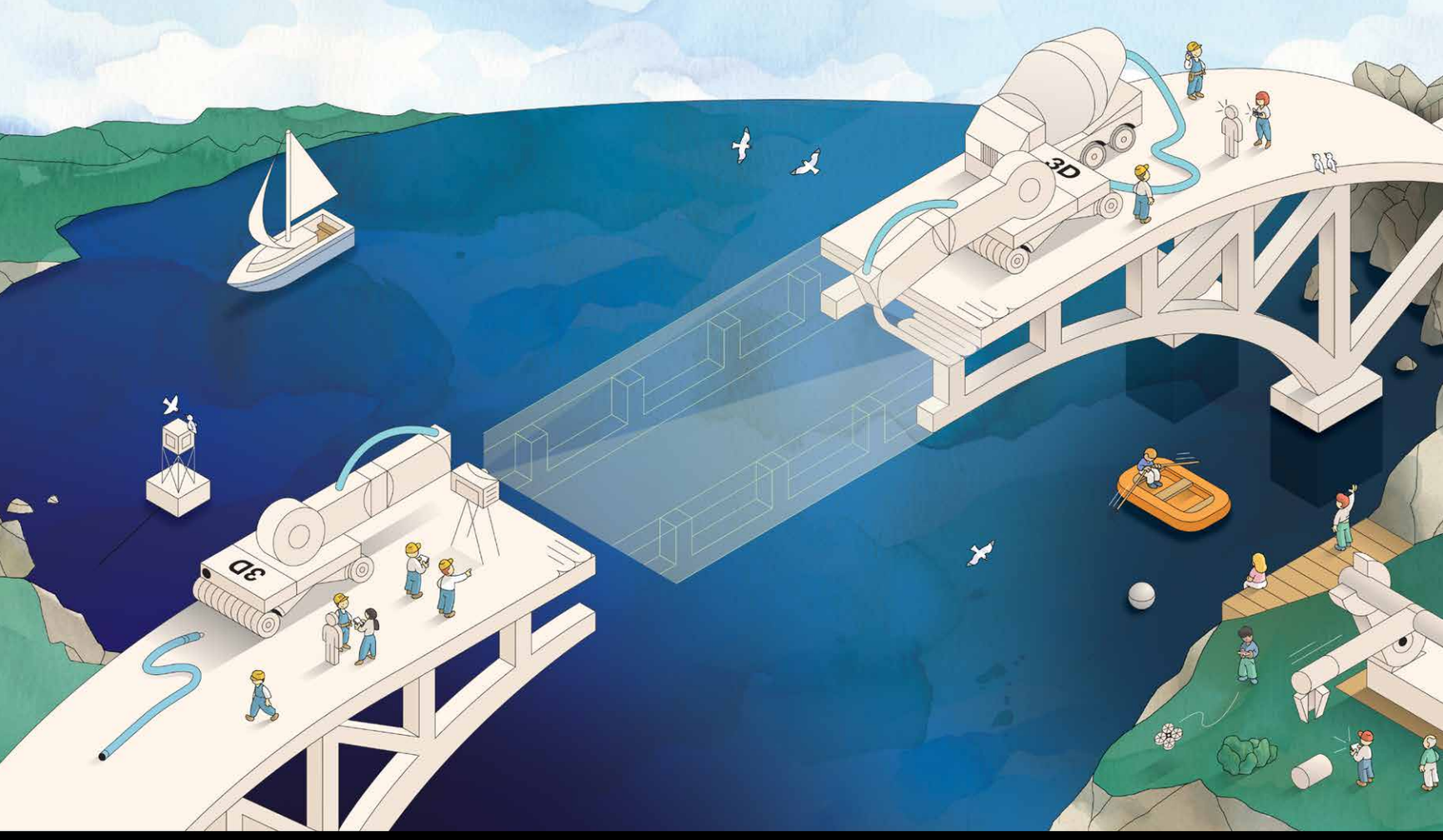


# FabLabNet

## Illustrated Story Book

**9 FabLabs join together**

to strengthen the innovation capacity of the central Europe Region
with the support of the INTERREG Central Europe programme

