Roll out Strategy

D.T3.3.2 and D.T3.3.4 PP3 HU – FabLab Budapest	Version 1 06.2019

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1. Incorporation of innovative services and tools to your portfolio

1.1. Chapter 1 - Background

In the FabLabNet project FabLab Budapest had the opportunity to test and experiment with tools for engaging new audiences. These mainly include:

1) Pilot Action 2
2) Fab Box Workshops
3) Fab City Workshops
4) Workshops as part of the European School of Makers

1.2. Chapter 2 – Goal and expected outcomes

Our goal is to not only attract the *usual suspects* but bring digital design and digital fabrication to a broad public. The way we see it a Fab Lab is far more than just a room with machines that can be used by professionals. A key aspect to reach new target groups is providing low-threshold access in order to appeal even to those not yet equipped with the relevant prior knowledge.

In addition to low cost these measures mainly include:

- outreach activities to raise awareness
- an inviting offer for first-time visitors and
- workshops and training programs for various target groups

Learning complex software programs in order to create a digital design represents a major obstacle for many potential Fab Lab users. There is a high probability of abandoning the project due to this entry barrier. Many innovative ideas are never realized because of this.

This is why the target group is often limited to people who already possess significant prior knowledge in digital design. To make a wider public familiar with the opportunities offered by a Fab Lab a new way of imparting knowledge is needed, namely hands-on workshops for technical and creative work at Fab Labs. Prior knowledge is neither assumed nor required. The entire innovation process from idea to finished prototype is worked through and acquired in a workshop. Participants can contribute their own ideas and realize them in small groups under expert supervision.

Initial training has been offered for many of the machines in the FabLab for quite long time already. However, this only provides an introduction to the safe handling of each machine and its control software. The creation of digital designs that serve as a template for the computer controlled production machines would go beyond the scope of these workshops. The combination of several technologies, which is often useful in practice, cannot be adequately conveyed in the initial training on the machines.

Through these measures the Fab Lab infrastructure can be made available to a significantly wider audience. Providing low-threshold access to high technology in a Fab Lab makes it possible to address people who, due to their educational or social backgrounds, would otherwise not be given the opportunity to become actively engaged in research and innovation. Fab Labs are helping to more effectively exploit the untapped potential in groups of people that are often neglected.

1.3 Chapter 3 - Target groups

FabLab Budapest targets the broad public with its activities. They are basically aimed at all persons in the metropolitan area of Budapest. This results in a target group size of approx. 2 million people.

Within this target group we distinguish:

- Pupils and students who want to get in contact with digital design and digital fabrication
- Residents of the city who want to shape their own future directly.
- All those who want to develop and distribute their own products.

1.4. Chapter 4 - Content of the action

- Describe the action (course, new tool, new approach in management)
- In case of course: how many participants?, how long will the action take?, who will train the participants?

FabCity – Budapest

Interactive stations visitors can experiment and try for themselves.

In their own workshop area, visitors also have the opportunity to gain a deeper insight into various topics. The Maker Faire is aimed at anyone who wants to be inspired or wants to try something new. As a family-friendly festival, children and young people are targeted with hands-on program. They are inspired in a creative and playful way for science and technology.

An extensive lecture program provides the opportunity to discuss content and projects with a larger group of like-minded people. The focus is on the diversity of open innovation, the sharing of ideas, the sharing or sharing of resources and the possibility of open collaboration.

The program is rounded off by a maker get-together, with the aim of promoting networking among the makers in Central Europe. Here they can exchange views with like-minded people and interested visitors and thus not only pass on their knowledge, but also expand it.

European School of Makers

We want to offer workshops around the topics of digital design and digital fabrication for various target groups as part of the European School of Makers. One of the activities we plan to offer is the Fab Lab Bootcamp or All Female Maker Bootcamp.

The FabLabNet partnership is proud to open the enrollment to its High-Level Training: European School of Makers (ESoM). A high profile set of courses specifically designed to share

the capacities developed within the FabLabNet project to a wider public of professional, following the project philosophy of making Central Europe more competitive by unlocking the innovation capacity of Fab Labs.

KUKA|prc builds upon the accessible visual programming system Grasshopper, which is a part of the CAD software Rhinoceros 3D. It provides the robotic building blocks to directly integrate a KUKA robot into a parametric environment. Instead of writing code, simple function-blocks are connected with each other and the results immediately visualized. During the lecture, the KUKA KR3 robotic arm, and the KUKA|prc will be introduced to the participants.

With digital technology, textile designers have the opportunity to achieve Industry 4.0 leadership and deliver automated control over the entire textile fabrication process. Also, individual designers are able to experiment with various materials and manufacturing processes to create unique and sustainable pieces. During the course, 3D scanning, laser cutting, and 3D printing technologies will be introduced to the participants.

During this course the safe operation basics of FabLab's woodworking machinery will be demonstrated with soft and hardwood materials during a manufacturing process of an open source design

1.5 Chapter 5 – Timeline

The described actions are planned to be carried out during the next 5 years.

