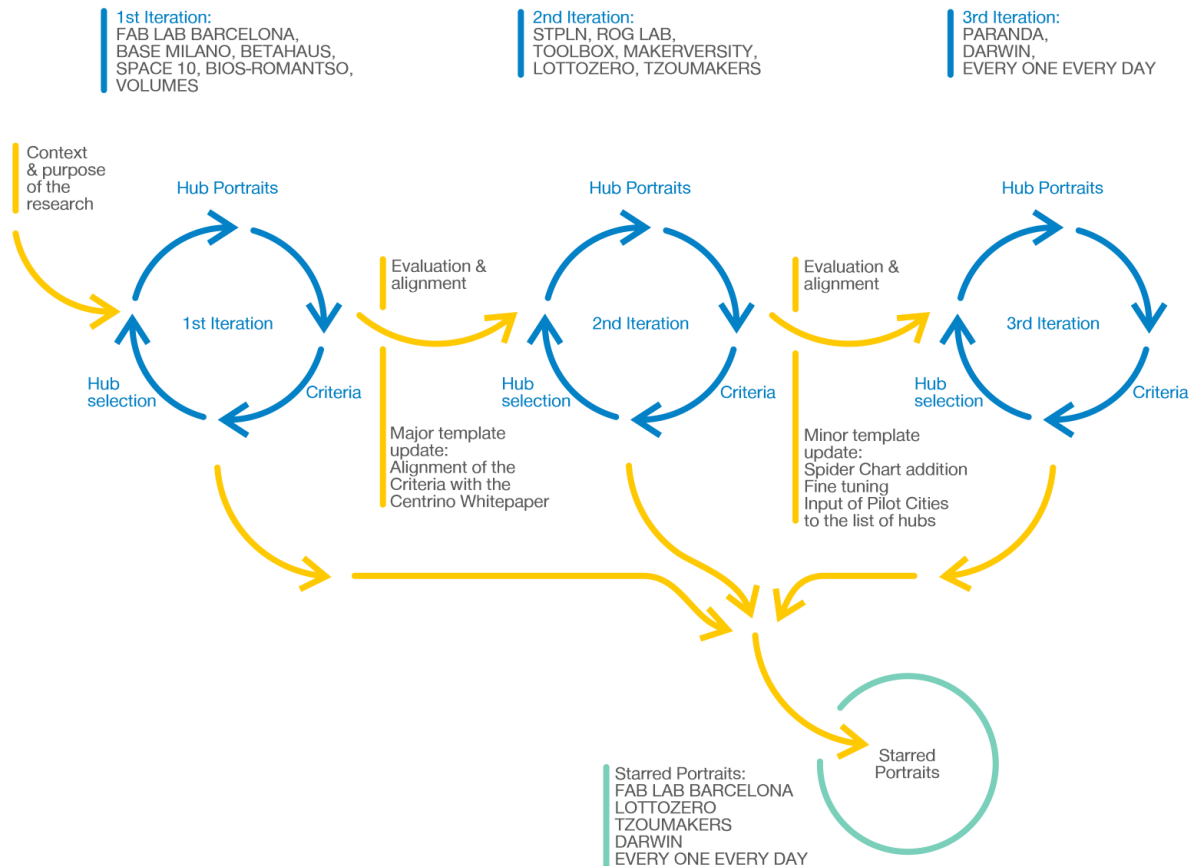


Figure 3 - The iterative methodology

Three iterations in total took place between November 2020 and January 2021, involving fifteen remarkable hubs across Europe. Each iteration focused on a different batch of hubs (respectively six, six and three) and employed an updated set of criteria of analysis. Each iteration was enriched and improved by the outcomes of the previous ones and the feedback of the hubs' representatives and of the WP3 team. After drafting a shortlist of remarkable hubs that conformed with the Fab City Hub Framework, an adequate sample was chosen for each iteration, respecting an equal representation in terms of geographical distribution, size of the hub, business models and so forth, in order to depict the diversity of the European scene. The list of hubs for the third iteration was also enriched by the input of the pilot cities. The selection of the hubs was performed by the team of WP3.

The overall format of the portraits evolved after every iteration; however, two main categories of data were gathered in every case: a first one gathering general quantitative data about the hub, a second one calculating the hub's compliance to CENTRINNO's main criteria. From the third iteration on (including the starred portraits), a spider chart was added to graphically illustrate the hub's consistency with the criteria.

The first iteration involved six hubs from six different European cities: FabLab Barcelona, BASE (Milano), Betahaus (Berlin), Space10 (Copenhagen), Bios (Athens) and Volumes (Paris). In this phase, the Fab City Hub Framework was still in a preliminary phase, hence the articulation of its criteria was not definitive.

The second iteration grouped six more hubs: STPLN (Malmö), Rog Lab (Ljubljana), Toolbox (Turin), Makerversity (London/Amsterdam), Lottozero (Prato) and Tzoumakers (Kalentzi). This round developed further the categorization of the hub's typologies and produced a first outline of the criteria classification based on CENTRINNO's Whitepaper. This eventually facilitated

the ultimate version of the portraits, which was adopted for Paranda (Tartu), Darwin (Bordeaux) and Every One, Every Day (London) in the third iteration. These portraits display a more accurate data classification, along with more detailed questions regarding the criteria. At the end of the iterative arch, five among the portrayed hubs were selected as “starred portraits” (Lottozero, Tzoumakers, Darwin, Fab Lab Barcelona and Every One, Every Day). These were considered to offer, more than other hubs, valuable narratives and indications for the co-creation of the future FCHs. Among other things, the starred portraits embody the most relevant examples of how to implement FCHs following the five main axes of the framework (circularity, inclusion, education, innovation and heritage).

The contents of the present report, especially those related to the starred portraits, will be shared online on the CENTRINNO website through the specific channel of the *Online Journal*. The term Journal is used here to refer both to the present report and the online resource. The emphasis is on the iterative methodology based on documenting an ongoing process - like in a journal - as a tool to shape a common vision of FCHs among CENTRINNO partners and beyond. In that sense, this document is designed to be a static report complemented by a dynamic resource - precisely the Online Journal - that will keep gathering contents and reflections on the future of FCHs in Europe.

The Online Journal will kick-off on April 7th and 8th 2021, with the launching online event *Fab City Hub Voices*, in which hub founders from two of the starred portraits (Fab Lab Barcelona and Lottozero) will be interviewed and will engage in a public discussion about CPHs in Europe. Contents and videos of the interviews are not included in this report, but will be published in the Online Journal on the CENTRINNO website. The portal will continue to stay active during the project’s life, with contributions from different partners and pilots documenting their reflections and activities related to the FCH implementations. These contents will highlight the challenges involved in launching and running such hubs, but also the opportunities that they can trigger for local innovation.

During the CENTRINNO project, the Online Journal is intended to serve as a resource to share and co-create FCHs in pilot cities.

3.2. Hubs’ Criteria in CENTRINNO

The final version of the Hub Portraits is structured in two main parts. The first part is dedicated to an array of general data that are meant to provide a global understanding of the analysed hub. Such information is crucial for the viewer to understand the hub at a glance through objective parameters, which indicate various aspects of the CPHs. A first set of “hub typologies” shows the core vocation of the hub, its official title and designation within the broader term of Creative and Productive Hub. The typologies taken into account span from makerspaces to hackerspaces, from Fab Labs to Living Labs, and show the principal focus of the hub (for a full list of the typologies accounted in the portraits see Chapter 2.1 Definitions and Glossary). The section of “production facilities” describes what kind of production and manufacturing activities characterize the hub, including agriculture, food production or transformation, electronics, metal and wood manufacturing, textile and 3D printing. It is important to note that often hubs are specialized in more than one productive activity and fit to more than one typology. Data about the hub’s location give an overview on the heritage status of the building or area. Lastly, the “administrative data” provide a thorough picture of the hub’s most relevant numbers (e.g., yearly turnover, number of employees), legal status, funding scheme and sources of revenue.

The second part of the portraits is dedicated to the analysis of the hub according to the five main criteria that reflect CENTRINNO's key concepts¹⁶. This part is organized in five sections, each one focusing on one of the criteria. A series of statements in each section gives an insight on the hub's cohesion with each of the criteria, being every statement scored from 0 to 5 according to the hub's compliance. Additional information is given to each section to provide concrete examples of how the hub articulates in practice the analysed criteria. For a complete overview of the portraits outline, see the Annexes section.

3.2.1. Hubs and Circularity

The first criterion focuses on the relation between hubs and circularity. Sustainability is one of the founding pillars of CENTRINNO's vision. This first lens of analysis aims at assessing how hubs contribute to a transition towards a more circular urban economy. As explained in chapter 2.2, the Fab City Hub model envisions a major shift of sourcing and using materials within an urban environment - specifically changing the paradigm of "Products in Trash Out" (PITO) to "Data In Data Out" (DIDO)¹⁷. This model suggests the overcoming of traditional linear economies in favour of a more circular approach, where production and recycling occur inside the city, and where awareness about such topics is actively promoted. The analysed criterion measures to what extent the hubs keep up with the ecological challenges of our time and foster a circular transformation process, generating a positive societal and environmental impact. In particular, this is investigated through four main measures: whether there is an active attention on recycling materials in the production processes or activities of the hubs, whether there is attention to reusing materials or products, whether a distributed manufacturing system is supported, and whether the hubs encourage awareness and a behavioural change concerning the circular economy.

¹⁶ https://centrinno.eu/wp-content/uploads/2021/02/Centrinno_WHITEPAPER_2.0_EUproject.pdf

¹⁷ <https://fab.city/uploads/whitepaper.pdf>

| | | |
|----------|---|--------|
| A | The hub develops products, services or activities that involve or foster recycling materials. | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year) | 0 to 5 |
| | <i>Additional data</i> | |
| B | The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities). | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year) | 0 to 5 |
| | <i>Additional data</i> | |
| C | The hub develops products, services or activities that foster behavioral change towards circular economy (workshops, training, research, etc.) | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year) | 0 to 5 |
| | <i>Additional data</i> | |
| D | The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens. | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year) | 0 to 5 |
| | <i>Additional data</i> | |

Figure 4 - Measures for Hubs and Circularity

3.2.2. Hubs and Inclusion

Secondly, the connection between hubs' activities and social inclusion is explored. For CENTRINNO the involvement of diverse social groups is considered as a key action towards innovation. Such participatory diversity is in fact explicitly mentioned in the third point of the project's vision, which is "to boost a diverse, inclusive, and innovative urban economy"¹⁸. Migration backgrounds, gender diversity, different views on heritage and cultural mix will enrich local strategies towards their objectives. Moreover, CENTRINNO wants to facilitate the inclusion of more women in makerspaces and Fab Labs, as well as new emergent gender groups belonging to the LGBTQ+ community. In the portraits, different levels of inclusion are taken into account, considering user-centered processes, bottom-up approaches and inclusive initiatives that put citizens at the centre, along with the connection of local and global communities. The four measures considered to analyse whether hubs have a remarkable level of inclusiveness are: to target a mixed audience (in terms of age, cultural background, socio-economic status) through their activities, to explicitly include vulnerable or marginalized groups in their activities, to actively involve communities in their activities and to nurture a global¹⁹ network. CENTRINNO's attention on inclusion implies in fact the support of a global knowledge shared between cities and regions, which in return gain access to different tools and solutions adaptable to local contexts.

¹⁸ https://centrinno.eu/wp-content/uploads/2021/02/Centrinno_WHITEPAPER_2.0_EUproject.pdf

¹⁹ <https://www.oxfordlearnersdictionaries.com/definition/english/global>

| | | |
|----------|---|--------|
| A | The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages). | |
| | 0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages | 0 to 5 |
| | Additional data | |
| B | Hub activities' target audience includes minorities, marginalised groups or disabled people. | |
| | 0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences | 0 to 5 |
| | Additional data <input type="text"/> | |
| C | Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub). | |
| | 0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities | 0 to 5 |
| | Additional data | |
| D | The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities). | |
| | 0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience. | 0 to 5 |
| | Additional data | |

Figure 5 - Measures for Hubs and Inclusion

3.2.3. Hubs and Education

The relationship between hubs and education is also considered. This lens tries to determine whether hubs carry out (vocational) training activities that engage local communities with the hub's local context and the wider manufacturing environment. In this case, not only are innovative and multidisciplinary educational programs relevant, but also their connection with local productive activities and networks, in order to create an ecosystem where knowledge and skills are sourced locally is underlined. This perspective on analysis is based on the conviction that FCHs have the power to redefine and give more recognition to craftsmanship professions in the twenty first century, highlighting the need for a solid and innovative maker workforce through up-to-date vocational and post-vocational training. The implementation of technology into artistic professions is also a method to boost innovative practices and revitalize this sector. The relationship between hubs and education is analysed firstly by assessing whether the hubs carry out educational activities, and, secondly, reviewing whether these are connected to formal or informal vocational training, whether they are linked to local manufacturing, and whether they are related to the hub's local community.

| | | |
|----------|--|--------|
| A | The hub carries out training or educational activities or programs. | |
| | 0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub | 0 to 5 |
| | Additional data | |
| B | The hub carries out activities in connection to (formal or informal) vocational training. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year | 0 to 5 |
| | Additional data | |
| C | The hub carries out activities that link vocational training with local manufacturing. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 0 to 5 |
| | Additional data | |
| D | The hub carries out training activities that are linked to the local context or community. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 0 to 5 |
| | Additional data | |

Figure 6 - Measures for Hubs and Education

3.2.4. Hubs and Innovation

It is furthermore analysed to what extent hubs foster innovation. This criterion does not belong to the five CENTRINNO concepts, but replaces the fifth aspect: "Fab City Hub". As explained in chapter 2.3, both the digital transition and the appearance of creative hubs have, since their early days, challenged our understanding of production, knowledge and innovation. Being the first two concepts to some extent covered in criteria 3.2.1 and 3.2.3, it was decided to analyse innovation separately. This criterion examines the performance of the hubs both within and beyond the four walls of their physical space and whether it opens new ways of collaboration with local institutions or fosters innovation through an open and transdisciplinary approach. Urban innovation takes place when different stakeholders are put in relation to one another, allowing for hubs to cooperate not only with local governments, but also with other creative associations, SMEs, larger companies, real estate developers and other actors in the urban ecosystem. In this section, four measures analyse whether hubs carry out activities that combine skills from different sectors and communities, whether they present innovative business models, whether they are integrated in wider exemplary policy schemes (at a local or national level) and whether they have inspired similar programs or policies. The collaboration between governments and the civil society should encourage a joint effort among administrations, civic groups, universities and other organizations to trigger a shift towards the empowerment of citizens. Such synergy generates a distributed network that facilitates a more innovative approach to urban regeneration and development.

| | | |
|---|---|--------|
| A | The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects. | |
| | 0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market | 0 to 5 |
| | Additional data | |
| B | The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs | 0 to 5 |
| | Additional data | |
| C | The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals. | 0 to 5 |
| | Additional data | |
| D | The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration | 0 to 5 |
| | Additional data | |

Figure 7 - Measures for Hubs and Innovation

3.2.5. Hubs and Heritage

The last criterion examines the hubs' use of their heritage context as a catalyst for innovation and urban regeneration. In other words, it investigates whether hubs activate their material and non-material heritage (historic buildings and sites, but also craft and production practices, inherited traditions and so forth), in order to use it as an instrument to understand their present and design their future. Therefore, the connection with the heritage context is not conceived only as being located in a historical industrial area, but also as the hubs' commitment to transform and evolve the neighbourhoods that are embedded in, maintaining their cultural legacy, social mix and economical diversity. Each city district has a specific history of production and manufacture, which constitutes the industrial identity of their urban ecosystem. This tradition corresponds to an asset of knowledge, skills and expertise shared among different professionals and citizens. Hubs can therefore play an active role for the rediscovery of the local genius, its preservation and its development. The connection between hubs and heritage is analysed by understanding, first of all, whether a hub is located in an historic area or building, secondly whether its activities are related to the historical or cultural legacy of the neighbourhood and lastly, whether the hub takes an active role in the transformation process of the neighbourhood.

| | | |
|----------|---|---------------|
| A | The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building. | |
| | 0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above | 0 to 5 |
| | <i>Additional data</i> | |
| B | The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood. | |
| | 0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities | 0 to 5 |
| | <i>Additional data</i> | |
| C | The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixity and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process). | |
| | 0 = the activities of the hub is completely independent from the local community and neighbourhood 5 = the activities of the hub are completely focused on keeping social mixity and economical diversity while transforming the neighbourhood | 0 to 5 |
| | <i>Additional data</i> | |

Figure 8 - Measures for Hubs and Heritage

4. Creative and Productive Hub Portraits

Before going into an in-depth reporting of the selected starred portraits in 3.3.2, this short introductory section aims to give a brief overview of the fifteen hubs that were investigated through the Hub Portraits. This section is supported by a complementary table presenting the typologies and production facilities of these hubs (see [Figure 9](#)).

Indeed, since the first phase of the research, the task has been driven by the aim of providing pilots (as well as other future cities wanting to implement a Fab City Hub project) a benchmark of the most remarkable hubs in Europe.

The Hub Gallery below constitutes an easy way to access this database and have a first overview of the hubs that a FCH operator should keep an eye on. These hubs are ongoing experiences and, while the research tries to capture the current state of their development, pilots are invited to follow their activities through their websites and social networks, in order to have a real-time monitoring of their evolution during the time frame of the CENTRINNO project and beyond.

In the next chapter (3.3.1), the five starred portraits are presented in detail as the most relevant narratives and stories to kick-off and inspire the CENTRINNO pilots. Nevertheless, the complete data collected through the 15 portraits are available in Annex 1, in case the reader is specifically interested in some aspects that are not covered in the main body of this report.

Hub Gallery: Hub Portraits at a glance



Fab Lab Barcelona

Barcelona, Spain (L)
Founded in 2007

The first Fab Lab in Europe, embedded into the renowned architecture and design school IAAC, Fab Lab Barcelona is the hotbed of the Fab City Global Initiative.

fablabbcn.org



BASE

Milan, Italy (L)
Founded in 2014

One of the most influential creative hubs in Milan, BASE is one of the CENTRINNO pilots and is an example of joint effort between local NGOs, public administration and private funders.

base.milano.it



Betahaus

Berlin, Germany (L)
Founded in 2009

Betahaus has a pioneer role in Europe as one of the first co-working spaces elaborating central topics of collaborative space like community building, empowerment, creating upon local needs.

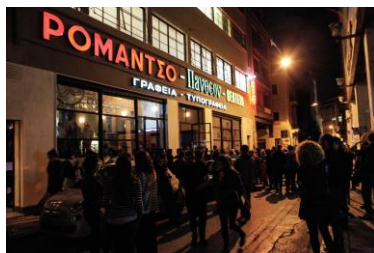
betahaus.com



Space 10
Copenhagen, Denmark (M)
Founded in 2007

SPACE10 is a research and design lab on a mission to create a better everyday life for people and the planet. It is supported by and entirely dedicated to IKEA but is also working as an independent lab.

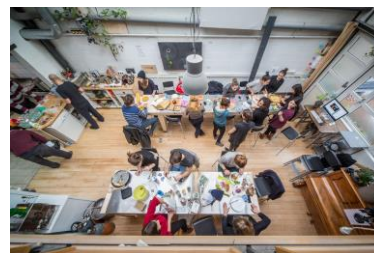
space10.com



Bios Romantso
Athens, Greece (L)
Founded in 2013

Bios Romantso, is situated in the historical centre of Athens and functions both as a creative hub and as a cultural centre, organizing and hosting a variety of events on a daily basis.

romantso.gr



Volumes
Paris, France (L)
Founded in 2015

Volumes is a space and a place open to very diverse activities and communities. It's an organic ecosystem capable of adapting and transforming according to local opportunities and the desires of its members.

volumesparis.org



Stpln
Malmö, Sweden (M)
Founded in 2011

STPLN is a meeting space for creative projects. Its mission is to provide space, time, structure and methods to support the development of ideas in the fields of art, design, media, tech, circular practices and innovation.

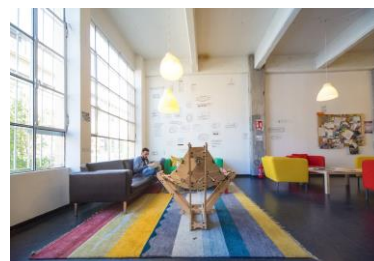
stpln.org



Rog Lab
Ljubljana, Slovenia (S)
Founded in 2012

RogLab is a creative hub established as part of the Museum and Galleries of Ljubljana (MGML). Slovenia's first maker lab, it gives creators of all ages access to production tools and encourages the innovative use of maker technologies.

roglab.si



Toolbox
Turin, Italy (L)
Founded in 2009

Toolbox is a 10.000 m2 hub, hosting a coworking space, a print club, a Fab Lab and other working spaces, located in the historical, industrial heart of Turin. It has been the hotbed of the world wide known, open-source hardware and software company Arduino.

toolboxcoworking.com



Makerversity
London, UK (L)
Founded in 2013

Makerversity provides a space for making and learning. They offer a coworking area, and several different workshops. Their objective is to support those, whose main occupation and source of income is “making” through offering a space in which ideas can become physical.

makerversity.org



Lottozero
Prato, Italy (S)
Founded in 2016

Lottozero is an international centre for textile design, art and culture. It operates both as a consultancy studio and as a creative hub, divided into a gallery/exhibition area, a shared studio space/coworking and an open Fab Lab for textile production, experimentation and research.

lottozero.org



Tzoumakers
Kalentzi Village, Greece (XS)
Founded in 2018

Tzoumakers is an open lab for communities to cooperatively design and manufacture tools for small-scale agricultural production, located in the region of Tzoumerka. It is constantly empowering the local agricultural communities providing them with tailor made open-source solutions.

tzoumakers.gr



Paranda
Tartu, Estonia (S)
Founded in 2019

Paranda is a makerspace focused on repair, upcycling and DIY activities. It promotes circular practices in the local community as well as in large communities through the use of social media.

paranda.ee



Darwin
Bordeaux, France (M)
Founded in 2008

Darwin hub is an entrepreneurial initiative for the ecological transition of the economy via the ecological rehabilitation of a military wasteland and the installation of tertiary and commercial activities related to the green and creative economy.

darwin.camp



Every One Every Day
London, UK (L)
Founded in 2008

Every One Every Day is an initiative at the Barking & Dagenham borough in London, fostered and supported by local authorities. It focuses on strong community participation, creating a distributed and thriving environment for creative and productive activities in the area.

weareeveryone.org

| HUBS | Fablab Barcelona | Base | Betahaus | Space 10 | Bios | Volumes | Stpin | Rog Lab | Toolbox | Makerversity | Lottozero | Tzoumakers | Paranda | Darwin | Every One Every Day |
|----------------------------------|------------------|------|----------|----------|------|---------|-------|---------|---------|--------------|-----------|------------|---------|--------|---------------------|
| TYPOLGY | | | | | | | | | | | | | | | |
| Third place | x | x | x | x | x | x | x | | | | | | x | x | x |
| Coworking | | x | x | | x | x | x | | | x | x | x | | x | x |
| Living Lab | | | | | x | | | | x | | | | | x | x |
| Fab Lab | x | | | | | | | x | x | | x | x | | | |
| Makerspace | | x | | x | x | x | x | x | x | x | x | x | x | x | x |
| Hackerspace | | | | | | | x | | x | | | x | | | |
| Educ Lab | x | | | | | | | x | x | x | | | | x | x |
| Food Lab | | | | x | | x | x | | | | | | | x | x |
| Bio Lab | x | | | x | | | | | | | | | | | |
| PRODUCTION FACILITIES | | | | | | | | | | | | | | | |
| Agriculture | x | | | x | | | | | | | | x | x | x | x |
| Food production & transformation | | | | x | | | x | | | | | x | x | x | x |
| Wood manufacturing | x | x | | x | | x | x | x | x | x | | x | x | x | x |
| Metal manufacturing | x | | | | | | x | | | x | | x | x | | |
| Electronics | x | | | x | | x | | x | x | x | | | x | | |
| 3D printing | x | | | x | | x | x | x | x | x | | x | x | | x |
| Textile | x | | | | | | x | x | | x | x | | x | | x |

Figure 9 - Typologies and Production Facilities of the Portrayed Hubs

4.1. Starred portraits

In the previous chapter, an overview of the 15 portrayed hubs was presented. Among those, 5 starred portraits were selected to be featured as the most relevant cases to kick-off and inspire the CENTRINNO pilots, prior to the implementation of the nine FCHs.

The selection process took place after the end of the third iteration of Hub Portraits, once the data collection and a first scan analysis were completed. This process took the form of a peer review among all the partners involved in the task.

At first, all 15 portraits were examined following an established set of parameters, such as:

- high performances and/or relevance of the hubs regarding the 5 criteria of the Fab City Hub Framework
- geographical diversity
- city scale diversity (large, medium, small and extra-small cities²⁰)
- established connection with core values and strategies implemented within or promoted by the Fab City Global Initiative

This first scan of the 15 Hub Portraits gave a first shortlist of starred portraits. Within this shortlist, the final selection was made following a curatorial approach. In fact, the main outcome of this work is the creation of online curated content in the form of an online journal. This curated content will focus on CPHs in Europe with the specific aim of building a common vision of what a Fab City Hub is.

Given this fundamental assumption which is at the core of the project proposal, then the focus goes on creating a strong narrative on FCHs in order to build a shared vision of them.

²⁰ According to the CENTRINNO GA

Thus curating, in this context, meant to carefully choose, arrange and present the five starred portraits not only based on the parameters described above, but most importantly focusing on their stories and key messages ([Wolff et al., 2012](#)). This curatorial approach is meant to highlight and share those key messages with the pilots in order to provide valuable indications and references as well as to inspire the beginning of a co-creational process with them.

Diversity, hybridity, non-standardisation and complexity have been recurring keywords and concepts in this research so far, not only in the conducted interviews and portraits but also in the overview and the literature review of chapter 2.

The starred portraits are selected to reflect these features of diversity and hybrid character: each hub in this section sheds light on a different side of the complex polyhedric geometry of the future FCHs.

In that sense, this section has been designed as a journey through the different portraits, each of those telling a different aspect of the same story, outlining the vision of a FCH as:

- a Fab Lab that expands beyond the walls of the lab (Fab Lab Barcelona - Spain)
- a hub as a distributed infrastructure in the city and for the citizens (Every One, Every Day - United Kingdom)
- a large-scale hub based on a collective and ecological governance (Darwin - France)
- a creative hub but also a consultancy centre for revamping traditional skills (Lottozero - Italy)
- a super small, super specific, super connected hub (Tzoumakers - Greece)

Apart from aiming to provide a recipe or a model to be reproduced in every city, this journal aims to introduce the reader to the emergent landscape of FCHs in which the starred portraits comprise the five cardinal points. Every pilot, in a co-creational approach with other partners of CENTRINNO, will then be able to go through the stories of this section with a unique perspective and then implement their actions based on findings on specific local context.

The above-described curatorial approach guided both the selection of the starred portraits and their format. Instead of descriptive, the editorial tone of the starred portraits in this chapter focuses again on the particular story that every hub is meant to tell. In that respect, this chapter is complementary to the raw data collected through the surveys and the interviews that are reported in the Annex section.

This section of the report is intended to be a curated material that can be further used to be published in the online journal, while also outlining specific aspects emerged during the research that could be further investigated in case a particular interest or need from a pilot arises.

The format of the featured portraits is composed according to the following seven sections:

- A title highlighting the story that each specific hub tells in the context of the research;
- A photo or a diagram that is particularly interesting in relation to the narrative of the hub.
- A curatorial note describing the hub, especially presenting how and why it matters for the research.
- A fact sheet, a sort of ID of the hub that showcases administrative information and other details, the revenue streams and especially the spider chart of the Fab City Hub

Framework. This fact sheet intends to give a quick visual overview of the hub connecting it to the 5 key concepts of CENTRINNO.

- A focus on 2 specific criteria from those mentioned above that allow to extract inspiration and actionable takeaways in relation to specific challenges.
- A highlighted initiative of the hub, such as: an education programme, an event, a research project.
- Some extracted topics for further investigation, which can be used as a structure for an online interview feeding into the online journal.

At the time of writing, two of the starred portraits (Fab Lab Barcelona and Lottozero) are scheduled to be featured in the online journal in April, through an online interview. The interview will explore, among others, the topics mentioned in the last point of the above list.

Later on, the online journal will be kept live and other starred portraits may then also be featured on the platform, which can also be fuelled by contributions from other partners according to the Communication and Dissemination Plan (D6.2).

4.1.1. Fab Lab Barcelona: a Fab Lab that expands beyond the walls of the lab



Figure 10 - Hands-on learning experience at Fab City Hub Barcelona

Curatorial note: what is the hub about and why it matters

Fab Lab Barcelona was the first Fab Lab founded in the European Union in 2007. It is a benchmark in the powerful network of over 2.000 Fab Labs in over 100 countries. The Fab City Global Initiative itself stemmed from Fab Lab Barcelona, which was its original hotbed before expanding to a global network of 38 member cities.

Fab Lab Barcelona (hereafter FLB) produces world-leading research and innovation-based projects around the digital fabrication laboratory, located at the core of the hub.

This expression “around the laboratory” is especially meaningful for the purpose of this research, as FLB is a live example of the impact that a hub is able to achieve, when it is driven by a vision that goes beyond the walls of the laboratory and expands beyond the digital fabrication facilities to challenge and create new visions for the city.

While FLB is a lab located in a physical space within a delimited and not distributed space, its trajectory and approach to innovation can be described as several layers that are built around this physical space.

The hub sits within the Institute for Advanced Architecture of Catalonia (IAAC), a world leading educational institution in architecture, urban design, digital fabrication and robotics situated in a building that was a former ceramics factory. IAAC represents the first outer layer of the FLB, which is strongly integrated in it and constitutes a fundamental pillar of the institution.

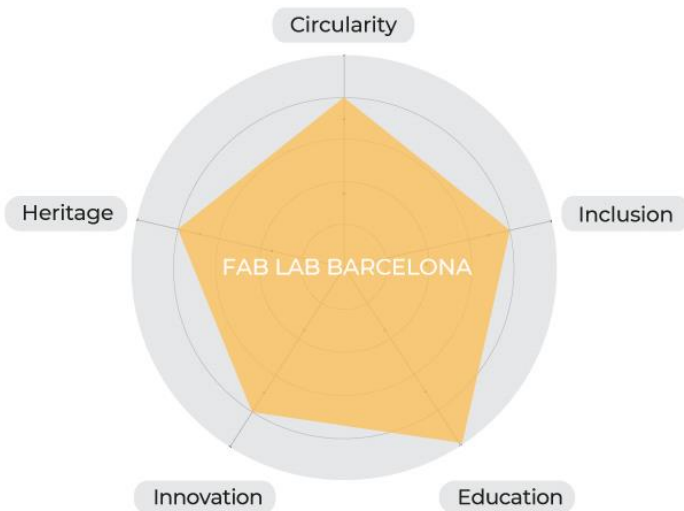
The second layer around FLB is the 22@ District, Poblenou, formerly the main industrial area of Barcelona. FLB involves the local community and stakeholders of Poblenou in different pilot projects, feeding in and learning from the local context and engaging with the citizens.

At a city level, the hub contributes to the development of the Maker District in Poblenou, Barcelona together with the City Council.

Within this dynamic of going beyond the walls, FLB also carried out the first prototype of a FCH, precisely giving the lab a more open and inclusive dimension: The FCH offered a middle ground ([Besson, 2017](#); [Cohendet et al. 2011](#)) link between the Fab City vision, manufacturing and prototyping spaces such as Fab Lab's and the local community. In that space citizens were encouraged to explore, test, learn and contribute to the broader activities of the hub, especially those related to the Fab City Global Initiative.

As part of the transition into Industry 4.0 and leading the Fab City Global Initiative, Fab Lab Barcelona is an example of how an approach based on human-scale and on the local everyday experience can play a fundamental role in shaping a global and international movement such as the Fab City Global Initiative, identifying opportunities in rising trends of urban regeneration.

Table 1 - Fact Sheet Fab Lab Barcelona

| | |
|---|--|
| NAME | Fab Lab Barcelona |
| WEBSITE | https://fablabbcn.org/ |
| LOCATION | Barcelona (Large city) - Spain |
| LAUNCH DATE | 2007 |
|  | |
| CENTRINNO PRODUCTIVE FOCUS | <ul style="list-style-type: none"> • Textiles, Leathers and Fashion • Food and Agriculture • Woodwork, Furniture and Design |
| HUB TYPOLOGIES | <ul style="list-style-type: none"> • Fab Lab • Third Place • Bio Lab • Educ Lab |
| SITE & HERITAGE | The hub is located in a <ul style="list-style-type: none"> • historic industrial area • historic area under transformation • historic/heritage building |
| ADMINISTRATIVE DATA | |
| LEGAL STATUS | <ul style="list-style-type: none"> • Foundation • Private Company |
| NUM. OF EMPLOYEES | 10-50 |
| YEARLY TURNOVER | 2M€ |
| FUNDING SCHEME | Private |
| PROFIT / NONPROFIT | Non-profit organization |
| TYPES OF REVENUS | <ul style="list-style-type: none"> • Educational programs (25%) • Research (65%) • Product and services (10%) |

Focus on two CENTRINNO criteria

FLB and Innovation

FLB is a laboratory for ideas that are prototyped, fabricated and tested using its digital fabrication facilities. The hub aims to create spaces for collaboration between the industry and research, citizen innovation and public institutions. Working with such diverse communities is a way to foster social-economic and technological innovation in a transversal and transdisciplinary manner.

Nevertheless, this multi-topic and multi-scale approach is grounded and based on a conceptualised framework that allows the hub to have a clear yet diverse agenda. In fact, FLB investigates seven strategic areas of research, which may be seen as separate and intersectional. The areas of research are as follows: Civic Ecology, Materials & Textiles, Productive Cities, Sense Making, Distributed Design and Emergent Futures.

Based on this framework, projects developed at the hub can then address fully or partially those areas of research and engage specific local and global communities depending on the specificity of every project.

Consequently, the business model of the hub is hybrid regarding its approach, since it combines education, services, and research activities as its primary business.

The starting point of the Fab City Global Initiative itself lies within FLB functioning as a hybrid space to connect the industry, policy makers and citizens. This vision led in 2014 the city mayor of Barcelona, with support from the Institute for Advanced Architecture of Catalonia, MIT and FLB to make a public commitment to have Barcelona produce everything it consumes within 40 years²¹. This commitment marks the beginning of the Fab City Global Initiative as since then other cities and regions started joining the 2054 pledge to transition into fully circular economies.

FLB and Education

Besides evolving inside a cutting-edge institution for education, FLB itself offers a variety of educational programmes. The hub is the coordinator of the global Fabacademy programme, the official training program of the Fab Lab Network, and it carries out a local version of the programme as well. Over the past years FLB developed iterations of Fabacademy such as the Circular Maker Academy most recently developed in the framework of the European project Pop-Machina.

FLB also runs Fabricademy that is remarkable for CENTRINNO, defined as “a transdisciplinary course that focuses on the development of new technologies applied in the textile industry, in its broad range of applications, from the fashion industry and the upcoming wearable market.”²²

Since 2018, FLB runs the “Master in Design for Emergent Futures”, addressing the dramatic and rapid changes the world and society are facing today in order to envision new radical scenarios for tomorrow through design and transversal thinking. The master programme also embeds and includes the Fab Academy training to provide technical skills. In that sense, it is

²¹ <https://pop-machina.eu/news/news-items/fab-city-the-global-circular-economy-movement-centred-around-local-makers>

²² <https://textile-academy.org/>

an innovative approach of building educational programs by combining existing resources and educational bricks.

Furthermore, the lab offers learning experiences for schools and companies, which are customized based on their areas of interests.

Highlighted initiative: Made Again challenge

With its capacity to bridge private companies with citizens and makers, FLB partnered up with Space 10 - IKEA's external future-living lab, which is also included in the portraits of this research - to create the Made Again challenge. This is considered to be the "largest Fab City prototype to date in Poblenou" in Barcelona - "a one-square-kilometre testbed to explore how to rethink and re-engineer our production system in cities."²³ The experiment took the form of a 5-day workshop, in which IKEA designers, local makers, biologists and experts in digital fabrication gathered and collected waste products from the streets, in order to later explore new products and solutions for those, through the use of technologies made available in FLB

The idea of the Fab City Prototype was replicated in Paris in 2018 during the Fab City Summit with a 2-week long Fab City Campus. The idea of the Fab City Prototype - which is an anticipation of the 2054 goal, in which cities will produce everything they consume, comes to create the opportunity for cities and communities to conduct a temporary experiment and challenge material flows and reinvent in a more circular way.

For more information about the challenge, the reader could also check:

<https://space10.com/project/made-again/>

Extracted topics for further investigation:

★ **FLB and open-source culture**

To create, to document and to publicly share seems to be a constant aspect of the projects of FLB. How is open-source culture informed, inspired and influenced by the hub?

★ **FLB and its educational environment**

The hub is embedded into an educational institution, IAAC, which is located in a district in constant evolution. How did these environments contribute to the growth and success of the hub?

★ **FLB as an event organizer**

In 2014, IAAC and FLB organized the Fab 10, the yearly gathering of the Fab Lab Network. The specific topic of the edition was "from Fab Labs to Fab Cities". How did this event impact the hub and its trajectory? More generally, in which way are events important for a hub, as a place for gathering communities?

²³ <https://space10.com/project/made-again/>

4.1.2. Every One, Every Day: the hub as a distributed infrastructure in the city and for the citizens

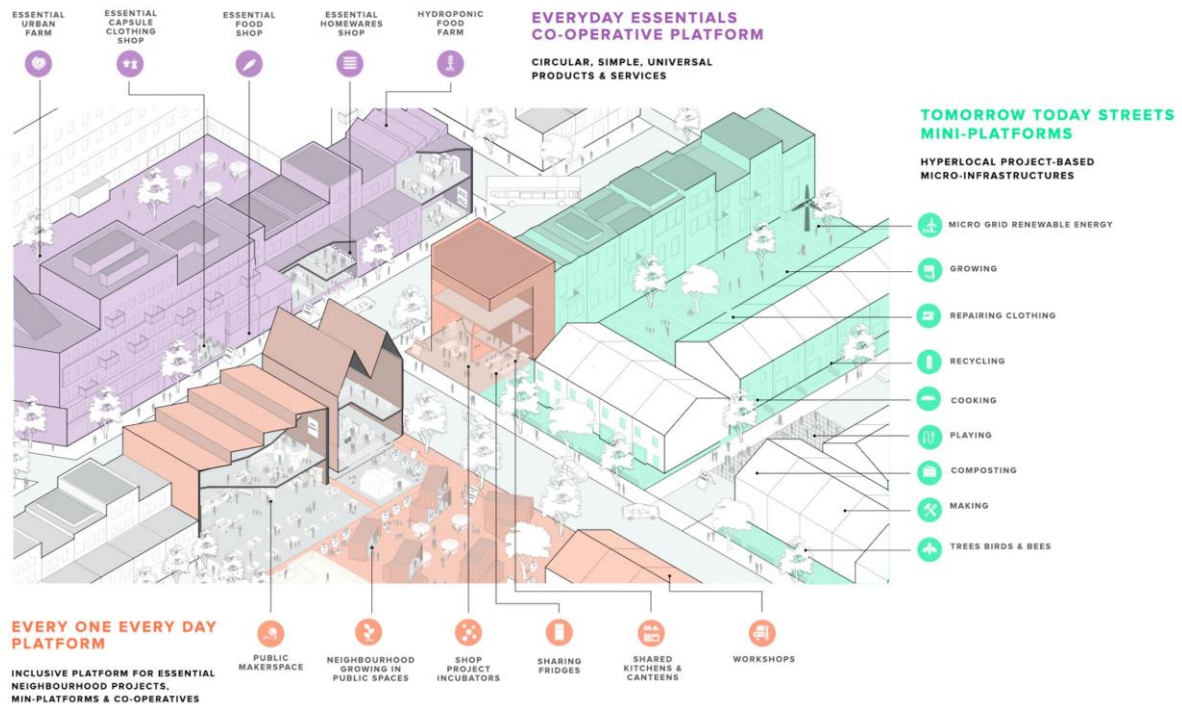


Figure 11 - Every One, Every Day platform: a representation of a hub with a distributed approach.

Curatorial note: what is the hub about and why it matters

As highlighted in the CENTRINNO Whitepaper²⁴ FCHs may range from centralised to distributed typologies, and the historical perspective on hubs, as discussed in chapter 2.3 of this report shows how the scale of impact of hubs often goes beyond the physical walls of the dedicated space. This is particularly true for the FCHs we aim to create within CENTRINNO, as they are intended to deal and collaborate with local authorities in order to maximise their social and economic impact in the cities that they are settled.

While Fab Lab Barcelona develops within a physical and defined space, working in collaboration with the surrounding neighbourhood, the city and the global networks, Every One Every Day (hereafter EOED) was found to be a relevant example of how the distributed character of a hub can be embedded at its very foundation.

The project is an initiative at the Barking & Dagenham borough in London, fostered by the Participatory City Foundation and supported by local authorities. It consists of several simultaneous activities and projects with a strong community participation, that are taking place in many different spaces, creating a distributed and thriving environment for creative and productive activities in the area.

EOED is designed to engage with the spatial scale of the city, flowing from identified buildings (such the warehouse which is the makerspace of the project) to streets and local shops. In that perspective and with its bottom-up, collaborative and inclusive approach, EOED exemplifies how the distributed spatial configuration of a hub is also a way to tackle topics related to the public spaces and inclusiveness. Tackling streets and open spaces as the

²⁴ https://centrinno.eu/wp-content/uploads/2021/02/Centrinno_WHITEPAPER_2.0_EUproject.pdf

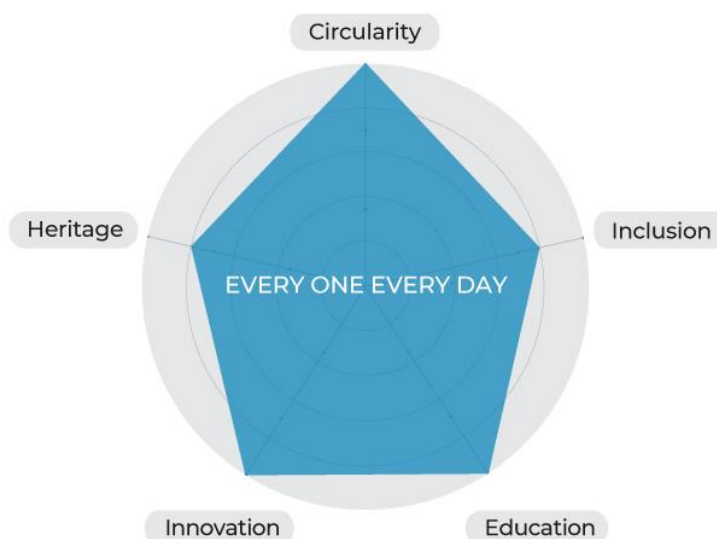
ground of their activities and experimentations, EOED opens to a diverse public and appears to be a way to be more accessible and prominent. Additionally, outdoor activities can be a way to cope with the actual pandemic situation.

This distributed nature at the neighbourhood's scale challenges the basic concept of what Labs and Hubs are or can be in terms of spatial structure. It is striking to note that EOED describes itself as a network of people and not a spatial initiative, highlighting the interconnection that links the space and the communities within this research.

The experience of EOED is particularly interesting given the current circumstances that the pandemic created, as it offers useful insights for hubs which cannot implement activities in their spaces due to Covid-19 restrictions. Also, EOED managed to shift many activities to a virtual environment²⁵ since March 2020. Nevertheless, this was possible partly because of their long trajectory and ongoing work with the local community.

²⁵ <https://www.weareeveryone.org/online-programme>

Table 2 - Fact Sheet Every One Every Day

| | |
|---|---|
| NAME | Every One Every Day |
| WEBSITE | www.weareeveryone.org |
| LOCATION | London (Large city) - United Kingdom |
| LAUNCH DATE | 2008 |
|  | |
| CENTRINNO PRODUCTIVE FOCUS | <ul style="list-style-type: none"> • Textiles, Leathers and Fashion • Food and Agriculture • Woodwork, Furniture and Design |
| HUB TYPOLOGIES | <ul style="list-style-type: none"> • Makerspace • Coworking • Third Place • Living Lab • Foodlab • Educ Lab |
| SITE & HERITAGE | <p>The hub is located in a</p> <ul style="list-style-type: none"> • historic industrial area • historic area under transformation |
| ADMINISTRATIVE DATA | |
| LEGAL STATUS | Foundation |
| NUM. OF EMPLOYEES | 10-50 |
| YEARLY TURNOVER | 1.8M€ |
| FUNDING SCHEME | Hybrid (Private/Public) |
| PROFIT / NONPROFIT | Non-profit organization |
| TYPES OF REVENUS | <ul style="list-style-type: none"> • Public funding • Private funding |

Focus on two CENTRINNO criteria

EOED and Inclusion

EOED is an initiative dedicated to making practical participation fully inclusive. The initiative focuses on creating an infrastructure which includes spaces for events and activities, and in addition provides toolkits plus a supportive team that facilitates a wide range of bottom-up activities and projects conducted by the community of local citizens. All benefits and outcomes from the activities are being measured and made publicly available through periodic reports²⁶.