Interreg
CENTRAL EUROPE
European Union
European Regional
Development Fund
FabLabNet

*This book is dedicated to the memory of Phil Handy (1961 - 2017)*

# FabLabNet

**The Illustrated Story Book**

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*Pictures:* MUSE FabLab, FabLAb Bratislava, FabLab Bielsko-Biała, FabLab Budapest, FabLab.hr, Marco Fellin, Domen Grogl, Happylab, Hana Josic, Miran Kambic, Joanna Kowolik, Nika Kurk, Gianluca Lopez, Makerspace, Grzegorz Michałowski, Domen Pal, strojLAB, RogLab, Eva Vaskova, Benjamin Vitti, Josip Vukičević, VUT Brno, Patrycja Węgrzyn, Geert Vanden Wijngaer

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*FabLabNet is an INTERREG Central Europe project coordinated by:* MUSE - Science Museum (IT)

*In partnership with:*
INNOC - Austrian Society for Innovative Computer Science (AT), Fabrication Laboratory Ltd. (HU), Brno University of Technology (CZ), Regional Development Agency in Bielsko-Biała (PL), Museum and Galleries of Ljubljana (SI), Slovak Scientific and Technical Information Centre (SK), FabLab - Association for Promoting Digital Fabrication (HR), UnternehmerTUM MakerSpace Gmbh (DE)

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*Printed in 500 copies by MUSE - Museo delle Scienze on April 2019, Trento*
*ISBN: 978-88-531-0058-0*

# Index

# INTERREG CE FabLabNet in brief

## Timeframe

1 July 2016 > 30 June 2019

## Priority

Innovation and knowledge development

## Specific Objective

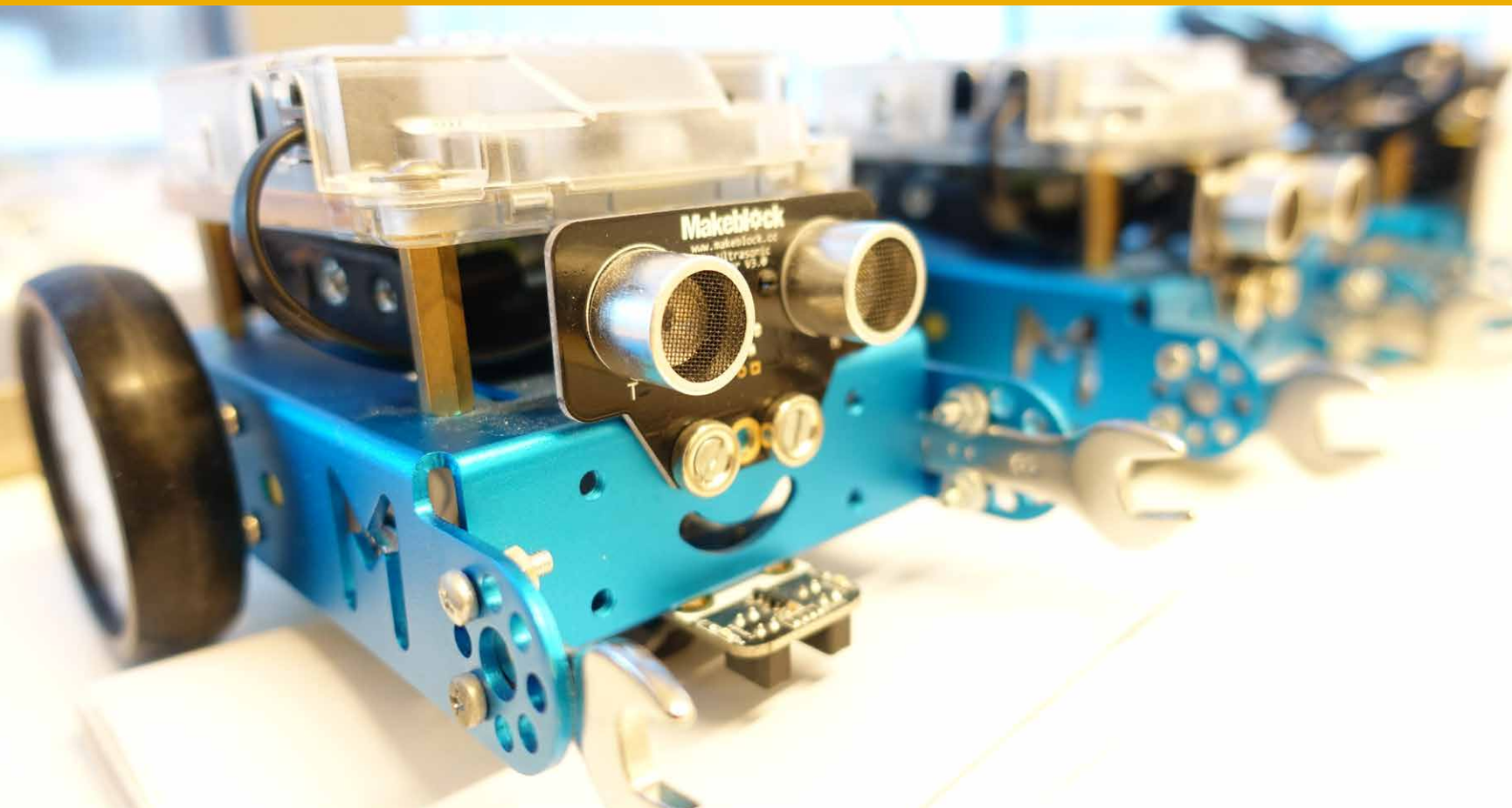
Sustainable links among innovation actors