1.6. Chapter 6 - Assessment of the environment

Strengths	Weaknesses
Strong relationships with local stakeholders Experience in organizing events Big community Well working management system	Small location (for some activities and growth) Hard to engage community
Opportunities	**Threats**
Relocation to a new and bigger space Interesting funding opportunities (national and EU)	Lack of funding Damage of (expensive) equipment

1.7 Chapter 7 - Cooperation

We want to cooperate with various institutions in the region with similar or complimentary target groups:

- Open Workshops, Makers Spaces, Hackerspaces and Fab Labs
- Maker-related events (Maker Faires, STEAM week, design markets, etc.)
- Maker-related companies (electronics, 3d printers, laser cutters, etc.)
- Research and Education Institutions (e.g., Kitchen Budapest, Science Center Network)

Furthermore we want to continue our cooperation with governmental organizations and policy makers, like the

- Ministry for Innovation
- Hungarian Academy of Sciences
- Chamber of Commerce

1.8 Chapter 8 - Advertisement

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We plan to each the general public via media visibility in various publications. This is ensured through media partnerships with high-reach print, radio and online media (e.g. Futurezone, FM4, Kurier, Der Standard, Kronen Zeitung, etc.). Journalists are specifically addressed as multipliers and provided with press releases.

The following communication channels are planned specifically:

- Social Media (Facebook, Instagram, Twitter)
- Online Ads: Facebook Campaign, Google AdWords, Youtube
- Newsletter
- Press releases
- Posters, flyers
- Merchandise

3. Strategies to target policy makers to spread Fablabs nation-wide

3.1 Chapter 1 -Background

As the first Fab Lab in the D/A/CH region and one of the first Fab Labs worldwide Happylab as strong connections with different policy makers in Austria. Furthermore we are often invited to participate in working groups (Directorate-General) of the European Commission to provide insight in the Maker Movement.

3.2 Chapter 2 - Vision and mission statement

In the foreseeable future, when robotization and automation determine our professional lives, DIY could give new meaning to our actions. By becoming Makers, we do not miss work. We just reinvent it - and thus preserve our independence. The maker movement is already living it out today: its all about figuring out how things work. Analogue and digital ideas may fertilize each other. Computers and robots are self-evident tools of any maker, and the openness to new technologies sets him apart from simple hobbyists.

Just as mainframe computers came to the desks of private individuals in the form of PCs in the 1980s, so do digital production machines now. Fab Labs and Makerspaces make digital production technologies such as CNC milling, laser cutters or 3D printers accessible and allow anyone to easily implement their own ideas. What has been common with software for years now becomes possible in the production of physical things. Thus, after the democratization of information, there is now also a democratization of production.

We want to raise awareness for this new industrial revolution and help society to benefit from the opportunities.

3.3 Chapter 3 - Action

In the FabLabNet project we have tested various different engagement tools in the form of Pilots. The next step is to work on deeper institutional cooperations between different stakeholders.

One of the most important target groups is the education sector. According to experts, the use and integration of digital production facilities on-site in schools is conceivable, but it requires a detailed investigation of the technical and spatial prerequisites that would have to be created in schools in order to integrate digital design and manufacturing technologies sustainably into the classroom. As the equipment is often expensive and has high maintenance

cost, we forsee a different approach. We would like to work on a new kind of cooperation between schools and Fab Labs to share equipment as well as training programs.

For primary schools mobile sets, like Fab Boxes used in the FabLabNet project are recommended. For secondary schools and universities cooperation agreements between Fab Labs and schools shall be created.

3.4 Chapter 4 - Stakeholders and target groups

All relevant stakeholders from quadruple helix are in the scope of our interest. In the field of education we want to work together with individual schools as well as governmental organizations like the Ministry for Education, Science and Research or the Vienna Board of Education.

3.5 Chapter 5 - Policies targeted

We would like to improve policies in terms of issues related to education primarily. The need of digital design and digital fabrication and the important role of Fab Labs in the coming industrial revolution shall be underlined and shall influence the STEAM education. We are targeting the Digital Education Action Plan of the European Commission, in particular Making better use of digital technology for teaching and learning.

3.6 Chapter 6 - Recommendations

As Makers we are hands-on people. Therefore we recommend starting with concrete actions and invite policy makers to see how they already work on a small scale before thinking about the big picture.

We want to explore in particular two threads: multidisciplinarity (in the agenda: makerspaces to support key competences) and lifelong learning dimension.

Multidisciplinarity: Some of the competences that can be learned in a makerspace pertain to electronics, 3D printing, 3D modelling, coding, robotics, and wood and metalworking. Very often, Makerspaces are linked to the development of STEM subject, but increasingly also to Arts and design. However, there are also many other competences that can be developed through these spaces and through the maker culture. Makerspaces are fostering entrepreneurship and are being utilized as incubators and accelerators for business start-ups. They are moreover use to promote literacy and creative expression.

Lifelong learning dimension: Maker culture resonates with lifelong learning and in cross-generational learning. Makerspaces are becoming increasingly popular, for instance, in

libraries, as public libraries already enjoy a status of 'third place' i.e. places that are neither home, nor work/school. Libraries offer the opportunity to be already at the centre of a local community, a welcoming space that is ingrained in our sense of belonging. Moreover, makerspaces are currently proliferating in formal education (from primary, to VET, to tertiary), in museums, in afterschool clubs, and are slowly being perceived as a space for early childhood education.

3.7 Chapter 7 - Financial sustainability and resources

The work will be financed with free cashflow of the organization. Furthermore national and cross-border funding opportunities will be explored.