As stated in those reports, the principles of the initiative are strongly related to social inclusion:

- Equality – attracting a diverse range of participants.
- Mutual benefit – involves people contributing and benefiting from a single action.
- Peer-to-peer – involves people working peer-to-peer on an equal footing.
- Productive activities – involves people in producing tangible things together.
- Open accessibility – involving as many people as possible, through working to reduce all types of participation barriers.

This open and inclusive approach also reflects into the “14 Design principles for building an inclusive Participatory Ecosystem”²⁷ developed by the Participatory City Foundation according to EOED’s experience.

EOED and Education

The EOED initiative is grounded in Participatory City’s nine years of deep engagement with those at the forefront of developing a “participation culture” around the world. The ambition of the initiative is to build a large-scale, fully inclusive, practical Participatory Ecosystem along with citizens, local stakeholders and policy makers.

The vision of starting from a specific local context (the Barking & Dagenham borough in London) with the ambition to become a global initiative is deeply embedded within the project.

This inspiration is illustrated by the initiative of “Here & Now School”²⁸ run by Participatory City Foundation (the organisation behind EOED), which is a school of participatory systems and design, established by Participatory City Foundation, bringing together research, knowledge building and learning. This includes residencies, transdisciplinary and research projects, but also Cities Programmes that target cities and regions that intend to learn the methodology and implement it in their territories.

Highlighted initiative: Tomorrow Today Streets

Tomorrow Today Streets provides the framework to give citizens the possibility to start projects right on the streets, ranging from organizing a street party with neighbourhoods to setting up a shared childcare activity.

The slogan of the initiative gives an interesting highlight on how EOED approaches the physical space of buildings, as they intertwine with public spaces: “Our homes are more than the buildings we live in, they’re also the streets we live on, the blocks of flats, cul-de-sacs and green spaces around us.”²⁹

²⁶ <https://issuu.com/participatorycity>

²⁷ <http://www.participatorycity.org/14-design-principles-for-inclusive-participation>

²⁸ <http://www.participatorycity.org/herenow-school>

²⁹ https://issuu.com/participatorycity/docs/final_tts_newspaper_23_06_v5_single

Tomorrow Today Street is based on 24 thematic kits designed and produced by the EOED team; each kit includes materials, equipment, training, all means of support that any citizen can use to initiate a project or an activity at a street/neighbourhood scale.

The hub's team positions itself, here, as a facilitator: it provides tools, kits and frameworks in order to empower citizens and let activities emerge rather than programming them in detail.

For more information about the initiative, the reader could check:

<https://www.weareeveryone.org/tomorrowtoday>

Extracted topics for further investigation:

★ DISTRIBUTED STRATEGIES

How did the hub put into practice the distributed approach? Is there any specific tool or guidelines that would be worth sharing? How did the hub approach local stores and libraries? Is it recommended to approach them in the early stages of the project or once a solid framework is already established?

★ CENTRALISED VS DISTRIBUTED

Unfolding the relation between a physical and centralised space and a distributed approach: is there a headquarter in EOED, a place that embodies the whole project? Is the Warehouse playing such a role? Is the distributed approach complementary to have one or several identified nodes of reference, such as the warehouse?

★ DIGITAL TOOLS

Digital tools such as social networks and online sessions seem to play a central role in EOED, already before covid-19 pandemic. Which were the specific tools used and/or recommended towards the citizens and why? How did this change with Covid-19?

3.1.3. Darwin: a large-scale hub based on a collective and ecological governance



Figure 12 - Darwin hall dedicated to skate activities.

Curatorial note: what is the hub about and why it matters

Darwin hub is a large scale (35.000 sqm) real estate operation in Bordeaux, France. In 2009, the private group Evolution, owned by a local family, after mobilizing in dialogue with local associations and citizens, bought a part of a former military site which was abandoned a few years before, back to life.

Darwin was born with the vision of investing those heritage buildings by rehabilitating them and by installing a multitude of different activities and communities, all of them united under the umbrella of social and ecological values.

Darwin is remarkable for its size (largest operation covered by this study) but especially because the hub exemplifies how governance can be a key and structuring aspect of such a complex project, mixing real-estate, entrepreneurial activities, ecological values and social justice.

The private company Evolution, which initiated the Darwin project, supported since the beginning the emergence of an inclusive governance of the hub, by encouraging economic and social initiatives coming from citizens and NGOs in the fields of culture, ecology and urban sports. In 2011, in order to formally support these initiatives, the Darwin Foundation was created, which acts as an endowment fund in order to assure a global responsibility of the mother company.

In 2013, the association "Darwin'co" was founded to represent the 180 structures and 400

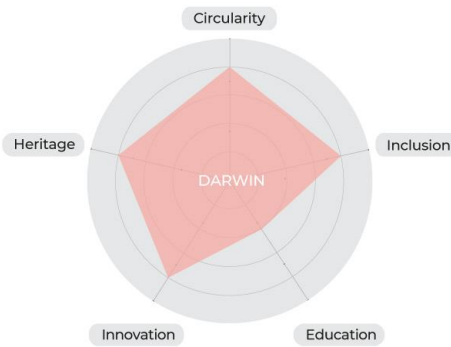
people working there (the co-workers), most of them working in green or creative economy. The total turnover of these organisations is about 70M€, which gives the NGO a considerable political and economic influence, both internally to the hub but also at the city's level.

This constitutes a two-head governance system, which allows "Darwin'co" to express the interests of the community that are discussed and negotiated with those of the private company Evolution.

Moreover, another association called "58ème" brings together an associative network of more than 50 associations housed in the Darwin ecosystem, in the fields of culture, sports, solidarity, and urban agriculture.

This multi-layered and organic governance has a big impact on the evolution of the project, empowering users, NGOs and companies incubated at Darwin, making the hub a real place for debate and collective actions on the ecological transition.

Table 3 - Fact Sheet Darwin

| | |
|--|---|
| NAME | Darwin |
| WEBSITE | https://twitter.com/DarwinBdx |
| LOCATION | Bordeaux (Medium city) - France |
| LAUNCH DATE | 2008 |
|  | |
| CENTRINNO PRODUCTIVE FOCUS | <ul style="list-style-type: none"> • Food and Agriculture • Woodwork, Furniture and Design |
| HUB TYPOLOGIES | <ul style="list-style-type: none"> • Makerspace • Coworking • Third Place • Living Lab • Bio Lab • Food Lab • Educ Lab |
| SITE & HERITAGE | <p>The hub is located in a</p> <ul style="list-style-type: none"> • historic area under transformation • historic/heritage building |
| ADMINISTRATIVE DATA | |
| LEGAL STATUS | <ul style="list-style-type: none"> • Private Company • Cooperative • NGO • Foundation |
| NUM. OF EMPLOYEES | +50 |
| YEARLY TURNOVER | 1.57M€ |
| FUNDING SCHEME | Hybrid (Private/Public) |
| PROFIT / NONPROFIT | Hybrid |
| TYPES OF REVENUS | <ul style="list-style-type: none"> • Memberships / subscriptions (20%) • Acceleration / incubation (8%) • Space rental / events (2%) • Private funding (15%) • Public funding (5%) • Product and services (50%) |

Focus on two CENTRINNO criteria

Darwin and Circularity

At Darwin, energy sobriety and ecological values are recurring topics. The renovation of the buildings to convert them into a creative hub was guided by radical solutions of bioclimatic architecture principles, including the choice of not having artificial air conditioning and optimising natural lighting.

This approach led Darwin to conceptualise the idea of NégaWatt, a strategic approach to sustainable energy focused on sobriety and efficiency coupled with the use of renewable sources.

These efforts result in a building with a consistently low energy consumption of 84 kWh /m²/year. Jean Marc Gancille - Darwin co-founder - claims the average CO₂ emission of a worker at Darwin is 6 times smaller than the average worker in a conventional office building in France³⁰.

Darwin's activism and radical commitment for ecological challenges is also expressed through the CLIMAX Festival, a major event that since 2015, gathers in Bordeaux a large audience (33,000 participants in 2017 and 2018) with a broad spectrum of interests: the fight against climate change, the erosion of biodiversity, the rights of nature, human rights (including those of indigenous peoples) and solidarity with refugees.

The festival is organised by NGO Darwin Climax Coalition, defined as an international coalition of activist organizations aimed at preserving living things. The NGO is giving a remarkable contribution to the cause of Amazon's deforestation as it supported the cacique leader Raoni Metuktire³¹ in filing his complaint against Jair Bolsonaro for the crime of ecocide linked to the deforestation. Amazon's deforestation was a key topic of the festival in 2019 and Raoni was one of the main guest speakers.

Darwin and Heritage

Darwin's approach to heritage could be defined as agile, frugal and incremental, the term incremental came up several times during interviews with a member of the team and it deserves to be highlighted. An incremental approach, opposed to a monolithic approach, is one that focuses on iterative progressive development, in which feedbacks of the system are observed and actions are made to implement new parts based on those feedbacks and user needs.

Darwin strived since its beginning to maintain a respectful relationship with the neighbourhood and to preserve what existed already by building upon it. These efforts are reflected through both tangible and immaterial layers of heritage.

On the tangible layer, the architecture and the physical spaces were occupied, renovated and used incrementally, based on the needs of the community, with an ecological approach, maximising reuse and minimising carbon footprint.

On the immaterial layer, since its kickstart, the hub dealt with local citizens and fought to maintain current activities and a memory of what was there before, again building upon and developing with the existing communities and their interests. This is exemplified in the Darwin

³⁰ <https://twitter.com/DarwinBdx>

³¹ https://en.wikipedia.org/wiki/Raoni_Metuktire

Foundation statement, which defines the categories of actions supported by the foundation. Those categories are based on activities that pre-existed in this site before. When the company Evolution came in, these activities (graffiti, street art, skateboarding and video-music) were expanded with the introduction of new topics brought by the development of the Darwin ecosystem and communities (such as architecture modulaire, ecological capacity building, alternative education).

Highlighted initiative: MIUSSEC

In collaboration with experts of sustainable construction, Darwin developed MIUSSEC (*Métrologie Intelligente des Usages pour la Sobriété Énergétique et les Éco-Comportements*), a digital web interface that gives all the users of the hub a quantitative feedback regarding the energy consumption of the building. This interface is designed based on the idea that the users of a building can have a huge impact on energy consumption (up to twice the consumption in case of improper use of the building and its facilities), and provides them with feedback to visualise and measure their efforts in reducing energy waste.

Apart from being an example of how digital tools can blend with physical spaces of the hub, MIUSSEC is again driven by the value at the core of the project by putting users and citizens in a position of empowerment in terms of governance, decision making and in facing ecological challenges.

Extracted topics for further investigation:

★ Ecological governance

Jean Marc Gancille - Darwin co-founder - calls it a “collective ecological governance”. How and why are collective and ecological approaches important in the governance of Darwin? And more generally, how does Darwin deal with such complex governance from a private company, NGOs and individuals? Are there any critical or difficult points to consider when opting for an inclusive governance?

★ Digital and low-tech

How does Darwin deal with an innovative and digital approach (social media, MIUSSEC) while promoting and opting for sobriety and low-tech? How do these aspects coexist complementary and not contradictory?

★ Incremental approach

The incremental approach and the “build upon” strategy seems crucial in Darwin’s development. How and where did these concepts originate? Is there a specific cultural and/or scientific background?

4.1.4. Lottozero: a creative hub but also a consultancy centre for revamping traditional skills



Figure 13 - Textile laboratories at Lottozero.

Curatorial note: what is the hub about and why it matters

Lottozero is an international center for textile design, art and culture located in the small city of Prato, in central Italy. It operates both as a consultancy center and as a creative hub, organized into a gallery and exhibition area, a shared studio space (coworking) and an open Fab Lab for textile production, experimentation and research.

These multiple spatial facilities target specifically an international audience of creative designers of the fashion and textile industry and Lottozero responds to their need for space, their demand for interaction and networking with other creators and also their need to access specific information and expertise, which is difficult to be gained through online resources.

Strongly rooted in a major industrial district dedicated to fashion, Lottozero is an interesting example of how a specialized hub (in the textile and fashion industry) can create its own local and global ecosystems and function as an interface between the local traditional context and the international one, more open and innovative.

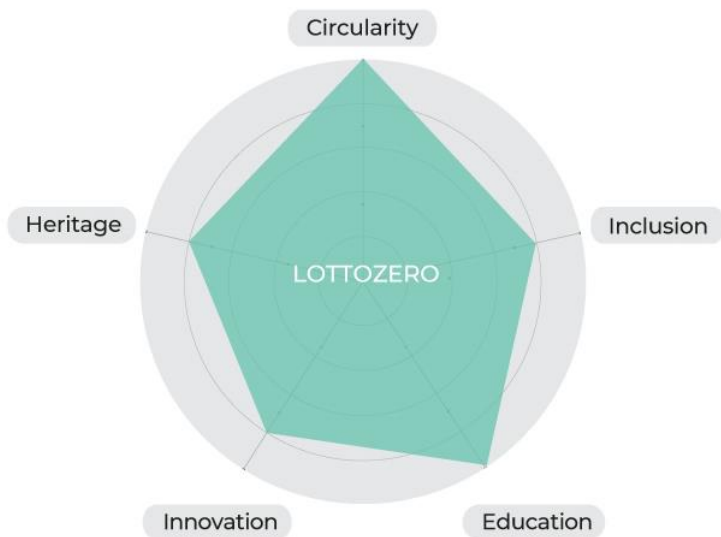
The hub is an interesting and unique example among the reviewed hubs of how the value of the hub resides in bridging together 3 different dimensions:

- The hub, by providing a physical space for experimentation and prototyping.
- Being embedded in an historical textile district with unique expertise and capacity of production.
- A widespread and reliable network of excellent creative collaborators all over the world.

This capacity of connecting those different dimensions creates a unique knowledge and expertise for Lottozero, which reflect into a diversified business model, in which 70% of the revenues are based on consultancy and educational activities.

Being a hub based in a physical space, its business model could be confused with a real-estate operation. However, Lottozero is a key example of how a bigger and more consistent value can be found in knowledge and expertise that are developed through the use of a physical space.

Table 4 - Fact Sheet Lottozero

| | |
|---|--|
| NAME | Lottozero |
| WEBSITE | www.lottozero.org/ |
| LOCATION | Prato (Small city) - Italy |
| LAUNCH DATE | 2016 |
|  | |
| CENTRINNO PRODUCTIVE FOCUS | <ul style="list-style-type: none"> Textiles, Leathers and Fashion |
| HUB TYPOLOGIES | <ul style="list-style-type: none"> Fab Lab Makerspace Coworking |
| SITE & HERITAGE | The hub is located in a <ul style="list-style-type: none"> historic area under transformation |
| ADMINISTRATIVE DATA | |
| LEGAL STATUS | Cooperative |
| NUM. OF EMPLOYEES | 1-5 |
| YEARLY TURNOVER | 100k€ |
| FUNDING SCHEME | Private |
| PROFIT / NONPROFIT | Non-profit organization |
| TYPES OF REVENUS | <ul style="list-style-type: none"> Memberships / subscriptions (10%) Educational programs (30%) Research (10%) Consulting (40%) Space rental / events (5%) Public funding (5%) |

Focus on two CENTRINNO criteria

Lottozero and Heritage

The hub is located in the Macrolottozero area of Prato, Italy. Prato is one of the most important industrial districts in Italy, with more than 8.000 companies operating in the textiles and fashion industry. Macrolottozero was heavily industrialized after World War II, but following one of the general trends that are tackled in CENTRINNO, most of the companies moved to a more accessible industrial area on the outskirts of the city, leaving a deep cultural vacancy and a variety of abandoned spaces and factories. Lottozero's headquarter is based in what used to be a warehouse for wholesale.

The founding principle of Lottozero lies in understanding the hub as a spatial link between this context - made of tradition and expertise - and an international community of creatives bringing in an open and contemporary approach, with new inputs and perspectives, enriching traditional local practices. In that regard, the hub's activities strongly protect and renew the historical and industrial heritage of the site.

Lottozero's founders claim to see the textile district as a sort of diffused laboratory, expanding the opportunities, knowledge and facilities of the hub. The hub operates then to create new partnerships, new working relationships, synergies and cross-pollination between players that would not otherwise interact with each other and would not know how to communicate (often quite literally!).

Lottozero and innovation

One of Lottozero's most remarkable features is its support for the development of emerging talents and brands by facilitating the exchange between them and the traditional companies of Prato's district. In order to achieve such objective, Lottozero has a residency and exhibition program that allows young designers to live in a dedicated apartment within the hub, while working with the facilities and the community of the hub.

Through these residencies, national and international designers and artists are directly connected to local manufacturers having the technical know-how to produce their creations. On the other side, traditional textile companies of the district are exposed to new approaches, technologies and cultures. This cross-pollination leads to the creation of new multidisciplinary projects and creates new forms of knowledge and expertise.

This innovative character of the hub, strongly connected with the heritage and the culture of the site, is often highlighted as best practice by the local administration. However, the hub has not yet achieved to work with the local authorities on a common agenda.

Highlighted initiative: Circular Wool

Circular Wool is an on-going (2017-2021) research project led by Lottozero in collaboration with the technology consultancy *R.S. Ricerca e Servizi*.

The project aims to transform a waste material, wool from local dairy sheep farms, which is disposed of at high environmental and economic costs, into a circular textile raw material. The wool is recovered and processed in the Prato textile district thus becomes a material for textile use to be applied in furnishing fabrics and interior products such as curtains, carpets and panels. The project operates through partnerships with host-brands and the design and production of circular and innovative products.

Circular Wool is based on the idea of adding value to a raw and depreciated material through

incorporating high levels of design, boosting the marketing and storytelling of the final product, with values of circularity that can resonate with the end-users' concerns for sustainability.

Extracted topics for further investigation:

★ **Creative hub as a consultancy centre**

How did the consultancy service come to be? Was it embedded in the original business model or did it emerge afterward? Is the service targeting small companies, big corporations or both?

★ **Collaborations with educational institutions**

Lottozero has collaborated with several Italian and foreign universities, as well as junior schools offering mentorship, lectures and workshops. What are the needs of such educational institutions and how does Lottozero respond to them?

★ **Lottozero and the pandemic**

Lottozero successfully transferred online a part of the activities with the strike of the pandemic. How was this transfer made possible? Having an already strong online identity made the process easier? Did this broaden or diversify Lottozero's audience and community?

4.1.5. Tzoumakers: super small, super specific, super connected.



Figure 14 - The facilities of Tzoumakers.

Curatorial note: what is the hub about and why it matters

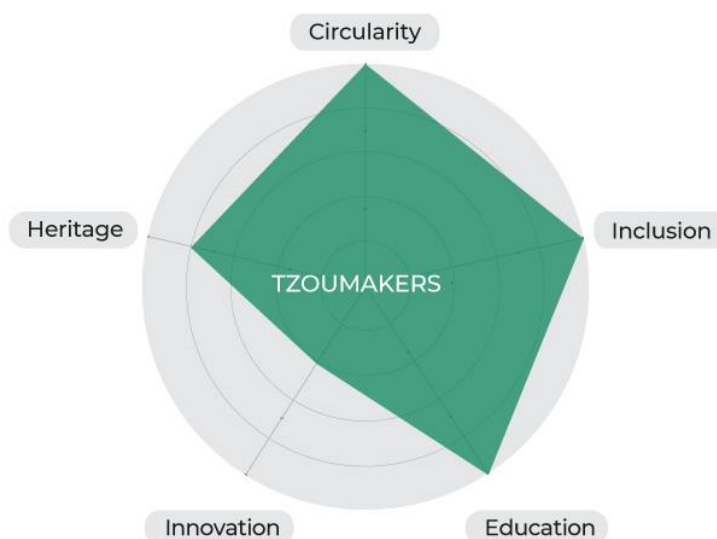
Tzoumakers is an open lab for communities to cooperatively design and manufacture tools for small-scale agricultural production, located in the region of Tzoumerka, in the cultural centre of the Kalentzi village in Ioannina, Greece.

Tzoumakers is an example of how a small initiative in an isolated location can achieve meaningful impact by grounding its activities on specific local needs while keeping a solid connection with global networks to share models, information and open-source projects.

The hub is located in Tzoumerka, a region of villages traditionally inhabited by farmers, animal breeders and beekeepers. Interestingly enough, the industrial revolution didn't affect local productive activities at a great scale, since modern, industrial-scale machinery is either too expensive or can't be operated in these mountainous areas. Tzoumakers' open-source tools are tailor made for these kinds of small-scale primary production activities. This is an example of how hubs (especially rural ones located in small cities) can respond to highly customisable needs that might be neglected by the mass standardised production, allowing traditions and culture to be conserved and to evolve with contemporary tools.

Tzoumakers share their facilities in the spirit of co-manufacturing tools together with the local community; beside that, Tzoumakers also focus on sharing with the community the knowledge gained from the whole process of manufacturing, by documenting the process and thus creating a virtuous loop of knowledge and production.

Table 5 - Fact Sheet Tzoumakers

| | |
|---|---|
| NAME | Tzoumakers |
| WEBSITE | www.tzoumakers.gr/english/ |
| LOCATION | Kalentzi (Extra-small city) - Greece |
| LAUNCH DATE | 2018 |
|  | |
| CENTRINNO PRODUCTIVE FOCUS | <ul style="list-style-type: none"> • Food and Agriculture • Woodwork, Furniture and Design |
| HUB TYPOLOGIES | <ul style="list-style-type: none"> • Fab Lab • Makerspace • Coworking • Hackerspace |
| SITE & HERITAGE | The hub is located in a <ul style="list-style-type: none"> • historic/heritage building |
| ADMINISTRATIVE DATA | |
| LEGAL STATUS | NGO |
| NUM. OF EMPLOYEES | 1-5 |
| YEARLY TURNOVER | 40k€ |
| FUNDING SCHEME | Hybrid (Private/Public) |
| PROFIT / NONPROFIT | Non-profit organization |
| TYPES OF REVENUS | <ul style="list-style-type: none"> • Research (46%) • Space rental / events (23%) • Private funding (6%) • Public funding (25%) |

Focus on two CENTRINNO criteria

Tzoumakers and Circularity

The “design global, manufacture local” model that Tzoumakers community practice and research is described by the P2P Foundation as “a production model that focuses on localized production settings via a network of distributed makerspaces. It builds on the convergence of global digital commons (i.e., knowledge, software, and design) with local manufacturing technologies, by taking into account the surrounding biophysical conditions. The reduction of transportation costs and the expected low environmental impact of locally produced solutions are considered as significant benefits of this model.”³²

This approach allows to create small, regional loops of production which facilitate the reduction of carbon emissions as less goods are moved around the planet, but also foster the repair and recycling of tools and pieces. In the specific case of Tzoumakers, this model allows for reduced raw materials transportation because tools are made locally.

In fact, since users have taken active part in the design, brainstorming and fabrication of their own tools, production costs are significantly reduced and the tools are easier to repair, allowing farmers to have an overall control of the technology they use in their everyday activities. Repair activities for the tools are hosted regularly in the makerspace when the need arises.

These principles resonate strongly with the values of the circular economy of the Fab City Global Initiative, previously presented in this report.

Tzoumakers and Inclusion

Inclusion is a core value at Tzoumakers. Educational activities and events mix audiences with different backgrounds, such as farmers with program developers and wood workers with architects. Activities also encourage the participation of groups that are not so well acquainted with technology such as old farmers and rural workers.

Epirus, the region to which Tzoumerka belongs, is suffering from significant population decline and has the second highest long-term unemployment rate in Europe³³. Tzoumakers contributes to making agricultural activities in Greece a more accessible and viable option by supporting farmers in being more resilient and innovative.

The high specialisation of the hub on rural activities in mountainous areas makes the open-source approach also relevant, in which the design blueprints and the documentation of each one of the tools fabricated are shared online with other communities in different regions of the world who face similar needs. In that sense the hub functions as an interface between the local and the global community, which have led Tzoumakers to the organization of international events to gather this global community with a specific program and agenda.

Highlighted event: Cultivating Open-Source Agriculture

Events can play a major role in activating and nurturing the community of the hubs, up to the point that in some cases hubs operate as event organisers and producers, with their business models directly relating to these aspects.

³² https://wiki.p2pfoundation.net/Design_Global_Manufacture_Local

³³ <https://ec.europa.eu/eurostat/documents/2995521/9746862/1-29042019-BP-EN.pdf/329a9132-20c0-485b-aa22-b34864c22fde>

This is particularly true for rural or isolated areas, as in the case of Tzoumakers. Those locations do not have large populations that allow the hub to benefit from a local flux of visitors, meaning that it can be challenging to attract a wider audience. Being the local population limited, events can function as calls for new community members coming from other locations, travelling because of the specificity of topic and expertise that hub can offer. This is what Tzoumakers has been able to do through the organisation of international events on the topics of agriculture and open-source technology, which have successfully attracted members of communities such as L'Atelier Paysan (France) and Valldaura Labs (Barcelona, Spain), also working on similar topics.

The 2019 retreat called Cultivating Open-Source Agriculture in Tzoumerka is an example of this kind of events hosted by Tzoumakers in collaboration with the local authority, the Municipality of Northern Tzoumerka and P2P Lab, during the activities of Phygital project³⁴.

Based on a call for application on the topic of “small scale agriculture solution”, 4 creative teams of designers, makers, farmers and enthusiasts were selected for participation. The retreat was organised in a 3 days format in which prototyping and manufacturing activities were alternated with more theoretical contents such as open-source culture, local sovereignty and emancipation, distributed production.

For more information about the event, the reader could check:

<https://phygitalproject.eu/news/2019/09/06/Invitation-for-a-3-day-retreat-Cultivating-Open-Source-Agriculture-in-Tzoumerka.html>.

Extracted topics for further investigation:

★ **Specialisation and open-source**

How does the hub deal with context specific needs and global knowledge sharing?
How are the communication barriers (in terms of language and culture) faced?

★ **Tech and inclusion**

How does the hub deal with local farmers and challenges with older populations that are not familiar with a makerspace and modern technology? Is there any lesson learned that would be worth sharing?

★ **Extra small**

Given the specific rural territory in which Tzoumakers is located, which recommendations could be extracted for hubs that want to develop in a rural or remote area? How did Covid-19 affect or is it affecting the vision of Tzoumakers in regards to localism and globalism?

³⁴ <https://phygitalproject.eu/about/>

4.2. Lesson Learned from the Hub Portraits

This section aims to draw some of the lessons learned from the fifteen Hub Portraits in form of ten founding principles that can be considered as a first set of insights and recommendations to develop FCHs in CENTRINNO's pilot cities. Being CPHs a non-standard model and being the Fab City Global Initiative strongly anchored to diversified local contexts and needs, these principles want to sketch lines of research and explorations more than providing rules that need to be replicated and check listed.

The way of thinking behind these principles is based on the idea - already formulated in chapter 2 - that Fab City Hubs are emerging in a situated context of already existing CPHs in Europe. Hub Portraits are serving the purpose of bringing out useful and inspiring practices to shape the vision of the future FCHs.

For that, the following methodology has been used:

1. All the portraits of the three iterations have been marked with codes in form of hashtags, each one expressing a specific concept;
2. All the hashtags have been gathered in a one document, in order to easily check their recurrence;
3. The authors used the document mentioned in point 2 to search for connections, similarities, gaps, emerging concepts and ideas;
4. Based on the reflection described in point 3, hashtags were then clustered;
5. From these clusters, a series of principles was outlined. For each principle, a first definition of their title was drafted. Each of the principles was linked to the cloud of clustered hashtags it emerged from;
6. Each of those principles has been completed with the addition of at least three highlights extracted from the hub portraits. This allowed to sharpen the titles of the principles based on real examples coming from the case studies;
7. The principles were refined, some of them were merged and some others were split, eventually resulting in a set of 10 principles

The principles were grouped in three different categories, going from the more abstract and general to the more specific and tactical. Below are the 3 groups of principles, mainly described through questions to which the principles aim to provide answers:

- **FAB CITY HUB VISION**

This group of principles aims to create a mindset from which the hub operators should look at their project and relative challenges. What is a FCH? How should one think about FCH? How should one visualise the future of those hubs in relation to other actors, makers, institutions and private companies?

- **FAB CITY HUB AND COMMUNITY**

How should FCHs relate to their communities? Is a physical space needed to start the project? How can somebody make the project inclusive? How should the hub's operating team collaborate with those communities?

- **FAB CITY HUB AND INFRASTRUCTURE**

This group focuses more on tangible assets of the Fab City Hubs: what about physical space and fabrication facilities? How should those be managed or designed? Are productive facilities meant to replace traditional production or rather used to reskill local communities?

Each of the principles is enunciated through a title, a short description and complemented with at least 2 highlights extracted from the Hub Portraits. In this section hubs are not described and introduced in detail, only specific aspects, projects or strategies functional to illustrate the

principles that have been reported. For all the details about the hubs that are not included in section 3.3.1 about starred portraits, the reader could refer to Annex 1.

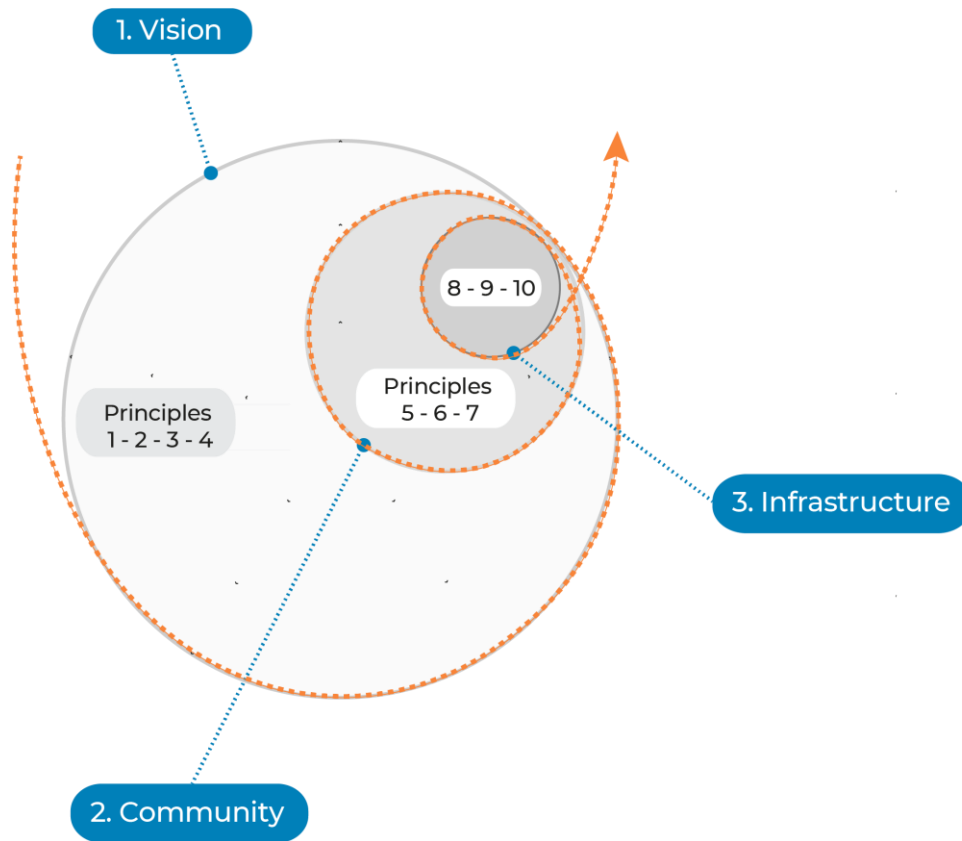


Figure 15 - Conceptual structure of the Fab City Hub principles

4.2.1 Fab City Hub Vision

Principle One - Fab City Hubs as ecosystem activators

An ecosystem can be defined as a community of living organisms interacting with its environment as a system. Thanks to these interactions, each ecosystem sustains its own equilibrium and allows a thriving life for its organisms. FCHs need to be thought of and structured as platforms that catalyse interactions and facilitate connections and collaborations among the different actors that are active in urban environments.

This role of *concentrators of urban interactions* is crucial in the purpose of building momentum toward more inclusive and circular economies in cities.

While their physical infrastructure should spatially enable these interactions, FCHs need also to provide a series of intangible assets that go beyond their physical dimension and turn them into “intermediaries for value productions” ([Gandini, 2015](#)). These intangible assets could be identified in the organisations of activities and public events for a large and diversified audience, in moments of conviviality and free exchanges among professional and non-professional actors.

In practice, FCHs are ecosystem activators for their capacity to connect a physical space to its surrounding communities, and from there develop projects and initiatives that are embedded in the local context.

Highlights from the hub portraits:

- **BETAHAUS** - the hub is a pioneer in the coworking movement and being the first start-up hub in Berlin, it acted as a real ecosystem activator creating a platform to connect, inspire and create momentum in its city. To nurture this ecosystem, the hub created a whole set of tools, such *Betapitch* - a pitch context for start-ups, *BetahausX* - a consulting firm that bridges start-up ideas with corporate innovation funnels - and *Hardware.co* - an accelerator program, sustained by Betahaus, for hardware development through the setup of multiple opportunities such as a lab, a series of meetings, and an online platform.
- **VOLUMES** - initially launched as a creative and productive hub in Paris. The hub shifted its narrative and its structure to an *ecosystem builder* in 2019, when it expanded and opened two new locations in the area. The company now does not operate anymore as a mere physical place, but focuses on activities (such as training, incubation and research), the main focus of which is to nurture the local ecosystem that is composed by a network of hubs intertwined with local communities and their projects.
- **SPACE 10** - being the innovation and research lab of a big corporation such as IKEA, the initiative is a bold move which certifies the will to go for an open model innovation. The hub, in fact, serves IKEA by connecting the company with local and international communities of practice, thus allowing the brand to operate in an ecosystem instead of being in a closed inhouse loop.

Principle Two - Fab City Hubs as physical devices for accessing distributed ecosystems

Local ecosystems, as mentioned before, encompass a diverse range of agents including makers, activists, entrepreneurs, private companies, and institutions. These actors are, by nature, distributed at the city and regional level and their capacity to make a positive impact at the urban scale is highly dependent on their mutual interaction and their distributed character. However, their distributed character also makes those ecosystems appear as intangible and difficult to grasp for newcomers.

Thus, FCHs are a fundamental interface to connect with these distributed urban ecosystems, a sort of access gate to enter them. This entry point can also be very powerful to guide visitors from abroad that want to enter the local innovation ecosystem.

Opposite to traditional innovation hubs or incubators, FCHs are not concentrating in a unique physical space all the stakeholder, projects and initiative, polarising in this way certain areas of the city and depriving others. Instead, they are a physical device to access the richness, variety and geographical distribution of communities, actors and projects.

This innovative aspect is similar to the one that the internet brought to the use of computers, transforming them from machines to store data and information to devices providing access to data that are distributed in a network.

FCHs operate as physical places and landmarks that give access to newcomers to the local productive and creative ecosystems of a city, being globally connected as nodes of a network that can exchange data, information, projects, initiatives and best practices.

Highlights from the hub portraits:

- **LOTTOZERO** - As described in the starred portrait, the hub acts as a gate for accessing key actors, know-how and resources around textile and fashion that are distributed in the Prato textile districts. Through residencies, training and events, a global community of creatives is attracted to the hub because of its capacity to connect with expertise that are available only within the territory and difficult to find online.
- **FAB LAB BARCELONA** - especially visible through the hub's European projects, FLB approach is sharing information and knowledge globally to apply and make locally. FLB supports the collaboration with and between the hub and stakeholders in the surrounding neighbourhood of Poblenou in Barcelona, for example through European pilot projects.
- **TZOUMAKERS** - by embracing the model of “design global, manufacture local”, this small and remote physical place challenges its boundaries connecting local and global communities together through the organisation of events around the specific topic of urban agriculture.
- **TOOLBOX** - the hub organises and hosts every year a series of festivals and events such as Torino Maker Faire³⁵ and Graphic Days³⁶ that gather national and international actors and contribute to giving both national and international visibility to Turin as an innovative centre for practices in social and technical innovation. These initiatives give the hub a character of a lighthouse ([Dovey et al., 2016](#)) in the local innovation ecosystem, also acknowledged by the Municipality.

Principle Three - Fab City Hubs as complex organisms enabling resiliency

The analysis of data collected for the Hub Portraits showed a common pattern regarding these spaces. Their structural, organisational, and functional aspects are predominantly hybrid, complex and non-hierarchical and manifest a sort of resistance to categorisation according to predefined models. This is also reflected in their space planning and the programs of their activities: as spaces they often have a flexible configuration and a function that is not fixed, maintaining a high level of adaptability to unplanned situations.

While the observer could confuse this with a lack of clear design intentions, those characteristics are instead voluntarily embraced and define even their core values.

By behaving as complex organisms, FCHs are able to stay open to the emergence of new needs, new projects, new spatial reorganisation, and in the end, perform as resilient structures to fast changing and hazardous environments.

Since the beginning of the Covid-19 pandemic in 2019, resilience has been a hot topic for the entire world, and some of the hubs included in this research have proven to be “able to adapt”³⁷.

Highlights from the hub portraits:

- **BASE** - the hub is an example of high diversity when it comes to its functional and spatial organisation. It offers a coworking space, residency facilities for artists, housing for visitors, a shooting space, a hospitality area with a café and a restaurant and spaces for events and exhibitions.
- **MAKERVERSITY** - during the first wave of the Covid-19 pandemic, similarly to other hubs included in this study as well as to a large number of Fab Labs and makerspaces

³⁵ <https://torino.makerfaire.com/>

³⁶ <https://www.graphicdays.it/2019/en/about-en/>

³⁷ “Able to adapt” is the motto of Darwin in Bordeaux

around the world, Makerveristy adapted to the situation and supported the NHS by launching PPE (personal protective equipment) micro-manufacturing within the hub³⁸.

- **DARWIN** - during the Covid-19 crisis, the hub promptly adapted its activity to the situation by hosting refugees, isolated and homeless people and set up an urgency centre for distributing food and sanitary equipment for the whole city. More generally, the NGO *La 58ème*, part of the Darwin ecosystem, brings together a network of more than 50 associations in the fields of culture, sports, solidarity, and urban agriculture, increasing their capacity to adapt to such unplanned situations.

Principle Four - Fab City Hubs as extensions of traditional institutions

Hubs have been previously described as flexible, hybrid and fluid structures in respect to their programs, their spatial organisation and the set of actors involved. These features confer to hubs a potential to act as in-between areas, functioning as playgrounds for experimentation and prototyping of unusual *assemblage* of actors and functions.

FCHs have to face the challenge of making space for such buffer zones, sometimes in areas where the real estate market is the most expensive, especially in large cities. Such spaces appear to be crucial for innovation and positive change, and also respond to a need of traditional organizations (schools, municipalities and private companies) to access those spaces that trigger innovation.

FCHs are then an augmented space for traditional institutions, serving as extensions and facilitating openness, networking and thinking - literally - outside of the box.

This role opens up interesting perspectives on financial sustainability for Fab City Hubs. In this way they attract key stakeholders who are crucial to drive change in the city and they can build collaborations with them; namely with private companies (which are likely to use the hub for innovation seminars and team buildings), educational institutions (for augmented learning experiences, peer-to peer education, residency program for students) and governmental institutions (providing them with a safe space for dialogue with citizens). By attracting this varied number of actors, expertise and methodologies FCHs could perform the role of living laboratories to imagine innovative and sustainable urban models.

Highlights from the hub portraits:

- **FAB LAB BARCELONA** - the hub aims to be a space that connects industry, research, citizen innovation and policy makers. Through the development of specific pilot projects, the hub facilitates spaces for transversal collaborations otherwise unavailable in-house for some private companies.
- **LOTTOZERO** - the hub has collaborated with several Italian and foreign universities, as well as high schools and junior high schools, offering mentorship, lectures and workshops revolving around textile design, sustainability and entrepreneurial skills.
- **STPLN** - the hub has created a creative redesign lab (named Återskapa) for children. Every school in the city, once per year, brings students between 6 and 9 years to participate in a bike kitchen workshop run by STPLN.
- **BIOS ROMANTSO** - Some of the initiatives developed by the hub to address issues of urban regeneration, social inclusion, citizens participation and lifelong learning have inspired the Municipality in the implementation of similar initiatives in other parts of the city.

³⁸ <https://makerveristy.org/makerveristy-innovation-community-launch-ppe-micro-manufacturing-hub-for-nhs-workers-fighting-covid-19/>

4.2.2. Fab City Hub and Community

Principle Five - Community comes first, space after.

A community is a social space in itself, and cities are built and transformed by people's actions and interactions, every day and continuously. *Cityness* "is the very nature of urban environments to continuously reshape the ways in which people, places, materials and affects are intersected" ([Simone, 2009](#)). Furthermore, a large-scale top-down planning practice often fails to grasp this essence of designing and delivering spaces that try to regulate and maintain the city *in-line* and providing spaces that are meaningful for its citizens ([Simone, 2009](#)).

To avoid falling into this top-down approach, FCHs need to emerge from the bottom and from building dialogues amongst actors: citizens, makers, activists, entrepreneurs and local authorities.

FCHs operators need to consider themselves firstly as community builders, before being space operators.

Communities and community building are thus the first steps to initiate a FCH. Often, event curation and programming are an effective tool to start creating a community. Indeed, as some of the examples in the highlights below, A FCH project can start as a series of events that then convert into a temporary or permanent space for pre-existing communities. These curated events create the conditions for a debate about the needs for a space, instead of designing the space beforehand ([Cingolani, 2012](#)).

Highlights from the hub portraits:

- **PARANDA** - the hub is an offspring of previously organized bottom-up initiatives similar to Transition Town³⁹ movement group, community gardens, Green Drink events⁴⁰ aiming to create a global network of individuals and organisations that work towards more sustainable urban environments. The hub as physical space came as a further step after these community activities.
- **STPLN**: the construction of the Stapelbädds Skatepark is the result of a fruitful collaboration between the Municipality of Malmö and the civil society, mostly represented by the local community of skaters. This collaboration resulted so successfully that the Municipality decided to open a call to hold pop-up events in an old slipway building near the skate park. In the span of two years, the space became defined as STPLN. Today, STPLN is a space of 2.000 m² built around its communities' needs.

Principle Six - Give voice to citizens

Being FCHs buffer zones (see Principle Four) - often in dense and highly optimised urban environments - they can become powerful spaces for expression and debate for citizens.

FCHs can give voice to the citizens in different ways:

- serving as spaces and platforms for gathering informal, neglected and marginalised communities;
- allowing such communities of citizens to meet, expand their contacts and reach out to entrepreneurs, makers and private companies;
- provide a space for dialogue between citizens and local institutions. In some cases, those hubs can become real spaces of friction, where existing tensions and conflicts

³⁹ <https://transitionnetwork.org/about-the-movement/>

⁴⁰ <http://www.greendrinks.org/>

are expressed and addressed. This space of expression can sometimes represent a first step towards constructive collaborations to find common solutions.

Following what could be called a *chronotopic scheme* ([Vaara, Reff Pedersen, 2013](#)), where the usage of spaces -*topos*- is differentiated based on several time layers -*chronos*-, Fab City Hubs can give free access to space and facilities to such communities at specific times, usually in the evening or during the week-end, where they are not occupied by other commercial activities.

By embracing this inclusive approach and by giving space to citizens and local communities, FCHs configure as sounding boards and launching platforms for bottom-up initiatives at the city level.