## Mission

FabLabNet builds upon the network of Central European FabLabs, in order to improve sustainable connections for strengthening the innovation capacity of the CE Region. Partners from nine Central European countries join forces to bring personal digital fabrication to the wider public and boost regional innovation.

FabLabNet main outcomes include several new format activities (the Pilot Actions), developed at a transnational level to help community-building, business development and advanced training.

The overall desired long-term effect of the project is to increase competitiveness across the Central Europe region by supporting digital transformation and impacting local policy-making.



## Partners

**Lead partner**
**MUSE - Science Museum**
**Department** MUSE FabLab
**Italy** Provincia autonoma di Trento

**Brno University of Technology**
**Department** strojLAB
**Czech Republic** Jihomoravský kraj

**Slovak Scientific and Technical Information Centre**
**Department** FabLab Bratislava
**Slovakia** Bratislavský kraj

**INNOC - Austrian Society for Innovative Computer Science**
**Department** Happylab
**Austria** Vienna

**Regional Development Agency in Bielsko-Biała**
**Department** FabLab Bielsko-Biała
**Poland** Śląskie

**FabLab - Association for Promoting Digital Fabrication**
**Department** FabLab.hr
**Croatia** Kontinentalna Hrvatska

**Fabrication Laboratory Ltd.**
**Department** FabLab Budapest
**Hungary** Közép-Magyarország

**Museum and Galleries of Ljubljana**
**Department** RogLab
**Slovenia** Zahodna Slovenija

**UnternehmerTUM MakerSpace GmbH**
**Department** MakerSpace
**Germany** Bayern


**The FabLabNet Team at the project kick off meeting in Trento, October 2016**

Ph: CC BY SA MUSE

Foreword

# Making central Europe a better place

**Luca Ferrarese**
Director at JS Central Europe

"Make things, not slides" is one of the mottos of the Makers movement, which established FabLabs as places of creativity and game changers in the global innovation ecosystem.

In many ways, this motto also applies to Interreg CENTRAL EUROPE. As an EU funding programme we are currently co-financing 129 transnational projects across central Europe. More than 1300 organisations work together hands-on to create and test new solutions for a broad range of shared challenges and needs.

Our projects primarily "make" regional capacities better. The strategies and policy recommendations developed by our projects are all potential game changers for a stronger central Europe. In line with the motto of the Makers movement, they are all tested on the ground to ensure they can realistically benefit a region. This helps that solutions will be applied and do not end up in the drawer.

We strongly believe that cooperation is central to run this large and creative capacity-building process in an efficient way. It simply avoids reinventing the wheel in each region and takes forward central Europe as a whole.

