The Emergence of the Liquid Circular Maker Space

Making in a community of practice for equitable solutions

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Project team

The Liquid Circular Maker Space
Name of the project

Circular Maker Academy
Project type

Fab Lab Barcelona
Organisation

Precious Plastic community workshop. 2021. Fab Lab Barcelona. Milena Calvo Juarez

Location

Online in eight cities: Barcelona (ES), Istanbul (TR), Kaunas (LT), Leuven (BE), Piraeus (GR), Santander (ES) Thessaloniki (GR), Venlo (NL)

Project Description

The Liquid Circular Maker Space emerged from the Circular Maker Academy. The academy programme was conducted by Fab Lab Barcelona (at the Institute of Advanced Architecture of Catalonia, IAAC) during 2020 in the framework of the EU Project Pop-Machina. The aim of the academy was to equip maker champions from six different countries with the skills and knowledge, following the training the trainer approach. With the objective to support the holistic establishment of Circular Maker Spaces in their respective cities. Due to the COVID-19 pandemic, the programme was transformed to a 100% online immersive learning experience. Pop-Machina is a Horizon 2020 project that seeks to highlight and reinforce the links between the maker movement and circular economy in order to promote environmental sustainability and generate socio-economic benefits in European cities.

Context and History

Increasing numbers of different types of creative and productive spaces are being established around the Globe. Even though their terminology and focus of work may differ, they share many things in common. Makerspaces (for the sake of simplicity the term "makerspace" will be fused from here on) are often community-led spaces in which individuals and groups of people have access to machines, tools and can share resources. Collaboratively they can work on commons-based projects, using rapid prototyping techniques, open-source software and hardware. Whilst makerspaces intend to be openly accessible for citizens, democratizing access to machinery and tools, enabling collaborative making processes, they do also face limitations. They currently lack strategically implemented material flows analysis, life cycle assessments, social inclusion methods. Also due to the notion of being strongly connected to technology, makerspaces often appear to be exclusive for civil society. While the apparent limitations may seem daunting, makerspaces may also be the most suitable to actively incorporate new strategies and practices.

In the 20th century, the circular economy was previously seen as a delusion, and returned to the surface as an admirable symbol for big corporations in the 21st century. One of the drivers for this was the Ellen MacArthur Foundation. Unfortunately "circular economy" now shares similar notions as "sustainable" and "green". Buzzwords which are being used by corporations with only limited implementations. Makerspaces, however, are platforms in which new practices, open design and innovation are taking place. Most importantly, the people within, share a similar mentality to creative problem solving and have a profound connection to collaborative thinking and making. Some

makers and designers gradually emerge from this sense of agency, shifting away from linear production and "throw away culture". Possibly leading as community champions, shaping a pathway for more circular making practices. The champions support the development of communities of practice. Together they share the same admirable and ambitious duty to change the status quo on a local and global scale. Which leads to the idea of how this revised approach of making practices may formulate. The Liquid Circular Maker Space is a call for a reflective approach to take systematic action as individuals, groups and institutions to support each one another to enable equitable futures.

What is the Need it Tackles?

The Emergence of the Liquid Circular Maker Space (LCMS) in Pop-Machina

The terminology "Liquid Circular Maker Space" emerged from the Circular Maker Academy (CMA), conducted by Fab Lab Barcelona in the year 2020 and, due to COVID-19, adapted to a fully online immersive learning experience. The CMA is part of an EU funded project called Pop-Machina. Pop-Machina aims to support city ecosystems by highlighting, reinforcing and linking the maker movement to the circular economy.

On a practical level, the development of LCMS is established with the people: there is an individual with an interest in circular making practices. This individual, or Circular Maker Champion, cultivates different types of activities in which citizens can participate. While doing so, a group of people who share similar interests start to manifest around the Circular Maker Champion. Eventually, depending on the size of the group of people, areas of interest may start to differentiate, articulating in areas of expertise. Together these groups can be seen as a community of practice. Throughout this whole process, there was no need to have one specific makerspace. Activities could have been in community centres, at home or in repair cafes. However, when this community of practice has the resources and support from e.g. an institution, a dedicated physical space (the LCMS) may be established in which they reside.

Drivers for Equitable Learning Environments

With a people-centered approach, the LCMS sees people as agents of change, re-thinking and re-inventing solutions. Hence, the terminology "liquid" is based on the idea that a LCMS is just as adaptive as the people within, supporting resilience in times of rapid change. Interests of people change as a function of time. This is part of human nature. Hence, in this respect, the liquidity of the space plays an important role. The LCMS is a multi-dimensional living system, composed of everyone who wants to partake. It explores the development of, and interconnections between the individual, groups of people and the larger ecosystem. Social inclusion should actively be part of the implementation strategy of a LCMS. Making tools and information accessible for an equitable environment. Having a democratic approach in which community members and citizens are part of decision making processes, to ensure a shared responsibility. Acknowledging the differences, characteristics and cultures which exist within the communities. And with this, the LCMS takes the shape of the community, reinventing itself through iterative and agile cycles by continuously evaluating its needs and function within its community. This may mean adapting everything from the LCMS's physical layout to how it is governed and used.