Highlights from the hub portraits:

- **BIOS ROMANTSO** - with the initiative “Creative Neighbourhood”, the hub aimed to connect the neighbourhood’s businesses with young creators, thus activating this part of the city’s downtown while simultaneously attempting to create an open dialogue with the city’s minority groups through cultural activities.
- **BASE** - hubs can give voice to the citizens also through channels other than physical space. During the first period of the Covid-19 pandemic in 2020, BASE which regularly engages with the neighbourhood and its inhabitants, launched the “Vicino Vicino” initiative, where local inhabitants took over the hub’s Instagram account to tell the stories of their daily life⁴¹
- **ROG LAB** - the hub is an example of space of confluence and a friction zone for the city. The coexistence of different initiatives around the hub (Avtonomna Tovar ROG, Rog Lab and Rog Centre) has created several clashes between the Municipality and the local community. Voices of the Autonomous Rog Factory (Avtonomna Tovar ROG) say they are not included in the regeneration process led by the city council, in which the Rog Lab is a sort of pilot. At the time of writing there is no evidence that this conflict led to a fruitful agreement between the stakeholder in place, yet the very expression of such frictions may be a first step towards a potential resolution of those.

Principle Seven - Focus on facilitating and empowering communities

If *Principle Five* focuses on how communities are a first step to set up a Fab City Hub, and *Principle Six* focuses on how a Fab City Hub should open its doors to citizens, *Principle Seven* is directed to the attitude and positionality of the managing team of the hub, once it has opened to public.

Such spaces are complex by nature, their management can be often overloaded while human resources are most of the time limited for financial reasons. Tasks range from space and fabrication facilities management, event curation, community building and governance coordination. Instead of overmanaging all the details, which would also lead to weaken the sense of belonging of the community, the team is recommended to act as facilitator of processes and projects that happen among members, while keeping a global overview of the activities.

Most of the time, hubs have few human resources, but their management requires a large range of tasks including the management of both the space and fabrication facilities, events curation and community building. Instead of doing and controlling everything, the team’s role should be that one of a facilitator who keeps a global vision on the project.

⁴¹ <https://base.milano.it/vicino-vicino/>

Facilitating that process needs a big effort on internal communication, which consists in documenting and distributing the knowledge among the community members. Actions like events, projects and governance should be as distributed as possible.

In this regard, FCHs' teams are curators of communities inhabiting those places, orchestrating distributed activities.

Highlights from the hub portraits:

- **TOOLBOX** - The large program of events is mainly curated based on proposals made by the community of users and companies hosted at Toolbox. The managing team acts as facilitator and service provider for such events.
- **EOED** - the toolkit created for the initiative Tomorrow Today Street, described in the starred portrait of Every One, Every Day is a clear example of how the hub focuses on creating clear documentation to empower citizens in creating their own projects and events.
- **STPLN** - Its own understanding of its mission is to provide space, time, structure and methods to support the development of ideas and projects in the fields of art, design, media, tech, circular practices and innovation.
- **MAKERVERSITY** - The lab focuses on assisting the process of transforming projects of makers into businesses by providing them the physical space, expert and peer to peer support.

4.2.3. Fab City Hub and Infrastructure

Principle Eight - Adopt an incremental approach, avoid overdesign.

*"Where there's nothing, everything is possible.
Where there is architecture, nothing (else) is possible."
The City of the Captive Globe, Rem Koolhaas (1972).*

Principle Five presents community building as a first, preparatory step to set-up a physical space for the Fab City Hub space. *Principle Eight* expands on that vision to suggest an agile approach to space design.

Instead of following a linear waterfall approach, where the space is fully planned and designed in advance, an incremental approach can leave space for real and situated needs to emerge from the community.

This could simply mean to temporarily leave empty some portion of the space or without attributing it to a precise function for later occupation or transformation. The recently nominated Pritzker Prize Architects Lacaton & Vassal, claimed a similar idea: "sometimes the answer is to do nothing"⁴².

Highlights from the hub portraits:

- **DARWIN** - The hub developed a frugal, incremental approach to transform over the years a heritage military wasteland into a complex and regular changing ecosystem that includes entrepreneurial and cultural activities.

⁴² <https://www.theguardian.com/artanddesign/2021/mar/16/lacaton-vassal-unflashy-french-architectures-pritzker-prize>

- **VOLUMES** - The creative and productive hub opened its doors to its community several months before the design and construction works were completed. This resulted in a co-creation process within the community which was invited to define the left empty space to respond to their needs. That's how a 50 sqm area of the hub ended up hosting a community kitchen that became one of the first Food Labs in Europe, today being one of the most successful activities of the hub.
- **ROG LAB** - The municipality has, since 2012, put forward a renovation plan for the factory to create the Rog Centre: a productive, cultural and creative hub. Instead of adopting a traditional approach, the Rog Lab was set up as a prototype to first test programmes, partnership and business models on a small scale.

Principle Nine - Fab City Hubs are not replacing factories

While production facilities (including spaces such as digital fabrication labs, shared kitchens and wood or textile manufacturing machines) are at the core of every FCH, they are not intended as industrial production sites that will take over the manufacturing capacity of the traditional artisans and industries.

FCHs are intended to be more of a cultural space for creative and productive activities, in which production facilities do not have the mere function of manufacturing products for consumption; those facilities are instead means for innovation, reskilling, citizen empowerment, social connection and conviviality.

FCHs will not produce everything a city consumes, nevertheless they have several other capacities to transition cities to more circular, inclusive and productive models: they foster a distributed productive system by connecting with local manufacturers using dedicated platform such as Makeworks⁴³ or similar; they create and promote new narratives and cultures about the productive, regenerative city by inventing new business models, production methods, new materials and by creating awareness through workshops and events like repair cafés and dedicated meetups, they foster innovation taking the production facilities out of the factory in a places where communities, public institutions and private companies are merged and can elaborate innovations; finally, as it has been proven during the pandemic, they can prototype and produce new products very quickly with a “viral design” ([Viral Design, 2020](#)) approach, out of the constraints of the traditional factory.

Highlights from the hub portraits:

- **FAB LAB BARCELONA** - the hub is designed as a “laboratory for ideas”. It uses digital fabrication facilities to prototype, fabricate and test these ideas in the real world through research and education.
- **SPACE 10** - the hub is a place where IKEA can design and test new products outside of its industrial environment, connecting with different communities through events.
- **PARANDA** - its activities are focused on the promotion of recycling and fixing goods as valid alternatives to wasteful consumerism. The hub creates awareness for a more sustainable consumption in the local community through workshops and meetups and reach a global audience through social media. On the other side, it also produces and sells products made with recycled material.⁴⁴

⁴³ <https://make.works/>

⁴⁴ <https://paranda.ee/en/products/>

Principle Ten - Fab City Hubs are multi-layered spaces, both physical and digital

The communications revolution produced by the Internet substantially affected the way we interact with the world ([Cingolani, Di Siena, 2016](#)). The very concept of space is reconfigured by this revolution and redefined as a complex system of relations between layers ([Cingolani, Di Siena, 2016](#)), being the physical and the virtual the most important of those.

Fab City Hubs spaces need to be designed within this framework of complexity and interconnection between those layers. This translates in the need of integrating the design of the tangible with the design of the intangible through different dimensions:

- Internal communication: the physical spaces for interaction and conviviality can be augmented by digital communication platforms for members of the hub (Slack⁴⁵, Mattermost⁴⁶, Discord⁴⁷ or similar)
- External communication: social networks and online events are tools to give visibility to projects and initiative, attract newcomers and finally expand to local and international communities
- Space management: the complexity of the space usages with different services (coworking, digital fabrication, shared kitchens, meeting rooms), different products (memberships, price plans, flex and fixed desks), different publics (Ngo, citizens, freelancer, makers, SME, big corporations) require a digital management tool highly integrated with the physical space (Nexodus⁴⁸, Cobot⁴⁹, OfficeRnD⁵⁰, etc.)

This integration of physical and digital space relates to the idea that the internet, originally created as a technology to bring close what is distant, allows to explore and connect with its own closer environment. ([Cingolani, Di Siena, 2009](#))

Highlights from the hub portraits:

- **VOLUMES** - the hub pushed since the beginning a vision of hybridisation between the physical and the digital, inviting the community to both gather in the physical space but also to interact through a digital communication platform (centred on Slack solution). These two channels - the physical and the digital - are complementary, allowing collaboration and community building also remotely. This culture, embedded since the opening of the hub, enables the community to stay connected and keep collaborations active during the pandemic.
- **EOED**: in the starter kits EOED created to support citizens in starting projects, a specific section is dedicated to digital platforms (Instagram, mighty networks, mural, WhatsApp and monday.com) that can be used among neighbours to “stay organised, plan, share ideas and show their street to the world”⁵¹
- **LOTTOZERO**: the hub's strong presence on social networks eased a transition to online events when the pandemic broke through. That allowed some educational activities and lectures to keep running despite the crisis.

⁴⁵ <https://slack.com/>

⁴⁶ <https://mattermost.com/>

⁴⁷ <https://discord.com/>

⁴⁸ <https://www.nexodus.com/>

⁴⁹ <https://www.cobot.me/en/fr>

⁵⁰ <https://www.officernd.com/>

⁵¹ <https://www.weareeveryone.org/tts-street-party>

5. CONCLUSIONS

The Creative and Productive Hubs Journal has provided a thorough investigation of how CPHs raised and advanced in the last decades in Europe. In order to grasp the diversity of the European scene, this report has taken into account a broad geographical scope and several case studies with their own historic backgrounds, productive traditions, cultural contexts and social fabrics.

Despite their great degree of diversity, CPHs proved to be highly adaptable mechanisms that trigger regeneration and innovation in different urban contexts. The recent history has shown that CPHs have been an important tool to meet local needs and respond to local challenges throughout Europe. The current experiences reported in the Hub Portraits represent remarkable models and an important step towards a global vision of what a FCH is and how it operates. Since their origins, CPHs saw hybridity as a key factor, not only in terms of offer and programming but also in terms of interactions with different stakeholders in a city. Many of the surveyed hubs represent clear examples of how this could translate into practice. Some of them dedicate their spaces to a diversified range of activities, others cater different professionals and their expertise, or again others nurture complex networks among administrative or educational institutions. The implementation of FCHs will necessarily have to keep this interconnectedness into account.

Hubs manifest different paradigms according to the specificities of their locations and backgrounds. Nonetheless, they share some fundamental features that explain their widespread adaptability and relevance. After the analysis of the remarkable hubs sampled in the Portraits, it appeared that hubs act as impactful lighthouses in the urban environment they are embedded in. If we consider such environments as modern agoras, it becomes immediately clear what responsibilities CPHs have. Agoras represent a gathering place but also an occasion for assembly and debate; as a consequence, hubs can not only bridge and unite the different communities of a city, but they can also promote a political conversation and in-field actions. As lighthouses in these public squares, CPHs function as gatekeepers that maintain the local ecosystem, connect and give voice to different stakeholders, ranging from citizens to businesses, professionals and governmental institutions. Henceforth, the hubs' main responsibility corresponds to an active role in good management practices, facilitation procedures and curatorial strategies.

This anticipates one of the main challenges for the future FCHs, namely the need to identify which are the most favourable partners in their urban environment. Hubs would collaborate on different degrees with citizens, industries, researchers or other stakeholders depending on the peculiarities of each city. The portrayed hubs in this report showed how collaborations among partners are always a key strategy to accomplish innovative urban interventions, which reflect CENTRINNO's core values.

The implementation of FCHs within the CENTRINNO project has an unequivocal political tone. This is due to the fact that hubs have an active role in shaping a city's environment, productive activities and social dynamics, besides holding a certain degree of collaboration with local administrations. However, the political environment is not always favourable and policy makers might not acknowledge the hubs' central role in shaping their cities. Institutional stability represents therefore an important requirement for CPHs to thrive, as it provides a solid ground for action and it facilitates joint strategies for urban regeneration.

The embeddedness of hubs within a city's political life is explored in the Policy and Program

Landscape (PPL), a valuable addition to this report that contextualises FCHs within a policy framework (see Annex 2). The PPL is meant to map policies, programs and initiatives across CENTRINNO's pilot cities, which all differ in terms of political contexts and strategies. This investigation provides an insight on what possibilities and opportunities are present in each city, and on how pilots can position themselves in them according to their own objectives and agendas. The policy schemes of a city, in fact, are not always in line with the hubs' goals and ambitions, but having an overview on the local policy landscape offers a way to find a mutual alignment or alternative solutions. Overall, the more a city upholds a long-term vision and effective reforms, the clearer it will be for pilots to navigate towards the accomplishment of their objectives.

However, these observations raise some important questions. Firstly, if FCHs are meant to become the cardinal points in their respective agoras, what are the best tools to achieve this vision for CENTRINNO's pilot cities? It is important to determine how each city can develop the most appropriate tools for their specific urban contexts, as each city presents different objectives, stakeholders and ecosystems. Therefore, the best ways to facilitate a virtuous flow of knowledge among their actors may vary. This holds true for the software level and the hardware level of hubs. The former refers to the best management practices useful for the coordination of all the communities involved in the hub and its ecosystem; the latter includes how design, architecture and the overall spatial organization influence a hub's efficiency as a FCH.

Secondly, the establishment of FCHs in the nine pilot cities will revitalize heritage industrial sites in the form of buildings, blocks or entire neighbourhoods; this may lead in the long run to the shaping of broader and multifaceted production clusters within a city. How can this scenario be predicted and facilitated in a virtuous way and, most importantly, how can institutional collaboration take place even in the most unfavourable environments? These questions initiate a broader discourse anticipated by the findings of the Hub Portraits, whose ten principles outline the main features of an effective FCH. The pilots' objective will be to align such guidelines with their own specificities.

Ultimately, this report has brought to light some valuable models of CPHs and has offered an insight on the main responsibilities and opportunities that FCHs may have in their cities. However, how all this translates into the nine pilot cities will be explored in the following tasks of the CENTRINNO project. In particular, the outcomes of this report are going to feed into the development of Task3.2, whose main purpose is to provide knowledge and insights on typologies, organizational structures and governance models of CPHs. This will eventually lead to the development of the *Fab City Hub Toolkit*, which will describe the common set of toolkits, methods and frameworks to be used in each pilot. In this phase, pilots will be guided through a series of activities that will help define the new FCHs as impactful agoras and innovative engines for urban change.

REFERENCES

- Azaïs, C., Corsani, A., Dieuaide, P. (eds) (2001), *Vers un capitalisme cognitif, entre mutations du travail et territoire*, Paris, L'Harmattan.
- Badham, R. J. (2008). Post-Fordist economy. In S. R. Clegg, & J. R. Bailey (Eds.), *International encyclopaedia of organization studies* (1278-1280). SAGE Publications.
- Baudouin T. (2006). *Ville productive et mobilisation des territoires*, Paris: L'Harmattan, 224.
- Besson, R. (2017). « Rôle et limites des tiers-lieux dans la fabrique des villes contemporaines », *Territoire en mouvement Revue de géographie et aménagement* [En ligne], 34 | mis en ligne le 29 novembre 2017, consulté le 16 novembre 2020. DOI: <https://doi.org/10.4000/tem.4184>
- Bianchini, M., Arquilla, V., Maffei, S., Carelli, A., Bianchini, M., & Milano, P. (2014). *FabLand : ' Making ' digital / analog distributed urban production ecosystems*. December. (n.d)
- Brown, J. (2017). Curating the 'Third Place'? Coworking and the mediation of creativity. *Geoforum*, 82, 112-126. Retrieved from <http://orca.cf.ac.uk/105914/>
- Burret A., 2015, *Tiers lieux. Et plus si affinités*, Limoges: FYP Editions, 176.
- Ceinar, I. M. (2019). Spazi di Coworking per la Trasformazione Urbana Processi Spaziali e Impatto Urbano in Prossimità degli Spazi di Coworking. 75–76. Retrieved from: https://www.academia.edu/42864783/Spazi_di_Coworking_per_la_Trasformazione_Urbana
- Cohendet P., Grandadam D., Simon L., 2011, « Rethinking Urban Creativity: Lessons from Barcelona and Montreal », *City Culture and Society*, vol. 2, n° 3, 151-158. DOI: 10.1016/j.ccs.2011.06.001
- Chesbrough, H., 2003. *Open Innovation*. Boston: Harvard Business School Press
- Chronéer, D., Ståhlbröst, A., & Habibipour, A. 2019. Urban Living Labs: Towards an Integrated Understanding of their Key Components. *Technology Innovation Management Review*, 9(3): 50–62. <http://doi.org/10.22215/timreview/1224>
- Daldanise, G. & Cerreta, M. (2019), "PLUS Hub: A Cultural Co-creative Enterprise for Local Urban/Rural Regeneration". In: Calabrò F., Della Spina L., Bevilacqua C. (eds) *New Metropolitan Perspectives*. ISHT 2018. *Smart Innovation, Systems and Technologies*, vol 101. Springer, Cham. https://doi.org/10.1007/978-3-319-92102-0_32
- Dempsey, N. (2010). Revisiting the Compact City? *Built Environment* (1978-), 36(1), 4-8. Retrieved March 22, 2021, from <http://www.jstor.org/stable/23289980>
- Diez, T. (ed.) (2020) *Fab City: The Mass Distribution of (almost) Everything*. Barcelona: Iaac, Fab Lab Barcelona and Fab City Global Initiative.
- Dovey, J., Pratt, A.C., Moreton, S., Virani, T., Merkel, J., & Lansdowne, J. (2016). *Creative Hubs: Understanding the New Economy*. British Council-The Creatives Hub Report: 2016.
- Ecosistema Urbano. (2014). *Dreamhamar*. (N.d.) Lugadero



Eychenne, F. (2012), *FabLab: l'avant-garde de la nouvelle révolution industrielle*, FYP, Limoges.

Fainstein, S. (1994), *The City Builders: Property, Politics and Planning in London and New York*. Blackwell e International Journal of Urban and Regional Research, UK.

Fish, M. (2016) "Contested Spaces / Radical Places: Squatting, Place and Subjectivity", in *Radical Space. Exploring Politics and Practice*. Shaw & Humm (eds.). Rowman & Littlefield. London.

Florida, R. (2002). *The rise of the creative class*. New York: Basic Books.

Gandini, A. (2015). The rise of coworking spaces: A literature review. *Ephemera: Theory and Politics in Organization*, 15(1), 193–205.

Gershenfeld, N. 2007. *The Coming Revolution on Your Desktop, from Personal Computers to Personal Fabrication*, New York, Basic Books.

Haase, D.; Kabisch, N.; & Haase, A. (2013) "Endless Urban Growth? On the Mismatch of Population, Household and Urban Land Area Growth and Its Effects on the Urban Debate". *PLoS ONE* 8(6): e66531. <https://doi.org/10.1371/journal.pone.0066531>

Illich, I. (1973). *Tools for Conviviality* (1st ed.). New York, NY: Harper & Row

Le Roux, S., 2015. 'The intangible economy: FabLabs "individualised production of objects". A stage in liberating the function of innovation', *Journal of Innovation Economics*, 17(2), 99. doi: 10.3917/jie.017.0099.

Merkel, J. (2015). Coworking in the city. *Ephemera theory & politics in organization*, 15(1), 121-139.

Migliore A., Ceinar I.M., Tagliaro C. (2021) Beyond Coworking: From Flexible to Hybrid Spaces. In: Orel M., Dvoullet O., Ratten V. (eds) *The Flexible Workplace*. Human Resource Management. Springer, Cham. https://doi.org/10.1007/978-3-030-62167-4_1

Mulas, Victor; Nedayvoda, Anastasia; Zaatari, Ghia, 2017. *Creative Community Spaces: Spaces That Are Transforming Cities into Innovation Hubs*. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/28329> License: CC BY 3.0 IGO.

Oldenburg, R., 1999. *The great good place: cafés, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community*. Cambridge, MA: Da Capo Press.

Jiménez, A. 2014. The Right to Infrastructure: A Prototype for Open-Source Urbanism. *Environment and Planning D Society and Space*. 32. 342-362. 10.1068/d13077p.

Juujärvi, S., & Pessoa, K. 2013. *Actor Roles in an Urban Living Lab: What Can We Learn from Suurpelto, Finland?* *Technology Innovation Management Review*, 3(11): 22–27. <http://doi.org/10.22215/timreview/742>

Laura Martelloni, Milena Juarez, Sally Bourdon, Ida Jusic, Erwan Mouazan, Vasilis Niaros, ... Zartashia Ahmed. (2019). *The REFLOW Handbook (Version 1.0)*. Zenodo.

Rabbiosi, C. (2016). Urban regeneration 'from the bottom up.' *City*, 20(6), 832–844. <https://doi.org/10.1080/13604813.2016.1242240>

Romein, A.; Nijkamp, J.; Trip, J. (2013), "Creativity-led regeneration: towards an evaluation framework". Conference paper at *AESOP-ACSP Joint Congress*. Dublin

Simone, A. (2009). *City Life from Jakarta to Dakar: Movements at the Crossroads* (1st ed.). Routledge. <https://doi.org/10.4324/9780203892497>

Smith, A. (2014). 'Technology networks for socially useful production', *Journal of Peer Production*, (5), 1–9.

Söderberg, J & Maxigas 2014. *Book of Peer Production: Special FSCONS Edition* (2-45). Aarhus, DK: NSU Press. [Invited from Special Issue of *Journal of Peer Production*]

Suire, R. (2016). La performance des lieux de cocréation de connaissances: le cas des fablabs, *Réseaux*, vol2 n°196, 81-109.

Unterfrauner, E.; Voigt, C.; Schrammel, M.; Menichinelli, M. (2018), "The Maker Movement and the Disruption of the Producer-Consumer Relation". In: Diplaris S., Satsiou A., Følstad A., Vafopoulos M., Vilarinho T. (eds) *Internet Science*. INSCI 2017. *Lecture Notes in Computer Science*, vol 10750. Springer, Cham. https://doi.org/10.1007/978-3-319-77547-0_9

Vaara, E. & Reff Pedersen, A. (2013). Strategy and chronotopes: a Bakhtinian perspective on the construction of strategy narratives. *M@n@gement*, 5(5), 593-604. <https://doi.org/10.3917/mana.165.0593>

Wolff, Annika; Mulholland, Paul and Collins, Trevor (2012). Storyspace: a story-driven approach for creating museum narratives. In: *Hypertext 2012: 23rd ACM Conference on Hypertext and Social Media*, 25-28 Jun 2012, Milwaukee, WI, USA.

INTERNET SOURCES

A brief history of coworking. (N.d.). Creative Density. Retrieved from: <https://www.creativedensity.com/a-brief-history-of-coworking/>

About us - European Network of Living Labs. (N.d.), (2021). Retrieved 26 March 2021, from <https://enoll.org/about-us/>

Agile Vs Waterfall: Know the Difference Between Methodologies, n.d. Guru99. Retrieved 25 March 2021 from <https://www.guru99.com/waterfall-vs-agile.html>

Chardonnet, E. (2017). The MIT Media Lab takes leadership of the DIYbio community. Retrieved 21 March 2021, from <https://www.makery.info/en/2017/10/10/le-mit-media-lab-prend-le-leadership-sur-la-communaute-diybio/>

Cingolani, F.; Di Siena, D. (2009). «Hyper-local Internet»: la nouvelle dimension des espaces publics des nos villes?. Retrieved 24 March 2021, from https://issuu.com/immaginoteca/docs/ima_090611_imaginario_hyperurbain2

Cingolani, F.; Di Siena, D. (2016) New paper: Urban aperture. Retrieved 24 March 2021, from <http://urbanohumano.org/blog/2016/01/02/new-paper-urban-aperture/>

Cingolani, F. (2012). Dreamhamar: Construction d'une communauté autour d'un espace physique et gestion des systèmes complexes en architecture participative - DNArchi.

Retrieved 19 March 2021, from <http://dnarchi.fr/experimentations/dreamhamar-construction-dune-communaute-autour-dun-espace-physique-et-gestion-des-systemes-complexes-en-architecture-participative/>

Fab City Global Initiative (2014) Fab City Whitepaper: Locally productive, globally connected self-sufficient cities. Retrieved from: <https://fab.city/uploads/whitepaper.pdf> (March, 2021)

The Fourth Industrial Revolution: what it means and how to respond. World Economic Forum. (2021). Retrieved 11 March 2021, from <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>.

Holman, W. (2015). "Makerspace: Towards a New Civic Infrastructure," Places Journal. Accessed 11 Mar 2021. <https://doi.org/10.22269/151130>

Smith, A. (2018). The Lucas Plan: What can it tell us about democratising technology today?. Retrieved 24 March 2021, from <https://blog.p2pfoundation.net/the-lucas-plan-what-can-it-tell-us-about-democratising-technology-today/2018/05/24>

Viral Design. (N.d.) (2020), Retrieved from: https://distributeddesign.eu/wp-content/uploads/2020/11/DistributedDesignBook_2020-online.pdf

ANNEX 01:

CREATIVE AND PRODUCTIVE HUB PORTRAITS



TABLE OF CONTENTS

| | |
|---|------------|
| 1. REMARKABLE HUB PORTRAITS | 84 |
| 2. "UPDATED PORTRAITS" | 85 |
| 2.1. FAB LAB BARCELONA | 85 |
| 2.2. LOTTOZERO | 95 |
| 2.3. TZOUMAKERS | 107 |
| 3. THIRD ITERATION OF REMARKABLE HUB PORTRAITS | 116 |
| 3.1. PARANDA | 117 |
| 3.2. DARWIN | 124 |
| 3.3. EVERY ONE, EVERY DAY | 132 |
| 4. SECOND ITERATION OF REMARKABLE HUB PORTRAITS | 141 |
| 4.1. STPLN | 141 |
| 4.2. ROG LAB | 146 |
| 4.3. TOOLBOX | 151 |
| 4.4. MAKERVERSITY | 157 |
| 4.5. LOTTOZERO | 161 |
| 4.6. TZOUMAKERS | 165 |
| 5. FIRST ITERATION OF REMARKABLE HUB PORTRAITS | 169 |
| 5.1. FAB LAB BCN | 169 |
| 5.2. BASE MILANO | 174 |
| 5.3. BETAHAUS | 177 |
| 5.4. SPACE 10 | 180 |
| 5.5. BIOS ROMANTSO | 184 |
| 5.6. VOLUMES | 187 |
| 6. TEMPLATES | 190 |
| 6.1. First Iteration | 190 |
| 6.2. Second Iteration | 196 |
| 6.3. Third Iteration | 203 |

1. REMARKABLE HUB PORTRAITS

This Annex section reports raw data of the Hub Portraits that were gathered between November 2020 and January 2021 from fifteen remarkable hubs across Europe. It is organised according to three different iterations. Each iteration focused on a different selection of hubs (respectively six, six and three) and employed an updated set of criteria of analysis. Each iteration was enriched and improved by the outcomes of the previous ones, the feedback from the hubs' representatives and from the WP3 team. Following the three iterations, the selected 'starred portraits' belonging to iteration one and two have been updated using the template of the third iteration (feeding into the "Updated Portraits" section). Finally, the templates that have been used along this process are reported.

The selection was made by a group of experts of CPHs involved in WP3, after drafting a shortlist of remarkable hubs that conform to the FCH Framework. The sample was chosen for each iteration, respecting an equal representation in terms of geographical distribution, size of the hub, business models and so forth, in order to depict the diversity of the European scene.

For more details on the methodology the reader could check section 3.1 of the report.

2. UPDATED PORTRAITS

FAB LAB BARCELONA

www.fablabbcn.org

Barcelona (L)
Spain

Launch date: 2007
Hub's Surface: 2200 m2

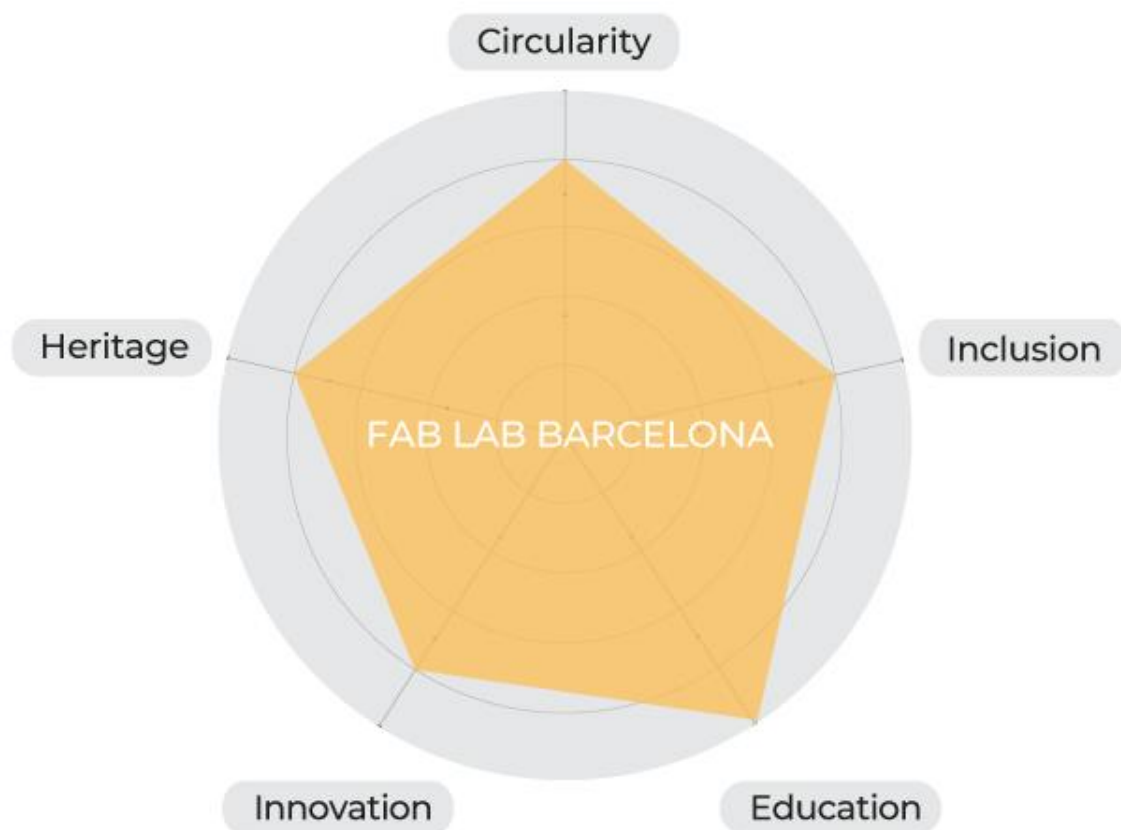
| | |
|----------------------|--|
| GENERAL DESCRIPTION | <p>Fab Lab Barcelona (hereafter FLB) was the first Fab Lab established in the European Union in 2007 and it is a benchmark in the powerful network of over 1800 Fab Labs in over 100 countries. It produces world-leading research and innovation based around the digital fabrication laboratory, which is located at the heart of the Lab.</p> <p>FLB is situated inside the Institute for Advanced Architecture of Catalonia (IAAC) in the 22@ District, Poblenou, Barcelona. The building, which was a former ceramics factory, is now a laboratory for ideas. The Lab uses digital fabrication facilities to prototype, fabricate and test these ideas in the real world as research, education and innovation practices, including 18 European research projects since 2014.</p> |
| SELECTION CRITERIA | <p>As part of the transition into Industry 4.0 and leading the Fab City initiative, FLB focuses on the human-scale and the everyday experience, identifying opportunities in rising trends across seven strategic areas of expertise.</p> |
| DRAFTING DESCRIPTION | <p>The interview with Tomás Díez Ladera (head of FLB), was conducted by Jessica Guy and Pablo Muñoz (IAAC), on the 17th of February 2021.</p> |

TYPES

| | |
|-----------------------|--|
| HUB | Fab Lab, Bio Lab, Third Place, Educ Lab. |
| PRODUCTION/FACILITIES | Biomaterials, Electronics, Textile, Wood Manufacturing, 3D Printing. |
| SITE & HERITAGE | Urban environment, industrial heritage site, historical heritage site. |

ADMINISTRATIVE DATA

| | |
|--------------------|--|
| LEGAL STATUS | Foundation |
| NUM. OF EMPLOYEES | 10-50 |
| YEARLY TURNOVER | 2 M€ |
| FUNDING SCHEME | Private |
| PROFIT / NONPROFIT | Non-profit |
| TYPES OF REVENUS | Educational programs - 25 % Research - 65 % Product and Services - 10% |



CENTRINNO'S CRITERIA

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|--|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year) |
| | <p>4</p> <p>Locally, FLB is continuously working on improving the current material flows within the Fab Lab itself and with the products and services it offers. The EU projects, which FLB is part of, advocate the necessity to improve product life cycles, incorporate a holistic understanding of material flows and encourage the design to disassemble and repair approaches.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • SISCODE: Remix el Barrio (Material flows, food waste) • Smart Citizen (Design to disassemble and repair) • Fabriacademy • Plastic for Good Challenge with Precious Plastic |
| B | <i>The hub develops products, services or activities that involve the reuse of materials (e.g., scrap store) or extending material life (e.g., repair activities).</i> |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year) |
| | <p>3</p> <p>Similar to the comment above. FLB's designs activities in relation to reuse and repair for tasks in EU projects, for local partnerships and collaborative challenges.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • SISCODE: Remix el Barrio (Material flows, food waste) • Made Again Challenge with Space10 (IKEA) |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year) |
| | <p>4</p> <p>One of FLB's main agenda is to build capacity within citizens to encourage the development of productive neighbourhoods and cities. This capacity building activities in the form of learning experiences can be seen as a range of services offered to the citizens and is part of many research projects' activities.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • Pop-Machina Maker Academy (Circular Maker Academy) • Remix the School • SISCODE: Remix el Barrio (Material flows, food waste) • Reflow Project dissemination activities, including Circular Economy Hotspot Catalonia 2021 |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|--|
| D | <p><i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year)</p> <p>4</p> |
| | <p>FLB believes in sharing information and knowledge globally to apply and make locally. This glocal approach can be seen in their work and participation in EU projects. FLB supports the collaboration with and between the hub's stakeholders in Poblenou (Barcelona). The activities locally are directed towards citizens and co-created with them. The Fab City Full Stack approach is serving as a guidance for the Lab to ensure that the project's approaches are not only targeting one layer of the Full Stack but also the interaction between the different layers.</p> <p>The following examples are global platforms or projects which are applied and contextualized in different regions/ pilots/ cities, address prototyping and manufacturing activities and are fostering collaboration.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • Make Works • Makers eXchange • Distributed Design Market Platform • Fablabs.io <p>Additional notes: FLB is continuously improving products, services and activities which address a circular economy. At the core of the work, knowledge and information is shared globally and adapted/contextualized locally. On a global research level, the topic of circularity is well rooted, influencing the approach and problematics dealt with in research projects. However, implementing circular routines in the lab itself is still a work in progress. Practicing what you preach is not easy!</p> <p>Even though an innovative distribution model for local production is still an ambition, FLB tries to implement as much as possible a distributive production model.</p> |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|--|
| A | <p><i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages</p> <p>3</p> |
| | <p>FLB works within a private foundation. The main target audience using the physical space are the students of the educational programmes. Furthermore, FLB offers its spaces for pilot activities with local communities. Some specific projects focus on children and schools. The main focus stays within these audiences. Specific regulations coming from the private foundation (IAAC) make it more difficult to have a completely open space for citizens. This limits the use of the infrastructure and the availability of its staff</p> |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|--|
| | <p>to dedicate their efforts to support more inclusive projects and educational programs. Opening the doors for more activities that involve diverse local communities and citizens is something that still needs improvement.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • Do-it • Remix the School |
| B | <p><i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i></p> <p>0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences</p> <p>2</p> <p>FLB's team comes from diverse backgrounds and countries. The work and tasks conducted in EU projects try in the best possible way to be open; nevertheless, FLB's activities do not always target minorities or marginalised groups. FLB itself is currently working towards a more inclusive approach, including gender-inclusion, () but a very specific agenda is not yet in place on how to better address minorities, marginalised groups or disabled people as target audience.</p> <p><i>Further reading:</i></p> <ul style="list-style-type: none"> • https://fablabbcn.org/projects/shemakes |
| C | <p><i>Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub).</i></p> <p>0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities</p> <p>5</p> <p>Different FLB pilot projects involve the local community and stakeholders from Poblenou. These activities are co-created and designed. Similarly to what was mentioned above, projects such as SISCODE with the pilot programme Remix el Barrio showcase how this approach is implemented. Having now two more pilots (CENTRINNO and FoodSHIFT EU Projects), FLB will follow a similar yet revised and adapted approach. Further iterations, e.g. from Remix el Barrio to Remix the School, are developing how to best involve communities to co-design activities. In the EU project FoodSHIFT the local pilot is actively involving the steering committee (made out of local stakeholders) to design an acceleration programme for innovative projects in relation to the food industry. Moreover, local stakeholders are also involved in the definition of research proposals.</p> |
| D | <p><i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i></p> <p>0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience.</p> <p>5</p> |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|---|
| | <p>FLB works with the Full Stack approach, which means connecting global with local. The different layers of the Full Stack serve as an opportunity to not only identify different actors, but also to identify areas in which projects can be tested in a transversal manner. FLB is connected to a platform ecosystem which offers a wide range of communities to communicate and collaborate, may this happen globally or locally.</p> <p>Additional notes: The approach from FLB is to include communities as much as possible. However, this can be sometimes challenging due to diverse needs and areas of interests of the communities the Lab worked with, as well as the legal status of FLB within a private foundation. The global vision of FLB can only be implemented well on a local level if contextualized with communities, stakeholders and policy makers. However, the implementation needs more time and can definitely be improved to create a more meaningful application.</p> |
| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
| A | <p><i>The hub carries out training or educational activities or programs.</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub</p> <p>5</p> |
| | <p>FLB offers a variety of educational programmes. FLB is the coordinator of the global Fab Academy programme and carries out a local version as well. Since 2018, it has a master programme called "Master in Design for Emergent Futures". Over the past years, FLB developed iterations of Fab Academy such as the Circular Maker Academy, most recently developed in the framework of the EU project Pop-Machina. Furthermore, the lab offers learning experiences for schools and companies, which are customized based on the areas of interests of the customer. One other remarkable educational programme is Fabricademy, which was also mentioned beforehand.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://fablabbcn.org/education/master/master-in-design-for-emergent-futures • https://pop-machina.eu/resources/downloads/D3.4 • https://pop-machina.eu/ |
| B | <p><i>The hub carries out activities in connection to (formal or informal) vocational training.</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year</p> <p>5</p> |
| | <p>FLB offers a variety of educational programmes which address informal and formal vocational training. These may follow for example the training-the-trainer approaches. FLB is also engaged with formal vocational training institutions, such as <i>Departament d'Educació of the Generalitat and</i></p> |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | |
|--|---|---|
| | InnovaFP (CENTRINNO), developing together educational programs that bridge formal and informal training approaches. | |
| C | The hub carries out activities that link vocational training with local manufacturing. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 4 |
| | Following the Fab City vision, the Fab Lab network and the connection to platforms such as Make Works, FLB carries out activities which connect capacity building, knowledge transfer and local manufacturing. This is aligned with transforming the outdated PITO (Product In Trash Out) model towards DIDO (Data In Data Out). Meaning that only data is being shared globally and products are manufactured locally. | |
| D | The hub carries out training activities that are linked to the local context or community. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 5 |
| | Please refer to the educational programmes which were mentioned above. Examples on how the global vision of Fab City is carried out on a local level or local context may be seen e.g. in the Fab City Hub. This space offered a link between the Fab City vision, manufacturing and prototyping spaces such as Fab Lab's and the local community. In that space citizens were encouraged to explore, test, learn and contribute. The ideas and vision of FLB are always contextualised with the local communities to create meaningful interactions. Further reading: <ul style="list-style-type: none">https://fablabbcn.org/projects/fab-city-hub | |
| Additional notes: One of the core activities from FLB is education. Many of the activities conducted are about knowledge transfer and capacity building. The narrative of the Fab City Initiative, the Full Stack approach and the areas of research give the framework for the learning experiences. | | |
| Further readings <ul style="list-style-type: none">https://fablabbcn.org/educationhttps://fablabbcn.org/projects/type/future-learning | | |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | |
|-------------------|---|---|
| A | The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects. | |
| | 0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market | 4 |
| | FLB investigates seven strategic areas of research, which may be seen as separate and intersectional. The areas of research are as follows: Civic Ecology, Materials & Textiles, Productive Cities, Sense Making, Distributed Design and Emergent Futures. The projects and research which are carried out address fully or partially these areas of research. When working with local and global communities, FLB combines areas of interests and skills with innovative technology to develop multi-disciplinary projects. FLB tries to serve as a space to connect industry, research, citizen innovation and public policy. | |
| B | <i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i> | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs | 4 |
| | FLB has a hybrid model that combines education, services, and research activities as its primary business. At the same time, innovative models, such as the Fab City approach stemmed from the work in FLB, enriching the current hybrid model, which is still evolving. <i>Further reading:</i> • https://fablabbcn.org/projects/fab-city | |
| C | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions.</i> | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals. | 4 |
| | The neighbourhood of Poblenou used to be the main industrial area of Barcelona. Due to the decline of manufacturing in European cities it got emptied during the 20th century. In the early 2000's, a new regulation was looking at the whole District of Sant Marti as the new innovation district, the @22 plan. FLB is located in this innovation district @22 plan, feeding in and learning from the local development. | |
| D | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> | |
| | | 5 |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. |
|-------------------|--|
| | <p>0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration</p> <p>FLB is part of a global network of Fab Labs. Within this network, knowledge and best practices are shared. The spaces serve as each other's inspiration, learning from each other how to implement knowledge transfer and best practices. FLB does have a unique role in this network. This can be seen with the examples of creating an education programme such as the Master in Design for Emergent Futures, being the coordinator of the FabAcademy programme and having an innovative business model based on the three main pillars of Education, Research and Product & Services. Globally, FLB has helped and supported other Fab Labs to establish. Locally FLB is contributing to the Maker District in Poblenou, Barcelona together with the City Council. FLB was also involved in the initial development of the Ateneus de Fabricació Digital, maker spaces managed by the City Council, which are engaged with local communities in several neighbourhoods in Barcelona.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://fablabbcn.org/education/master/master-in-design-for-emergent-futures • https://fabacademy.org/ • https://ajuntament.barcelona.cat/ateneusdefabricacio/en/ <p>Additional notes: FLB is working towards creating spaces for collaboration. This may come in various forms. Working together with diverse communities, policy makers, educational institutions and so on. Through this, FLB hopes to foster social-economic and technological innovation in a transversal and transdisciplinary manner.</p> |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|---|
| A | <p><i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i></p> <p>0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above</p> <p>5</p> <p>FLB is located in Poblenou, which is part of the industrial heritage of Europe. The facility is located in an old ceramics factory, which is catalogued as heritage by the local council. The facade and the general architectural features of the building are typical examples for Poblenou's industrial heritage.</p> |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|--|
| B | <p><i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i></p> |
| | <p>0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities</p> <p>4</p> |
| | <p>The hub model is not completely connected to the industrial legacy of the area in which the lab is located, but it has become part of the lab's narrative and strategy. FLB does collaborations with some old industries that are still located in the area, as well as building a narrative from the industrial heritage of Poblenou through a revision of productive activities and networks (Make Works Catalonia). FLB has engaged with the historical value of Poblenou as an industrial area also by helping establish a local network of makers through the maker circuit with Poblenou Urban District, and with the development of the maker district program with the Barcelona City Council. CENTRINNO is also a project supporting these efforts.</p> |
| C | <p><i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).</i></p> |
| | <p>0 = the activities of the hub is completely independent from the local community and neighbourhood 5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood</p> <p>2</p> |
| | <p>One of the main challenges in the Poblenou area is the disconnection between the people who work there and those who live there. There are ongoing processes in some projects by FBL (SISCODE and CENTRINNO) that involve some degree of engagement with local organizations, such as Taula Eix Pere IV, which are focused on preventing the gentrification process of Poblenou. Similarly, the Fab City Hub experience aimed at connecting with the local community. Nevertheless, the activities at FLB usually involve the new population of Poblenou (international community, young professionals, etc.) and not so much the traditional neighbours and vulnerable population who are suffering the consequences of gentrification.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://eixpereiv.org/ • https://fablabbcn.org/projects/fab-city-hub |