FabLabNet is one of our most hands-on projects. It brings together various FabLabs into a central European network. The nine project partners have shared their experiences and developed new activities to mutually boost their knowledge and capacity for a more innovative ecosystem in their regions. They tested and adapted trends that emphasise new business models.


**Luca Ferrarese at the EU Week of Region and Cities in Brussels, October 2018**

Ph: © European Union / Geert Vanden Wijngaer

In this booklet you will learn a lot about the concrete products that the project has produced with EU support over the past three years: They created prototypes, 3D models, "Fab Boxes", training schools, hackathons, and even an electronic music party for the next generation of innovators.

I wish you an interesting read!

Preface

# This AND that: the relevance of FabLabs for Public Engagement in Science and Technology

**Michele Lanzinger**
Director MUSE

When in the early 2000s, the father of FabLabs, Neil Gershenfeld, started to investigate new ways of working with bits AND atoms, I was extremely interested in a point he used to make in his presentations. Academia – he said - traditionally approaches science and technology issues in dichotomist terms: it's often a matter of hardware OR software, mind OR body, entropy OR energy, services OR manufacturing, computer sciences OR physical sciences, bits OR atoms.
But – he added – Nature doesn't work that way. Every cell in our body is hardware AND software. Addressing one aspect at a time started to feel, in early 2000s, outdated.
Fast forward, 2013. In Trento we opened MUSE, a new science museum in the heart of the Alps where each subject is treated with a multidisciplinary and multidimensional approach. Nothing is just "Vertebrate Zoology", or "Physics", or "Geology". We built MUSE around the concept of complexity, around the need to interpret scientific facts under the different lenses of Nature AND Environment AND Human society.
That's why, when we drafted the MUSE Vision Document in early 2000s, it felt just natural to