Making in the Liquid Circular Maker Space

Makerspaces are being challenged for their use of supposedly energy intensive machines. Often being compared to large scale industries, the actual benefits which can be accomplished in makerspaces are often forgotten. LCMS's work in their local context. It is the role of the community champions, and individuals themselves to ensure that local challenges are being addressed holistically. Sharing their insights and best practices on a global scale - a common ideology in the maker movement. However, not only the choice of machinery and tools play an important role in the circularity of makerspaces. Rapid prototyping techniques and many academic programmes which take place in makerspaces still use the same materials as many years ago. These materials are increasing in their scarcity. Which means products or projects emerging from makerspaces may have a heavier impact as assumed. It is about time to find valid material alternatives especially for young makers, and participants of educational programmes to ensure that experiments and exploration can take place in a more sustainable way. Using materials which can be fed back into the material flow, for example bio plastics. Or having machines and tools available which ensure that plastics can be recycled. Giving materials, electronics, and other discarded items which may be forgotten in our basements a new life. Rethinking new

Hybrid biomaterials session during the Circular Maker Academy. June 2021. Fab Lab Barcelona. Picture by Santi Fuentemilla.

applications, remixing and reinventing to not only fit personal needs, but collective ones. One person's trash is another person's treasure. Eventually there would be no more "waste", only materials and products in different stages of their lifecycle.

What is the Global-Local Relationship of the Project?

The LCMS serves as a site in which equitable, circular solutions to local and global complex problems can develop, mature and scale. In this space, citizens and local communities are engaged to take part in circular making practices, co-creation and co-design of circular solutions for dilemmas which the local communities face. However, LMCS is more than just its physical space and its machines. The aim is to work collaboratively, experimenting and fostering new synergies with surrounding or encompassing ecosystems. The people who engage with the LCMS can distribute their locally gained knowledge of circular making practices beyond neighbourhoods and cities, considering intersectionality and the cross-pollination of ideas in already established, distributed online platforms. The LCMS is adaptive and iterative by nature, with low barriers for participation and an empowering environment.

How was the Development Process of the Project?

The Circular Maker Academy (CMA) gave us the opportunity to explore, together with the Circular Maker Champions, what a LCMS could be, how the academy itself should be designed, how the approach to local challenges should be addressed, and how people will be engaged. The CMA actively co-designed the curriculum with the participants. Through continuous feedback loops, the needs of the participants were addressed in inspirational talks and hybrid hands-on learning experiences. Basically, the CMA itself was merely the supporting framework for the journey of the participants on an instructional, guided and ultimately autonomous path to develop their own communities of practice locally.

What Results did your Project Accomplish?

The learning curve was, and is a steady one, in which we (Fab Lab Barcelona) continuously learn about our Circular Maker Champions and the LCMS. The Circular Maker Academy gave us the opportunity to explore, together with the Circular Maker Champions, what a LCMS could be. How the approach to local challenges should be addressed and how people will be engaged.

An extraordinary example are the makerspaces established in Leuven and Istanbul. In Istanbul we were able to follow the processes of a Circular Maker Champion which enabled us to engage within their neighbourhood, and slowly start their own local community of practice. Now, in the year 2021, we are excited to see the opening and the activities being established in Döngüsel İşler Atölyesi (Turkish for Circular Maker Space), the Circular Maker Space in Istanbul. The prior established community of practice will finally have physical space to meet

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regularly. After completing the academy, all Circular Maker Champions shared a similar sense of belonging and sense of community. We are collaboratively trying to keep our community from a distance via monthly online meetups in which we share updates and continuously have peer-to-peer workshops. We are still exploring how a distributed Circular Maker Champion network may articulate.

Why is This Distributed Design?

To be able to fully "close the loop" we have to equip makers / young designers with the skills and tools that enable them to manifest and develop ideas that can be upscaled in the market. Whilst continuously having activities and learning experiences which offers citizens to take a glimpse of possible actions, they easily incorporate them into their everyday fabric. An open-source mentality indicates that designs, code and how-tos should be shared online and for free, globally. The same goes for the guides to establish Liquid Circular Maker Spaces that adapt to the local context. We should bear in mind the socio-enviro-economic context in which makerspaces can contribute to the local ecosystem. With this, we can incorporate a sense of agency by design for a caring circular economy.