LOTTOZERO

www.lottozero.org

Prato (S)
ITALY

Launch date: 2016
Hub's surface: 400 m2

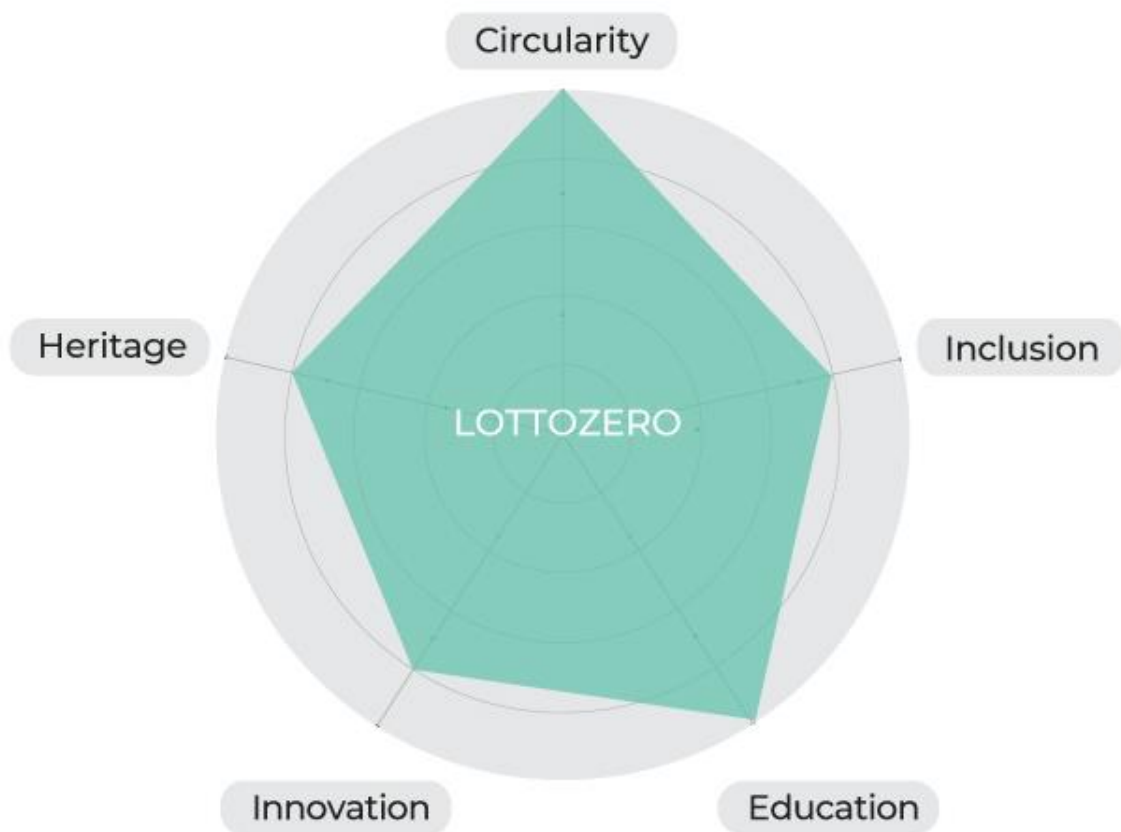
| | |
|----------------------|--|
| GENERAL DESCRIPTION | <p>Lottozero is an international centre for textile design, art and culture. It operates both as a consultancy studio and as a creative hub, divided into a gallery/exhibition area, a shared studio space/coworking and an open Fab Lab for textile production, experimentation and research.</p> <p>The work done in the creative hub is aimed primarily at people operating in textiles and fashion, it responds to their need for space, their need for comparison with other creators and access to information not available online. The hub provides feedback, tutorship and the possibility to live and exhibit in this environment. The development of emerging talents and brands is supported through scouting and residencies in the Lottozero headquarters and by facilitating the exchange between them and the traditional companies of the Prato textile district.</p> <p>The work done with the consultancy studio targets designers, artists, brands and institutions, providing personalized services to anyone concerned with the world of textiles, textile art and fashion. The extensive knowledge of Lottozero is complemented with the expertise and production capacity of the historical textile district and with a widespread reliable network of excellent creative collaborators that have been scouted all over the world. The Lottozero in-house textile laboratories allow to constantly experiment, create and prototype new ideas, in order to continuously design and develop innovative concepts for internal or external use.</p> |
| SELECTION CRITERIA | <p>Lottozero is an interesting example of how a highly specialized hub, in collaboration with the textile and fashion industry, can create its own local and global ecosystem.</p> |
| DRAFTING DESCRIPTION | <p>The interview with Tessa Moroder, Administrative Director from Lottozero, was conducted by Davide Amato and George Kalathas (ECHN) on the 16th of February 2021.</p> |

TYPES

| | |
|---------------------------|--|
| HUB | Makerspace, Coworking, Fab Lab. |
| PRODUCTION/ FACILITIES | Textile. |
| SITE & HERITAGE | The hub is located in an urban environment and a historic area under transformation. |

ADMINISTRATIVE DATA

| | |
|--------------------|--|
| LEGAL STATUS | Cooperative |
| NUM. OF EMPLOYEES | 1-5 |
| YEARLY TURNOVER | 100K€ |
| FUNDING SCHEME | Private |
| PROFIT / NONPROFIT | Non-profit |
| TYPES OF REVENUS | Memberships / subscriptions - 10% Educational programs - 30% Research - 10% Consulting - 40% Space rental / events - 5% Public funding - 5% |



CENTRINNO'S CRITERIA

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | |
|--------------------|---|----------|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year)</i> | 5 |
| | <p>The project is part of a global vision on the importance of quality production in all areas, which aims to stimulate good design, the use of recycled materials, shared tools and the return to old craftsmanship, for example by blending it with digital culture.</p> <p>Lottozero cannot ignore the values that permeate every single project developed there: collective vision, inclusion, sharing, quality, openness, economic and environmental sustainability, and a non-profit mentality.</p> | |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|---|
| B | <p><i>The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i></p> <p>0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year)</p> <p>5</p> <p>CIRCULAR WOOL project, 01/2017 – 2021: Circular Wool is an on-going research project in collaboration with Ricerca e Servizi. The project aims to transform a waste material, wool from local dairy sheep farms, which is disposed of at high environmental and economic costs, into a circular textile raw material. The wool recovered and processed in the Prato textile district becomes a material for textile use to be applied in furnishing fabrics and interior products such as curtains, carpets and panels. The project operates through partnerships with host-brands and the design and production of circular and innovative products. The added value is given through a high level of design applied to the product that helps to convey the concept of circularity and the short supply chain approach of the raw material, in communication with and storytelling the final product.</p> |
| | <p><i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i></p> <p>0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year)</p> <p>5</p> <p>Lottozero sees sustainability as the opposite of a trend. In fact, they see it as a long-term mentality that should pervade all aspects of a company's life, resulting in a radical (re)evaluation of its objectives and values and inducing structural changes. Since July 2019, Lottozero has been a partner of the Cambiamoda project, realized with the support of the Italian Agency for Cooperation Development and the Mani Tese association, in collaboration with Istituto Oikos and other major partners. Through education and awareness-raising actions, the initiative aims to trigger a change in lifestyle, consumption and production in the fast fashion sector, spreading and promoting more responsible and sustainable models that respect workers' rights and the environment. For this project Lottozero has created a sustainable design thinking workshop for design students at Italian universities and a special edition of Fashion Revolution Fair, scheduled in two locations: Manifattura Tabacchi, Florence, and Base, Milan. Due to the health crisis, the events were temporarily suspended and integrated with an online version, proposed during Fashion Revolution Week, in April 2020.</p> <p>Other workshop examples:</p> <ul style="list-style-type: none"> - 07/2018 - Taste of colour, No lab Academy, Milan. Experiential dyeing workshop with natural pigments derived from food products or waste and knowledge of textile fibres. - 04/2019 - Extraordinary surfaces, Manifattura Tabacchi, Florence. Practical workshop for the creative reuse of plastics and other waste materials with the support of the hot press. Workshop realized in the context of "God is green", a festival promoting sustainable practices. - 01/2020 - Sustainable Design Thinking workshop, So_Sarpi, Milan. Theoretical workshop for designers and creatives, aimed at |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | |
|--------------------|---|---|
| | <p>acquiring knowledge about processes, materials and practices in the textile- clothing sector and more sustainable design methodologies. Workshop realized in the context of “So x Tatreez Design”, fundraising aimed at supporting the social project Tatreez.</p> | |
| D | <p><i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i></p> | |
| | <p>0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year)</p> | 5 |
| | <p>The textile workshop in Lottozero is a practical workspace open to the public and intended for technical and artistic experimentation, the development of prototypes and projects, the production of limited editions and unique pieces, textile training/workshops, the production of works of art and, as an operational space, to support creative residencies. Lottozero creates synergies to embark on a lasting path and forge bonds over time that can give value and benefit to both parties. Lottozero seeks partners and sponsors that share its same values: great attention to quality, product innovation and specialized know-how.</p> <p>Partners provide support in the form of knowledge, contacts, time and availability to help Lottozero achieve certain pre-established goals in the short, medium or long term. Each partner and stakeholder of Lottozero believes in its mission and is committed to contributing in a concrete manner through technical support, supply of materials, machinery, furniture or tools and providing their time and know-how. These stakeholders become part of the Lottozero network in an active, constructive and long-lasting way.</p> <p>In recent years, Lottozero has developed collaborations with contemporary art museums, cultural institutions and associations, which have led to the development and implementation of exhibition projects, performances and concerts, both within the Kunsthalle and in other contexts.</p> <p>Active Collaborations: CHAT (Centre for Heritage, Arts and Textiles), Central Museum of Textiles, TextielMuseum in The Netherlands, Villa Romana in Florence, Museion - Museum of Modern and Contemporary Art in Bolzano, Centre for contemporary art Luigi Pecci of Prato French Institute of Florence, Prato Textile Museum</p> | |
| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. | |
| A | <p><i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i></p> | |
| | <p>0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages</p> | 4 |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. | |
|--|---|---|
| | Lottozero is a cooperative, by ideological choice, non-profit, open to all, and over time it foresees the growth of the number of members who will want to share their mission. | |
| B | <i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i> | |
| | 0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences | 2 |
| | - No data on this. | |
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub).</i> | |
| | 0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities | 3 |
| | - No data on this. | |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> | |
| | 0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience. | 5 |
| | Lottozero actively nurtures a network of professionals who are connected to local textile companies, international institutions, NGOs and research centres. As a consequence, Lottozero acts as a facilitator for a global community. | |
| Additional notes: The project is aimed primarily at creative young people, responding to their need for work spaces, allowing comparison with other European creators and access to information not available online, as well as providing feedback, tutorship and the opportunity to live and exhibit in this environment. Through the design office, it facilitates the contact between industrial cultural heritage and young creative culture, establishing dialogues and collaborations. It brings young artists where they would not go autonomously and it gives them a space in which to work. The office facilitates the right connections in the business and industrial world allowing the spread of young artists' culture, their knowledge, their creativity and vision. In this way, artists have access to certain unreached parts of society, like the very traditional textile district. Since Lottozero started its activities, Prato has quickly become a creative pole and a reference point for the whole industry, spreading the culture of quality, the value of the roots, as well as the knowledge of the productive processes of the industrial world and contributing to the individual and collective well-being of the whole sector. | | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | |
|------------------|---|---|
| A | <i>The hub carries out training or educational activities or programs.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = Training or educational activities represent at least 50% of the activities of the hub</i> | 5 |
| | <p>The textile workshop in Lottozero is a practical workspace open to the public and intended for technical and artistic experimentation, the development of prototypes and projects, the production of limited editions and unique pieces, textile training/workshops, the production of works of art and as an operational space to support creative residencies.</p> <p>It is equipped with machinery for experimentation and research materials on textile, through craft, manual and industrial techniques that are typical of the Italian textile sector. During non-Covid, times there is a varied program of workshops and lectures taking place at the Hub, currently the Hub has transferred part of the activities online.</p> | |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub carries out at least 2 different types of formal or informal vocational training per year</i> | 5 |
| | <p>Lottozero has collaborated with several Italian and foreign universities, as well as high schools and junior high schools, offering mentorship, lectures and workshops revolving around textile design, sustainability and entrepreneurial skills.</p> <p>Collaborations with universities and design schools:</p> <ul style="list-style-type: none">- From 2017 to 2019: Mentorship for Ocad University Off-Campus Studies Program, Florence.- In 2018: Mentorship for the Independent Study Program, MFA, SACI College of Art & Design, Florence, Italy.- From 2018: Course management and lecturing “Textile print design”, Professional Training Program of Textile Design, IED Firenze.- From 2018: Course management and lecturing “Textile design”, MA Textile and Fashion Design, NABA Milano.- From 2019: Course management and lecturing “Design of the archive”, Professional Training Program of Textile Design, IED Firenze .- Since 2019: Course management and lecturing “Materials Technology”, BA in Italian and English, Istituto Marangoni, Firenze.- Academic year 2019/20: activation of the Sustainable Design Thinking workshop, conceived for university students of a variety of the best fashion, design and communication schools and aimed at transmitting knowledge and applicable skills to their training and professional path. The objective is to educate students, future designers, to a more ethical and sustainable design.- From 2020: part of the teaching staff of the course “Intrecciare il futuro”, organized by the Officine Vispa cooperative in Bolzano and aimed at developing textile/fashion and entrepreneurial skills to facilitate the employment of unemployed women. | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | | |
|--|--|--|---|
| | <p>- From 2020: Course leader of the three-year Fashion Design of MADE Program, at the Academy of Fine Arts in Syracuse, starting in October 2020. The course, designed and built by Lottozero in collaboration with the Director of the Academy Alessandro Montel, aims to train designers in the textile/fashion sector who are expert in the product, its components and its production processes: designers capable of proposing an innovative and original vision, which takes into account the contemporary context and its problems, both from a socio-cultural and production point of view.</p> <p>In addition to curricular lessons, the Lottozero team collaborates with Italian and foreign universities, high schools and junior high schools, offering specifically structured workshops and lessons.</p> | | |
| C | <p><i>The hub carries out activities that link vocational training with local manufacturing.</i></p> <table border="1" data-bbox="472 864 1399 976"> <tr> <td data-bbox="472 864 1254 976"> 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing </td><td data-bbox="1254 864 1399 976">5</td></tr> </table> <p>The hub consistently works with local manufacturing for a variety of projects that include training, creativity, heritage and textile know-how. One example of such a collaboration was the Creative wear project, which sought to recover and highlight design heritage and “artisanal” knowledge of Mediterranean cultures by bringing renewed creative energy to clusters and industrial districts.</p> <p>Lottozero hosted 4 textile designers from all over Europe who completed a 2-week residency each in the heart of the textile district of Prato. The designers lived in the Lottozero residency apartment and worked in collaboration/mentorship with Lottozero and with some of the key figures of the leading textile companies of the district.</p> <p>The designers had the opportunity to access and work with the historical textile archives of some of the most prestigious active businesses of Prato and of the Textile Museum. Scope of the project was to give them a new interpretation and to use them as a base for new textile products.</p> | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 5 |
| 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 5 | | |
| D | <p><i>The hub carries out training activities that are linked to the local context or community.</i></p> <table border="1" data-bbox="472 1563 1399 1675"> <tr> <td data-bbox="472 1563 1254 1675"> 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community </td><td data-bbox="1254 1563 1399 1675">5</td></tr> </table> <p>All Lottozero workshops and activities are also aimed at its local context and community. One recent project was the Lottozero Open Club, a cycle of events born from the need to return to meet people, create a stronger community and share knowledge and experiences related to textile culture. It consisted of a full calendar of meetings and workshops that took place from late September to late November 2020.</p> <p>The program began with an Open Day, dedicated to the discovery of the textile workshop. Two special collaborators of Lottozero showed participants the machinery and the tools available inside the laboratory; and there were practical demonstrations so that anyone was able to try their hand with needles, yarns and fabrics.</p> | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 5 |
| 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 5 | | |

| | |
|------------------------------|--|
| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
| | <p>After the Open Day, the program continued with Open Nights, a series of weekly events that took place every Monday evening, including workshops with artists and designers, talks, presentations and meetings with some realities and associations of the territory.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • http://www.lottozero.org/lottozero-open-club |
| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. |
| A | <p>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</p> <p>0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market</p> <p>5</p> |
| | <p>What makes Lottozero innovative compared to other creative hubs operating in the same or similar sectors, is that from the beginning the Hub was conscious to be based in a very specific industrial district, with everything that implies. In planning the activities, the hub considered how to best take advantage of the vicinity of the textile industrial district and how the district could best take advantage of the hub's vicinity, with everything this encompasses, like the Hub's insight into new artistic and creative practices and the Hub's international networks. Many young European designers and creatives have a hard time accessing the know-how and the production capacity that is currently still available in Europe. The hub was conscious that the industrial district has a hard time keeping up with all the competition coming from extra European countries.</p> <p>The team knows that by uniting these two actors, new multidisciplinary projects could come to life. These projects are replicable not only in Italy, where the industrial district is one of the main economic models, but in many other areas of the European Union. The hub's team was expecting the project to foster even more collaborations between artists and designers and the small and medium sized textile industry. The Hub's team is conscious that sometimes being so multidisciplinary and avant-garde compared to what was known until now makes it difficult for projects to be understood entirely and oftentimes the potential is not immediately clear, especially for traditional companies in the district that have been operating in a certain way for a long time.</p> |
| B | <p><i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs</p> <p>3</p> |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | |
|--|---|----------|
| | The business model is currently under review as the hub has not been able to operate in an economically sustainable manner yet. | |
| C | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions.</i> | |
| | <i>0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals.</i> | 0 |
| | Despite there being much interest from local, regional and national institutions, and always being cited and displayed as a best practice and an incredible success in the region, Lottozero is sadly not included (especially financially) in a wider program which works towards common goals, but this would definitely be one of the hub's goals. | |
| D | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> | |
| | <i>0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration</i> | 3 |
| | After opening in 2016, many creative hubs have started focusing on the theme of fashion, textiles and sustainability. In this sense, Lottozero might have been the first one. | |
| Additional notes: One of Lottozero's most remarkable features is its support to the development of emerging talents and brands through scouting and residencies in its headquarter, by facilitating the exchange between them and the traditional companies of Prato's district. They initiate an exchange with traditional textile companies, by showing them new means of creative innovation, and by putting designers in contact with companies who have the necessary technical know-how to produce their creations. Such collaborations manifest as a series of artistic residencies and exhibitions, and as a result of the exchange between artists (both national and international) and the local know-how. | | |
| Further readings: <ul style="list-style-type: none">http://www.lottozero.org/residency | | |

| HUBS & HERITAGE | | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|--|--|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> | |
| | <i>0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above</i> | 5 |
| | <p>The hub is located in the Macrolottozero area of Prato, Italy. Prato is one of the most important industrial districts of the country and still encompasses over 8000 companies operating in the textiles and fashion field. Macrolottozero was one of the first areas of the city which was heavily industrialized after World War II, but most of the companies that were born there later moved to a more accessible industrial area on the outskirts of the city, leaving a deep cultural vacancy and a variety of abandoned spaces and factories. The Lottozero headquarter is based in what used to be a warehouse for wholesale, which Lottozero completely restructured and refurbished. Just like Lottozero, many cultural actors have taken advantage of these abandoned spaces and have moved into this area creating a very lively neighbourhood for cultural and creative activities. The neighbourhood is also home to one of the largest Chinese populations of Europe and is therefore a hotspot for exchange of culture between Italy and China. Being in such an important place for textile and fashion heritage is also important for our access to archives and the history of many local companies.</p> | |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> | |
| | <i>0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities</i> | 3 |
| | <p>Lottozero’s activities are 100% in line and related with the historical and cultural legacy of the neighbourhood and the city. Not only do they build upon the know-how, capacity and heritage of the historical textile district, using it as a diffused laboratory for a large quantity of projects, but they also work with their network and community to bring and create new partnerships, new working relationships, synergies and cross pollination between players that would not otherwise interact with each other and would not know how to communicate (often quite literally) and operate together. Lottozero’s objective is to bring young creatives and designers closer to the heritage and history of the textile district and at the same time elevate and promote the textile district with the new input and creativity of our community.</p> <p>Other than this, the hub develops a variety of heritage related projects: projects that build upon heritage design, like inviting designers to work with</p> | |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. | |
|--|--|---|
| | the archives of local textile companies and teaching young designers how to utilize archives for their creative practices. One of the last projects that was completed in this direction was a Learning Lab funded by the European Creative Hubs Network where a module of heritage design thinking was developed, using one of the textile archives present in our headquarters to be used in design and art universities around the world. | |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).</i> | |
| | <i>0 = the activities of the hub is completely independent from the local community and neighbourhood</i> <i>5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood</i> | 2 |
| | It could be argued that for Lottozero's case a "light" or "more ethical" gentrification process would be beneficial to the neighbourhood and the community. The hub's contribution to the transformation process of the neighbourhood is mainly the attraction created for younger creative people and for people who have an interest in the well-being of their society (through attention on sustainability and/or circularity, and ethical production practices) and the textile district. By creating a movement of these people to the neighbourhood and the city of Prato, Lottozero has provided the area with new perspectives, new ways of thinking and seeing things. | |
| <p>Additional notes: Lottozero Open Club was a cycle of events born from the need to return to meet people, create a stronger community and share knowledge and experiences related to textile culture. It consisted of a full calendar of meetings and workshops that took place from late September to late November 2020.</p> <p>The program began with an Open Day, dedicated to the discovery of the textile workshop. Two special collaborators of Lottozero will show the participants the machinery and the tools available inside the laboratory; there will be practical demonstrations and anyone was able to try their hand with needles, yarns and fabrics.</p> <p>Starting on Monday, September 28th, the program of Open Nights initiated a series of weekly events, including workshops with artists and designers, talks, presentations and meetings with some local realities and associations.</p> | | |
| <p>Further readings:</p> <ul style="list-style-type: none">http://www.lottozero.org/lottozero-open-club | | |

TZOUMAKERS

<https://www.tzoumakers.gr>

Kalentzi village (XS)
Greece

Launch date: 2018
Hub's surface: 63 m2

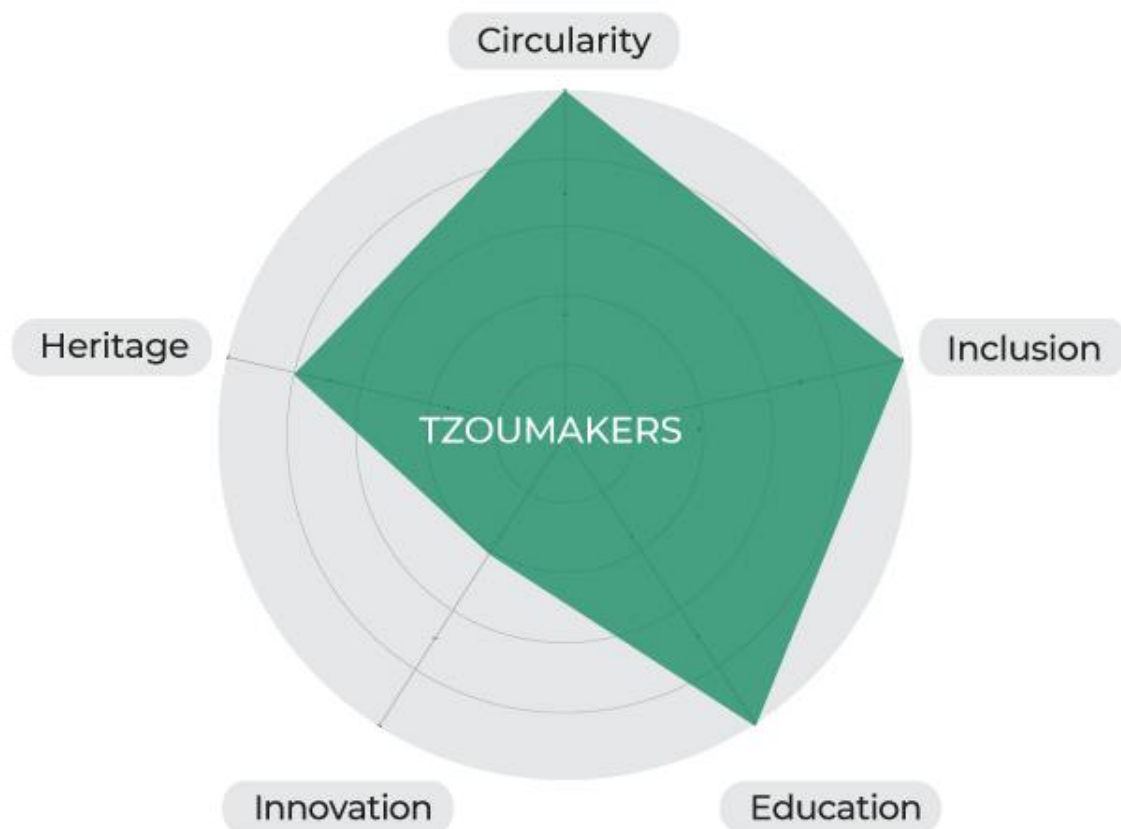
| | |
|----------------------|--|
| GENERAL DESCRIPTION | Tzoumakers is an open lab for communities to cooperatively design and manufacture tools for small-scale agricultural production, located in the region of Tzoumerka, in the cultural centre of the Kalentzi village near the city of Ioannina. |
| SELECTION CRITERIA | This open lab was proposed to be studied in the context of the CENTRINNO Remarkable Hubs, due to the fact that it represents an active community of makers that is constantly empowering the local agricultural communities providing them with open-source solutions. Also, its underlying idea of "Design Global, Manufacture Local" as a common is quite promising. |
| DRAFTING DESCRIPTION | The interview with Alexandros Pantazis, the Community Manager of Tzoumakers, was conducted by George Kalathas (ECHN), on the 1st of March 2021. |

TPOLOGIES

| | |
|-----------------------|---|
| HUB | Fab Lab, Makerspace, Coworking, Hackerspace. |
| PRODUCTION/FACILITIES | Agriculture, Food Transformation, Metal Manufacturing, Wood Manufacturing, 3D Printing, Creative Craftsmanship. |
| SITE & HERITAGE | Rural environment; the hub is located in a historic/heritage building. |

ADMINISTRATIVE DATA

| | |
|--------------------|---|
| LEGAL STATUS | NGO |
| NUM. OF EMPLOYEES | 1-5 |
| YEARLY TURNOVER | 40K€ by average |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | Non-profit |
| TYPES OF REVENUS | Research - 45,7% Space rental / events - 22,6% Private funding - 6,3% Public funding - 25,4% |



CENTRINNO'S CRITERIA

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|--|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year) |
| | <p>The “Design Global Manufacture Local” model that Tzoumakers practices, builds on global access to industrial knowledge and localised physical construction. This type of configuration is complementary to the concept of circular economies as it makes smaller, regional cycles or production/repair/recycling possible.</p> <p>Examples of tools:</p> <ul style="list-style-type: none"> - 2018, The Post Driver was made using metal components from an old truck axle. - 2019, The Tilling Fork was made using scrap metal from a truck's suspension system. |
| B | <i>The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year) |
| | <p>Since the hub's users have taken active part in the design, brainstorming and fabrication of their own tools, production costs are significantly reduced and the tools are easier to repair, allowing farmers to have an overall control of the technology they use in their everyday activities. Repair activities for the tools are hosted regularly in the makerspace when the need arises.</p> |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year) |
| | <p>The community of Kalentzi and nearby villages in Tzoumerka actively participates in the activities hosted by the makerspace, including the repair activities and the prototyping of tools that use recycled materials or scrap store. In addition, the communities of L'Atelier Paysan and Valladura, who also develop projects in the sense of upcycling, have both participated in events hosted by Tzoumakers.</p> <p>Further readings:</p> <ul style="list-style-type: none"> • https://www.latelierpaysan.org/English • https://valldaura.net |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | |
|--|---|---|
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year) | 5 |
| | <i>Further readings:</i> <ul style="list-style-type: none">• 2019-2020 - “CLOUDS MODULAR SYSTEM” “Clouds” system co-created with Ludd makerspace Clouds system documentation English available• 2019 - Herb Milling Machine co-created in collaboration with the local community Herb milling machine construction workshop• 2019 - 3-day workshop open to local and international audiences Cultivating Open Source in Tzoumerka | |
| Additional notes: The “Design Global, Manufacture Local” model that Tzoumakers community practices and researches allows for less transport of raw materials because tools are made locally and local materials can be used when possible. Moreover, as the design is open, scrap or recycled materials can be used in the manufacturing of tools. Additionally, the design is made by communities of commoners so no planned obsolescence is present and the tools are designed in such a way that they are easily repairable. | | |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. | |
|------------------|--|---|
| A | <i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i> | |
| | 0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages | 5 |
| | Through its activities, the makerspace of Tzoumakers mixes audiences with different backgrounds, such as farmers with program developers and wood workers with architects. In addition, in the open making events a lot of different people and stakeholders are coming together. In addition, the hub also addresses groups that are not so well acquainted with technology such as older, more traditional farmers by encouraging them to participate in the hub's activities. | |
| B | <i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i> | |
| | 0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences | 4 |
| | Epirus, the region to which the villages of Tzoumerka belong, is suffering from significant population decline and has the second highest long-term unemployment rate in the EU (2018). When the tourist season comes to an end, the majority of villages in the region are virtually empty. In addition to | |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|---|---|
| | <p>that, the agricultural sector in Greece suffers from lack of financing and governmental support initiatives.</p> <p>All of the activities that Tzoumakers organise are supported financially entirely by the makerspace and anyone interested to attend can participate for free. Furthermore, through raising awareness on the project and sharing knowledge and ideas, Tzoumakers contributes to making agricultural activities in Greece a more accessible and viable option by making farmers more successful and resilient.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://ec.europa.eu/eurostat/documents/2995521/9746862/1-29042019-BP-EN.pdf/329a9132-20c0-485b-aa22-b34864c22fde |
| C | <p><i>Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub).</i></p> <p>0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities</p> <p style="text-align: right;">5</p> |
| | <p>Tzoumakers is a community-driven makerspace that invites local communities to cooperatively design and manufacture tools. Their facilities, fabrication equipment and the tools manufactured so far, are also shared in the spirit of building and strengthening communities and cooperation in rural areas.</p> |
| D | <p><i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i></p> <p>0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience.</p> <p style="text-align: right;">4</p> |
| | <p>Photos, blueprints and instructions for the construction and operation of the tools manufactured are shared online on a dedicated section in Tzoumakers' website (only in Greek for the moment) as well as in shared drive folders.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://www.tzoumakers.gr/tools/ |
| <p>Additional notes: One of the main points of focus for Tzoumakers' activities is social inclusion. Tzoumakers is a community of makers, meaning that they support cross-disciplinary collaboration and co-creation, either with local communities, other professionals or makerspaces. Mainly operating in agricultural communities, the hub strongly supports the locals with their actions, keeping them informed about new projects and inviting them to contribute either by proposing or assisting in the construction of new tools. It is important to emphasise that Tzoumakers makerspace does not simply develop new tools 'in house'. Rather it builds upon the individual ingenuity of the community and keeps them open for everyone to participate. In addition, the community shares photos, blueprints and instructions for the construction and operation of the tools they make online. Tzoumakers also promotes the actions of similar maker communities that focus on agriculture open-source solutions directly through its website (L'Atelier Paysan and FarmHack). The hub bridges those communities by organizing international events, invites and supports makers from abroad to visit and participate in manufacturing events.</p> | |

| | |
|---|---|
| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
| Further readings: <ul style="list-style-type: none"> • Post Driver • Tilling Fork | |
| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
| A | <i>The hub carries out training or educational activities or programs.</i> |
| | <div> <div> <i>0 = You completely disagree with the statement above</i> <i>5 = Training or educational activities represent at least 50% of the activities of the hub</i> </div> <div>5</div> </div> |
| | <p>A big part of the activities of Tzoumakers includes training & educational workshops regarding the use and construction of tools. The hub conducts free educational seminars on a regular basis addressed to the broader community. The subjects of these seminars can vary from the safe use of their production facilities to the design, construction and operation of open-source tools.</p> <p>Further readings:</p> <ul style="list-style-type: none"> • Tool documentation workshop • More workshops and seminars |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> |
| | <div> <div> <i>0 = You completely disagree with the statement above</i> <i>5 = The hub carries out at least 2 different types of formal or informal vocational training per year</i> </div> <div>5</div> </div> |
| | <p>Workshops of various forms (tool prototyping or brainstorming, design, documentation etc) are curated and supported financially entirely by the lab. Those are either conducted when certain needs arise within the community that need to be addressed or they are organised as wider events with invited guests and arranged actions in order to raise awareness on the project and build capacities.</p> <p>Activities:</p> <ul style="list-style-type: none"> - 2018, Documentation of community needs and Post Driller fabrication workshop - 2019, Safety measures & milling machine use workshop <p>Further readings:</p> <ul style="list-style-type: none"> • https://www.tzoumakers.gr/wp-content/uploads/2019/12/Ergastirio-asfaleias-18_12_2019.png |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | |
|---|--|---|
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub carries out at least one activity per year that links vocational training with local manufacturing</i> | 5 |
| | All of the activities, seminars and workshops (tool prototyping or brainstorming, design, documentation) that are hosted by the makerspace address and encourage the local community to participate in them. <i>Further readings:</i> <ul style="list-style-type: none">2019 - Safety measures & milling machine use workshop2020 - Tool documentation workshop | |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub carries out at least one activity per year that links to the local context or community</i> | 5 |
| | Tzoumakers considers knowledge as a common good creating a sense of community when managing common resources such as the lab or the tools that are constructed. Tzoumakers conducts regular free educational workshops and seminars addressed to the broader community. Their subjects can vary from the safe use of the hub's production facilities to the design, construction and operation of open-source tools. Activities: <ul style="list-style-type: none">2018, Documentation of community needs and Post Driller fabrication workshop2019, Design, improvement and fabrication of Tilling Fork2019, Info day: Making agricultural solutions2020, Tool documentation workshop <i>Further readings:</i> <ul style="list-style-type: none">https://www.tzoumakers.gr/wp-content/uploads/2020/07/DDMP_Poster_2020.png | |
| Additional notes: In addition to the activities of the makerspace, members of Tzoumakers and P2P lab offer lectures on open-source agriculture business models in two postgraduate study programmes in Tallinn University of Technology and in the Autonomous University of Barcelona. In addition, the hub has collaborated with or hosted lecturers from other higher educational institutes. <i>Further readings:</i> <ul style="list-style-type: none">Tallinn UniversityAutonomous University of BarcelonaSchool of Political Sciences of the Aristotle University of ThessalonikiDepartment of Early Childhood Education University of ThessalySocial and Cultural Anthropology Department VRIJE Universiteit AmsterdamValldura Labs | | |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | |
|-------------------|--|---|
| A | The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects. | |
| | 0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market | 5 |
| | The hub strongly supports co-creative practices and collaborative projects between a variety of sectors with a focus on collaborative design, engineering and agriculture. | |
| B | The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs | 0 |
| | Tzoumakers' exact business model has not been replicated yet. However, it is an ongoing research question and a case study example in university lectures. | |
| C | The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals. | 3 |
| | Tzoumakers develops one of the two research pilots of the Cosmolocalism EU project. In addition, since it forms the pilot of P2P Lab's activities, it can be related with the Fab City Global Initiative. <i>Further readings:</i> <ul style="list-style-type: none">• Cosmolocalism• P2P Lab• Fab City Global Initiative | |
| D | The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration | 2 |
| | Two people from Greece, upon visiting the makerspace, are interested in initiating a similar initiative. However, until today they have not done something practical. In addition, another person that got inspired from Tzoumakers is now a key player and initiator of the Fab City Hamburg. <i>Further readings:</i> | |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | | |
|--|---|--|---|
| | <ul style="list-style-type: none">Fab City Hamburg | | |
| <p>Additional notes: Tzoumakers' makerspace was created by an initiative of P2P Lab with initial funding from the Phygital EU project. Currently it is partly funded by the Cosmolocalism EU project. Tzoumakers forms the pilot of the main research aim of P2P Lab.</p> <p>Following a series of meetings, the participants of the Tzoumakers community, underline their needs and problems suggesting possible solutions to those as well as describing how this makerspace's facilities would contribute in building those solutions. The makerspace until this point is located in the cultural centre of the Kalentzi village.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none">P2P LabPhygitalCosmolocalism | | | |
| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. | | |
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> | | |
| | 0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above | | 2 |
| | The region of Tzoumerka is a historic area but it is not industrial or under transformation. The building that now hosts the makerspace is not considered as historic. However, it was the space of the cultural association of the village which has now moved below the makerspace. | | |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> | | |
| | 0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities | | 3 |
| | The open-source agricultural solutions that Tzoumakers build are related and in touch with the local needs of farmers, animal breeders etc. but not necessarily with the historical/cultural legacy of the neighbourhood. | | |

| HUBS & HERITAGE | | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. | |
|--|--|--|---|
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).</i> | | |
| | <i>0 = the activities of the hub is completely independent from the local community and neighbourhood</i> <i>5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood</i> | | 5 |
| | Traditionally, the residents of the villages in the region of Tzoumerka, were farmers, animal breeders and beekeepers. The industrial revolution did not affect their productive activities at a great scale, since modern, industrial-scale machinery is either too expensive or cannot be operated in these mountainous areas. Tzoumakers' open-source tools are tailor made for this kind of small-scale primary production. In addition, Tzoumakers shares its facilities in the spirit of co-manufacturing tools together with the local community and it also shares the manufactured tools together with the knowledge gained from the whole process. | | |
| Additional notes: Tzoumakers' vision is to create similar open and collaborative production sites in both villages and cities (in municipal level) where citizens may seize technology into their own hands. These sites may be supported by municipalities and / or by multi-stakeholder cooperatives. | | | |

Third iteration of remarkable Hub Portraits

The third iteration is the ultimate version of the portraits. It was used for Paranda (Tartu), Darwin (Bordeaux) and Every One, Every Day (London). These portraits display a more accurate data classification, along with more detailed questions regarding the criteria.

In this specific Annex section, only Paranda has been reported because the other two (Darwin and Every One, Every Day) have been selected as *starred portraits* and raw data have been reported only in the corresponding section.

For more details on the methodology the reader can check section 3.1 of the report.

PARANDA

www.paranda.ee

Tartu (S)
Estonia

Launch date: 2019
Hub's Surface: 120 m2

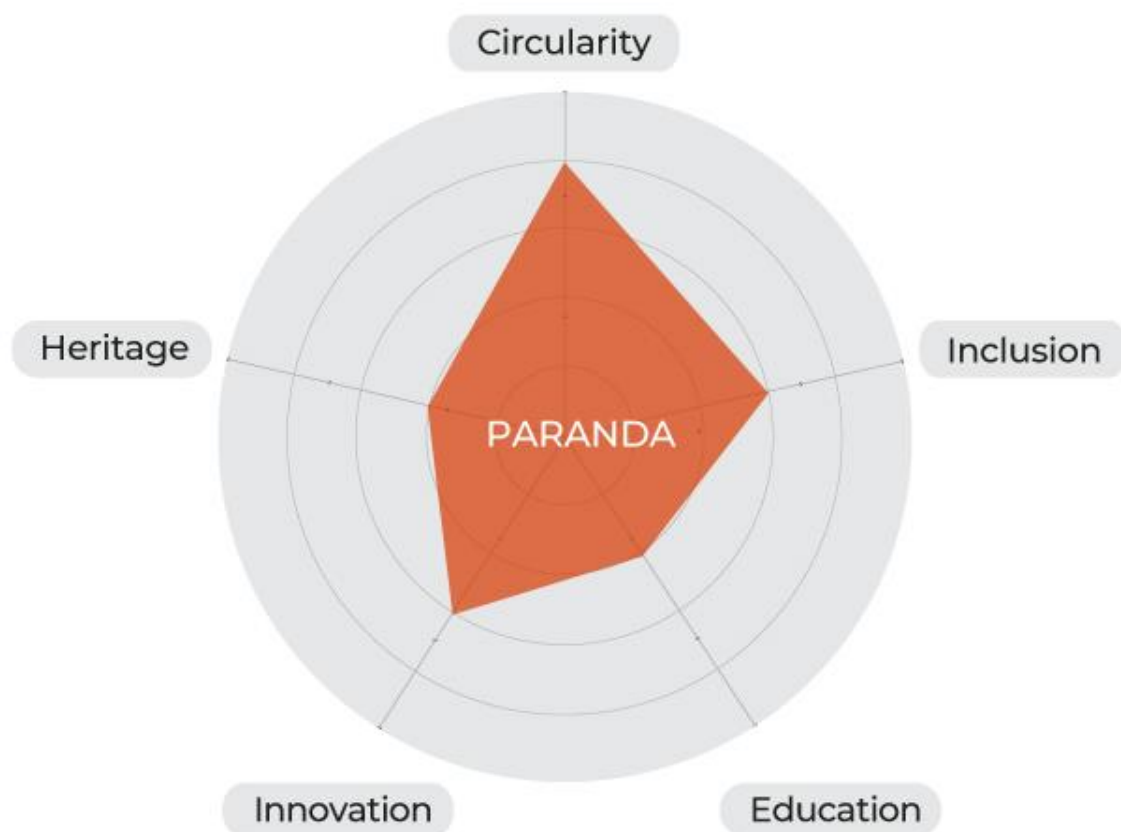
| | |
|----------------------|--|
| GENERAL DESCRIPTION | Paranda is a makerspace focused on repair, upcycling and DIY activities. It promotes circular practices in the local community and on an international network. |
| SELECTION CRITERIA | Paranda has been chosen for its diverse activities related to circularity in a small town in the Baltic region. It's particularly interesting to study how they reach a large community through the use of social media. |
| DRAFTING DESCRIPTION | The interview with JIŘÍ KREJČÍ, co-founder, involved in collaborative projects and communications from Paranda, was conducted by Davide Amato (ECHN) on the 26th of February 2021 |

TYPOLOGIES

| | |
|-----------------------|---|
| HUB | Makerspace, Third Place. |
| PRODUCTION/FACILITIES | Agriculture, Electronics, Food, Metal Manufacturing, Textile, Wood Manufacturing, 3D Printing. |
| SITE & HERITAGE | Urban environment, the hub is located in an historic area under transformation and in a historic/heritage building. |

ADMINISTRATIVE DATA

| | |
|--------------------|--|
| LEGAL STATUS | NGO |
| NUM. OF EMPLOYEES | 1-5 |
| YEARLY TURNOVER | 39K€ |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | Non-profit |
| TYPES OF REVENUS | Memberships / subscriptions - 1% Acceleration / incubation - 7% Space rental / events - 2% Private funding - 15% Public funding -75% |



CENTRINNO'S CRITERIA

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | |
|--|--|---|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year) | 5 |
| | Paranda bases its whole activity on the promotion of recycling and fixing as valid alternatives to wasteful consumerism. The hub produces and sells items produced with recycled material: https://paranda.ee/en/products/ | |
| B | <i>The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year) | 5 |
| | Paranda's philosophy encourages reusing and repairing as valid alternatives to wasteful consumerism. This vision drives in particular from the series of Repair Café organized around the city of Tartu and beyond, which promotes the habit of repairing among communities. <i>Further readings:</i> <ul style="list-style-type: none">https://paranda.ee/en/repair-cafe/ | |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year) | 5 |
| | Paranda aims at sharing and spreading its knowledge by means of workshops and a consistent informative online presence, especially via their YouTube channel. <i>Further readings:</i> <ul style="list-style-type: none">https://paranda.ee/en/workshops/ | |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year) | 0 |
| | They have no distributed manufacturing and prototyping. | |
| Additional notes: Paranda has been also involved in community urban gardens. The group of friends who started Paranda was previously involved in setting up 3 community gardens which eventually merged into one; it has public funding and a permanent stay for the future. The teams are now more separated but they are still a community that runs these things simultaneously and support each other. If the Covid-19 would not be an issue, they would be running rescued food events regularly in the Paranda kitchen. | | |

Further readings:

- <https://www.youtube.com/channel/UC57jDezGTi4d0BTqInGRdGQ>

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. | |
|--|--|---|
| A | <i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i> | |
| | 0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages | 3 |
| | - No data on this | |
| B | <i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i> | |
| | 0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences | 0 |
| | - No data on this | |
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub).</i> | |
| | 0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities | 4 |
| | Paranduskelder is an offspring of previously organized bottom-up initiatives like Transition Town movement groups, community gardens, green drink evenings therefore functions as a hub (groups are free to use its space) for different kinds of groups and communities that work towards more sustainable urban environment - e.g. community gardens organizing teams, Fridays for Future Estonia, food share Tartu. | |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> | |
| | 0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience. | 4 |
| | Paranda has an international orientation, its website is accessible for English speakers and its YouTube videos are in English. It participated in some EU initiatives such as Erasmus+ and ESC Solidarity Project. | |
| Additional notes: Paranda was born from previous bottom-up initiatives and is built upon those communities; moreover, its initiatives encourage communal activities and social experiences. Nonetheless, they do not have a specific strategy of inclusion for marginalized categories. | | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | |
|---|--|---|
| A | <i>The hub carries out training or educational activities or programs.</i> | |
| | 0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub | 5 |
| | Paranda offers workshops and a YouTube series of informative videos about DIY culture. It also provides a “Social Sustainability Toolkit” based on a MA thesis project. <i>Further reading:</i> <ul style="list-style-type: none">https://paranda.ee/en/toolkit/ | |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year | 0 |
| | - No data on this | |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 0 |
| | - No data on this | |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 4 |
| | The Repair Cafés are not meant as training activities, but they do involve a transmission of knowledge, skills and awareness concerning environmental and consumeristic issues among the local community. | |
| Additional notes: Although Paranda does not have a systemic educational program or vocational training, it is primarily dedicated to raising awareness about reusing and recycling among its audience. If not educational, we can consider Paranda’s activities highly informative, by means of social media communication and sporadic workshops. | | |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | |
|---|--|---|
| A | The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects. | |
| | 0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market | 2 |
| | Repair cafe. | |
| B | The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs | 0 |
| | - No data on this | |
| C | The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals. | 4 |
| | Paranduskelder's goals are aligned with the Tartu municipality sustainability strategy for 2030, specifically - directing citizens to reuse and repair, as well as supporting local NGOs that work towards transition towards circular economy | |
| D | The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration | 2 |
| | Paranda has inspired the starting of a similar community repair space in Keila, as well as advising on practical matters to a soon coming makerspace/re-makery in Tallinn. | |
| Additional notes: Paranda is also currently working on setting up a team to work towards a Fab City pledge for the city of Tartu. | | |

| HUBS & HERITAGE | | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|---|---|--|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> | |
| | <i>0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above</i> | 3 |
| | It is located in a building that used to be a Soviet widget factory during the soviet time. | |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> | |
| | <i>0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities</i> | 0 |
| | No, the area undertook a renewal with different creative businesses. | |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).</i> | |
| | <i>0 = the activities of the hub is completely independent from the local community and neighbourhood 5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood</i> | 2 |
| | Paranda provides the indoor space for Emajõe community garden steering the group to meet during the winter time. | |
| Additional notes: The widget factory area transitioned from an old Soviet industrial site to a creative ecosystem. According to Paranda’s contact person, this ecosystem may seem innovative and aligned to other European creative ecosystems, but in fact it does not show much of an effective community among its actors, and the area’s development is driven primarily by profit rather than urban revitalization. | | |

DARWIN

<https://twitter.com/DarwinBd>

Bordeaux (M)
France

Launch date: 2008
Hub's surface: 35 000 m2

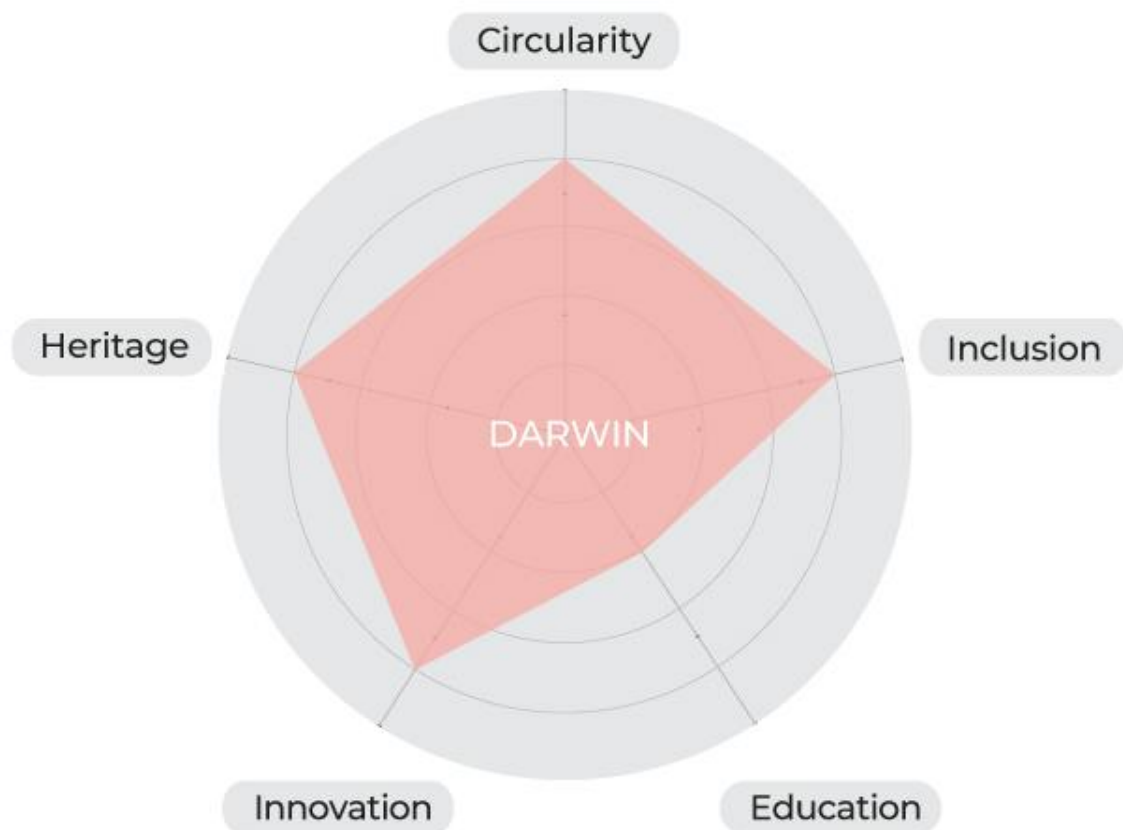
| | |
|----------------------|---|
| GENERAL DESCRIPTION | <p>Darwin is an entrepreneurial initiative for the ecological transition of the economy via ecological rehabilitation of a military wasteland in the heart of Bordeaux (low-energy building) and the installation of tertiary and commercial activities relating to the green and creative economy.</p> <p>The place is organised through a collaborative governance by including citizens to generate economic prosperity and social well-being. Citizens are integrated into a permanent approach to reducing the collective ecological footprint.</p> |
| SELECTION CRITERIA | <p>Darwin integrates all CENTRINNO concepts (Inclusion, Heritage, Circular economy, Innovation, Education).</p> <p>It is an interesting example of how the waste & energy consumption and the construction mode of the building participate in a very concrete way to a sustainable management of the hub. It is a good case study for the dependency between social and tangible design, e.g. the MIUSEEC project.</p> <p>It is also interesting that the project is supported mainly by private funding of an industrial company from the city of Bordeaux. It exemplifies a real estate alternative of how to revitalize a heritage site as an entrepreneurial initiative without transforming it into a pure profit investment.</p> |
| DRAFTING DESCRIPTION | <p>The interviews with founder Philippe Barre and urban planner Marien Chazette have been conducted by Wolf Kühr (VOLUMES).</p> |

TYPES

| | |
|-----------------------|---|
| HUB | Makerspace, Coworking, Third Place, Living Lab, Bio Lab, Foodlab, Educ Lab. |
| PRODUCTION/FACILITIES | Agriculture, Food, Wood manufacturing. |
| SITE & HERITAGE | Urban environment; the hub is located in an historic area under transformation and in a historic/heritage building. |

ADMINISTRATIVE DATA

| | |
|--------------------|--|
| LEGAL STATUS | Private company, Cooperative, NGO, Foundation |
| NUM. OF EMPLOYEES | 10-50 |
| YEARLY TURNOVER | 1.57M€ |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | Hybrid |
| TYPES OF REVENUS | Memberships / subscriptions - 20% Acceleration / incubation - 8% Space rental / events - 2% Private funding - 15% Public funding -5% Sales of products and services - 50% |



CENTRINNO'S CRITERIA

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | |
|---|---|-------------|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year)</i> | 4,5 |
| | The majority of furniture and rehabilitation materials are from recycled sources. The hub incubates several start-ups working in the circular economy field and hosts projects that recycle buildings and other materials. 92% of the waste of the ecosystem is recycled from events, building, office, and restaurant. | |
| B | <i>The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year)</i> | 4, 5 |
| | Darwin makes a point of honour to adopt a circular policy in all the events they organize, namely for recycling, zero waste or the Climax festival. The hub collaborates with Emmaeus to repair and sell electronic products. | |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year)</i> | 5 |
| | It developed the MIUSEEC (Métrologie Intelligente des Usages pour la Sobriété Énergétique et les Eco-Comportements) project, an interface that informs the user of the hub about its energy & CO2 consumption. The result is that the consumption of the building is 84 kWh /m2/year. Until recently, Darwin hosted two participatory repair workshops dedicated to cycles and motorcycles. | |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year)</i> | 2 |
| | The lack of formalism in governance slows down collaboration and the creation of collective works. Basically, anything can be done and therefore not much is done or is not visible. | |
| Additional notes: Darwin is a very interesting example of how the building and its management contribute to an ecological consumption mode. When the building has been transformed to a creative hub, a bioclimatic arrangement of the spaces has been chosen in order to avoid air conditioning, an | | |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--|--|
| <p>optimisation of the lightning, as well as a reduction of grey energy during the choice of construction materials. Also, the furniture is second hand.</p> <p>In order to engage the users of the hub to contribute actively to the ecological transition, Darwin has developed the concept of “NégaWatt”. It is a strategy including energy sobriety and performance and the use of renewable energies.</p> <p>Since 2015, the Darwin Ecosystem has been organizing the Climax Festival. Each year in Bordeaux, it mobilizes a large audience (33,000 festival-goers welcomed in 2017 and 2018) around various causes such as the fight against climate change, the erosion of biodiversity, the rights of nature, human rights (including those of indigenous peoples) and solidarity with refugees.</p> <p>This festival with a hybrid program, which combines arts, music and science, welcomes experts and renowned personalities each year within a series of conferences sponsored by leading NGOs and major witnesses.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • Le projet écologique - Un écosystème écolo • Climax Festival: CLIMAX 202 | |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|---|
| A | <p><i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages</p> <p style="text-align: right;">4</p> |
| | <p>The hybrid character of its activities, welcomes a remarkable mix of audiences. Darwin is the second most visited site in Bordeaux, hosting more than 40 associations, more than 600 co-workers, providing emergency accommodation. In normal time It hosts several events every week. Darwin welcomes all types of public, and can in this sense be considered as a real city district with a strong social mixture.</p> |
| B | <p><i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences</p> <p style="text-align: right;">4</p> |
| | <p>From the beginning, Darwin adopted a strong solidarity policy by welcoming homeless or refugees (often during winter but sometimes during larger periods through reinsertion programs, by inviting people from different cultures and by committing on various topics). During the Covid-19 crises, Darwin adapted rapidly its activity to the situation by hosting refugees, isolated and homeless persons. Also, they developed an urgency centre for distributing food and sanitary equipment for the whole city.</p> |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. | |
|--|---|---|
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub).</i> | |
| | 0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities | 5 |
| | As part of the Darwin ecosystem, the NGO 'the 58ème' brings together a network of more than 50 associations in the fields of culture, sports, solidarity, and urban agriculture. In order to amplify solidarity actions, the SCIC (French acronym for Cooperative societies of collective interest) Darwin Solidarités was created in 2020. | |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> | |
| | 0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience. | 4 |
| | The NGO Darwin Climax Coalition is an international coalition of activist organizations aimed at preserving living things. It was this NGO in particular that supported the cacique Raoni in filing his complaint against Jair Bolsonaro for the crime of ecocide linked to the Amazon. | |
| <p>Additional notes: Darwin conducted a program of urban hybridization by combining economic activities and initiatives from citizens and NGOs in the fields of culture, ecology and urban sports. Its founders supported since the beginning the emergence and development of citizen alternatives. To do so, they initiated the Darwin Foundation, an endowment fund in order to assure a global responsibility of the company.</p> <p>The Foundation financed the incubator "Évolution" that was created in 2011. It incubates over 20 NGO's and more than 100 events per year that develop urban culture & agriculture, citizenship & solidarity. The governmental model of Darwin is based on a strong implication of the members and users of the hub. An association «DARWIN'CO» has been founded to represent the 180 structures and 400 people working there (the co-workers), most of them working in green or creative economy. Its total turnover is about 70M€ that makes it an important actor. The association 58ème brings together an associative network of more than 50 associations housed in the Darwin ecosystem, in the fields of culture, sports, solidarity, and urban agriculture. In order to amplify solidarity actions, SCIC Darwin Solidarités was created in 2020. Darwin'CO is the NGO for entrepreneurs and the NGO "58ème" for social activities.</p> | | |
| <p><i>Further readings:</i></p> <ul style="list-style-type: none">• https://darwin.camp/projet-darwin/des-alternatives-citoyennes/• https://darwin.camp/projet-darwin/les-darwiniens/?doing_wp_cron=1611764902.6745309829711914062500• https://caserneniel.org/darwin-foundation-caserne-niel-2/ | | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | |
|--|---|---|
| A | <i>The hub carries out training or educational activities or programs.</i> | |
| | 0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub | 4 |
| | Darwin hosts an experimental high school, the “lycée Edgar Morin”, based on revolutionary pedagogical methods enhancing autonomy, adaptability and responsibility for the students. <i>Further readings:</i> <ul style="list-style-type: none">https://www.lycee-edgarmorin.com/ | |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year | 1 |
| | Not yet. | |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 1 |
| | Not yet. | |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 1 |
| | Not yet. | |
| Additional notes: Since 2016, Darwin has hosted the High School “Edgar Morin” on its site. The school has developed a unique curriculum for an alternative pedagogy in order to develop the autonomy, responsibility, the capacity of ‘complex thinking’, collective intelligence, and group working of the students. The school is using the facilities from the hub, such as the urban permaculture farm, the skateboard parc and the proximity to the entrepreneurs that are working there. | | |
| <i>Further readings:</i> <ul style="list-style-type: none">https://www.lemonde.fr/o21/article/2018/02/26/a-bordeaux-un-lycee-ou-l-on-apprend-en-cassant-les-codes_5262773_5014018.htmlhttps://www.youtube.com/watch?v=kV-dllxOQg&feature=emb_title&ab_channel=France3Nouvelle-Aquitainehttps://www.lycee-edgarmorin.com/ | | |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | |
|---|---|---|
| A | The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects. | |
| | 0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market | 5 |
| | The interdisciplinary activities between intellectual and manual work are the core values of the project. | |
| B | The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs | 4 |
| | Evolution, the mother company, as well as all businesses hosted on-site, have a tax of 5% that finances the social activities of the ecosystem. | |
| C | The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals. | 2 |
| | The conflict between Darwin and the developer of the ZAC Bastide Niel, in which the City of Bordeaux is a shareholder, harms relations between Darwin and the Bordeaux municipal majority. | |
| D | The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration | 2 |
| | A lot of project leaders come to be inspired by Darwin, which receives very regularly promoters who come to ask questions about the architectural, urban and ecological model. | |
| Additional notes: A mix of entrepreneurial activities, hybrid know-how and economic models creates the foundation of a greater frugality and well-developed social activities and relations: <ul style="list-style-type: none">- an inter-enterprise relocation plan- zero waste strategy (20 types of waste are collected and include a proximity recycling sector)- collaborative repair workshops- urban agriculture initiatives (permaculture, aquaponics, composting of organic waste, soil less agriculture...) | | |

- upcycling procedures.

Darwin has developed a real exosystemic business model where the lucrative businesses finance through a tax the non-profit activities.

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. | |
|-----------------|--|---|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> | |
| | 0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above | 5 |
| | Darwin is located within a military wasteland: the entire Darwin project invests heritage buildings by rehabilitating them, and advocates frugal and incremental architecture. | |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> | |
| | 0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities | 4 |
| | Darwin fought for several years for a frugal, incremental and respectful relation with the neighbourhood to conserve the existing heritage and build upon it. Today, Darwin is facing an urban project from a promoter next to its site that wishes to demolish the buildings to make place for new constructions. | |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).</i> | |
| | 0 = the activities of the hub is completely independent from the local community and neighbourhood 5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood | 4 |
| | Darwin was a pioneer in the urban transformation of the Bordeaux Right Bank, formerly an industrial and working-class district. Darwin is one of the major players in bringing the Right Bank back to its roots. | |

Additional notes: Darwin is a former 19th century military base that was bought by a private group in 2009 while keeping the historic architecture and installing a multitude of new activities. It is located on the right bank of Bordeaux, in a historically working-class district.

Further readings:

- <https://darwin.camp/projet-darwin/une-friche-urbaine-renovee/>

EVERY ONE, EVERY DAY

www.weareeveryone.org

London (L)
United Kingdom

Launch date: 2008
Hub's surface: 3850 + 6300 outdoor m2

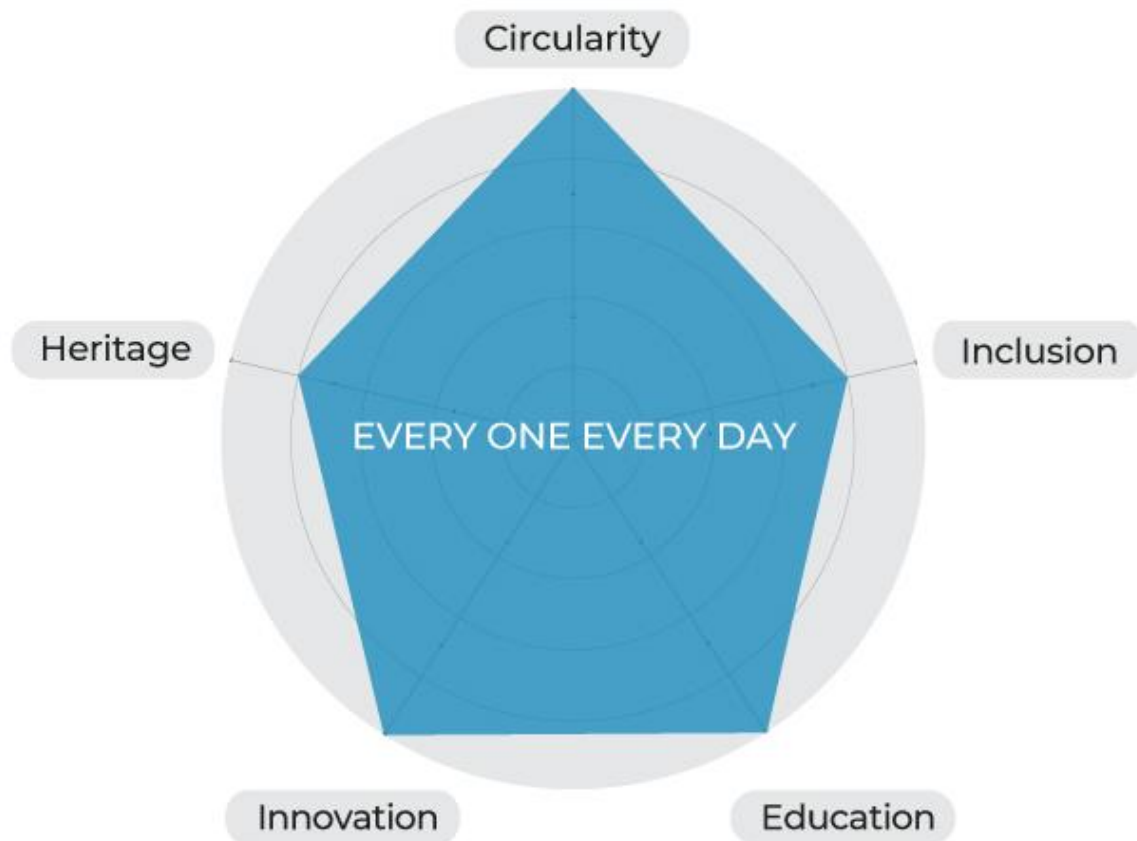
| | |
|----------------------|--|
| GENERAL DESCRIPTION | Every One Every Day is an initiative at the Barking & Dagenham borough in London, fostered by the Participatory City Foundation and supported by local authorities. Several simultaneous activities and projects, with strong community participation are taking place in many different spaces, creating a distributed and thriving environment for creative and productive activities in the area. The Every One Every Day (EOED) initiative is grounded in Participatory City's nine years of deep engagement with those at the forefront of developing 'participation culture' around the world. The ambition of the initiative is to build a large-scale, fully inclusive, practical Participatory Ecosystem together with the citizens, local stakeholders and policy makers. Measuring the value co-created by this Participatory Ecosystem and to establish its viability as a long-term contributor to producing healthy, happy and resilient neighbourhoods. |
| SELECTION CRITERIA | The initiative was chosen to be portrayed as a hub due to its bottom-up, collaborative and inclusive approach. Its distributed nature at the neighbourhood scale offers useful insights for hubs which cannot implement activities in centralized spaces due to Covid-19 restrictions. Moreover, the initiative has managed to shift many activities to a virtual environment since March 2020. Nevertheless, this was possible in part because of their long trajectory and ongoing work with the local community. |
| DRAFTING DESCRIPTION | The interview with Nina Timmers, Lab director, and Ruchit Purohit, researcher of EOED and Participatory City was conducted by Jessica Guy and Pablo Muñoz (IAAC), on the 18th December 2021. |

TYPES

| | |
|---------------------------|--|
| HUB | Makerspace, Coworking, Third Place, Living Lab Foodlab, Educ Lab. |
| PRODUCTION/ FACILITIES | Agriculture, Food, Textile, Wood Manufacturing 3D Printing, Repair Workshops. |
| SITE & HERITAGE | The hub is located in a historic industrial area and an historic area under transformation. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------------------------|
| LEGAL STATUS | Foundation |
| NUM. OF EMPLOYEES | 10-50 |
| YEARLY TURNOVER | 1.57M€ |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | Non-profit |
| TYPES OF REVENUS | Public funding Private funding |



CENTRINNO'S CRITERIA

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | |
|--|--|----------|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year)</i> | 4 |
| | The initiative is connecting with projects such as Precious Plastics to address the local challenges in connection to recycling materials. Based on their context, EOED also identifies collaboratively with its community potential projects which address the recycling of materials beyond the material plastic. | |
| B | <i>The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year)</i> | 5 |
| | The initiative is collaborating with local institutions such as a public library to create activities for citizens in which furniture is being reused and repaired. There are more activities related to the 5 R's (reduce, reuse, refurbish, repair, recycle), which can be seen in their activity portfolio linked at the end of this section. Furthermore, the neighbourhood initiative also hosts a Repair Cafe. | |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year)</i> | 4 |
| | All activities from the initiative related towards (but not limited to) the 5 R's include capacity building workshops, which not only teach practical skills but also raise awareness about circular economy. Furthermore, they are inviting people to participate in action research practices to grow into a "Global Faculty of Practice" around these topics. | |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year)</i> | 5 |
| | The initiative is working collaboratively together with local stakeholders, institutions and citizens to create a portfolio of activities which include manufacturing processes (from low-tech to high-tech). For example, they host "open project nights", which also include networking activities. | |
| Additional notes: The EOED initiative is providing an extensive list of co-created activities that involve circular economy. These projects take place in the whole neighbourhood, on the streets, in | | |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--|--|
| <p>community spaces, in the initiative's "official" spaces and in common/public spaces such as the library or schools. They encourage citizens by making practical tools for collective engagement available. This means they are encouraging projects that support knowledge sharing, e.g. cooking, repairing, reusing and playing for everyday practices. Furthermore, their co-ops and businesses care for their environment generating and creating clever ways of dealing with waste through recycling and energy production.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://www.weareeveryone.org/precious-plastics • https://www.weareeveryone.org/upstuff • https://www.weareeveryone.org/repair-cafe • https://www.weareeveryone.org/valence-project • http://www.participatorycity.org/transdisciplinary-research-project • https://www.weareeveryone.org/open-project-night • https://www.weareeveryone.org/projects-summary • https://www.weareeveryone.org/tomorrowtoday • http://www.participatorycity.org/open-making-society | |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|---|
| A | <p><i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages</p> <p style="text-align: right;">5</p> |
| | <p>All activities are targeting a mixed audience. The initiative clearly states that all activities should be open to anyone to join. Among their goals, they intend to foster an inclusive and equitable environment in the borough. This is the case for activities conducted by the team, or facilitated by community members. The initiative is located in a neighbourhood in which a migrant population lives and many activities involve these different communities.</p> |
| B | <p><i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i></p> |
| | <p>0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences</p> <p style="text-align: right;">3</p> |
| | <p>EOED is located in the boroughs of greater London, where many vulnerable or marginalised groups (at the city scale) live. As mentioned before, activities are designed as open and inclusive as possible. Nevertheless, the activities are not specifically targeted at marginalised groups. However, the initiative is giving space to marginalised groups to participate or even lead activities. An example is the collaborative childcare cooperative.</p> |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|---|---|
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub).</i> |
| | <div> <div> <i>0 = You completely disagree with the statement above</i> <i>5 = At least 50% of the activities are developed involving local communities</i> </div> <div>5</div> </div> |
| | There is a core group of the initiative that is providing support materials, resources and training for the citizens. This means that there is a repository of existing activities which can be used by the citizens. The activities were co-created to ensure that they are context based. The citizens can suggest new projects which can be collectively developed. Furthermore, the initiative is providing and supporting activities and projects and ideas are incubated, developed and implemented in the neighbourhood. |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> |
| | <div> <div> <i>0 = You completely disagree with the statement above</i> <i>5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience.</i> </div> <div>4</div> </div> |
| | The main focus of the initiative is to foster a local community and neighbourhood development. However, EOED is making all their content online available and has gained reputation over the past years. Currently there are multiple other cities that are interested in implementing similar initiatives; others already implemented a contextualized version. On an organisational level there is exchange with global networks (the platform team), even though the local community is only indirectly involved. |
| <p>Additional notes: The EOED initiative is dedicated to make practical participation fully inclusive. All the projects through EOED will be supported by the initiative's infrastructure. All benefits and outcomes from the activity are being measured and made publicly available.</p> <p>The principles of the initiative are the following:</p> <ul style="list-style-type: none"> - Equality – attracting a diverse range of participants. - Mutual benefit – involves people contributing and benefiting in a single action. - Peer-to-peer – involves people working peer-to-peer on an equal footing. - Productive activity – involves producing tangible things together. - Open accessibility – involving as many people as possible, through working to reduce all types of participation barriers. <p>Further readings:</p> <ul style="list-style-type: none"> • http://www.participatorycity.org/every-one-every-day | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. | |
|--|--|---|
| A | <i>The hub carries out training or educational activities or programs.</i> | |
| | 0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub | 5 |
| | The initiative conducts action research, educational programmes, capacity building workshops and is fostering idea and project generation in a variety of forms. | |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year | 4 |
| | The initiative offers spaces (e.g. The Warehouse) in which the citizens can learn about digital fabrication methods, they offer making activities for capacity building and informal vocational training. There is not an official connection to formal vocational training. | |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 5 |
| | Local manufacturing projects are defined by the community with project designers. These initiatives allocated a budget and resources along with training. | |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community | 5 |
| | All activities are directly co-created & designed with their local communities and are contextualized in the neighbourhood. | |
| Additional notes: the initiative offers the “Here & Now School” which is the umbrella term for a school of participatory systems and design bringing together research, knowledge building and learning. This includes residencies, cities programmes, transdisciplinary research project, transition research project and collective impact indices. | | |

| HUBS & INNOVATION | Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | |
|-------------------|---|---|
| A | The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects. | |
| | <i>0 = The hub is thematic and specialised. It only covers one field of activities</i> <i>5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market</i> | 4 |
| | <p>The initiative is supporting the development of other initiatives and businesses based on the interests of the citizens. Furthermore, it also offers multiple activities and incubators to further transform ideas into collaborative business models. The local stores work under a cooperation model that involves different sectors (business, public sector, citizens) and disciplines (food, woodworking, textiles, culture, care, etc.).</p> <p>Citizens are encouraged to transform their ideas into a collaborative/ co-op business in the neighbourhood. The ideas are often emerging from the activities and then further developed through the incubation programmes and the support of the initiative.</p> | |
| B | <i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs</i> | 3 |
| | <p>The focus of the initiative is not on incubation. However, they provide spaces and resources for citizen-led incubation projects.</p> <p>They are currently exporting some of the project's methods and initiatives (Cities Programme, Tomorrow today streets) to Canada.</p> | |
| C | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions.</i> | |
| | <i>0 = You completely disagree with the statement above</i> <i>5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals.</i> | 4 |
| | <p>EOED started from a collaboration with the Barking and Dagenham Borough and the local department of participation and engagement. The initial idea, put in place by the Participatory City Foundation in collaboration with the local authority, was to test scaling up local participatory initiatives to the borough scale. Barking & Dagenham borough is currently one of the funding partners and there is still a close collaboration with different departments in the borough.</p> | |
| D | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> | |
| | | 3 |

| | | |
|--|---|--|
| | <p><i>0 = You completely disagree with the statement above</i></p> <p><i>5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration</i></p> | |
| | <p>The initiative has a “city programme” in which they for example work together with Canada to test the implementation of the approach in different cities. They are developing a curriculum so that the approach can be applied in other contexts/cities.</p> | |
| <p>Further readings:</p> <ul style="list-style-type: none">• http://www.participatorycity.org/cities-programme• https://www.weareeveryone.org/collaborative-business• https://www.weareeveryone.org/kickstart | | |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. | |
|-----------------|--|----------|
| A | <p><i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i></p> | |
| | <p>0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above</p> | 3 |
| | <p>The initiative is located in Barking and Dagenham, which is a Borough of Greater London. The area was known for their fishing industry and the area was characterised by farming, woodland and the fishing fleet at Barking. By the end of the 19th century, it had ceased to exist, replaced by train deliveries of fresh fish from the East Coast ports. It is a post-industrial town where stable, semi-skilled, mainly (white) male jobs have disappeared in a manner not dissimilar to some of other great northern towns and cities. This is not necessarily considered as industrial heritage in terms of protection/preservation, however there is a strong (post)industrial identity in that area.</p> | |
| B | <p><i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i></p> | |
| | <p>0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities</p> | 2 |
| | <p>This is something that the initiative wants to take into account but is until now not developed yet.</p> | |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. | |
|-----------------|--|---|
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).</i> | |
| | 0 = the activities of the hub is completely independent from the local community and neighbourhood 5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood | 4 |
| | This is something that the initiative wants to take into account but is until now not developed yet. | |

Second iteration of remarkable Hub Portraits

This is the second iteration that includes six more Hub Portraits: STPLN (Malmö), Rog Lab (Ljubljana), Toolbox (Turin), Makerversity (London/Amsterdam), Lottozero (Prato) and Tzoumakers (Kalentzi). This round developed further the categorization of the hub's typologies, identifiers and the criteria classification.

STPLN

<https://stpln.org>

Malmö (M)
Sweden

Launch date: 2011

| | |
|----------------------|---|
| GENERAL DESCRIPTION | STPLN is a unique meeting space for individuals and organisations developing creative projects and ideas. The Creative Hub consists of workshops, studios, coworking spaces, a makerspace and event venues. The mission of the organisation is to provide space, time, structure and methods to support the development of ideas and projects in the fields of art, design, media, tech, circular practices and innovation. |
| SELECTION CRITERIA | STPLN is an interesting example of an urban post-industrial transformation process in a medium city and of the emergence of a new ecosystem of activities that are linked to the 're-economy' (e.g.re-cycling, re-use, re-pair). |
| DRAFTING DESCRIPTION | The interview with Joshua Ng, Senior Project Leader, was conducted by Wolf Küh (VOLUMES), on the 18th of December 2020. |

TYPES

| | |
|-----------------------|--|
| HUB | Makerspace, Hackerspace, Coworking, Food Lab, Third Place. |
| PRODUCTION/FACILITIES | Creative Craftsmanship, 3D Printing, Carpentry, Creative Craftsmanship, Fashion Accessories, Media Production, Metal Manufacturing, Textile Transformation, Wood Manufacturing, 3D Printing. |
| SITE & HERITAGE | Urban environment, it is located in a historic industrial area under construction. |

ADMINISTRATIVE DATA

| | |
|--------------------|---------------|
| LEGAL STATUS | NGO |
| NUM. OF EMPLOYEES | 5-10 |
| FUNDING SCHEME | Hybrid funded |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

| HUBS & INNOVATION | |
|-------------------|---|
| A | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</i> |
| B | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> |
| C | <i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i> |
| D | <i>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</i> |

Additional notes: In 2005, the mayor of Malmö began the process of redefining the city from an industrial city to an information/innovation-based city. The heart of this process was in the neighbourhood of Västra Hamnen, a harbour district where the former Kockums Crane (largest crane in the world) was replaced by the Turning Torso skyscraper.

In Malmö, the municipality also collaborated with part of the civil society (the skaters) for the first time. This collaboration resulted in the construction of Stapelbädd's Skatepark, one of the largest outdoor public skateparks in Europe. This started to bring in a lot of "skate tourists" from other cities and kickstarted a new unintended industry for Malmö. Since then, the skateboarding organisation Bryggeriet has undertaken the task of building skateparks across Europe along with building "Bryggeriets Gymnasium" in Malmö, the world's only skateboarding high school. The city of Malmö has also appointed a "Skateboarding Coordinator" in the Streets and Parks Department, whose role is to make public spaces more skateable.

After the success of the skatepark, an open call initiated by the city brought in two cultural workers who held pop-up events for a period of 2 years (pilot phase) at the building that the hub is now located. After this phase, the space became STPLN. Today the Municipality is in charge of 3 salaries and the rent of the building.

A new neighbourhood is also planned in Malmö (Nyhamnen). The city administration and the planning department have looked at the development of STPLN and its neighbourhood (Västra Hamnen) as a case study.

Further readings:

- <https://www.huckmag.com/art-and-culture/vans-malmo-skate/>
- <https://edition.cnn.com/2014/09/25/living/ecofriendly-shipwards-in-malmo/index.html>

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|--|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity (e.g. giving tools and voice to the local community against a gentrification process).</i> |

Additional notes: The former activities in the area were linked to the harbour. It was abandoned several years ago. Nobody lived there before, so there is no possible conflict between former and present inhabitants. Lately, several high standard housings have been built and current residents have moved in in the last 2-3 years. New initiatives have also started in the neighbourhood (a dance theatre, a skateboarding culture house, a social enterprise cafe) that STPLN collaborates with.

Further readings:

- <https://malmo.se/Service/Var-stad-och-var-omgivning/Stadsplanering-och-strategier/Stadsutvecklingsomraden/Nyhamnen.html>

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|--|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> |
| B | <i>The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> |

Additional notes: The building was a storage of the Street Department. When the hub and the first NGOs started their activity, they found a lot of material on the spot. This attracted particular initiatives who are working with recycled materials (for design, furniture, arts...) Also, there was no budget for material at the beginning, which fostered the reuse of existing materials. One of the first initiatives in the pilot period was Cykelköket, the bicycle kitchen and Återskapa, the redesign lab for kids. These activities inform and orient the culture and norms of the space until today. Today, the most significant initiatives on recycling and circular economy are:

Further Readings:

- Malmö Makerspace: <https://www.malmomakerspace.se/>
- Återskapa: redesign lab for children: <http://en.aterskapamalmö.se/>
- Cykelköket: bicycle kitchen: <https://www.cykelkoket.com/>
- Repair cafe: <https://www.repaircafe.nu/>
- Strumpfabriken: Sock factory: <https://www.strumpfabriken.com/>
- Precious Plastic Sweden: <https://www.preciousplasticsweden.org/>

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|---|---|
| A | <i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i> |
| B | <i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i> |
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is co-designed with them, the community is represented in decision-making groups at the hub).</i> |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> |
| <p>Additional notes: Malmö is already a quite diverse city, so the activities at STPLN naturally attract a diverse crowd. Cykelköket (bike kitchen) is a free open bicycle workshop in a city with a high number of cyclists. This results in a lot of people of different socio-economic backgrounds coming from all over the city for the purpose of repairing or maintaining their means of transportation. Återskapa (redesign lab for children) has a dedicated schedule within the central school board which means that every class in the city (between the ages of 6-9) will visit for a workshop once a year. Pop-up summer tours (mobile bicycle kitchen/makerspace) also travel to different central squares/plazas on the periphery of the city staying for a week hosting workshops. Communities at STPLN are: makers, freelancers, amateur / professional photographers, anarchist bike groups, feminist and non-binary bike groups and others.</p> <p>The residents of the neighbourhood sometimes visit the events, but they do not use the facilities very much, for which there are several explanations: the strong transformation of the area (see 'hubs & heritage') makes it so that most of the inhabitants are new in the neighbourhood and do not know the hub yet. Another explanation is that the activities do not match with the socio-economic profiles, for example: there are few independents who need coworking spaces. This activity attracts very specific communities that correspond to the proposals and come from all over Malmö.</p> | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
|---|--|
| A | <i>The hub carries out training or educational activities or programs.</i> |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> |
| <p>Additional notes: Focus in educational activities is a less important axis for STPLN. The hub collaborates with the Universities of Lunds and Malmö in the departments of Product Design, Industrial Design, Leadership for Sustainability, Interactive Design, Experimental Media Programs and develops various activities such as:</p> <ul style="list-style-type: none"> - Lectures - Exhibitions - Daylong course/workshop | |

STLPN also organises workshops for High schools in the fields of photo development, serigraphy, laser cutting, DIY practices. The hub also participates in Agora, a European project with a mentorship program to help local young creatives to develop their idea or project in one year.

Further readings:

- <https://stpln.org/agora>

ROG LAB

<https://roglab.si>

Ljubljana (S)
Slovenia

Launch date: 2012

| | |
|----------------------|--|
| GENERAL DESCRIPTION | ROG Factory was a bicycle factory at the heart of Ljubljana. The building, without use since 1991, was occupied in 2006. Users secured and cleaned the spaces and established the Avtonomna Tovar ROG (Autonomous Rog Factory), including ateliers, workshops, galleries, a skate-park, a concert hall, recreational facilities and social centres. The municipality has, since 2012, put forward a renovation plan for the factory to create the Rog Centre, a productive, cultural and creative hub. Lastly, Rog Lab is a small-scale pilot project set up in 2012 to develop and test programmes, partnerships and business models for the new Rog Centre. The coexistence of these initiatives (Avtonomna Tovar ROG, Rog Centre and Rog Lab) has created several clashes between the Municipality and the local community, including an attempt of eviction in 2016 and an ongoing property rights lawsuit. This hub portrait will mention three hubs in one: Rog Lab, Rog Centre and Autonomous Rog Factory. Nevertheless, it will focus on the Rog Lab, as it is the main reference for CENTRINNO. |
| SELECTION CRITERIA | Rog Lab is relevant for CENTRINNO due to its location in a former industrial area and the history and interrelations between the different actors (Municipality, local community) involved in the transformation process of the site. |
| DRAFTING DESCRIPTION | The portrait has been drafted through desk research by Pablo Muñoz Unceta and Jessica Guy (IAAC) on the 18th of December 2020. |

TYPES

| | |
|-----------------------|--|
| HUB | Makerspace, Fab Lab, Educ Lab. |
| PRODUCTION/FACILITIES | Architecture, Creative Craftsmanship, Media Production, Textile Transformation, 3D Printing. |
| SITE & HERITAGE | Urban environment. The hub is located in a historic industrial area under construction. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | Public facility |
| NUM. OF EMPLOYEES | 1-5 |
| FUNDING SCHEME | Public funded |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

| HUBS & INNOVATION | |
|--|---|
| A | <p><i>The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</i></p> <p>The hub is part of the bigger project for the renovation of Rog Centre.</p> |
| B | <p><i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i></p> <p>This is actually the intention of the City of Ljubljana: to use the Rog Lab as a reference project for urban regeneration. Nevertheless, it has not succeeded in this yet.</p> |
| C | <p><i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i></p> <p>- No data on this</p> |
| D | <p><i>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</i></p> <p>The hub develops activities on and across different topics: Textiles, Electronics, Theatre and Visuals, Digital Manufacturing, etc. In every activity adults and children are targeted differently.</p> |
| <p>Further readings:</p> <ul style="list-style-type: none"> https://roglab.si/assets/Uploads/dokumentii/Roglab-Rog-Centre-Catalogue-2020.pdf | |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|---|
| A | <p><i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i></p> <p>- No data on this</p> |
| B | <p><i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i></p> <p>One of the main ongoing processes in Rog Lab is the co-creation of a vision and an activity program for the Rog Centre. Even though this process is in place and has involved 300 stakeholders, current users of the Autonomous Rog Factory claim that they haven't been included in the process.</p> |
| C | <p><i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity (e.g. giving tools and voice to the local community against a gentrification process).</i></p> <p>An attempt of eviction in 2016 led to a property rights lawsuit of 8 individuals of the Autonomous Rog Factory against the city of Ljubljana. Voices of the Autonomous Rog Factory say they are not included in the regeneration process:</p> <p><i>Further readings:</i> http://atrog.org/en/about-us/save-rog/criticism-of-municipality-s-plans</p> |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|---|
| A | <p><i>The hub develops products, services or activities that involve or foster recycling materials.</i></p> <p>There are some activities that involve recycling materials, especially plastics, but there is not a "recycling approach" to most activities in the hub.</p> |
| B | <p><i>The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i></p> <p>Some of the hub's activities, especially the open calls in the past, have targeted minorities: individuals with physical disabilities, ageing population. There is also a program on graffiti and street art exclusively for women, and activities for children.</p> |
| C | <p><i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i></p> |

| | |
|--|---|
| | <p>There was an open call in 2017 that addressed topics related to the sustainable city (see list of links). Nonetheless, the focus was not specifically on circular economy.</p> |
| D | <p><i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i></p> <p>The lab rents out equipment and provides support to individuals and entrepreneurs who want to manufacture products. It is also registered in fablabs.io and the Fab Lab network, which should in theory mean that they can do so in a distributed way.</p> |
| <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • https://roglab.si/en/workshops/Recycled-tote-bag/ • https://roglab.si/en/workshops/recycle-reuse/?sc=1 | |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|--|
| A | <p><i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i></p> <p>There are several activities that target specific genders, age groups or collectives, and there are as well general public activities and courses. The interconnections between both activities are not well known at the moment.</p> |
| B | <p><i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i></p> <p>Some of the hub's activities, especially the open calls, have targeted some minority groups such as individuals with physical disabilities and ageing population.</p> <p>There is also a program on graffiti and street art exclusively for women, and activities for children.</p> |
| C | <p><i>Communities are actively involved in the hub's activities (e.g. the agenda is co-designed with them, the community is represented in decision-making groups at the hub).</i></p> <p>Rog Lab provides support and access to knowledge and machines for entrepreneurs, designers, makers etc. so they can develop their own ideas. Nevertheless, whether the activities are specifically co-designed by the community is not known at the moment. Moreover, on the co-creation workshop to define the Rog Centre vision, which is one of the activities in which the Rog Lab is involved, the participatory process may not have taken into account the local community who currently uses the building (see Hubs & Heritage - C).</p> |

| | |
|--|--|
| D | <p><i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i></p> <p>- No data on this</p> |
| <p>Further readings:</p> <ul style="list-style-type: none"> • https://www.roglab.si/en/open-calls/roglab-open-active-aging/ • https://www.roglab.si/en/grafem/ • https://www.roglab.si/en/open-calls/RogLab-Open-Design-Dis-ability/ • https://fablabs.io/labs/roglab • http://nws.eurocities.eu/MediaShell/media/2018_innovation_Ljubljana.pdf | |

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
|---|---|
| A | <p><i>The hub carries out training or educational activities or programs.</i></p> <p>The lab has training programmes in: Screen Printing, CNC Milling Machine, Laser Cutter and 3D printing, and specific courses on Composite Structures and Rhinoceros.</p> |
| B | <p><i>The hub carries out activities in connection to (formal or informal) vocational training.</i></p> <p>The training activities take place more than twice a year and are provided in collaboration with other institutions, such as the International Centre of Graphic Arts.</p> |
| C | <p><i>The hub carries out activities that link vocational training with local manufacturing.</i></p> <p>As commented in A, all training activities (considered informal vocational training) are related to local manufacturing. There is at least one open call per year (see list of links) which is connected to local manufacturing and design.</p> |
| D | <p><i>The hub carries out training activities that are linked to the local context or community.</i></p> <p>Same comment as in section C in concerns of open calls.</p> |
| <p>Further readings:</p> <p>A:</p> <ul style="list-style-type: none"> • https://www.roglab.si/en/trainings/ • https://www.roglab.si/en/trainings/kategorija/course <p>B:</p> <ul style="list-style-type: none"> • https://www.roglab.si/en/trainings/training-screen-printing/ <p>C:</p> <ul style="list-style-type: none"> • https://www.roglab.si/en/open-calls/ | |