**Cooking together: FabLabNet visiting BITZ FabLab in Bozen on April 2018**

Ph. CC BY SA MUSE FabLab

**Cooking together: FabLabNet visiting BITZ FabLab in Bozen on April 2018**

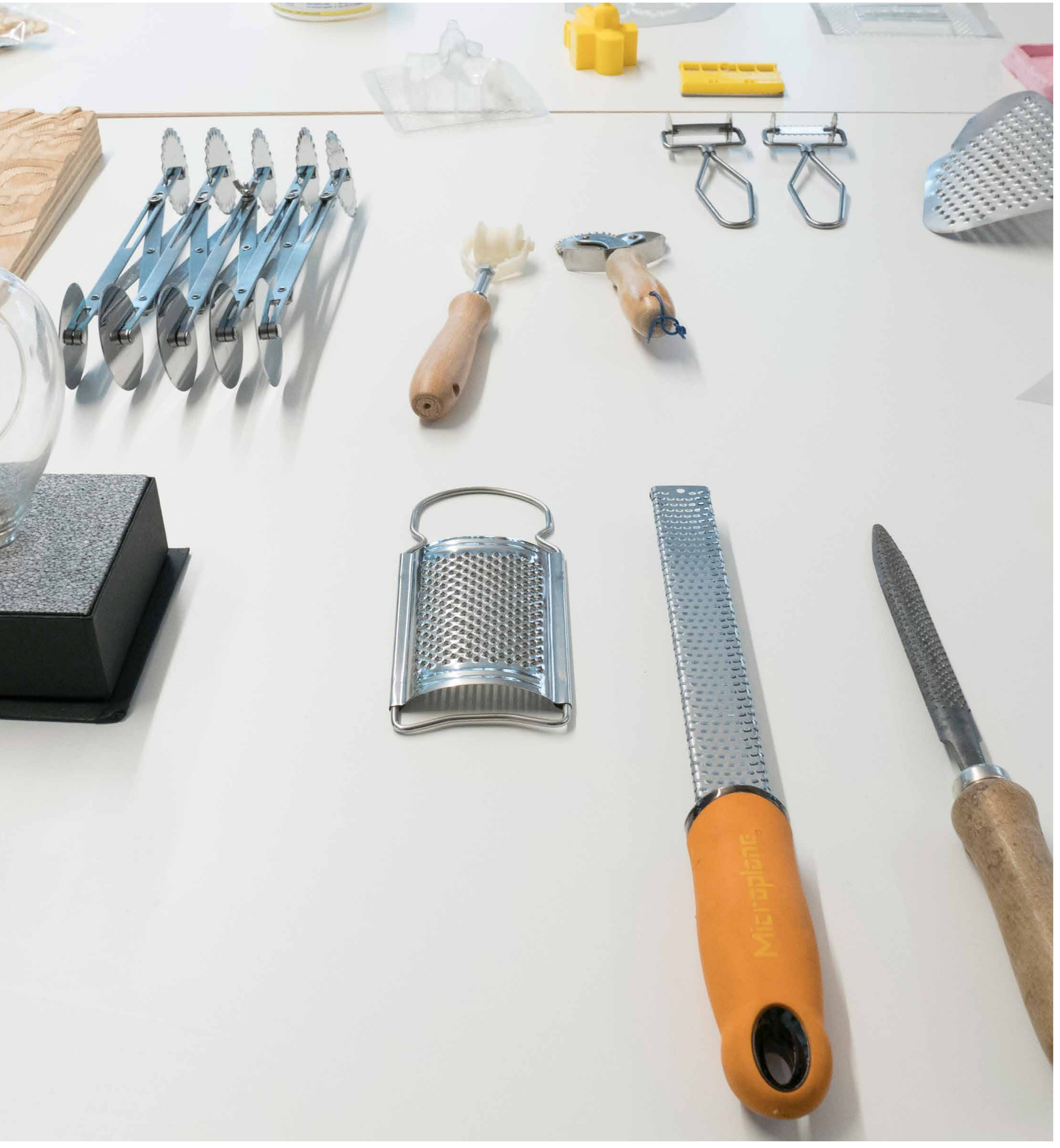
Ph: CC BY SA MUSE FabLab

include a FabLab in the museum. We decided to install it at floor +1, between the Prehistoric Unit and the Sustainability Gallery. Today, I can say that this choice was not only right but, to some extent, necessary.

I do believe it is indeed necessary for a modern science museum to invite its visitors to take an active part in the construction of science, in the care for environment, in building our society. I am always very proud to describe MUSE as a museum for people, not for specimens. What better exemplification of this overarching MUSE philosophy than hosting a Fabrication Laboratory? In our MUSE FabLab, users are called to take action in the collective construction of physical objects, starting from community ideas. This collective co-construction happens on a daily basis, in an open space, by people from different generations, different cultural backgrounds, and different motivations. People use our FabLab for Education, Experimentation, and even Business. In five years of operations, the FabLab community has produced the most extraordinary variety of outputs: from 3D printed human skulls to biomimicry jewelry, from custom prosthetics for disabled users, to 3D printed sugar candies.

In 2016, it felt natural to expand these incredible MUSE FabLab experimentations at an international level, towards the rising European makers scene.

Thanks to the INTERREG Central Europe Programme, our FabLab had the opportunity to work in a network with eight of the most interesting FabLabs of Central Europe, for three intense years. This book illustrates what they did. Enjoy!