TOOLBOX

<https://toolboxcoworking.com/>

Turin (L)
Italy

Launch date: 2009

| | |
|----------------------|--|
| GENERAL DESCRIPTION | Toolbox is a 10.000 m2 hub, hosting a coworking space, a print club, a Fab Lab and other working spaces, located in the historical industrial heart of Turin. Toolbox is a stimulant and vibrant space for freelancers, start-ups and makers that look for an inspiring work environment to get in contact with different professionals, and form collaborations to improve projects and local connections. The space opened thanks to a fruitful collaboration between the factory landlord and the initiator of Toolbox, who had proposed an innovative project and an interesting alternative for the owners to revitalise the abandoned building. Toolbox organises and hosts more than 400 events per year and important fairs linked to the maker and design movement. |
| SELECTION CRITERIA | The hub has been selected because it is settled in a large industrial building in the former industrial centre of Turin. The aim was to understand the conditions that have made this occupation possible, the relation the hub has established with the industrial building and the limitations, opportunities and challenges the hub is facing today regarding the building and its environment. It is worth to be noted that Toolbox has been the hotbed of Arduino, an open-source hardware and software company. |
| DRAFTING DESCRIPTION | The interview with Aurelio Balestra, CEO and Francesca Meinero, Community manager of Toolbox, was conducted by Francesco Cingolani and Carlotta Fontana Valenti (VOLUMES), on the 18th of December 2020. |

TYPES

| | |
|-----------------------|--|
| HUB | Makerspace, Hackerspace, Fab Lab, Coworking, Living Lab, Educ Lab. |
| PRODUCTION/FACILITIES | Creative Craftsmanship, Media Production, 3D Printing. |
| SITE & HERITAGE | Urban environment, it is located in a historic industrial area. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | Private company |
| NUM. OF EMPLOYEES | 5-10 |
| FUNDING SCHEME | Private funded |
| PROFIT / NONPROFIT | Profit |

CENTRINNO'S CRITERIA

| HUBS & INNOVATION | |
|-------------------|---|
| A | <p><i>The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</i></p> <p>The hub did not benefit from any specific national, regional or city policies and programmes for the kick-off of the project, nor the municipality financed or supported the initiative with a specific collaboration.</p> |
| B | <p><i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i></p> <p>The municipality acts as supporter and facilitator without formal engagement. They recognize Toolbox as one of the best practices for social innovation that contributes to giving international visibility to Turin as a centre for innovation.</p> |
| C | <p><i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i></p> <p>Toolbox runs a traditional business model for profit, whose income comes from the rent of workplaces and private events. However, they re-invest part of the profit in cultural and public events, or free residencies for selected projects that contribute in adding value to the space. On the other side, the team negotiates a fair rent with the landowner. The hub offers a large variety of free events that amplify the network of possible users and future collaborations.</p> |
| D | <p><i>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</i></p> <p>The hub's users come from a variety of fields, most of them are freelancers, small start-ups and also larger companies. Besides the possibility to participate in many public events that aim to foster collaboration and creativity among the participants, the hub's users are also attracted by the multidisciplinary and inspiring environment for work.</p> |

Further readings:

- [*Torino Maker Faire*](#),

- [Graphic Days.](#)

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|--------------------|--|
| A | <p><i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i></p> <p>Toolbox occupies 10.000 m2 of a dismissed foundry industry situated in a large industrial area close to the railway station and the city centre of Turin. The factory belongs to a family who decided to rent the building to Toolbox for a reasonable price since they sought in this initiative a valuable opportunity to revive the building.</p> |
| B | <p><i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i></p> <p>Besides some investments to refurbish parts of the factory to start the project, Toolbox did not engage in specific actions related to the building's history and the cultural legacy of the neighbourhood.</p> <p>However, the hub benefits from a temporary change of use which allows the project to run, since they had some limitations to transform the spaces. This special administrative condition, for instance allows the team to have an industrial robot, which would have been impossible in traditional offices. Dealing with a substantial number of m2 the management team has proceeded organically for opening the space and gradually refurbishing spaces, according to users' needs.</p> |
| C | <p><i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity (e.g. giving tools and voice to the local community against a gentrification process).</i></p> <p>The site is part of a former industrial area. A rezoning has never been approved; thus, the building still has a productive destination of use. The hub's interaction with industrial heritage is limited. Toolbox does not develop specific projects or activities related to the historical industrial past. Neither similar initiatives have arisen in the neighbourhood. The hub is a unique example in the area, which is mostly occupied by facilities that are out of use. The area is currently not involved in any regeneration project at the neighbourhood scale.</p> |
| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
| A | <p><i>The hub develops products, services or activities that involve or foster recycling materials.</i></p> <p>Toolbox does not have an overall circular economy strategy that informs all their activities, although sustainability is one of the long-term objectives of the space. Circular economy issues are embedded in specific initiatives that populate the scene of the hub.</p> |

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|---|
| B | <p><i>The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i></p> <p>Activities such as Fab Lab Torino, or public events as the Maker Faire Torino are opportunities to gather experts and amateurs around circular economy challenges.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • Fab Lab • Maker Faire Torino |
| C | <p><i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i></p> <p>Aworld , which is a company part of Toolbox, are the developers of “AWorld App for Living Sustainably” aiming to help citizens to implement sustainable behaviours. Furthermore, Toolbox commits to 100% energy consumption from renewable sources and consequently has strongly reduced its CO2 consumption compared to previous years.</p> <p><i>Further readings:</i></p> <p>AWorld App for Living Sustainably</p> |
| D | <p><i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i></p> <p>- No data on this</p> |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|---|
| A | <p><i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i></p> <p>Toolbox is a space open to freelancers and innovative start-ups looking for hybrid and inspiring places to work as well as strength and expand their networks. It offers a variety of services and events which are 90% free. They do not apply any selection criteria to users that want to rent spaces instead they privilege multidisciplinary practices. However, their attention is predominantly focused towards digital technology, arts and creative business activities.</p> |
| B | <p><i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i></p> <p>They hosted a few events directed to refugee groups (Power Coders, a bootcamp of coding with Le Wagon Ngo) and a Meetup group for entrepreneurial women.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • Power Coders. |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|--|
| | <ul style="list-style-type: none"> <i>Meetup group for entrepreneurial women</i> |
| C | <p><i>Communities are actively involved in the hub's activities (e.g. the agenda is co-designed with them, the community is represented in decision-making groups at the hub).</i></p> <p>The large event program is mainly curated based on proposals made by the community of users and companies hosted at Toolbox. The managing team acts as facilitator and service provider for such events. Toolbox currently does not have any engagement with the neighbourhood, from one side because it is an area characterized by a heavy railway infrastructure and abandoned factories with few people living there, on the other because the existing population is a very marginal one.</p> |
| D | <p><i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i></p> <p>- No data on this</p> |
| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |

| | |
|---|---|
| A | <p><i>The hub carries out training or educational activities or programs.</i></p> <p>Toolbox is the organiser of one of the main events for freelancers, called Freelance Day. On these days the space hosts conferences, specific training courses and workshops for freelancers that are also open to the public. The hub's team is also in contact with the Politecnico University of Turin to rent some spaces as ateliers for students, but it is evaluating the viability of this collaboration.</p> <p><i>Further reading:</i> <u>Freelance Day.</u></p> |
| B | <p><i>The hub carries out activities in connection to (formal or informal) vocational training.</i></p> <p>Among its guests, there is the Future Urban Legacy Lab (FULL) which is a working group on urban issues linked to the Politecnico University of Turin. Nevertheless, the hub does not have an overall strategy focusing on education but it maintains relationships with local universities.</p> |
| C | <p><i>The hub carries out activities that link vocational training with local manufacturing.</i></p> <p>Future Urban Legacy Lab is a research department by Politecnico di Torino and Toolbox.</p> <p><i>Further reading:</i> <u>Future Urban Legacy Lab</u></p> |
| D | <p><i>The hub carries out training activities that are linked to the local context or community.</i></p> <p>Toolbox has not developed projects that engage with the local community or context in the surrounding neighbourhood, but only with the community attending the hub's activities.</p> |

MAKERVERSITY

<https://www.makerversity.org>

London (L)
UK

Launch date: 2013

| | |
|----------------------|---|
| GENERAL DESCRIPTION | Makerversity is a site in central London (located in Somerset House, next to the River Thames), which provides a space for making and learning. They offer a co-working area, and several different workshop areas which can be accessed through different membership models or residencies. Their objective is to support those, whose main occupation and source of income is “making” through offering a space in which ideas can become physical. |
| SELECTION CRITERIA | The hub has been selected for its activities, related to vocational training for makers and also for its central and historical location within the city of London. |
| DRAFTING DESCRIPTION | The portrait has been drafted through desk research by Jessica Guy and Pablo Muñoz (IAAC), on the 11th of January 2021. |

TYPES

| | |
|-----------------------|--|
| HUB | Makerspace, Educ Lab, Coworking |
| PRODUCTION/FACILITIES | Carpentry, Creative Craftsmanship, Fashion Accessories, Media Production, Textile Transformation, Wood Manufacturing, 3D Printing. |
| SITE & HERITAGE | Urban environment, the hub is located in a historic/heritage building. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | SME |
| NUM. OF EMPLOYEES | 10-50 |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | No data on this |

CENTRINNO'S CRITERIA

| HUBS & INNOVATION | |
|-------------------|---|
| A | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</i> |
| B | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> |
| C | <i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i> |
| D | <i>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</i> |

Additional notes: Makerversity is located at Somerset House (and supported by the Somerset House Trust) which is a working arts centre built on historic foundations in central London. Somerset House is dedicated to backing progress, championing openness, nurturing creativity and empowering ideas. Makerversity has opened another space in Amsterdam, Netherlands.

Makerversity focuses on assisting the process of transforming projects of makers into businesses by providing them the physical space, expertise and peer to peer support.

The hub provides a variety of programmes and events for its members and the general public fostering collaboration and multidisciplinary projects. They currently have 62 members and have had over 300 members in total.

Further readings:

- <https://makerversity.org/members/>
- <https://www.mayku.me/>
- <https://makerversity.org/events/>

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|--|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity (e.g. giving tools and voice to the local community against a gentrification process).</i> |

Additional notes: (A) the hub is located at Somerset House next to the river Thames in London. Initially built by 1997, the Somerset House Trust is established to preserve and develop Somerset House for public use. Trust was established in 1997 to enhance the education of the public by the provision of a centre for the arts and to maintain the buildings for the benefit of the local and international community as an example of English national heritage.

(B) 1547 Edward Seymour, Lord Protector and Duke of Somerset.

(C) At Somerset House they are committed to building a diverse and inclusive community reflecting the diversity of the local society. The values of Somerset House are being put into practice in each of the spaces/ collaborators/ members, such as Makerversity.

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|--|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> |
| B | <i>The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> |

Additional notes: The hub carries out many activities which support capacity building for their members and community. They do not make products or services which are directly linked to the circular economy. However, during the Covid-19 pandemic Makerveristy did support the NHS (National Health Service) National by launching PPE (Poly-phenylene ether) micro-manufacturing hub. There are many members, emerging creatives and makers who develop projects, products, services and businesses which do address partially ecological challenges and circular economy.

Further readings:

- <https://makerveristy.org/makers-with-a-mission-health-tech-cohort-applications-open/>
- <https://makerveristy.org/makerveristy-innovation-community-launch-ppe-micro-manufacturing-hub-for-nhs-workers-fighting-covid-19/>
- <https://saltyco.uk/> (Example from Makers on a Mission)

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|---|
| A | <i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i> |
| B | <i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i> |
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is co-designed with them, the community is represented in decision-making groups at the hub).</i> |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> |

Additional notes: Somerset House is one of the largest sites concentrating creative enterprises, artists and arts organisations in the UK. The hub's team believe that Makerveristy can play a distinctive role in tackling some of the barriers around access and diversity for young people wishing to develop a career in the cultural and creative sectors. Somerset House as a whole has committed to an anti-racism pledge, which is ensured to be implemented in all the sectors of the organisation, hence this applies also to Makerveristy. Their key values are (1) Nurturing Creativity, (2) Relevance and (3) Diversity and Inclusion across all sectors. Makerveristy applies this in example directly in their workshops and panel discussions and implicit in the work atmosphere.

Further readings:

:

- <https://makerversity.org/event/queer-health-late/>
- <https://makerversity.org/covid-19-response-how-makerversity-members-created-sustainable-ppe/>
- <https://makerversity.org/makerversity-innovation-community-launch-ppe-micro-manufacturing-hub-for-nhs-workers-fighting-covid-19/>

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
|------------------|--|
| A | <i>The hub carries out training or educational activities or programs.</i> |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> |

Additional notes: Makerversity offers programmes and events dedicated to its members (who pay a membership fee) and also offers a variety of activities for the broader public. The focus of the activities is (1) Workshops/ Masterclasses, (2) Maker Demonstrations, (3) Panel Discussions and (4) Exhibition and Tours:

1. Workshops are open to the public and members
2. The masterclasses and topics of the workshops are capacity building activities to enhance creative, making and vocational capabilities.
3. Maker Demonstrations are public speaking and demonstrations from their members to the broader public. Offering their members to showcase their work.
4. Panel Discussions invite all people (makers, citizens, members) to collaboratively discuss topics which matter to the current social - economic state.

The “member only” workshops and masterclasses are specifically designed to improve the business developments of the makers’ projects. They cover topics such as “Intellectual property and rights”, “Data analysis foundations” and “Emotional Intelligence”.

Furthermore, they offer two Residency programmes for “Makers on a mission” and “Makers under 25”. In this case, makers can apply to use the space for free for up to six months to kick-start ideas and new businesses taking their first steps into the world. Makers will gain access to studio desk space, workshops and machines, a thriving creative community and business support events. After this they can have access to the facilities with a reduced price.

Further readings:

- <https://makerversity.org/events/>
- <https://makerversity.org/event/working-lunch-intellectual-property-rights-with-haley-quiliano-law/>
- <https://makerversity.org/makers-with-a-mission/>

LOTTOZERO

www.lottozero.org

Prato (S)
ITALY

2016
400 m2

| | |
|----------------------|---|
| GENERAL DESCRIPTION | Lottozero is an international research and networking centre for textile design, art and culture. It operates as a creative hub and a design studio with a coworking area, a gallery/exhibition space and a Fab Lab area. It connects local expertise and know-how with a broader network of professionals and institutions, through workshops, lectures, exhibitions, residencies and initiatives. |
| SELECTION CRITERIA | Lottozero is an interesting example of how a highly specialized hub, in collaboration with the textile and fashion industry can create its own local and global ecosystem. |
| DRAFTING DESCRIPTION | The interview with Tessa Moroder, Administrative Director of Lottozero, was conducted by Davide Amato (ECHN), on the 17th November 2020. |

TYPES

| | |
|-----------------------|--|
| HUB | Makerspace, Coworking, Fab Lab. |
| PRODUCTION/FACILITIES | Textile Transformation, Creative Craftsmanship, Fashion Accessories. |
| SITE & HERITAGE | The hub is located in an urban environment and a historic area under transformation. |

ADMINISTRATIVE DATA

| | |
|--------------------|-------------|
| LEGAL STATUS | Cooperative |
| NUM. OF EMPLOYEES | 1-5 |
| FUNDING SCHEME | Private |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

| HUBS & INNOVATION | |
|--|---|
| A | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</i> |
| B | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> |
| C | <i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i> |
| D | <i>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</i> |
| <p>Additional notes: One of Lottozero's most remarkable features is its support for the development of emerging talents and brands through scouting and residencies in its headquarters, by facilitating the exchange between them and the traditional companies of Prato's district. They initiate an exchange between traditional textile companies, by showing them new means for creative innovation, and designers, by putting them in contact with companies who have the necessary technical know-how to produce their creations.</p> <p>Such collaborations manifest as a series of artistic residencies and exhibitions, as a result of the exchange between artists (both national and international) and the local know-how.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> http://www.lottozero.org/residency | |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|-----------------|--|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity (e.g. giving tools and voice to the local community against a gentrification process).</i> |

Additional notes: Lottozero Open Club was a cycle of events born from the need to return to meet people, create a stronger community and share knowledge and experiences related to textile culture. It consisted of a full calendar of meetings and workshops that took place from late September to late November 2020.

The program began with an Open Day, dedicated to the discovery of the textile workshop. Two special collaborators of Lottozero showed the participants the machinery and the tools available inside the laboratory; there were also practical demonstrations and anyone was able to try their hand with needles, yarns and fabrics.

From Monday September 28, the program of Open Nights started a series of weekly events, every

Monday evening, including workshops with artists and designers, talks, presentations and meetings with some realities and associations of the territory.

Further readings:

- <http://www.lottozero.org/lottozero-open-club>

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--------------------|--|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> |
| B | <i>The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> |

Additional notes:

CIRCULAR WOOL 01/2017 – 2021

Circular Wool is an on-going research project in collaboration with R.S. Ricerca e Servizi. The project aims to transform a waste material, wool from local dairy sheep farms, which is disposed of at high environmental and economic costs, into a circular textile raw material. The wool is recovered and processed in the Prato textile district thus becomes a material for textile use to be applied in furnishing fabrics and interior products such as curtains, carpets and panels. The project operates through partnerships with host-brands and the design and production of circular and innovative products. The added value is given through a high level of design applied to the product that helps to convey the concept of circularity and the short supply chain approach of the raw material, in communication and storytelling of the final product.

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|------------------|---|
| A | <i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i> |
| B | <i>Hub activities' target audience includes minorities, marginalised groups or disabled people.</i> |
| C | <i>Communities are actively involved in the hub's activities (e.g. the agenda is co-designed with them, the community is represented in decision-making groups at the hub).</i> |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> |

Additional notes: Lottozero actively nurtures a network of professionals who are connected to local textile companies, (inter)national institutions, NGOs and research centres. As a consequence, Lottozero acts as a facilitator for a global community.

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
|--|--|
| A | <i>The hub carries out training or educational activities or programs.</i> |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> |
| <p>Additional notes: Lottozero has collaborated with several Italian and foreign universities, as well as high schools and junior high schools, offering mentorship, lectures and workshops revolving around textile design, sustainability and entrepreneurial skills. One of the last collaborations sees Lottozero involved as a course leader of the three-year Fashion Design of MADE Program, at the Academy of Fine Arts in Syracuse, started in October 2020. The course, designed and built by Lottozero in collaboration with the Director of the Academy Alessandro Montel, aims to train designers in the textile/fashion sector who are expert in the product, its components and its production processes: designers capable of proposing an innovative and original vision, which takes into account the contemporary context and its problems, both from a socio-cultural and production point of view.</p> | |

TZOUMAKERS

<https://www.tzoumakers.gr/english/>

Kalentzi Village - Ioannina (XS)
Greece

Launch date: 2018

| | |
|----------------------|--|
| GENERAL DESCRIPTION | Tzoumakers is an open lab for communities to cooperatively design and manufacture tools for small-scale agricultural production, located in the region of Tzoumerka, in the cultural center of the Kalentzi village. |
| SELECTION CRITERIA | This open lab was proposed to be studied in the context of the Centrinno Remarkable Hubs, due to the fact that it represents an active community of makers that is constantly empowering the local agricultural communities providing them with open-source solutions. Also, its underlying idea of “design global, manufacture local” as a common is quite promising. |
| DRAFTING DESCRIPTION | The interview with Alexandros Pantazis, the Community Manager of Tzoumaker was conducted by George Kalathas (ECHN) on the 8th of January 2021 |

TYPOLOGIES

| | |
|-----------------------|---|
| HUB | Makerspace, Hackerspace, Fab Lab, Coworking. |
| PRODUCTION/FACILITIES | Agriculture, Creative Craftsmanship, Food Transformation, Metal Manufacturing, Wood Manufacturing, 3D Printing. |
| SITE & HERITAGE | Rural environment, the hub is located in a historic/heritage building. |

ADMINISTRATIVE DATA

| | |
|--------------------|------------|
| LEGAL STATUS | NGO |
| NUM. OF EMPLOYEES | 1-5 |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

| HUBS & INNOVATION | |
|---|---|
| A | <i>The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</i> |
| B | <i>The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</i> |
| C | <i>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</i> |
| D | <i>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</i> |
| <p>Additional notes: Tzoumakers' makerspace was created by an initiative of P2P Lab with initial funding from the Phygital EU project. Currently it is partly funded by the Cosmolocalism EU project. Tzoumakers forms the pilot of the main research aim of P2P Lab. Following a series of meetings, the participants of the Tzoumakers community, underlined their needs and the problems suggesting possible solutions to them as well as describing how this makerspace's facilities would contribute in building those solutions. The makerspace until this point is located in the cultural centre of the Kalentzi village. The hub strongly supports co-creative practices between a variety of sectors with a focus on collaborative design, engineering and agriculture.</p> <p><i>Further readings:</i></p> <ul style="list-style-type: none"> • P2P Lab • Phygital • Cosmolocalism | |

| HUBS & HERITAGE | Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation. |
|---|--|
| A | <i>The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.</i> |
| B | <i>The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.</i> |
| C | <i>The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity (e.g. giving tools and voice to the local community against a gentrification process).</i> |
| <p>Additional notes: Traditionally, the residents of the villages in the region of Tzoumerka, were farmers, animal breeders and beekeepers. The industrial revolution did not affect their productive activities at a great scale, since modern, industrial-scale machinery is either too expensive or cannot be operated in these mountainous areas. Tzoumakers' open-source tools are tailor made for this kind of small-scale primary production. In addition, Tzoumakers share their facilities in the spirit of co-manufacturing tools together with the local community and they also share the manufactured tools together with the knowledge gained from the whole process. Tzoumakers' vision is to create similar open and collaborative production sites in both villages and cities (in municipal level) where citizens may seize technology into their own hands.</p> | |

Further readings:

- [Tool construction workshop](#)
- [Open Source Agriculture Workshop](#)

| HUBS & CIRCULARITY | Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. |
|--|--|
| A | <i>The hub develops products, services or activities that involve or foster recycling materials.</i> |
| B | <i>The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</i> |
| C | <i>The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.).</i> |
| D | <i>The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</i> |
| <p>Additional notes: The “design global, manufacture local” model that Tzoumakers community practice and research allows for less transport of raw materials because tools are made locally and local materials can be used when possible. Moreover, as the design is open, scrap or recycled materials can be used in the manufacturing of tools. Additionally, the design is made by communities of commoners in a way that no planned obsolescence is present and the tools are designed in such a way that are easily repairable.</p> <p>Further readings:</p> <ul style="list-style-type: none"> • “Clouds” system co-created with Ludd makerspace • Clouds system documentation English available | |

| HUBS & INCLUSION | Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities. |
|--|---|
| A | <i>The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</i> |
| B | <i>Hub activities’ target audience includes minorities, marginalised groups or disabled people.</i> |
| C | <i>Communities are actively involved in the hub’s activities (e.g. the agenda is co-designed with them, the community is represented in decision-making groups at the hub).</i> |
| D | <i>The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</i> |
| <p>Additional notes: One of the main points of focus for Tzoumakers’ activities is social inclusion. Tzoumakers is a community of makers, meaning that they strongly support cross-disciplinary collaboration and co-creation, either with local communities, other professionals or makerspaces. Mainly operating in agricultural communities, Tzoumakers strongly support the locals with their actions keeping them informed about new projects and inviting them to contribute either by proposing or assisting in the construction of new tools. It is important to emphasise that Tzoumakers do not</p> | |

simply develop new tools ‘in house’, rather the hub builds upon the individual ingenuity of the community and keeps it open for everyone to participate. In addition, the community shares the photos, blueprints and instructions for the construction and operation of the tools it makes online. Tzoumakers also promote the actions of similar maker communities that focus on agriculture open-source solutions directly through their website ([L'Atelier Paysan](#) and [FarmHack](#)) and bridges those communities by organizing international events where the hub invites and supports makers from abroad to visit and participate in manufacturing events in Tzoumakers community.

Further readings:

- [Post Driver](#) English available
- [Tilling Fork](#) English available
- [More open-source tools on Tzoumakers' website](#) (Info in Greek)

| HUBS & EDUCATION | Hubs that host vocational training and educational programs, linked to local productive activities and local networks. |
|------------------|--|
| A | <i>The hub carries out training or educational activities or programs.</i> |
| B | <i>The hub carries out activities in connection to (formal or informal) vocational training.</i> |
| C | <i>The hub carries out activities that link vocational training with local manufacturing.</i> |
| D | <i>The hub carries out training activities that are linked to the local context or community.</i> |

Additional notes: A big part of the activities of Tzoumakers' includes training & educational workshops regarding the use and construction of tools. The hub considers knowledge as a common good creating a sense of community when managing common resources such as the lab or the tools the community constructs. Tzoumakers conducts regular free educational seminars addressed to the broader community. Their subjects can vary from the safe use of their production facilities to the design, construction and operation of open-source tools. It's also important to mention that the hub addresses groups that are not so well acquainted with technology such as older, more traditional farmers by encouraging them to participate in their activities.

Further readings:

- [Tool construction workshop](#)
- [Safety measures & milling machine use workshop](#)
- [Herb milling machine construction workshop](#)
- [More workshops and seminars](#) (Info is in Greek)
- [Open Source Agriculture Workshop](#)

First iteration of remarkable Hub Portraits

In the first iteration six hubs from six European cities were selected: FabLab Barcelona, BASE Milano (Italy), Betahaus (Berlin), Space10 (Copenhagen), Bios-Romantso (Athens) and Volumes (Paris). The selection of the hubs was performed by a group of experts of Creative and Productive Hubs and members of the WP3. The overall objective was the refinement of the questionnaire based on the obtained results.

FAB LAB BCN

<https://fablabbcn.org/>

Barcelona (L)
Spain

Launch date: 2007

| | |
|----------------------|--|
| GENERAL DESCRIPTION | Fab Lab Barcelona was the first Fab Lab established in the European Union in 2007 and is a benchmark in the powerful network of over 1800 Fab Labs in over 100 countries. They produce world-leading research and innovation projects based around the digital fabrication laboratory which is located at the heart ⁵² of their facilities. |
| SELECTION CRITERIA | One of the selection criteria for the first iteration of the Hub Portraits was to be part of the Centrinno Consortium. Fab Lab Barcelona was chosen for that reason. |
| DRAFTING DESCRIPTION | This portrait was drafted by members of IAAC. |

TYPES

| | |
|-----------------------|--|
| HUB | Fab Lab, Bio Lab, Electro Lab, Third Place, Educ Lab. |
| PRODUCTION/FACILITIES | Agriculture, Wood Manufacturing, Creative Craftsmanship, Fashion Accessories, Media Production, City Gardening, 3D printing, Architecture, Textile Transformation. |
| SITE & HERITAGE | Urban environment, industrial heritage site and historical heritage site. |

⁵² <https://fablabbcn.org/about>

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | Private company |
| NUM. OF EMPLOYEES | 10-50 |
| FUNDING SCHEME | Private funded |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

| POLICY FRAMEWORK | This specific hub is remarkable because: |
|------------------|--|
| A | <p><i>Local policy frameworks (including urban master plans and strategic policy making documents) had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...).</i></p> <p>The neighbourhood of Poblenou used to be the main industrial area of Barcelona. Due to the decline of manufacturing in European cities it got emptied during the 20th century. In the early 2000's a new regulation was looking at the whole District of Sant Marti as the new innovation district, the 22@ plan.</p> |
| B | <p><i>The hub sustains activities that maintain or recreate social and economic dynamics directly related to the historical-cultural legacy of the neighbourhood. These activities served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences.</i></p> <p>Fab Lab Barcelona (hereafter FLB) has engaged with the historical value of Poblenou as an industrial area, and helped to establish a local network of makers through the maker circuit with PUD, and with the development of the maker district program with the Barcelona City Council. CENTRINNO is a project supporting these efforts. Members of FLB created the public network of Fab Labs with the support of the city council.</p> |

| REAL ESTATE CONTEXT | This specific hub is remarkable because of its interconnectedness with real estate market: |
|------------------------|---|
| A | <p><i>It is developed in a highly aggressive and heavy real estate market. It is a good example of how to establish hubs in central areas of the cities.</i></p> <p>The Fab Lab has been developed thanks to special conditions of the market years ago, which allowed it to have a long-term rent agreement at a reasonable price. The whole market has been growing and now prices are higher than before, and it would be impossible to rent such a space before the pandemic.</p> |
| B | <p><i>It is developed in areas with low real estate rates or urban wasteland.</i></p> <p>The pandemic has changed the conditions again, and has caused a drop in the rent of such types of spaces.</p> |
| C | <p><i>The hub and its community profited itself from the gentrification process they have contributed.</i></p> <p>FLB has indirectly contributed to the gentrification process of Poblenou, and it is benefiting from it thanks to the type of public that it attracts, and connects to, at least, the majority.</p> |

| BUSINESS & INNOVATION VALUE | This specific hub is remarkable because: |
|-----------------------------------|---|
| A | <p><i>It leads to the establishment of new businesses through its facilities.</i></p> <p>FLB supports businesses by helping them innovate and conduct research. It has helped a few businesses to develop, but it is not its main activity.</p> |
| B | <p><i>It interconnects professionals and communities from different fields of activities.</i></p> <p>It serves as a space to connect industry with research, with citizen innovation, and with public policy.</p> |
| C | <p><i>It has been the first hub of a new typology (co-working, biolab...).</i></p> <p>FLB is the first FabLab established in the European Union. It is the first prototype of a Fab City Hub.</p> |
| D | <p><i>The hub developed new business models.</i></p> <p>The FLB has a hybrid model that combines education, services, and research activities as its primary business. This hybrid model is still evolving.</p> |
| E | <p><i>It has an innovative business model for locally productive activities.</i></p> <p>This is a target, but it is something that FLB has not achieved yet. The productive cities narrative, and the internal innovation approach around them, has helped FLB to attract companies and other sources of funding associated with the three activities: education, services, and research.</p> |

| | |
|---|--|
| F | <p><i>It had a strong influence on other hubs in terms of business culture of the sector.</i></p> <p>FLB has supported the establishment of other Fab Labs and trained their staff for many years.</p> |
|---|--|

| INCLUSIVENESS & SOCIAL VALUE | This specific hub is remarkable because: |
|------------------------------|--|
| A | <p><i>It mixes different communities from different social classes, genders and cultures and ages.</i></p> <p>FLB needs to improve in opening for any citizen. Being a private company limits the use of the infrastructure and for the staff to dedicate their efforts to support projects and programs.</p> |
| B | <p><i>It focuses also on creating social value rather than only business.</i></p> <p>Totally, the structure creates social value through projects that have a profit focus, as well as having a populated repository of open-source projects, and by publishing content through different media and platforms.</p> |
| C | <p><i>It includes gender, LGBTQ populations, people with disabilities, and racial, ethnic, and religious subgroups, marginalised groups as migrants, refugees, asylum seekers and homeless.</i></p> <p>The groups that are part of FLB are diverse, manifested in the core team. However, some groups are more difficult to serve.</p> |

| PRODUCTIVE / DISTRIBUTIVE STRATEGY | This specific hub is remarkable because: |
|------------------------------------|---|
| A | <p><i>It offers production facilities of a new kind.</i></p> <p>FLB offered production facilities when it first opened, but then Fab Labs started appearing at a broader level, and in Barcelona they are now a public service.</p> |
| B | <p><i>It has an innovative distribution model for local production.</i></p> <p>An innovative distribution model for local production is still an ambition.</p> |
| C | <p><i>It uses circular economy strategies.</i></p> <p>The Fab Lab needs to improve a lot on this topic.</p> |
| D | <p><i>It uses distributive production models.</i></p> <p>FLB tries to apply distributed production models as much as possible.</p> |
| E | <p><i>It produces locally new types of products.</i></p> <p>The company supports the development of new products through innovation and research with businesses and students.</p> |

| HERITAGE CONTEXT | This specific hub is remarkable because: |
|---------------------|--|
| A | <p><i>It is hosted in an industrial area with high historical value.</i></p> <p>Poblenou is part of the industrial heritage of Europe.</p> |
| B | <p><i>Its model typology is highly dependent on the industrial area in which it is located.</i></p> <p>Its model typology is not completely dependent on the industrial area in which it is located, but has become part of the narrative and strategy of the lab.</p> |
| C | <p><i>It recreates value by profiting to the former industry.</i></p> <p>The members of the FLB collaborate with old industries that are still located in the area and build a narrative from the industrial heritage of Poblenou.</p> |
| D | <p><i>It links personal / individual / habitants' history with the site-specific history.</i></p> <p>It does not link personal, individual, and habitants' history with the site-specific history as much as FLB members would like to. This is part of one of the main challenges in Poblenou, the disconnection between the people that work there and the people that live there.</p> |

BASE MILANO

<https://base.milano.it/>

Milan (L)
Italy

Launch date: 2014

| | |
|----------------------|--|
| GENERAL DESCRIPTION | Located within the ex-Ansaldo complex, it is one of the most important urban regeneration projects in Europe, BASE is breathing new life into a monument of industrial architecture, exploring new models of collaboration between public and private sectors: a state-owned building, entrusted by Milan City Council to a private, non-profit social enterprise, the self-financed outcome of a union between five different charities and businesses. |
| SELECTION CRITERIA | One of the selection criteria for the first iteration of the Hub portraits was to be part of the Centrinno Consortium. Base Milano was chosen for that reason. |
| DRAFTING DESCRIPTION | This portrait was drafted through desk research by Davide Amato (ECHN) in November 2020. Additional points were added in February 2021 by Marina Mussapi from Base. |

TYPES

| | |
|-----------------------|-----------------------------------|
| HUB | Third Place, Coworking. |
| PRODUCTION/FACILITIES | Intellectual & Social Production. |
| SITE & HERITAGE | Industrial heritage site. |

ADMINISTRATIVE DATA

| | |
|--------------------|-------------------|
| LEGAL STATUS | Social Enterprise |
| NUM. OF EMPLOYEES | 10-50 |
| FUNDING SCHEME | No data on this |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

POLICY FRAMEWORK

What kind of Local policy frameworks had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...). Has this hub served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences?

The municipality of Milan bought the industrial site in 1990 with the clear purpose of renovating and dedicating this space to cultural activities, in order to boost the requalification of the area (now one of the most culturally thriving districts of Milan). This project is a successful joint collaboration of public and private sectors. In 2014, the municipality assigned through a public call the ex-Ansaldo space to a consortium of both profit and non-profit cultural organizations (Arci Milano, Avanzi, Esterni, h+, Make a Cube), which gave birth to BASE Milano (Oxa Srl Impresa Sociale). The Cariplo Foundation also played a big role in the funding of the project.

REAL ESTATE CONTEXT

How the real estate context influenced or is influencing the hub?

The Tortona area developed as an industrial pole in the city. During the 20th century, several industrial sites were established, along with residential buildings dedicated to the factories' workers. After the cessation of the manufacturing activities, many creative companies moved their businesses in the old industrial sites. With time, the area hosted more and more creatives and today it is one of the most creatively thriving districts of Milan. The consequent gentrification process, added to the historical industrial heritage of the neighbourhood, boosted the area's real estate value.

BUSINESS & INNOVATION VALUE

Why is the hub innovative and how this is translated to business?

BASE Milano is one of the first creative hubs in Milan. As such, it is at the forefront of innovation of the CCI's (Cultural & Creative Industries). In its facilities, it hosts, fosters and connects creative businesses from different sectors in a co-working space. Base selects only companies with a high cultural and social impact, in line with Base's standards. Since 2016 Base has consolidated its vocation as a centre for the production and co-production of cultural initiatives with a high social value. The functions developed characterize Base both as a creative hub (a place dedicated to professionals in the creative industries) and as a community hub (an open and accessible place that offers services to citizens).

The project now translates into 12.000 square meters that host temporary and permanent functions: a workspace, ateliers and an artist residence, spaces dedicated to the music industries, an auditorium, a large study room open to the public, learning rooms dedicated to training, a bar and a social concierge, spaces for exhibitions, shows, workshops and conferences.

INCLUSIVENESS & SOCIAL VALUE

What kind of actions and strategies have developed the hub to promote inclusiveness and social values?

Base Milano is actively promoting narratives and committing actions that include inclusiveness of minorities. Its attention to urban issues and projects of requalification constitutes an added social

value. Additionally, Base's venue is open to the public with its restoration and exhibition spaces, constituting an important third space for the city and the neighbourhood.

PRODUCTIVE / DISTRIBUTIVE STRATEGY

What kind of production does the hub support and does he have developed a particular strategy for its distribution?

Base Milano offers a big co-working space, residency facilities for artists, a shooting space, a hospitality area with a café/restaurant and exhibition/event spaces, giving shape to a highly hybrid hub. Base's venue has become a meeting jointure where different realities can meet and exchange, develop and distribute knowledge and information. From the point of view of programming, Base works in collaboration with important national and international players to offer a 365-days program aimed at experimenting with the most innovative cultural languages and involving new audiences. Base has developed several projects that investigate issues of collective relevance, through the experimentation of artistic and creative languages and the activation of a multiplicity of formats including artist residencies, temporary exhibitions, workshops, territorial development processes. These projects were activated thanks to co-productions and long-term partnerships aimed at investigating contemporary issues such as: the sphere of living and urban transformations, the man-machine relationship, new learning processes, the transformations in the world of work.

HERITAGE CONTEXT

Is the hub situated in a historic or ancient industrial area? If yes, what impact does it have on its model?

Base Milano is located in a valuable historical site, the Ex-Ansaldo factory, which is now dedicated to cultural and creative activities, which include also the Scala Theatre workshops and the Mudec museum. Base regularly engages with the neighbourhood and its inhabitants, for instance with the monthly "Vicino Vicino" initiative, where local inhabitants take over Base's Instagram account. The territorial context in which Base operates (Tortona Solari district) has undergone an extraordinary transformation, passing from an industrial district to an area characterized by the establishment of the Creative Industries.

The involvement of the neighbourhood and the city are key aspects of Base Milano's mission. Base regularly engages with the neighbourhood and its inhabitants, for instance with the Social Concierge project, a regeneration work that involved the entry of the Ansaldo area and which allowed the development of various functions including parcel delivery for co-workers, an info point and a short supply chain market.

BETAHAUS

<https://www.betahaus.com/>

Berlin (L)
Germany

Launch date: 2009

| | |
|----------------------|---|
| GENERAL DESCRIPTION | Betahaus started in a 250m ² warehouse in Kreuzberg in 2009 by just six students that created an unconventional workspace, where people could collaborate, where innovators and misfits could break from the traditional office environment and imagine the impossible. It was the first coworking space in Berlin before it became one of Europe's leading start-up cities. It's a space for freelancers to work together. For teams to collaborate. For artists to create. For start-ups to host events. Flexible spaces that work for and evolve to what the community needs. It's a space that fosters connection and community. The name Betahaus suggests a spirit of openness to change, never getting stuck in routines just because they're comfortable, learning and growing. "Always making mistakes and always improving." |
| SELECTION CRITERIA | This hub has been selected because of its pioneer role in Europe as one of the first coworking spaces elaborating central topics of collaborative space like community building, empowerment, creating upon local needs. |
| DRAFTING DESCRIPTION | The interview with Christophe Fahle, CEO of Betahaus was conducted by Wolf Kühr (VOLUMES) on the 26th of November 2020 |

TYPOLOGIES

| | |
|-----------------------|--|
| HUB | Coworking, Third Place. |
| PRODUCTION/FACILITIES | Media Production, Architecture. |
| SITE & HERITAGE | Urban environment, industrial heritage site. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | SME |
| NUM. OF EMPLOYEES | 10-50 employees |
| FUNDING SCHEME | Private Funded |
| PROFIT / NONPROFIT | Profit |

CENTRINNO'S CRITERIA

POLICY FRAMEWORK

What kind of Local policy frameworks had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...). Has this hub served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences?

Betahaus was one of the very first coworking spaces in Europe. In this role of pioneer, it inspired several other coworking spaces as well as cities. Betahaus empowered coworking initiatives by organising, since 2009, free workshops "How to create a coworking space?". In order to advocate the coworking movement, Betahaus was the co-founder of the NGO "European Coworking Assembly" in 2010 to give voice to the emerging coworking movement in Europe.

REAL ESTATE CONTEXT

How the real estate context influenced or is influencing the hub?

Betahaus has contributed to the real estate market concept of "flexible use". It has been promoted to industry players by weekly tours through Betahaus. Increasing rent makes it more difficult to run a low margin or non-profit aspect of business (e.g. Fab Lab, Digital Lab).

BUSINESS & INNOVATION VALUE

Why is the hub innovative and how this is translated to business?

Betahaus is a coworking pioneer example. It is the first bigger space (+2.000sqm) in Berlin, and one of the first in the EU:

- It is the First Start-up Hub in Berlin and an "ecosystem builder"
- Betapitch is the co-founder of start-up pitch contest
- BetahausX, is a consulting firm that bridges start-up ideas with corporate innovation funnels
- Hardware.co is a Hardware Accelerator Program
- One Coworking is a Global Coworking Roaming Platform

INCLUSIVENESS & SOCIAL VALUE

What kind of actions and strategies have developed the hub to promote inclusiveness and social values?

- Gender balance and multi-ethnic team
- Handicapped accessible workplaces
- Gender neutral toilets
- Supporting initiatives by giving free workspace

PRODUCTIVE / DISTRIBUTIVE STRATEGY

What kind of production does the hub support and does he have developed a particular strategy for its distribution?

- No data on this

HERITAGE CONTEXT

Is the hub situated in a historic or ancient industrial area? If yes, what impact does it have on its model?

Betahaus has 2 spaces. The Neukölln Building, which was constructed in 1914 as the first company for film development. The second building in Kreuzberg was the former headquarter of the "Tageszeitung" - the central media of the 1968 movement in Berlin.