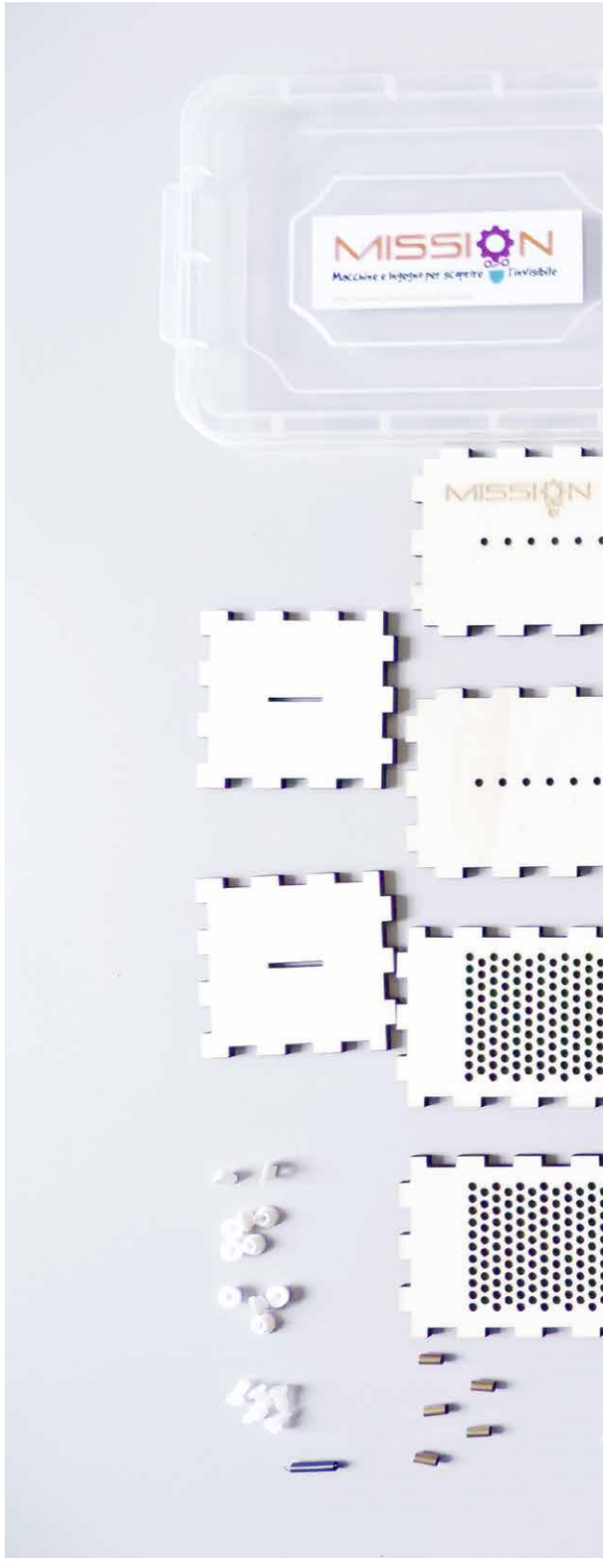

Microplane

Preface

# The right tool

**Marco Fellin**
MUSE FabLab

I've always loved those screwdriver toolsets. They are handy, lightweight and they work with the most of the screws we may find in our labs.
Their shape depends on how they were engineered, so the experience behind them. They provide an optimal torque and they are effective in daily use. However, they are no use with nuts, for hammering nails or for soldering.
Similarly, the FabLabs around the world are shaped differently, and they fit a wide variety of stakeholders. One FabLab may have powerful and precise milling capabilities, perfect for intercepting business needs; another has cute little robots for interacting with young minds.
Each of us has a tool box with a selection of tools we consider adequate for our needs. However, sooner or later we will find we are missing a tool, because we would like to innovate and make something new. We love expanding our horizons of creativity, and at that moment we will feel the need for a new tool.
The solution is simple: to share the FabLab tool boxes, providing access to a potentially infinite range of tools. In this way, the differences among us, the variety of tools, become a key factor for success.
This is the concept behind the FabLabNet consortium: a sharing of best practices, tools, experiences, and formats for interfacing with the various actors of innovation.
This booklet is the result of the 3 years' experience of a group of 9 FabLabs across Central Europe. We have shared our best tools in addressing education, business, and communities for promoting bottom-up innovation. It is a concise and accurate way to share our experience.
The tool you're looking for is in a shared, open toolbox.