Further readings:

- Betahaus Neukölln Inventor of celluloid, <https://de.wikipedia.org/wiki/Geyer-Werke>
- Betahaus Kreuzberg: former Taz building https://en.wikipedia.org/wiki/Die_Tageszeitung

SPACE 10

<https://space10.com/>

Copenhagen (M)
Denmark

Launch date: 2007

| | |
|----------------------|--|
| GENERAL DESCRIPTION | Space10 is a research and design lab with a mission to create a better everyday life for people and the planet ⁵³ . |
| SELECTION CRITERIA | This hub has been selected to better understand its relation with a giant private company such as IKEA. It is a lab which addresses contemporary challenges in a holistic and multilevel approach from theory up to prototyping new ideas. |
| DRAFTING DESCRIPTION | This portrait has been drafted by Tomas Diez (IAAC) based on his past collaboration and knowledge with the hub and through desk research, in November 2020. |

TYPOLOGIES

| | |
|-----------------------|---|
| HUB | Makerspace, Living Lab, Food Lab, Third Place. |
| PRODUCTION/FACILITIES | Agriculture, Wood Manufacturing, Food Production & Transformation, Media Production, 3D printing, Architecture. |
| SITE & HERITAGE | Urban environment, industrial heritage site and historical heritage site. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | Private Company |
| NUM. OF EMPLOYEES | 10-50 |
| FUNDING SCHEME | Private funded |
| PROFIT / NONPROFIT | Non-profit |

⁵³ <https://space10.com/about/>

CENTRINNO'S CRITERIA

| POLICY FRAMEWORK | This specific hub is remarkable because: |
|-----------------------------|---|
| A | <p><i>Local policy frameworks (including urban master plans and strategic policy making documents) had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...).</i></p> <p>Space10 is located in a new zone of the city that was transformed thanks to the policy framework of converting the meat pack district into a new activity pole for the city of Copenhagen.</p> |
| B | <p><i>The hub sustains activities that maintain or recreate social and economic dynamics directly related to the historical-cultural legacy of the neighbourhood. These activities served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences.</i></p> <p>Space10 inspires other hubs in other cities. It is necessary to know better the impact they have in local policy making.</p> |
| REAL ESTATE CONTEXT | This specific hub is remarkable because of its interconnectedness with real estate market: |
| A | <p><i>It is developed in a highly aggressive and heavy real estate market. It is a good example of how to establish hubs in central areas of the cities.</i></p> <p>Space 10 is a good example to study the complex relation of a regeneration and gentrification process (specifically the meatpacking district in Copenhagen in this case).</p> |
| B | <p><i>It is developed in areas with low real estate rates or urban wasteland.</i></p> <p>It used to be an abandoned area many years ago.</p> |
| C | <p><i>The hub and its community profited itself from the gentrification process they have contributed.</i></p> <p>The public of Space10 can be totally linked with the typology that contributes to gentrification processes.</p> |
| BUSINESS & INNOVATION VALUE | This specific hub is remarkable because: |
| A | <p><i>It leads to the establishment of new businesses through its facilities.</i></p> <p>Space 10 supports research and experimentation, but not directly the creation of businesses.</p> |
| B | <p><i>It interconnects professionals and communities from different fields of activities.</i></p> <p>It has a very rich research program combined with public events and activities.</p> |

| | |
|---|--|
| C | <p><i>It has been the first hub of a new typology (co-working, biolab...).</i></p> <p>Not really. It is an innovation lab of a company like IKEA, that serves as an idea generation, and it is relatively open to the public.</p> |
| D | <p><i>The hub developed new business models.</i></p> <p>Not really. It is a business model that depends on the funds of a third party: IKEA</p> |
| E | <p><i>It has an innovative business model for locally productive activities.</i></p> <p>It is an innovative approach to innovation supported by a company, but connected with communities of practices, and in some cases open to the public.</p> |
| F | <p><i>It had a strong influence on other hubs in terms of business culture of the sector.</i></p> <p>Space10 is an innovation hub that is renowned locally and internationally, and that has received recognition from different media through its projects.</p> |

| INCLUSIVENESS & SOCIAL VALUE | This specific hub is remarkable because: |
|------------------------------|--|
| A | <p><i>It mixes different communities from different social classes, genders and cultures and ages.</i></p> <p>Space10 targets early adopters of products, some researchers, and some social activists. The activities of the hub are targeted to higher classes, ages between 19 and 40. The events are usually quite multicultural and gender balanced, as their team is too.</p> |
| B | <p><i>It focuses also on creating social value rather than only business.</i></p> <p>Since it is already funded, the hub is able to develop projects with an open approach.</p> |
| C | <p><i>It includes gender, LGBTQ populations, people with disabilities, and racial, ethnic, and religious subgroups, marginalised groups as migrants, refugees, asylum seekers and homeless.</i></p> <p>Space10 is an inclusive place. It has developed projects related to refugee tech in the past.</p> |

| PRODUCTIVE / DISTRIBUTIVE STRATEGY | This specific hub is remarkable because: |
|------------------------------------|---|
| A | <p><i>It offers production facilities of a new kind.</i></p> <p>It has a fully equipped makerspace, as well as other facilities for urban farming, bio materials, virtual reality, etc.</p> |

| | |
|----------|--|
| <i>B</i> | <p><i>It has an innovative distribution model for local production.</i></p> <p>It uses its makerspace to support the local research projects.</p> |
| <i>C</i> | <p><i>It uses circular economy strategies.</i></p> <p>- No data on this</p> |
| <i>D</i> | <p><i>It uses distributive production models.</i></p> <p>- No data on this</p> |
| <i>E</i> | <p><i>It produces locally new types of products.</i></p> <p>It is a place to experiment with new products. Some of them are also tested in their events.</p> |

| HERITAGE CONTEXT | <i>This specific hub is remarkable because:</i> |
|---------------------|--|
| <i>A</i> | <p><i>It is hosted in an industrial area with high historical value.</i></p> <p>Space 10 is located in the old meatpacking district of Copenhagen, similar to La Villette Park in Paris.</p> |
| <i>B</i> | <p><i>Its model typology is highly dependent on the industrial area in which it is located.</i></p> <p>It is not that dependent.</p> |
| <i>C</i> | <p><i>It recreates value by profiting to the former industry.</i></p> <p>Not at all.</p> |
| <i>D</i> | <p><i>It links personal / individual / habitants' history with the site-specific history.</i></p> <p>Not really.</p> |

BIOS ROMANTSO

<https://www.romantso.gr/?Lang=En>

Athens (L)
Greece

Launch date: 2013

| | |
|----------------------|--|
| GENERAL DESCRIPTION | Romantso, the former printing plant of “Romantso” magazine, is situated in the historical centre of Athens and functions both as a creative hub and as a cultural centre, organizing and hosting a variety of, accessible to the wider public, events, on a daily basis. |
| SELECTION CRITERIA | One of the selection criteria for the first iteration of the Hub Portraits was to be part of the CENTRINNO Consortium. Bios Romantso was chosen for that reason. |
| DRAFTING DESCRIPTION | The interview with Vassilis Charalampidis, the Co-founder and Director of the hub was conducted by George Kalathas (ECHN) in November 2020 |

TYPES

| | |
|-----------------------|---|
| HUB | Coworking Space, Third Place, Makerspace, Living Lab. |
| PRODUCTION/FACILITIES | Media Production, Photography Studio, Sound Recording & Production, Backline Equipment. |
| SITE & HERITAGE | Urban environment. |

ADMINISTRATIVE DATA

| | |
|--------------------|-----------------|
| LEGAL STATUS | Private Company |
| NUM. OF EMPLOYEES | 10-50 |
| FUNDING SCHEME | Hybrid |
| PROFIT / NONPROFIT | Non-profit |

CENTRINNO'S CRITERIA

POLICY FRAMEWORK

What kind of Local policy frameworks had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...). Has this hub served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences?

Bios Romantso hub was not part of a local policy framework. Its profile and activities are often used by local authorities as best practices. Bios Romantso is presented in all relevant reports by the Greek ministry of culture as state-of-the-art action and best practice in the fields of Creative and Collaborative Spaces (CCS) and also as an urban regeneration example model. The municipality has used actions first implemented and tested by Bios Romantso in the centre of the city in the topics of urban regeneration, social inclusion, citizens participation and lifelong learning.

REAL ESTATE CONTEXT

How the real estate context influenced or is influencing the hub?

Bios Romantso, the former printing plant of the "Romantso" magazine is situated in Athens downtown. Romantso was one of the most popular magazines of Greece back in the 60s. After the magazine's closing in 1990 the building was abandoned for more than 20 years before Romantso opened as the first creative hub of Athens in 2013.

Although it is located in a very central area of the historic centre, this specific part is at stake of being a ghetto and there is a lot of abandoned property, such as office spaces and stores. Approximately 60 years ago, this specific part of Athens used to be the vibrant commercial centre of Athens.

BUSINESS & INNOVATION VALUE

Why is the hub innovative and how this is translated to business?

Bios Romantso is the first creative hub of Athens that opened its doors to creatives during the years of recession in a very difficult spot of the decayed commercial centre in the heart of Athens. Today, Bios Romantso functions both as a creative hub and as a cultural centre, organizing and hosting a variety of, accessible to the wider public, events, on a daily basis. The hub provides both private and coworking spaces to new creatives and offers a wide range of services and advisory activity, vital for the start of every new entrepreneurial activity. The main goal looks toward the successful new business development aiming toward independence from the hub and establishing them as viable businesses. The building is a meeting point for young creatives and it is always open to host citizens' initiatives. The hub's Open Studio Days programme allows, four times a year, the new creative businesses housed in the hub to open their office doors to the public, giving the latter the opportunity to view the work of the members up close, but also the overall activities and operations of the hub. The Open Studio actions are an important and integral part of Romantso's life, constituting an organized opportunity for exposure to a wider audience.

INCLUSIVENESS & SOCIAL VALUE

What kind of actions and strategies have developed the hub to promote inclusiveness and social values?

The hub is located in a multicultural neighbourhood and its activities support and promote cultural exchange. Since the hub's first years of operation, in 2013, the initiative "Creative Neighbourhood" aimed to connect the neighbourhood's businesses with young and upcoming creators, thus activating this part of the city's downtown while simultaneously attempting to create an open dialogue with the city's minority groups through cultural activities. "Creative Neighbourhood" attempted to have a positive impact in Athens' life and culture, forging strong relationships between the city's cultures and minorities and the hub itself. The initiative met such success that it became part of the hub's cultural program, taking the form of a festival the year that followed. Visitors and members of Bios Romantso hub can participate in the hub's activities or just socialize with friends or network with their colleagues. A vibrant venue of artistic creation is welcoming and involving the wider public in an open dialogue, aiming to influence the Athenian arts scene. Young artists and creatives are hosted, on a frequent basis, inviting their circles and the wider public to experience vivid art events of all kinds. The café, the exhibition space and the concerts/ theatre stage, are accessible to everyone in order to present new ideas, new projects and new media to be developed.

PRODUCTIVE / DISTRIBUTIVE STRATEGY

What kind of production does the hub support and does he have developed a particular strategy for its distribution?

Bios Romantso is not a productive hub.

HERITAGE CONTEXT

Is the hub situated in a historic or ancient industrial area? If yes, what impact does it have on its model?

Bios Romantso, is located in the former printing plant of the "Romantso" magazine, one of the most important Greek post-war magazines. It is situated in the historical centre of Athens and for more than 60 years, the plant has been based in the Anaxagora's street building, alongside other popular magazines from the 50s until the 80s, like "Pantheon" and "Vendeta". After the printing plant closed, the whole neighborhood started to decline and according to researchers it started reminding an "urban ghetto". Since Bios Romantso started operating once again as a creative hub and cultural centre, this part of the city has started to thrive, attracting visitors, creatives and businesses. Today, it is considered to be one of the most important venues in the centre of Athens and thanks to its activity the whole neighbourhood has been completely reformed, reminding nothing of its previous years of abandonment.

VOLUMES

<http://volumesparis.org/>

Paris (L)
France

Launch date: 2015

| | |
|----------------------|---|
| GENERAL DESCRIPTION | Volumes lab, formerly Volumes coworking space was created in Paris in 2015, thanks to the initiative of three friends. They shared common interests and passion for networked and distributed communities, collaborative spaces and open-source design. Volumes started with the desire of creating a space but also a place open to very diverse activities and communities. The group of founders imagined this place as an organic ecosystem capable of adapting and transforming according to local opportunities and the desires of its members. Volumes establishes strong ties with the neighbour's communities, local associations but also with other third-spaces in the city and with the Municipality itself. |
| SELECTION CRITERIA | One of the selection criteria for the first iteration of the Hub portraits was to be part of the CENTRINNO Consortium. Volumes was chosen for that reason. |
| DRAFTING DESCRIPTION | The interview with Baptiste Bernier member and founder of the hub was conducted by Carlotta Fontana Valenti (VOLUMES). |

TYPES

| | |
|-----------------------|---|
| HUB | Makerspace, Coworking, Food Lab, Third Place. |
| PRODUCTION/FACILITIES | Wood Manufacturing, Food Transformation, 3D Printing, Creative Craftsmanship, Media Production. |
| SITE & HERITAGE | Urban environment. |

ADMINISTRATIVE DATA

| | |
|-------------------|----------------|
| LEGAL STATUS | Cooperative |
| NUM. OF EMPLOYEES | 1-5 employees |
| FUNDING SCHEME | Private funded |

PROFIT / NONPROFIT

Hybrid

CENTRINNO'S CRITERIA

POLICY FRAMEWORK

What kind of Local policy frameworks had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...). Has this hub served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences?

The launch of Volumes space in 2015 was possible, also, thanks to the economic support received from a regional call for supporting the creation of Third-Places.

With his combination of very diverse spaces such as a food lab, a makerspace and a coworking space, Volumes established a unique and innovative multi-faceted third place in Paris. The food lab is a professional kitchen conceived as a collaborative and productive space. It is also an association of members engaged in creating events, debates and activities about sustainable food systems. Thanks to the pioneer work developed by the food lab association, today Volumes collaborates with the local Municipality committed to developing an integrated strategy for sustainable food systems for 2030.

REAL ESTATE CONTEXT

How the real estate context influenced or is influencing the hub?

Despite being a popular neighbourhood, the 19th arr in Paris has been touched by some gentrification phenomena which have contributed to the rise of prices in the area. Volumes does not escape that phenomenon, even if its members were able to establish a fair relationship with the landlord and pay a reasonable rent. As a coworking space, Volumes offers special prices for people living in the neighbourhood.

BUSINESS & INNOVATION VALUE

Why is the hub innovative and how this is translated to business?

Volumes has adopted an economic business model based on the principle that 80% of the economic activity allows the financing of 20% of social activities.

In addition, several innovative businesses have been initiated in Volumes. Social enterprises like Open-Source Politics or the Thot School, certified French courses for migrants and refugees, or the Civic Wise Network, which promotes citizen engagement for collaborative urbanism, were born in Volumes. The makerspace has contributed to building a community of creators, artists and makers who exchange and share knowledge and face common challenges. During the pandemic crisis in march 2020, the makerspace of Volumes has been part of the "Makers x covid" Paris initiative. The creation of a collaborative platform to coordinate production and distribution of emergency sanitary equipment among different makerspaces in Paris.

INCLUSIVENESS & SOCIAL VALUE

What kind of actions and strategies have developed the hub to promote inclusiveness and social values?

Volumes has been involved in many social projects in collaboration with local associations and in social projects for migrants and vulnerable populations. The venue has also offered spaces to host migrants and vulnerable populations.

Within Volumes, the cooperative has favoured the creation of many social enterprises which have been key actors to build a creative and socially engaged community. To promote local inclusion, Volumes offers special prices for people living in the neighbourhood.

PRODUCTIVE / DISTRIBUTIVE STRATEGY

What kind of production does the hub support and does he have developed a particular strategy for its distribution?

- No data on this

HERITAGE CONTEXT

Is the hub situated in a historic or ancient industrial area? If yes, what impact does it have on its model?

Volumes sits in the Mouzaia neighbourhood, a former working-class area of Paris. The building is a former small industrial space which has been abandoned and reconverted as a third place. Nevertheless, the space does not have any connection with the former industrial activities.

TEMPLATES

In this section the templates from the three iterations are displayed.

They have been shared among the project partners together with a guideline document in order to instruct the elaboration of the Hub Portraits. The data was collected through desk research and/or interviews with leading managers from the hubs.

After each iteration, the portraits were analysed and according to their results, the template was enhanced for the next iteration.

First Iteration

| | |
|-----------------|---|
| HUB NAME | PICTURE/ please upload 2-3 high resolution pictures here. Country City |
|-----------------|---|

TYPES: multiple choice - please underline

| | | |
|---|--|---|
| <ul style="list-style-type: none"> • Makerspace • Hackerspace • Fab Lab • Coworking | <ul style="list-style-type: none"> • Living Lab • Bio Lab • Electro Lab • Food Lab | <ul style="list-style-type: none"> • Third Place • Educ Lab |
|---|--|---|

IDENTIFIERS: multiple choice - please underline or fill

| | |
|--|---|
| Type of Industries <ul style="list-style-type: none"> • Agriculture • Wood manufacturing • Biotechnology • Food Production (beer, kombucha, veggie meet...) • Food transformation • Metal manufacturing • 3D printing • Architecture • Textile transformation | <ul style="list-style-type: none"> • Creative craftsmanship • leather work • fashion accessories • Carpenters • media production • city gardening |
| Site specification <ul style="list-style-type: none"> • urban environment • Peri-urban environment • rural environment • industrial heritage site • historical heritage site | Business model <ul style="list-style-type: none"> • Public funded (Fablab Lisboa...) • Private funded (Space10...) • SME • Non-profit organization • profit organization |
| YEAR OF CREATION | CITY SIZE* XS S M L |
| NUMBER OF EMPLOYEES | LEGAL STATUS |

| | |
|---|---|
| <ul style="list-style-type: none"> • 1-5 • 5-10 • 10-50 • +50 | Public funded (Fablab Lisboa...) Private funded (Space10...) SME Mixed |
|---|---|

* see Centrinno project description

CRITERIA: WHY THIS HUBS IS REMARKABLE

Please note between 1-7 the remarkability of the hub concerning the following topics:

CENTRINNO'S CRITERIA

| POLICY FRAMEWORK | This specific hub is remarkable because: |
|------------------|--|
| A | <p><i>Local policy frameworks (including urban master plans and strategic policy making documents) had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...).</i></p> <p>1= not at all / 7 = the creation of the hub is entirely due to a policy framework</p> <p><i>Write here ...</i></p> |
| B | <p><i>The hub sustains activities that maintain or recreate social and economic dynamics directly related to the historical-cultural legacy of the neighbourhood. These activities served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences.</i></p> <p>1= never/ 7 = The hub has/had strong impact on policy making</p> <p><i>Write here ...</i></p> |

| REAL ESTATE CONTEXT | This specific hub is remarkable because of its interconnectedness with real estate market: |
|---------------------|--|
| A | <p><i>It is developed in a highly aggressive and heavy real estate market. It is a good example of how to establish hubs in central areas of the cities.</i></p> <p>1= very bad example / 7 = very good example</p> <p><i>Write here ...</i></p> |
| B | <p><i>It is developed in areas with low real estate rates or urban wasteland.</i></p> <p>1= not at all 7 = completely</p> <p><i>Write here ...</i></p> |
| C | <p><i>The hub and its community profited itself from the gentrification process they have contributed.</i></p> <p>1= not at all 7 = completely</p> <p><i>Write here ...</i></p> |

| BUSINESS & INNOVATION VALUE | This specific hub is remarkable because: |
|-----------------------------|---|
| A | <p><i>It leads to the establishment of new businesses through its facilities.</i></p> <p>1= not at all 7 = more than 5 businesses have been established thanks to specific facilities</p> <p><i>Write here ...</i></p> |
| B | <p><i>It interconnects professionals and communities from different fields of activities.</i></p> <p>1= the professionals come all from the same sector 7 = a very multidisciplinary work environment</p> <p><i>Write here ...</i></p> |
| C | <p><i>It has been the first hub of a new typology (co-working, biolab...).</i></p> <p>1= the typology existed since long time 7 = the typologies did not exist before</p> <p><i>Write here ...</i></p> |
| D | <p><i>The hub developed new business models.</i></p> <p>1= the used business model is a very common model.7= the used business model did not exist before.</p> <p><i>Write here ...</i></p> |
| E | <p><i>It has an innovative business model for locally productive activities.</i></p> <p>1= there are no locally productive activities // 7= the hub is known for its innovative business model for locally productive activities</p> <p><i>Write here ...</i></p> |
| F | <p><i>It had a strong influence on other hubs in terms of business culture of the sector.</i></p> <p>1 the hub has not inspired other hubs / 7 =the hub is an influencer in the field of hub innovation</p> <p><i>Write here ...</i></p> |

| INCLUSIVENESS & SOCIAL VALUE | This specific hub is remarkable because: |
|---------------------------------|---|
| A | <p><i>It mixes different communities from different social classes, genders and cultures and ages.</i></p> <p>1= not at all / 7 = different social classes, genders and cultures and ages working together and it is strongly supported by the hub</p> <p><i>Write here ...</i></p> |
| B | <p><i>It focuses also on creating social value rather than only business.</i></p> <p>1= Not at all // 7 totally</p> <p><i>Write here ...</i></p> |
| C | <p><i>It includes gender, LGBTQ populations, people with disabilities, and racial, ethnic, and religious subgroups, marginalised groups as migrants, refugees, asylum seekers and homeless.</i></p> <p>1= Not at all // 7 totally</p> <p><i>Write here ...</i></p> |

| PRODUCTIVE / DISTRIBUTIVE STRATEGY | This specific hub is remarkable because: |
|--|---|
| A | <p><i>It offers production facilities of a new kind.</i></p> <p>1= Not at all // 7 several facilities of a new kind exist</p> <p><i>Write here ...</i></p> |
| B | <p><i>It has an innovative distribution model for local production.</i></p> <p>1= do not exist / 7= several distribution models have been created</p> <p><i>Write here ...</i></p> |
| C | <p><i>It uses circular economy strategies.</i></p> <p>1= Not at all // 7= it's a big part of its business</p> <p><i>Write here ...</i></p> |
| D | <p><i>It uses distributive production models.</i></p> <p>1= no collaboration to produce / 7= distributive production is a core element of its business</p> <p><i>Write here ...</i></p> |

| | |
|----------|--|
| <i>E</i> | <p><i>It produces locally new types of products.</i></p> <p>1 = not at all / 7=the hub is very innovative in the creation of new products</p> <p><i>Write here ...</i></p> |
|----------|--|

| HERITAGE CONTEXT | <i>This specific hub is remarkable because:</i> |
|---------------------|--|
| <i>A</i> | <p><i>It is hosted in an industrial area with high historical value.</i></p> <p>1= not at all // 7= it is situated in an recognized industrial area with high historical value</p> <p><i>Write here ...</i></p> |
| <i>B</i> | <p><i>Its model typology is highly dependent on the industrial area in which it is located.</i></p> <p>1= not at all / 7 = totally dependant</p> <p><i>Write here ...</i></p> |
| <i>C</i> | <p><i>It recreates value by profiting to the former industry.</i></p> <p>1= not at all / 7 =strongly linked to the former industry</p> <p><i>Write here ...</i></p> |
| <i>D</i> | <p><i>It links personal / individual / habitants' history with the site-specific history.</i></p> <p>1= not at all / 7 =a strong emotional link exists between the history of the place, the people and the former industry</p> <p><i>Write here ...</i></p> |

POLICY FRAMEWORK

What kind of Local policy frameworks had a great impact on making this hub emerge because of specific support provided to the project (financial, regulatory, etc...). Has this hub served as inspiration and demonstrators for local authorities who started building specific urban policies based on those experiences?

[Write here ...](#)

REAL ESTATE CONTEXT

How the real estate context influenced or is influencing the hub?

[Write here ...](#)

BUSINESS & INNOVATION VALUE

Why is the hub innovative and how this is translated to business?

[Write here ...](#)

INCLUSIVENESS & SOCIAL VALUE

What kind of actions and strategies have developed the hub to promote inclusiveness and social values?

[Write here ...](#)

PRODUCTIVE / DISTRIBUTIVE STRATEGY

What kind of production does the hub support and does he have developed a particular strategy for its distribution?

[Write here ...](#)

HERITAGE CONTEXT

Is the hub situated in a historic or ancient industrial area? If yes, what impact does it have on its model?

[Write here ...](#)

Second Iteration

HOW TO FILL THIS TEMPLATE

Dear Partners

Here is the template of the second iteration. We have two objectives:

- 1. To collect data about remarkable hubs for Centrinno*
- 2. To improve the template for the 3rd iteration*

Here is the process we suggest to fill the template:

- 1. Define a contact person for the hub and contact him/her to check her/his availability to support you in collecting the data (please make sure to respect the Data Management Regulations and use the consent form provided). You will then be able to get back to him/her at point 5.*
- 2. Read first the template to have an idea of the data we want to collect*
- 3. Execute desk research on the selected hub through its website, online articles, videos, etc...*
- 4. Fill in the template based on your personal knowledge and by the results of your desk research*
- 5. Send the template to the hub to check and verify the information and to add or correct content Please make sure to be supportive in this process and offer a call for better explanation if needed*
- 6. Have a final check to the template and send it back to Volumes together with the signed consent form*

In this document:

- **RED** is to provide instructions to fill the template
- **BLUE** is a text you need to replace with your contributions
- **BLACK** is where we do not need your input, but please feel free to give feedback using the comment feature of google doc.

For more context on this template, you can find more information in the [Guidelines document](#).

You can now start below.

In advance, many thanks for your collaboration!

The table below needs to be filled by the person who is conducting the research for the hub portraits.

| | |
|----------------------|---|
| Date of edition | <i>Example: 1st of December 2020</i> |
| Hub portrait lead | <i>Please write here Name, Surname and Organization of the person of VOL, IAAC or ECHN who conducted the research on this hub.</i> |
| Sources & references | <i>Please list here sources and references you used to fill the template</i> |
| Hub point of contact | <i>Please write here the name, surname and role in the organization of the person you contacted to check, confirm and complete the template. This person also needs to sign a consent form for data management regulations.</i> |

| | |
|----------------------------------|--|
| HUB NAME Country, City | PICTURES: please upload 2-3 high resolution pictures in the same folder as this document. |
| GENERAL DESCRIPTION | Please add here a short description of the hub (about 5 lines) with its main specificities. This also needs to include why this hub has been chosen for the review. |

Spider Chart

- this part will be processed by Volumes based on the information given below

TYPES multiple choice - please underline

| | | |
|---|---|---|
| <ul style="list-style-type: none"> • Makerspace • Hackerspace • Fab Lab • Coworking | <ul style="list-style-type: none"> • Living Lab • Bio Lab • Electro Lab • Foodlab | <ul style="list-style-type: none"> • Third Place • Educ Lab |
|---|---|---|

IDENTIFIERS multiple choice - please underline

| | |
|--|---|
| Type of Industries <ul style="list-style-type: none"> • Agriculture • Architecture • Biotechnology • City gardening • Carpentry • Creative craftsmanship • Fashion accessories | <ul style="list-style-type: none"> • Food Production (E.g.: beer, kombucha, veggie meet...) • Food transformation • Media production • Metal manufacturing • Leather work • Textile transformation • Wood manufacturing • 3D printing |
| Legal Status <ul style="list-style-type: none"> • SME • Cooperative • NGO • Foundation Funding <ul style="list-style-type: none"> • Public (E.g.: Fablab Lisboa...) • Private (E.g.: Space 10) • Hybrid | Profit / Non-profit <ul style="list-style-type: none"> • Profit organization • Non-profit organization • Hybrid - if relevant, provide us with details |
| Launch date Please write here | Number of employees please underline <ul style="list-style-type: none"> • 1-5 • 5-10 • 10-50 • +50 |

| | |
|--|--|
| <p>Site specification <i>please underline</i></p> <ul style="list-style-type: none"> ● Urban environment ● Peri-urban environment ● rural environment <p>Heritage specification <i>multiple choice - please underline</i></p> <ul style="list-style-type: none"> ● The hub is located in a historic industrial area ● The hub is located in an historic area under transformation ● The hub is located in a historic/heritage building | <p>City size* <i>please underline</i></p> <ul style="list-style-type: none"> ● XS (<10k) ● S (<500k) ● M (<1M) ● L (>1M) |
|--|--|

* see Centrinno GA

CENTRINNO'S CRITERIA

| Hubs & Innovation | |
|---|--|
| <p>A - The hub is integrated in (or is a key part of) a wider policy scheme or program, being regulated, funded or co-managed by a public administration or in collaboration with it.</p> <p>0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration</p> | <p><i>Please score this from</i> 0 to 5</p> |
| <p>B - The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach.</p> <p>0 = You completely disagree with the statement above 5 = Yes, the hub is one of the main influencers in the field of innovation hubs and it has inspired more than one policy or program</p> | <p>0 to 5</p> |
| <p>C - The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</p> <p>0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs</p> | <p>0 to 5</p> |
| <p>D - The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects</p> <p>0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market</p> | <p>0 to 5</p> |
| <p><i>Tell us more!</i> <i>Please describe with 5 to 10 lines the hub in relation to the criteria listed above.</i></p> | |

Feel free to add links of best projects or case studies developed by the hub;

Please answer below:

Please list links to best case studies or projects developed by the hub:

- <http://www.>
- <http://www.>

Hubs & Heritage

Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation.

A - The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building.

0 = You completely disagree with all the statements above
5 = You completely agree with all the statements above

*Please score
this from
0 to 5*

B - The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood.

0 = the activities of the hub are completely different to the former ones
5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities

0 to 5

C - The hub takes an active part in the transformation process of the neighbourhood in order to keep social mix and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process).

0 = the activities of the hub is completely independent from the local community and neighbourhood
5 = the activities of the hub are completely focused on keeping social mixity and economical diversity while transforming the neighbourhood

0 to 5

Tell us more!

*Please describe with 5 to 10 lines the hub in relation to heritage context and the criteria listed above.
Feel free to add links of best projects or case studies developed by the hub;*

Please answer below:

Please list links to best case studies or projects developed by the hub:

- <http://www.www.www>
- <http://www.www.www>

Hubs & Circular Economy

Hubs that hold true to the ecological challenges of our time and foster a circular transformation process

A - The hub develops products, services or activities that involve or foster recycling materials

Please score

| | |
|---|------------------------------------|
| <p>0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year)</p> | <p><i>this from 0 to 5</i></p> |
| <p>B - The hub develops products, services or activities that involve reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities).</p> <p>0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year)</p> | <p><i>0 to 5</i></p> |
| <p>C - The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.)</p> <p>0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year)</p> | <p><i>0 to 5</i></p> |
| <p>D - The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens.</p> <p>0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year)</p> | <p><i>0 to 5</i></p> |
| <p><i>Tell us more!</i> <i>Please describe with 5 to 10 lines the hub in relation to circular economy and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub;</i></p> | |
| <p><i>Please answer below:</i></p> <p><i>Please list links to best case studies or projects developed by the hub:</i></p> <ul style="list-style-type: none"> http://www.www.www http://www.www.www | |

Hubs & Inclusiveness

Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities

| | |
|--|---|
| <p>A - The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages).</p> <p>0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages</p> | <p><i>Please score this from 0 to 5</i></p> |
| <p>B - Hub activities' target audience includes minorities, marginalised groups or disabled people.</p> <p>0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub are open and accessible for such minorities</p> | <p><i>0 to 5</i></p> |

| | |
|---|----------------------|
| <p>C - Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, community is represented in decision-making groups at the hub)</p> <p>0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities</p> | <p>0 to 5</p> |
| <p>D - The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities).</p> <p>0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience.</p> | <p>0 to 5</p> |
| <p>Tell us more! Please describe with 5 to 10 lines the hub in relation to inclusiveness and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub;</p> | |
| <p>Please answer below:</p> <p>Please list links to best case studies or projects developed by the hub:</p> <ul style="list-style-type: none"> http://www.www.www http://www.www.www | |

Hubs & Education

Hubs that host vocational training and education programs, linked to local productive activities and local networks

| | |
|---|---|
| <p>A - The hub carries out training or educational activities or programs.</p> <p>0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub</p> | <p>Please score this from 0 to 5</p> |
| <p>B - The hub carries out activities in connection to (formal or informal) vocational training.</p> <p>0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year</p> | <p>0 to 5</p> |
| <p>C - The hub carries out activities that link vocational training with local manufacturing.</p> <p>0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing</p> | <p>0 to 5</p> |
| <p>D - The hub carries out training activities that are linked to the local context or community.</p> <p>0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community</p> | <p>0 to 5</p> |
| <p>Tell us more! Please describe with 5 to 10 lines the hub in relation to education context and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub;</p> | |

Please answer below:

Please list links to best case studies or projects developed by the hub:

- <http://www.www.www>
- <http://www.www.www>

Give us feedback!

*This is an iterative process and we want to collect feedback to upgrade this template for the next iteration.
Please list your feedback below.*

This template worked well for:

-

The following points could be improved:

-

Many thanks!

Grazie!

Merci!

Third Iteration

HOW TO FILL THIS TEMPLATE

Dear Partners

Here is the template of the second iteration. We have two objectives:

- 1. To collect data about remarkable hubs for Centrinno*
- 2. To improve the template for the Fab City Hub Framework*

Here is the process we suggest to fill the template:

- 1. Define a contact person for the hub and contact her/him to check her/his availability to support you in collecting data (please make sure to respect the Data Management Regulations and use the [consent form provided](#)). You will then be able to get back to her/him at point 5.*
- 2. Read first the template to have an idea of the data we want to collect.*
- 3. Execute desk research on the selected hub through its website, online articles, videos, etc...*
- 4. Fill in the template based on your personal knowledge and by the results of your desk research.*
- 5. Send the template to the hub to check and verify the information and to add or correct content. Please make sure to be supportive in this process and offer a call for better explanation if needed.*
- 6. Have a final check to the template and send it back to Volumes together with the signed consent form.*

In this document:

- **RED** is to provide instructions to fill the template.
- **BLUE** is a text you need to replace with your contributions.
- **BLACK** is where we do not need your input, but please feel free to give feedback using the comment feature of google doc.

For more context on this template, you can find more information in the [Guidelines document](#).

You can now start below.

In advance, many thanks for your collaboration!

The table below needs to be filled by the person who is conducting the research for the hub portrait.

| | |
|----------------------|---|
| Date of edition | <i>Example: 1st of December 2020.</i> |
| Hub portrait lead | <i>Please write here Name, Surname and Organization of the person of VOL, IAAC or ECHN who conducted the research on this hub.</i> |
| Sources & references | <i>Please list here sources and references you used to fill the template.</i> |
| Hub point of contact | <i>Please write here the name, surname and role in the organization of the person you contacted to check, confirm and complete the template. This person also needs to sign a consent form for data management regulations.</i> |

| | |
|-----------------------------------|--|
| HUB NAME | <i>PICTURES: please upload 2-3 high resolution pictures in the same folder as this document.</i> |
| <u>GENERAL DESCRIPTION</u> | <i>Please add here a short description of the hub (about 5 lines) with its main specificities. This also needs to include why this hub has been chosen for the review.</i> |

TYPES *multiple choice - please underline*

| | |
|--|---|
| <ul style="list-style-type: none"> • Fab Lab • Makerspace • Coworking • Hackerspace • Third Place | <ul style="list-style-type: none"> • Living Lab • Bio Lab • Food Lab • Educ Lab |
|--|---|

PRODUCTIVE ACTIVITIES *multiple choice - please underline*

| | |
|--|--|
| <ul style="list-style-type: none"> • Agriculture • Biomaterials • Electronics • Food (<i>production or transformation</i>) | <ul style="list-style-type: none"> • Metal manufacturing • Textile • Wood manufacturing • 3D printing • Other - <i>please complete the list if needed</i> |
|--|--|

GEOGRAPHICAL SITUATION *multiple choice - please underline*

| | |
|--|---|
| Country | <i>Name of the country</i> |
| City | <i>Name of the city</i> |
| City size* <i>please choose by population</i> <ul style="list-style-type: none"> • XS (<10k) • S (<500k) • M (<1M) • L (>1M) | Site specification <i>please underline</i> <ul style="list-style-type: none"> • Urban environment • Peri-urban environment • rural environment Heritage specification <i>multiple choice - please underline</i> <ul style="list-style-type: none"> • The hub is located in a historic industrial area • The hub is located in an historic area under transformation • The hub is located in a historic/heritage building |

* as defined in the Centrinno GA

ADMINISTRATIVE DATA

| | |
|--|---|
| Size of the hub | (m2) |
| Launch date | Please write here |
| Average yearly turnover (budget) <i>If data are available, it is suggested to give an average value based on 2018,2019 and 2020.</i> | in k€ |
| Number of employees - <i>please underline</i> <ul style="list-style-type: none"> • 1-5 • 5-10 • 10-50 • +50 | Legal Status - <i>please underline</i> <ul style="list-style-type: none"> • Private company • Cooperative • NGO • Foundation • Public institute / facility |
| Funding Scheme <ul style="list-style-type: none"> • Public (<i>E.g.: Fablab Lisboa...</i>) • Private (<i>E.g.: Space 10</i>) • Hybrid | Profit / Non-profit <ul style="list-style-type: none"> • Profit organization • Non-profit organization • Hybrid - <i>if relevant provide us with detail</i> |
| Types of revenues <i>multiple choice - please underline</i> <i>If you have those, please provide details of distribution in percentage of different revenues.</i> <ul style="list-style-type: none"> • Memberships / subscriptions - % • Acceleration / incubation - % • Educational programs - % • Research - % • Consulting - % • Space rental / events - % • Private funding - % • Public funding - % • Other - <i>please complete the list if needed</i> | |

CENTRINNO'S CRITERIA

| Hubs & Circularity Hubs that hold true to the ecological challenges of our time and foster a circular transformation process. | | |
|---|---|--------------------------------------|
| A | The hub develops products, services or activities that involve or foster recycling materials. | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve recycling materials (at least one new product or service per year) | <i>Please score this from 0 to 5</i> |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| B | The hub develops products, services or activities that involve the reuse of materials (e.g. scrap store) or extending material life (e.g. repair activities). | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products or services that involve reuse of materials (at least one new product or service per year) | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| C | The hub develops products, services or activities that foster behavioural change towards circular economy (workshops, training, research, etc.) | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly products, services or activities in that sense (at least one activity or project per year) | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| D | The hub involves prototyping and manufacturing activities that are developed in a distributed way, fostering collaboration with other stakeholders, hubs or citizens. | |
| | 0 = You completely disagree with the statement above 5 = The hub develops constantly prototyping and manufacturing activities and processes in a distributed way (at least two new activities or processes per year) | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |

Tell us more!

Feel free to add a few lines about the hub in regards to **Circularity** and the criteria listed above.
Feel free to add links of best projects or case studies developed by the hub that are not covered in the data above.

Please answer below:

Case studies and projects developed by the hub or policies related to the hub not already covered above:

- <http://www.>
- <http://www.>

Hubs & Inclusion

Hubs that foster social inclusion, have a bottom-up approach, put citizens at the centre and connect local and global communities.

| | | |
|----------|--|-------------------------------|
| A | The activities developed in the hub specifically target a mixed audience (i.e. different socio-economic profiles, different cultures, different ages). | |
| | 0 = You completely disagree with the statement above 5 = The audience of all the activities developed in the hub represents every socio-economic profiles, cultures and ages | Please score this from 0 to 5 |
| | Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here. | |
| B | Hub activities' target audience includes minorities, marginalised groups or disabled people. | |
| | 0 = You completely disagree with the statement above 5 = All the activities developed in the hub are open and accessible to such audiences | 0 to 5 |
| | Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here. | |
| C | Communities are actively involved in the hub's activities (e.g. the agenda is codesigned with them, communities are represented in decision-making groups at the hub). | |
| | 0 = You completely disagree with the statement above 5 = At least 50% of the activities are developed involving local communities | 0 to 5 |
| | Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here. | |
| D | The hub fosters exchange and contact points between the local community and the global community (e.g. online platforms, dissemination activities). | |

| | | |
|--|---|---------------|
| | 0 = You completely disagree with the statement above 5 = Every activity or project developed by the hub is disseminated and accessible online for a global audience. | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| Tell us more! <i>Feel free to add a few lines about the hub in regards to Inclusion and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub that are not covered in the data above.</i> | | |
| <i>Please answer below:</i> Case studies and projects developed by the hub or policies related to the hub not already covered above: <ul style="list-style-type: none"> http://www. http://www. | | |

Hubs & Education

Hubs that host vocational training and educational programs, linked to local productive activities and local networks.

| | | |
|----------|---|--------------------------------------|
| A | The hub carries out training or educational activities or programs. | |
| | 0 = You completely disagree with the statement above 5 = Training or educational activities represent at least 50% of the activities of the hub | <i>Please score this from 0 to 5</i> |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| B | The hub carries out activities in connection to (formal or informal) vocational training. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least 2 different types of formal or informal vocational training per year | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| C | The hub carries out activities that link vocational training with local manufacturing. | |
| | 0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links vocational training with local manufacturing | 0 to 5 |

| | | |
|--|--|----------------------|
| | <p><i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i></p> | |
| D | <p>The hub carries out training activities that are linked to the local context or community.</p> | |
| | <p>0 = You completely disagree with the statement above 5 = The hub carries out at least one activity per year that links to the local context or community</p> | <p>0 to 5</p> |
| | <p><i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i></p> | |
| <p>Tell us more! <i>Feel free to add a few lines about the hub in regards to Education and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub that are not covered in the data above.</i></p> | | |
| <p><i>Please answer below:</i></p> <p><i>Case studies and projects developed by the hub or policies related to the hub not already covered above:</i></p> <ul style="list-style-type: none"> http://www. http://www. | | |

| Hubs & Innovation Hubs that open new ways of collaboration with the local institutions and foster innovation through an open and transdisciplinary approach. | | |
|--|--|---|
| A | <p>The hub carries out activities that combine skills from different sectors and communities and it develops multi-disciplinary projects.</p> | |
| | <p>0 = The hub is thematic and specialised. It only covers one field of activities 5 = The hub only carries out activities that combines at least two disciplines and/or two sectors of the market</p> | <p><i>Please score this from</i> 0 to 5</p> |
| | <p><i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i></p> | |
| B | <p>The hub has developed innovative business models (e.g. incubation hub, educational hub) or an innovative approach (e.g. circular lab) that have been replicated later in other hubs.</p> | |
| | <p>0 = You completely disagree with the statement above 5 = Yes, the hub developed innovative models and approaches that have been replicated in more than 5 different hubs</p> | <p>0 to 5</p> |
| | <p><i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i></p> | |

| | | |
|---|---|---------------|
| C | The hub is integrated in (or is a key part of) a wider policy scheme or program and works towards common goals in close collaboration with local, regional and/or national institutions. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the public administration and shares with it a common vision, agenda and goals. | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| D | The hub has inspired similar local/regional/national policies or programs, who have adopted/adapted the hub model or approach. | |
| | 0 = You completely disagree with the statement above 5 = Yes, the hub is perfectly integrated into the policy frameworks of the local public administration and it benefits from a strong public/private collaboration | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| Tell us more! <i>Feel free to add a few lines about the hub in regards to Innovation and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub that are not covered in the data above.</i> | | |
| <i>Please answer below:</i> <i>Case studies and projects developed by the hub or policies related to the hub not already covered above:</i> <ul style="list-style-type: none"> http://www. http://www. | | |

Hubs & Heritage

Hubs that use heritage as a catalyst for innovation and whose activities are connected to industrial areas under transformation.

| | | |
|----------|---|--------------------------------------|
| A | The hub is located in a historic industrial area AND/OR the hub is located in an historic area under transformation AND/OR the hub is located in a historic/heritage building. | |
| | 0 = You completely disagree with all the statements above 5 = You completely agree with all the statements above | <i>Please score this from 0 to 5</i> |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |

| | | |
|--|---|---------------|
| B | The activities carried out in the hub are related (content-, production- or audience-wise) to the historical or cultural legacy of the neighbourhood. | |
| | 0 = the activities of the hub are completely different to the former ones 5 = the activities of the hub are the same than the historical ones but the hub also push forward a new contemporary approach and perspective on those former activities | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| C | The hub takes an active part in the transformation process of the neighbourhood in order to keep social mixture and economical diversity. (e.g. giving tools and voice to the local community against a gentrification process). | |
| | 0 = the activities of the hub is completely independent from the local community and neighbourhood 5 = the activities of the hub are completely focused on keeping social mixture and economical diversity while transforming the neighbourhood | 0 to 5 |
| | <i>Please describe shortly if, how, why the hub fits these criteria. Feel free to add links and references, as they could be useful to justify the score given above. In case there is not enough data, please mention it here.</i> | |
| Tell us more! <i>Feel free to add a few lines about the hub in regards to Heritage and the criteria listed above. Feel free to add links of best projects or case studies developed by the hub that are not covered in the data above.</i> | | |
| <i>Please answer below:</i> Case studies and projects developed by the hub not already covered above: <ul style="list-style-type: none"> http://www. http://www. | | |

| |
|---|
| Give us feedback! <i>This is an iterative process and we want to collect feedback to upgrade this template for the final version of the Fab City Hub Framework. Please list your feedback below.</i> |
| <i>This template worked well for:</i> <ul style="list-style-type: none"> <i>The following points could be improved:</i> <ul style="list-style-type: none"> |

Many thanks!
Grazie!
Merci!

ANNEX 02:

CENTRINNO'S POLICY AND PROGRAMME LANDSCAPE

Mapping policies, programs and initiatives across CENTRINNO's pilots



TABLE OF CONTENTS

| | |
|---|-----|
| 1. INTRODUCTION | 215 |
| 1.1. What is a Policy and Programming Landscape? | 215 |
| 2. METHODS | 216 |
| 2.1. Mapping the Policy and Programming Landscape | 216 |
| 2.2. Themes covered within the PPL Survey | 216 |
| 3. ANALYSIS LENSES | 217 |
| 3.1. The circular economy lens | 217 |
| 3.2. The heritage lens | 217 |
| 3.3. The training & education lens | 217 |
| 3.4. The inclusive lens | 217 |
| 4. A MAPPING TOOL FOR POLICY & PROGRAMMING LANDSCAPES | 218 |
| 4.1. Elements of the PPL diagram | 219 |
| 5. POLICY AND PROGRAMMING LANDSCAPE DIAGRAMS | 221 |
| 5.1. A PPL for Hubs & Circular Economy | 221 |
| 5.2. A PPL for Hubs & Inclusion | 224 |
| 5.3. A PPL for Hubs & Heritage | 227 |
| 5.4. A PPL for Hubs & Training | 229 |
| 6. PPL WORKSHOP | 231 |
| 6.1. Why a PPL workshop? | 231 |
| 6.2. PPL workshop approach: | 231 |
| 7. FUTURE APPLICATION AND CONCLUSION | 233 |
| REFERENCES | 234 |

LIST OF FIGURES

| | |
|--|-----|
| Figure 1 - The PPL diagram..... | 218 |
| Figure 2 - PPL diagram for Hubs & Circularity..... | 222 |
| Figure 3 - PPL diagram for Hubs & Inclusion | 224 |
| Figure 4 - PPL diagram for Hubs & Heritage | 227 |
| Figure 5 - PPL diagram for Hubs & Education..... | 229 |

LIST OF TABLES

| | |
|---|-----|
| Table 1 - The PPL for hubs & circularity..... | 222 |
| Table 2 - The PPL for Hubs & Inclusion | 225 |
| Table 3 - The PPL for Hubs & Heritage | 228 |
| Table 4 - The PPL for Hubs & Education..... | 230 |

1. INTRODUCTION

Policies, programs and initiatives play a significant role in realizing urban manufacturing, heritage and regeneration activities planned by CENTRINNO pilot hubs. Locally available funding schemes, subsidies and grants are not only critical to finance and implement the set-up of CENTRINNO Hubs, they are also an important indicator for the strategic direction and development agenda of their surrounding communities.

Targeted policy programs that support local initiatives in the realm of urban manufacturing, heritage and regeneration, however, are not always the norm, depending on each city's local context. But even without policy programs that directly target CENTRINNO's objectives, it is often possible to find cross-cutting themes where urban programs and pilot interests overlap. Understanding the landscape of urban policies, thus, is an empowering tool for pilots to harness resources by positioning their own objectives based on local strategies and agendas for development.

Based on a policy survey sent out to CENTRINNO's nine pilots, we have created a Policy and Programming Landscape Diagram which can (1) serve as a starting point to map the diversity of policy contexts; and (2) introduce an exercise to conceptualize a pilot's own objectives in relation to this landscape.

1.1. What is a Policy and Programming Landscape?

The term *policy and programming landscape* (PPL) emerged to denote the complexity of public policies, private and public initiatives and other supporting financial or non-financial infrastructures that exist in cities. PPLs offer a way to think about policies and programs in an integrated fashion instead of understanding a policy as an isolated lever for one specific purpose. As an example, a policy created to safeguard affordable workshop places for artisans in cities alone does not represent the wider context of programs and supportive policies that are needed to achieve this objective. A city bureau may exist to support artisans in finding affordable spaces, or a zoning regulation may give tax incentives to landowners when offering sites for innovation spaces. Looking at these policy levers together will allow pilot hubs to create a deeper understanding of the opportunities and barriers that may arise.

A landscape approach can further allow pilots to broaden their policy horizon and look for funding or partnership opportunities beyond their specific field of interest. Many cities, for example, provide resources to spur innovation and economic growth without a particular emphasis on CENTRINNO's objectives (such as circularity or social inclusion). However, with the correct narrative, hubs can reframe and reposition their objectives to align with wider urban goals.

2. METHODS

2.1. Mapping the Policy and Programming Landscape

In November 2020, a survey was sent to the CENTRINNO pilot teams to collect information about the PPL currently present in the different cities. The landscape encompasses policy frameworks, public-led initiatives and programmes for urban manufacturing and urban regeneration of industrial and historic heritage. The survey tried to capture opportunities, good practices and initiatives that pilots are aware of, present in the pilot cities and that could be inspiring to other pilots' projects within the CENTRINNO consortium.

2.2. Themes covered within the PPL Survey

The primary section of the survey focuses on mapping existing policies, programmes and/or regulations for urban manufacturing and for the urban regeneration of industrial and historic heritage. The survey gathered key examples of projects that have been implemented with support of these policies.

Additionally, pilots were asked to share information on policies that are valuable to their project and that do not specifically have a focus on manufacturing or regeneration. Moreover, it was attempted to learn about the relationship the pilot cities have with both governmental and private actors who could play a key role in realising the objectives of the different pilots.

In the final section of the survey, the pilots were asked to share what opportunities are known in terms of financing schemes or subsidies that could help the pilots in building their local hub. This section tries to understand what other actors, such as (governmental) entities, foundations or banks, would be able to support or finance the projects, and if the pilot projects have already benefited from one of these actors.

3. ANALYSIS LENSES

The CENTRINNO framework is built on four key themes that represent the ambitions, activities and focal points across CENTRINNO's nine pilot hubs. In line with this framework, pilot hub activities broadly relate to (1) the Circular Economy, (2) Heritage, (3) Training & Education and (4) Inclusion. During the project's lifetime, hubs will develop programming that touch upon all or some of these areas, depending on their local interests and challenges. From a policy perspective, this diversity of potential focal points requires an equally flexible mapping approach of the policy landscape surrounding these four themes. A short description of the different hubs in relation to their main lens of analysis is given below.

3.1. The circular economy lens

Hubs that seek to work on the transition towards a circular economy in cities are summarized under this lens of analysis. The policy and programming analysis for this lens clusters urban policies and initiatives that support hubs in their ambitions to contribute to a circular economy. How the circular economy weaves into a hub's programming may differ significantly. Some hubs may focus on circular land use and adaptive building reuse, while others may establish physical workshops in which local waste streams are redesigned, reused or recycled into value-added products.

3.2. The heritage lens

A heritage lens places into the centre hubs that are interested to use heritage as an engine for urban innovation and regeneration. These hubs may emphasize local engagement in the discussion around heritage restoration or prospective place-based solutions for community development. They may also be actively engaged in the cartography and collection of skills, practices, knowledge and traditions that represent local heritage assets. Through the heritage lens on urban policy and programming landscapes, we cluster the types of resources, regulations and initiatives that support hubs in implementing heritage-centred programming.

3.3. The training & education lens

The third analysis lens focuses on training and education activities in the context of pilot hubs. CENTRINNO hubs may implement a range of programming around the vocational training of local communities to reskill, redefine and re-acknowledge the role of craftsmanship in urban areas. Policies and programmes that can support this objective of hubs are clustered in this lens of analysis.

3.4. The inclusive lens

The last lens of analysis addresses hubs that seek to explore social inclusion and diverse community engagement in their programming. Their activities can refer to the inclusion of people with migration backgrounds, with different gender identities, age, education levels or disabilities. Urban policy programs that enable, finance and support community-driven social inclusion initiatives and projects are the centre of this analysis lens.

4. A MAPPING TOOL FOR POLICY & PROGRAMMING LANDSCAPES

CENTRINNO's four analysis lenses presented above were the basis for mapping the responses about urban policies provided by pilots. Each lens provided a new way of reading, filtering and clustering policies mentioned across CENTRINNO pilot cities. A "heritage" reading of the data maps out how policies may support hubs interested in various activities around heritage. A "circular economy" reading would cluster policies that could be beneficial for hubs interested in circularity. Based on these four "lenses", responses were iteratively clustered, resulting in the diagram presented in Figure 4.1. The diagram helps to map policy programs based on (1) the "theme" of their content; (2) the relative relevance they pose for CENTRINNO hubs; (3) the type of levers employed. Each element is described in more detail below.

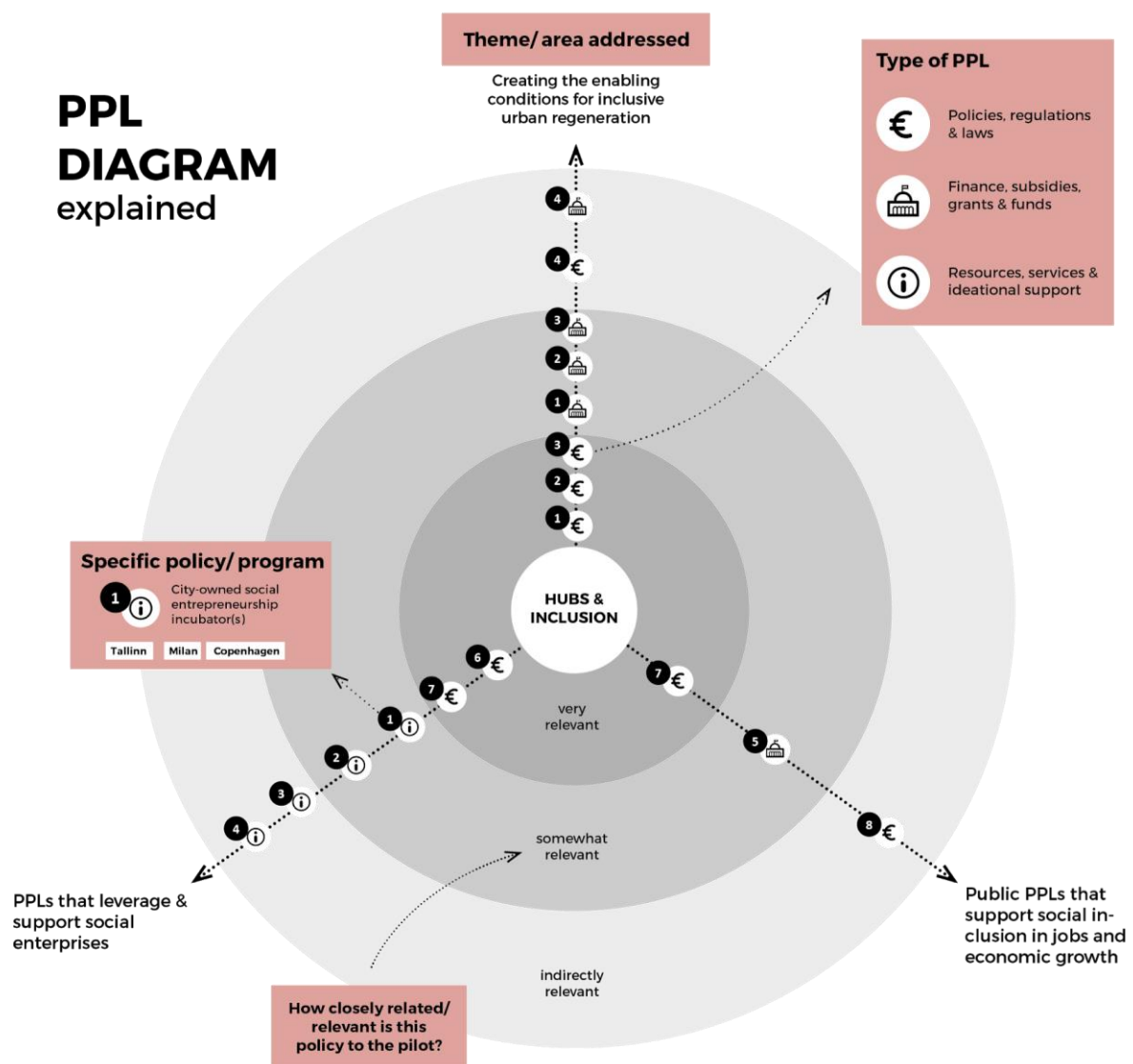


Figure 16 - The PPL diagram

4.1. Elements of the PPL diagram

Clustered by theme

Policies, programs and initiatives present across CENTRINNO pilots can be clustered into broad themes that describe their intersection with each PPL lens. As an example, a group of policies and programs intended to support brownfield revitalization and building restoration can be framed as *Enablers for Circular Land Use* under the lens of Circular Economy Hubs. The very same policies can also be clustered as *Safeguards for Heritage restoration* under the Heritage lens. Resulting from this iterative grouping of PPL per analysis lens, each PPL mapping diagram contains three axes - one per emerging cluster.

These thematic clusters help the user of PPL diagrams to visualize the intersection of a policy programming direction from the perspective of their own interests (i.e. Circular Economy, Heritage, Training or Inclusivity).

Clustered by relevance

The clustering of PPL by theme led to the emergence of a gradient of relevance for Hub activities. Some policies and programs are strategically targeting their resources towards innovation hubs or their related activities, while others may provide the underlying policy infrastructure or municipal vision that support or hinder the goals of CENTRINNO hubs. As an example, a municipal development plan outlining the vision for job inclusion or housing affordability in regenerating neighbourhoods may provide hubs with a stronger business case for their plans without directly providing financial support, infrastructure or other forms of resources.

To visualize the degree of immediate relevance to Hubs, policies and programs that are more supportive for hub activities are placed at the centre of the PPL mapping diagrams. While direct access to funding, land or resources may be more important at a first glance, it is helpful for CENTRINNO hubs to be aware of the overarching municipal goals and development agendas in relation to business development, environmental sustainability, and social inclusion.

Tagged by type of policy lever

CENTRINNO pilots referred to a variety of policies, programs and initiatives present in their landscape. Building on Donella Meadows's "Places to Intervene in a System" ([Meadows, 1999](#)), policies can be categorized by their effectiveness to transform complex systems towards a desired outcome.

Some policies, such as subsidies, tax exemptions and grants are examples of leverage points that are characterized by a low effectiveness to achieve change since they merely change the parameters of a system without tackling the root cause of undesired conditions ([Meadows, 1999](#)). More effective are those policy interventions that change the underlying system structure and the goal of urban systems. Changing laws and rules, and enforcing those effectively through incentives and punishment, for example, have a deeper achievement of

the desired outcomes. Translated to CENTRINNO's objectives of sustainable and inclusive urban regeneration, this could play out as follows: tax incentives and subsidies for establishing socially inclusive innovation hubs may be a directly relevant support in the short-run; but they do not change the underlying structure that perpetuates urban challenges such as gentrification, displacement or loss of heritage value. If CENTRINNO hubs want to contribute to socially and environmentally sustainable models of urban regeneration, their engagement with urban policy landscapes needs to move past short-term thinking around grants or subsidies.

In the CENTRINNO PPL Mapping Diagrams, policies and programs were tagged by three types of levers: (1) Taxes, grants, subsidies (low effectiveness for transformative change); (2) Information & Service Support (low to medium effectiveness for transformative change) (3) Laws, regulations and rules (medium to high effectiveness of transformative change).

5. POLICY AND PROGRAMMING LANDSCAPE DIAGRAMS

This section presents the main high-level insights on (1) opportunities and (2) challenges resulting from the four PPL analyses lenses.

5.1. A PPL for Hubs & Circular Economy

Urban policies and programming that support circular economy activities in the nine pilot cities are broadly clustered in three themes. First, a suite of policies exist that enable or facilitate the circular use of brownfields and industrial land. While grants and funds for site restoration and depollution may be directly relevant to innovation hubs, hubs may also benefit from mixed-use zoning plans that give priority to socially inclusive or circular projects or businesses.

Second, another set of policies identified through the survey supports either directly or indirectly circular programming in CENTRINNO hubs, by creating the favourable conditions and enabling the environment for an urban circular economy. Examples include changes to waste regulations, urban goals for recycling, sustainable public procurement or tax benefits to circular activities.

Third, pilot hubs can resort to a variety of publicly financed initiatives seeking to tap into business and entrepreneurial action towards a circular economy. Urban innovation incubators, call for projects, local competitions or municipally managed coordination and networking for circular economy actors belong to this theme.

HUBS & CIRCULARITY

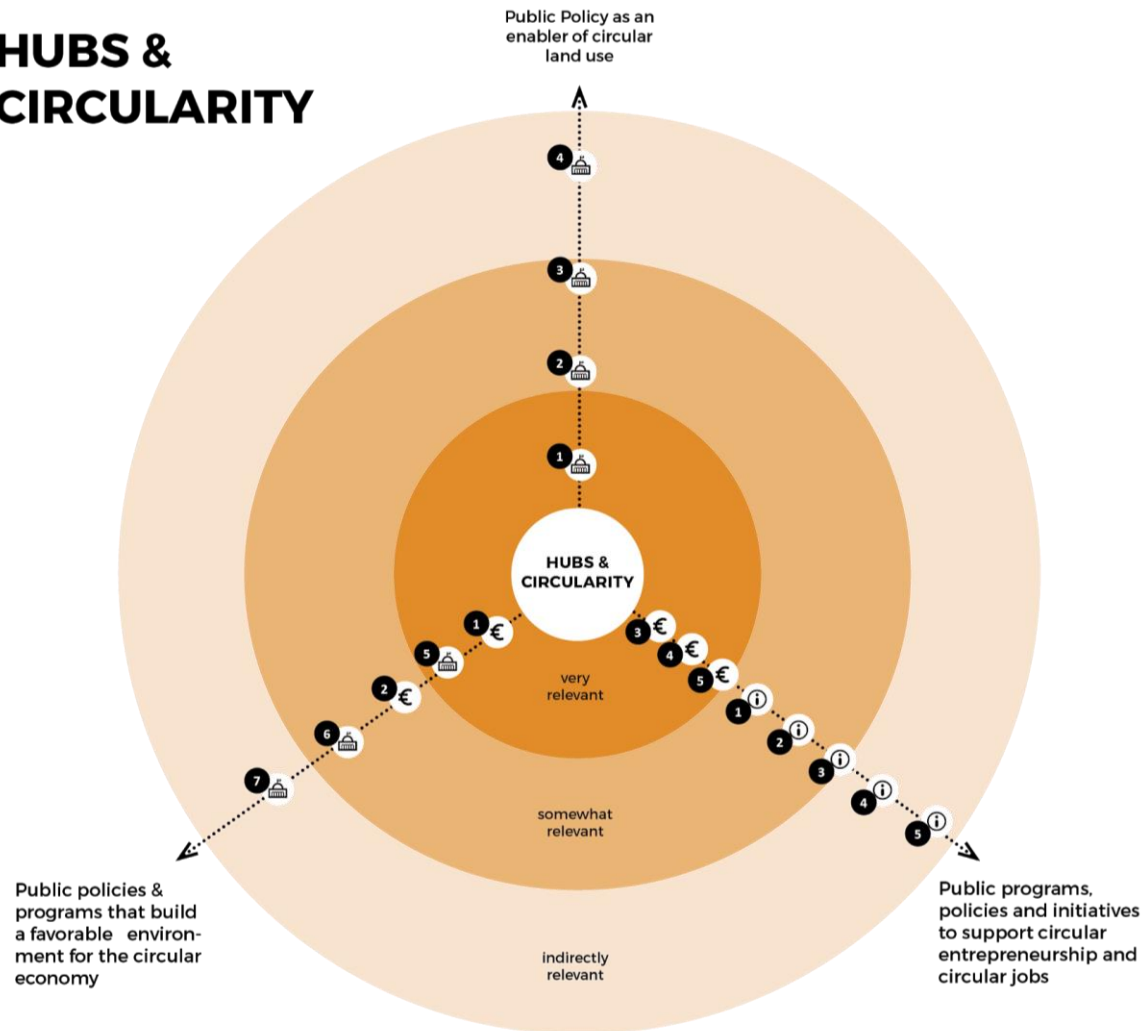





Figure 17 - PPL diagram for Hubs & Circularity

Table 6 - The PPL for hubs & circularity

| |  Policies, regulations & laws |  Finance, subsidies, grants & funds |  Resources, services & ideational support |
|----|--|--|--|
| 1. | Funds and grants for land recycling & de-pollution Paris | Tax deductions on labour-intensive circular activities | City-owned incubation targeted to circular & sustainable innovation Amsterdam, Milan, Tallinn |
| 2. | Temporary Use Agreements & rental deductions for projects with a focus on social or environmental impact Milan, Geneva | Public support for urban community gardens Amsterdam, Milan, Tallinn | National Industry Pact: collaboration to create circular jobs Barcelona |

| | | | |
|---|--|--|---|
| 3. | Development plans and zoning plans that prioritize eco-industrial parks Geneva, Milan | Municipal funding of community initiatives with a social or ecological focus Amsterdam | Local competitions and awards for businesses to implement sustainable initiatives ⁵⁴ Paris |
| 4. | Laws and regulations penalizing greenfield development Milan | Finest Twins - TalTech's grants for smart city research Tallinn | |
| 5. | Laws requiring circular waste management of industry (Anti-waste bill, France) Milan, Paris | Additional EU funding for innovative actions in cities (UIA Initiative and Urbact) Tallinn | |
| 6. | City-wide projects and agendas for urban green space development (Pollination Corridor, Tallinn) Amsterdam, Milan, Tallinn | | |
| 7. | Development agendas with high-level goals for circularity & recycling Amsterdam, Tallinn | | |
| Challenges: | | Opportunities: | |
| <ul style="list-style-type: none"> Few policies and programs that specifically support circular economy programming of non-for-profit organizations Lack of policies and programs that support circular economy actions of small and medium-sized enterprises Narrow definition of “circularity” that does not benefit traditionally “circular” sectors, such as repair and reuse businesses | | <ul style="list-style-type: none"> Look for non-governmental funding for circular economy activities Align hub's circular economy plans with urban agendas to build a value proposition for the promotion of hub activities Tap into resources for circular land use, such as depollution activities and physical restoration | |

⁵⁴ <https://www.prix-idea.ch/>

5.2. A PPL for Hubs & Inclusion

CENTRINNO pilots have identified policies and programming that support social inclusion activities across three themes: First, some PPL support hubs by creating the enabling conditions for inclusivity in urban regeneration projects. Established processes for participatory decision-making around urban regeneration, or the provision of community development funds fall into this category.

Second, there are a myriad of urban policies and initiatives that seek to support social enterprises and entrepreneurship through support services, incubation programs or tax reductions.

Third, a central theme for social inclusion policies highlights job inclusivity and economic development of socially excluded groups. Reflecting the pilots' interest in manufacturing jobs, this thematic cluster of policies includes urban programs for training and upskilling of marginalized communities as well as job creation programs in manufacturing industries.

HUBS & INCLUSION

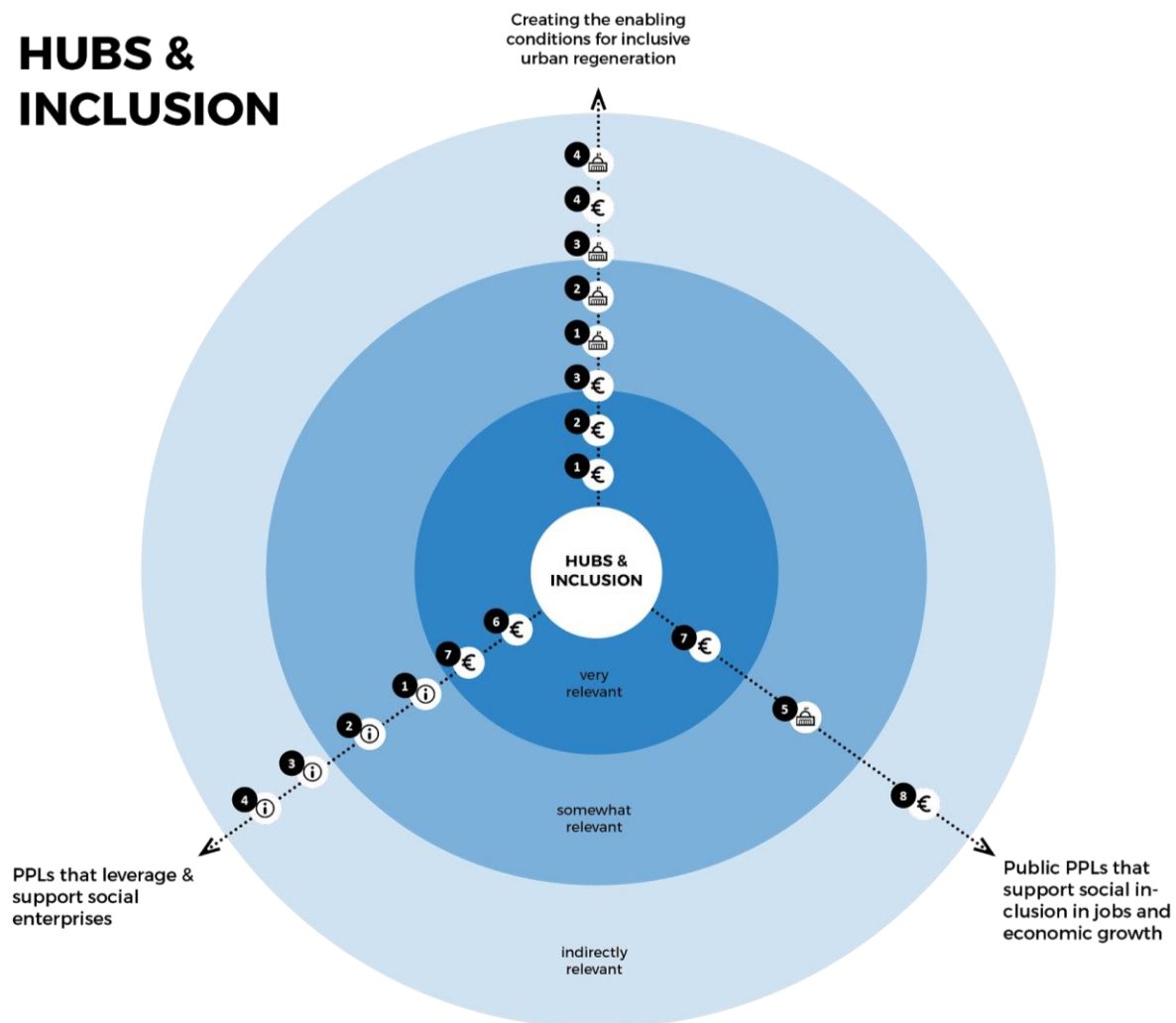





Figure 18 - PPL diagram for Hubs & Inclusion

Table 7 - The PPL for Hubs & Inclusion

| |  Policies, regulations & laws |  Finance, subsidies, grants & funds |  Resources, services & ideational support |
|--------------------|--|--|--|
| 1. | Temporary Use Agreements of industrial land between city/ local developers and socially-oriented initiatives Geneva, Paris, Milan | Neighbourhood Development Funds (Amsterdam, Barcelona, Milan) | Social Innovation Incentive Program ⁵⁵ (G'Innove) Geneva |
| 2. | Ensuring affordability of living and working spaces in regenerating neighbourhoods Geneva, Barcelona | Private financing for local development projects (e.g. through banking foundations) Milan | Financing, consulting and support for businesses (Fontect) Geneva |
| 3. | Participatory & democratic processes in community development Paris, Geneva, Copenhagen, Tallinn | Economic incentives for landowners to create spaces, innovation laboratories and uses of public interest Milan, Paris | Bureau Broedplaatsen: City support to set up incubator programs and workshops Amsterdam, Paris |
| 4. | Regional agenda-setting and strategies highlighting social inclusion Geneva, Milan, Tallinn | Regional business strategies for safeguarding manufacturing jobs (Amsterdam, Milan) | City-owned social entrepreneurship incubators Tallinn, Paris, Barcelona |
| 5. | | Subsidy schemes & tax reductions for socially inclusive projects Amsterdam, Barcelona, Milan | Building networks of collaboration between social enterprises and Fab Labs Milan |
| 6. | | Grants for start-ups with a social impact (FabriQ Quarto) Milan, Paris | |
| 7. | | Funding to design training courses and skills development targeted to economically excluded communities Milan, Paris | |
| Challenges: | | Opportunities: | |

⁵⁵ <https://www.geneve.ch/fr/themes/developpement-durable/municipalite/engagements-economie/programme-innove>

| | |
|---|---|
| <ul style="list-style-type: none"> • Few policies and programs that support reskilling and life-long learning in manufacturing sector • Few proven policy approaches to ensure affordability of living and working places in regenerating areas | <ul style="list-style-type: none"> • Inclusion hubs as mediators between urban authorities and local manufacturers and makers • Leverage social entrepreneurs to solve social inclusion challenges in urban regeneration projects • Build active partnerships with development corporations and municipality to shape regeneration plans in the surrounding area |
|---|---|

5.3. A PPL for Hubs & Heritage

The majority of heritage-focused policies and programs identified by pilots addresses the restoration and preservation of historical heritage buildings and sites. Funding and grants that encourage building restoration by individuals and organizations have been mentioned by the majority of CENTRINNO pilots.

Whilst less prevalent, a second emerging theme relates to programming that supports cultural actors in urban areas. An example of such organized support for cultural actors is the Foundation for the Promotion of Emergent Culture (FPLC⁵⁶) in Geneva, which works to help artists and cultural organizations to access grants, rental aid or workshop spaces.

A third emerging theme in the heritage policy and programming landscape clusters municipal activities, events and programming to foster the engagement of citizens with heritage and culture. Local festivals, heritage walking tours or subsidies for heritage-centered projects fall into this category.

HUBS & HERITAGE

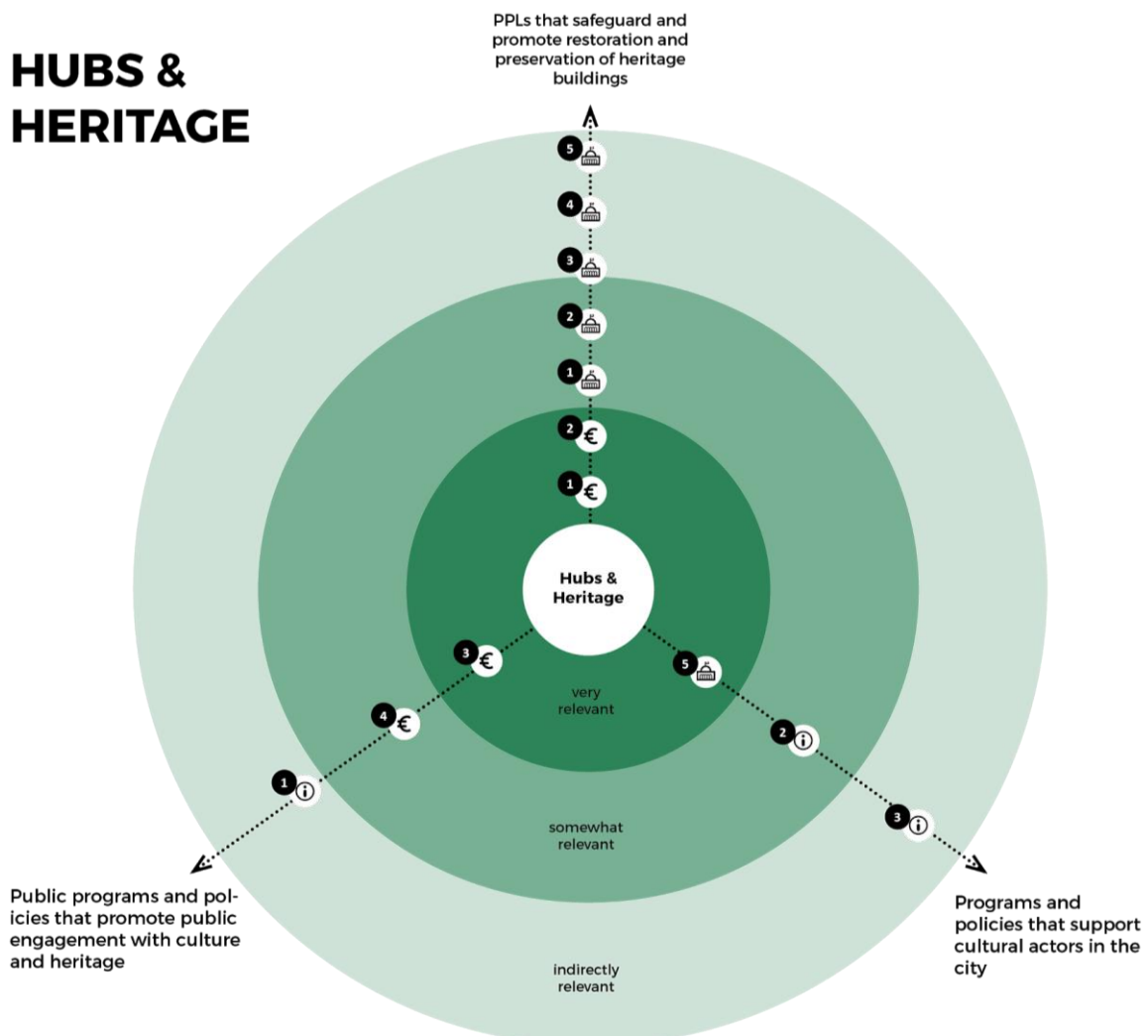





Figure 19 - PPL diagram for Hubs & Heritage

⁵⁶ <http://www.fplce.ch/>

Table 8 - The PPL for Hubs & Heritage

| |  Policies, regulations & laws |  Finance, subsidies, grants & funds |  Resources, services & ideational support |
|--|--|---|--|
| 1. | Temporary Use Agreements of industrial land between city/ local developers and socially-oriented initiatives Geneva, Milan | Renovation funds for restoring heritage status buildings Amsterdam, Milan | Monument walks: City-wide cultural programming to educate on Amsterdam's monuments (Stadherstel) Amsterdam |
| 2. | Modifications to municipal zoning regulations to support renovation of industrial sites Barcelona | National cooperatives that provide funding to restore heritage buildings Amsterdam | Amsterdam MADE - certificate for local artisans and crafts Amsterdam |
| 3. | Citizen engagement processes for regeneration projects Barcelona, Milan, Tallinn | Subsidies for projects that pass on intangible heritage ⁵⁷ Amsterdam | Foundation for Emergent Culture - Support for cultural organization Copenhagen, Geneva |
| 4. | Laws on the protection of historic places Blonduos, Copenhagen, Tallinn | Subsidies for projects that work on digital heritage for education ⁵⁸ Amsterdam | |
| Challenges | | Opportunities | |
| <ul style="list-style-type: none"> Industrial heritage is not a major focus of heritage-supporting policies The role and value of non-physical heritage (embedded in practices, memories and traditions) is lacking consolidated support of policies Policies and programming around heritage do not sufficiently reflect the contested nature of labelling an item as heritage | | <ul style="list-style-type: none"> Tapping into funds for physical heritage restoration Building a value proposition for safeguarding intangible heritage Build partnerships with local or regional Heritage Protection Agencies | |

⁵⁷ <https://cultuurparticipatie.nl/subsidie-aanvragen/2/immaterieel-erfgoed>

⁵⁸ <https://cultuurparticipatie.nl/subsidie-aanvragen/28/creatief-gebruik-digitaal-erfgoed>

5.4. A PPL for Hubs & Training

The fourth PPL categorizes and clusters existing policies that could potentially support CENTRINNO hubs in developing training programs and educational content.

A key insight emerging from pilot responses is that training and education is not a policy theme per se but always seen in relation to another topic. For example, a set of urban or national policies could support hubs in developing training and reskilling programs for 21st century skills, while other programs seek to provide training resources for entrepreneurial and professional growth more generally. A third theme could see education more in the light of public engagement in local culture, heritage and making.

HUBS & EDUCATION

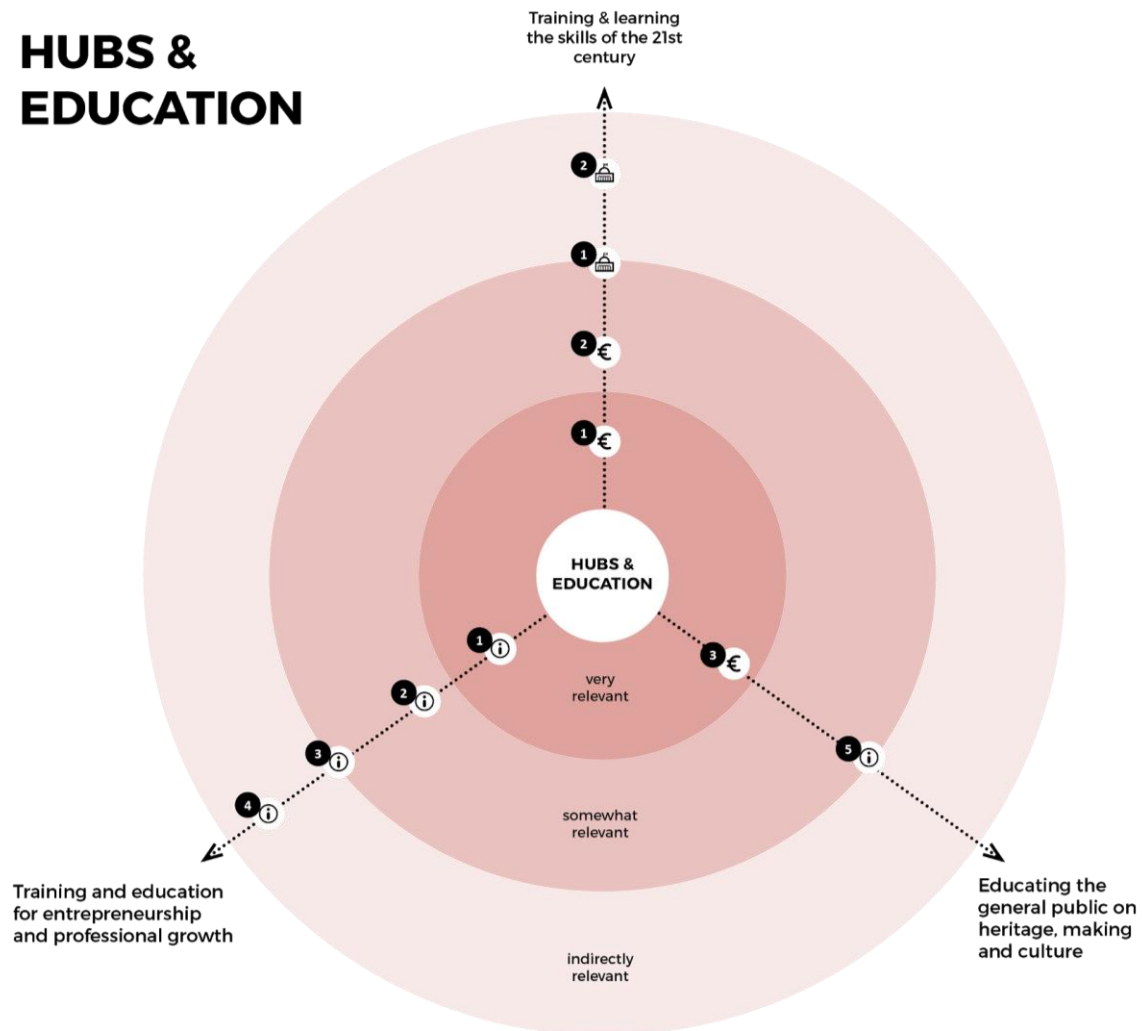


Figure 20 - PPL diagram for Hubs & Education

Table 9 - The PPL for Hubs & Education

| |  Policies, regulations & laws |  Finance, subsidies, grants & funds |  Resources, services & ideational support |
|---|--|--|--|
| 1. | Digital Manufacturing Training Courses (Network of training centres to spread skills of 21st century) Geneva | Funding to design training courses and skills development targeted to economically excluded communities Milan | City bureau to support set up of workshops and incubators Amsterdam |
| 2. | Regional policy program to support remote learning in vocational schools Barcelona | The Learning Fund: Support for businesses to employ apprentices ⁵⁹ Geneva | City-owned incubation targeted to circular & sustainable innovation Geneva, Tallin, Milan |
| 3. | | Subsidies for projects that work on digital heritage for education Amsterdam | City-owned social entrepreneurship incubators Tallinn |
| 4. | | | National Industry Pact: collaboration to create circular jobs Barcelona |
| 5. | | | Creativity accelerator for kids Amsterdam, Tallinn |
| Challenges: | | Opportunities | |
| <ul style="list-style-type: none"> Limited focus of public vocational education programs for the circular economy Only few mentions of consolidated policy support for reskilling within manufacturing sector | | <ul style="list-style-type: none"> Tap into financial resources to build training programming centred around circular economy and digital manufacturing skills Collaborate with city incubator programmes to create targeted call for applications around designing curriculums for training and education for 21st century skills | |

⁵⁹ <https://www.geneve.ch/fr/themes/logement-finances-vie-economique/insertion-socioprofessionnelle-creation-emplois/fonds-apprentissage>

6. PPL WORKSHOP

6.1. Why a PPL workshop?

Within subtask 3.1.2. (PPL analysis), policy frameworks for urban manufacturing and urban regeneration of industrial and historic heritage present in pilot cities are identified and compared.

Subtask 3.1.2. aims to provide pilots with a hands-on approach that supports pilots in understanding how to utilise their local PPLs that build on the CENTRINNO theoretical framework. The work analysing the PPL should support pilots in their efforts to develop the local project development strategy - in short, to turn the PPL into a valuable and usable asset. In order to facilitate the utilisation of the PPL, a 90-minute online workshop was developed in which pilots explore the different PPL lenses, map the pilot context (i.e., industry, stakeholders, communities, expertise, resources) and explore how the PPL can be utilised by pilots in building the local CENTRINNO hubs.

The online workshop is part of WP3 and was implemented within the CENTRINNO pilot training program (WP4), which took place prior to the first pilot sprint. The PPL workshop took place on Thursday March 11th 2021, during which all nine pilots participated.

6.2. PPL workshop approach:

In this chapter, the objectives and activities of the five workshop sections are explained.

SECTION 1. Introducing the workshop and the PPL diagrams [10 minutes]

During the first section, the general approach of the PPL analysis was introduced including the overall objective of the workshop. The four PPL lenses were introduced to the pilots, along with how the structure of the diagrams support them in navigating and utilising the local PPL's.

SECTION 2. Exploring the PPL's for the entire pilot network [10 minutes]

In section 2, the pilots familiarised with the policies and programmes based on the data that each pilot had provided. This exploration gave pilots a first sense of the breadth of the analysed policies. It also showed how the diagrams were used to cluster the information that was provided.

SECTION 3. Mapping the local 'context' [30 minutes]

The PPL is an asset which can be used to build the CENTRINNO hubs. However, in order to understand specific development objectives within each city, pilots need to get a sense of the current landscape on different levels. That is why in Section 3 pilots mapped their known context based on the following questions:

1. What industry is present in the pilot area? (for example: woodworking, shipbuilding, steelwork, knitting)
2. What type of organisations are present? (for example: foundations, private companies, corporations, commons)
3. What type of space? (for example: type, size, or physical vs. online)

4. What type of heritage can be found in your pilot? (for example: industrial, cultural, embodied heritage)
5. What communities are present or involved? (for example: students, professionals, local inhabitants, social entrepreneurs, Fab Lab community, cultural centre)
6. What expertise & skills are already there? (for example: commoning, digital fabrication, vocational training models, urban agriculture, circular economy)
7. What resources are present within the pilot? (for example: makerspaces, workshops, recording studio, students, public programming, knowledge)

SECTION 4. Learning how to use the PPL diagrams [30 minutes]

During the first pilot sprint, pilots will get a more detailed sense of the objectives/missions that they will pursue. With this section of the training, we intend to help pilots position their activities in relation to the PPLs in order to find a common denominator and a common language that aligns the pilot objectives to the existing PPL.

In this step of the workshop pilots will translate the example of needs into development *objectives*. We will then use the PPLs for each city to explore how the PPL can be harnessed to support these objectives.

Step 1: Pilots brainstorm a series of hypothetical or actual activities and/or objectives they are planning during the first sprint. It is important to emphasise that the activities/ objectives do not have to be final or real. They explicitly serve as an exercise to practice how this tool can be useful later on.

Step 2: The pilot teams vote for activities they want to work on further in Step 3.

Step 3: In this step, pilots will discuss how PPLs can support their objective. First, they select the one development objective that was voted for in step 2 into the centre of a PPLs diagram. Next, pilots search, select and copy policies that could become relevant for this objective. In doing so it is important to remember that only because an objective is most closely related to heritage does not mean that only heritage-focussed PPL can be useful. We can also phrase heritage restoration as a circularity issue.

SECTION 5. Reflection [10 minutes]

The PPL diagrams are developed to function as a useful tool that helps pilots explore the complexity of the policy landscapes around them. The first version of this model is a prototype based on the data that pilots have provided.

During the last minutes of the workshop, feedback from the pilots was gathered on how to change, adjust and expand the diagrams to become more purposeful for the pilot teams. The reflection was articulated from the following questions:

- Which additional PPL types would be useful to categorize policies?
- Do the themes (axes) per chart make sense to you?
- Would you prefer more specific PPL examples or broader categories of PPLs?

7. FUTURE APPLICATION AND CONCLUSION

The purpose of the policy and programming analysis was to allow CENTRINNO pilots to understand local public resources, and to harness them for their goals, missions and planned activities. While the PPL diagrams, to date, do not cover each pilots' local policy landscape in its entirety, we hope they will become a useful tool during the course of the CENTRINNO project. There are three potential applications of the PPL diagrams:

1. **PPL diagrams allow pilots to build business cases that align with local agendas:** pilots are encouraged to return to the diagrams and the presented workshop exercises when drafting their programming strategies and activities. The PPL can support pilots to scope how a specific urban agenda, program or existing policy can be harnessed to implement their planned actions.
2. **PPL diagrams as a living documentation of urban initiatives:** during CENTRINNO, pilots will continue to gain insights and knowledge about local policies and programs that support hub activities. We hope pilots continuously update these diagrams to build out a collective repertoire of PPLs across the nine pilot cities. As a living documentation of policy-related findings, the MIRO board used for the workshops will remain accessible for all pilot cities to explore each other's policy context and how it is used by pilots.
3. **PPL diagrams for informed policy recommendations:** lastly, the updated and growing diagrams of policy landscapes can help pilots to communicate and highlight critical policy gaps in the later stages of the CENTRINNO project. Which policy support is missing to support innovation hubs regarding circularity, heritage, inclusion and education? Which policy innovations could be suggested to local policy makers? We hope that a more nuanced understanding of policy gaps and challenges will feed back into urban and regional decision-making.

REFERENCES

- [1] Meadows, D. H. (1999). Leverage points: Places to intervene in a system. The Sustainability Institute. Retrieved from: http://www.donellameadows.org/wp-content/userfiles/Leverage_Points.pdf