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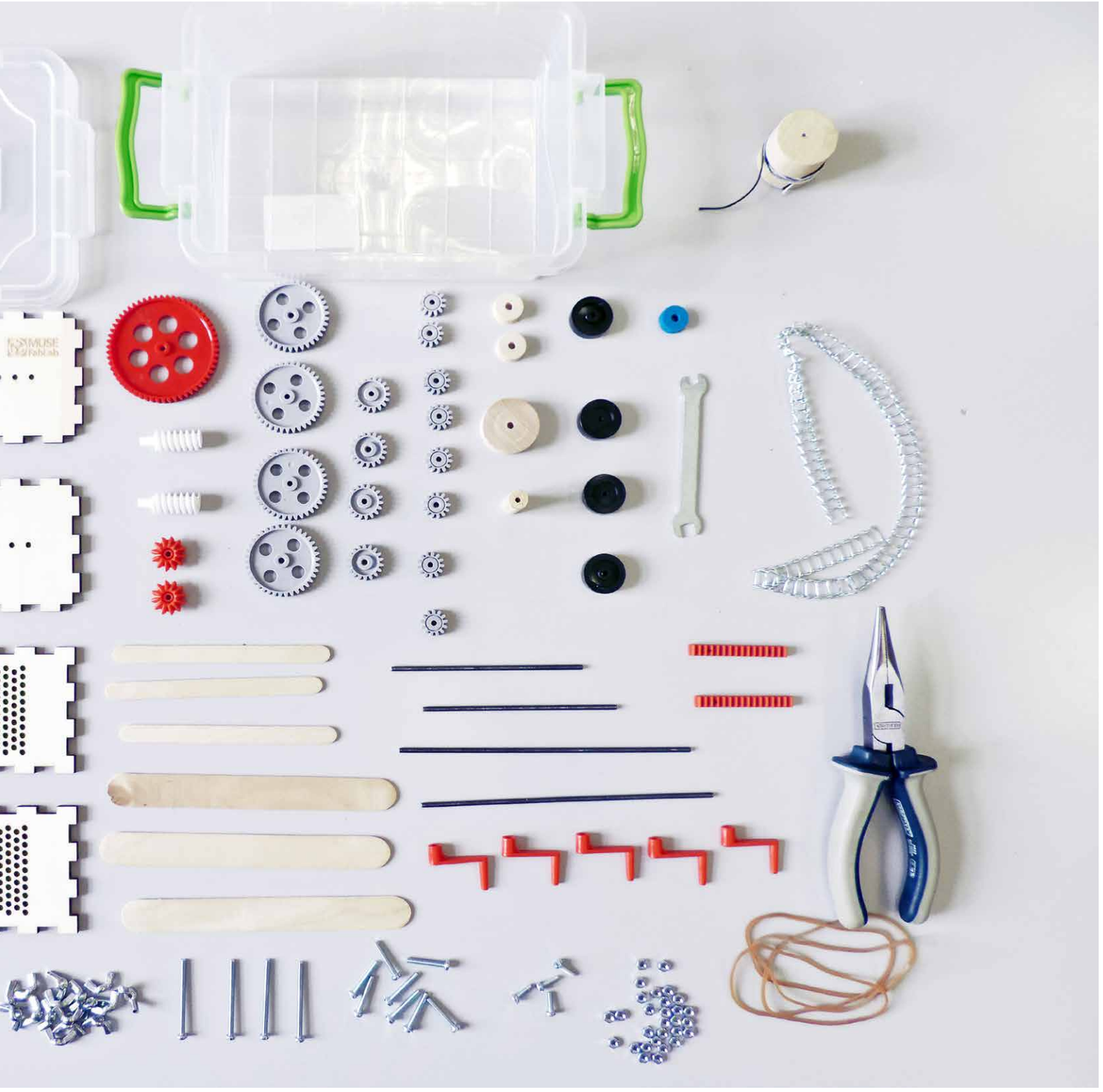


Chapter 1

# Growing together

## The state of FabLabs in central Europe and their outlook for growth

**Dávid Pap**
FabLab Budapest

First I met the idea of FabLabs in 2010. I was fascinated by the approach to innovation. I believe that change comes from below and I always wanted to learn. Perfect match! A FabLab is a technical prototyping platform for innovation and invention, providing stimulus for local entrepreneurship. A FabLab is also a platform for learning and innovation: a place to play, to create, to learn, to mentor, to invent.

FabLabs can play a significant impact on local society by giving access to technologies and knowledge. This impact is also a promise to the local economic needs: reindustrialization, Industry 4.0, local manufacturing. These passwords sound like candy to the ears of decision makers. During running a FabLab, I realized the difference between talking about how things should be done or start doing them. With the project FabLabNet, we started a work to unleash the innovation potential of connecting Central European labs with different background and operation model. We used the primary intention of FabLabs to create a network: we distributed knowledge, infrastructure and operation models. The perfect foundation to build on, and face the challenge of expanding. In the future, we need to improve the connection of makers and designers with the market and capital. We will work on to make the distributive approach of ours more recognizable by the education sector. The network has the chance to transform STEAM learning in diverse educational settings through digital fabrication technologies.


FAB
LAB
BUDAPEST

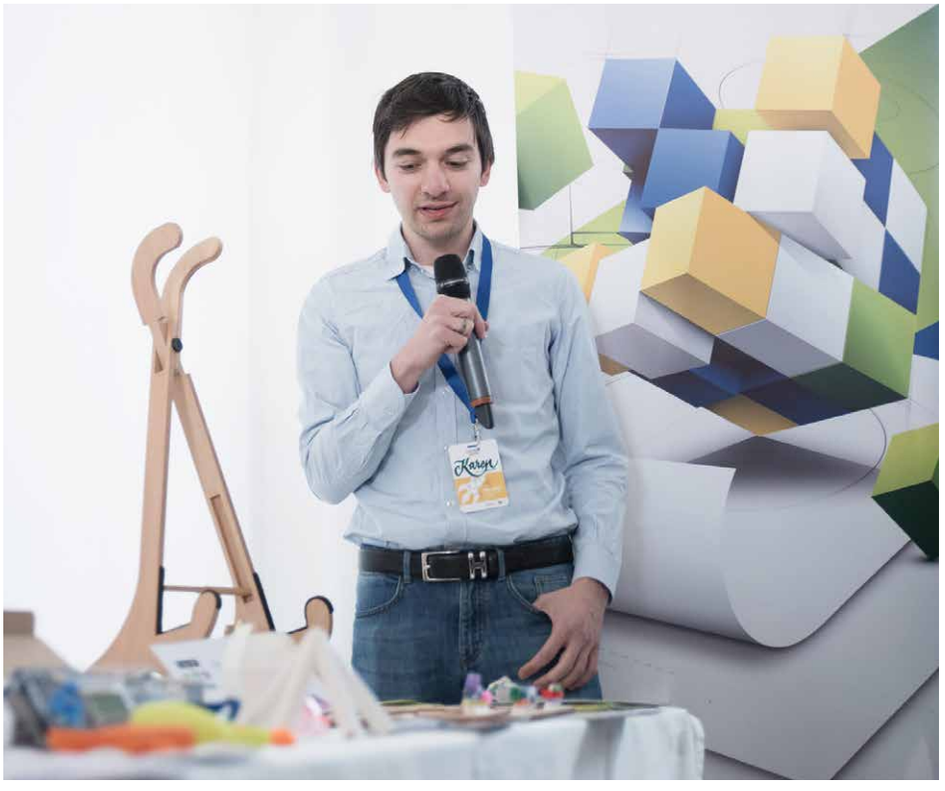

FABLABNET
LAUNCHING
EVENT
TESLA

# 1.1 Baseline studies

## Base jumping into FabLabNet

To build network of FabLabs, one of the first steps was to get to know each other: who we are, and what we are doing were the first important part of the baseline study conducted by each partner. In order to know ourselves, the way we work, and who our stakeholders are, we map our local ecosystem. Partners build their business canvas by recognizing and documenting their stakeholders, important partners, clients, services and products. The baseline study was crucial to identifying our potential and essential for further activities and networking.

**Roberto Vdović**
FabLab.hr




**Hacking from the basics! Karim from Happylab pimping his name tag at the FabLabNet Launching Conference.**

Ph: CC BY SA FabLab Budapest

## The FabLabNet baseline studies

**Digital Transformation Camp in Trento, October 2017**

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**Mapping Challenges and Innovation Potential within innovation ecosystem**

Each FabLab is embedded in its environment, providing services to start-ups, academics, artists, and individuals. We are building a strong network of 9 Central European FabLabs which are very different from each other. The aim is to boost their impact on local innovation. To achieve this we need to understand our local challenges, find and start to talk to partners who will join in this mission.

1. Desk research on the three key FABLAB-NET topics by assigned partners ***Annex QR DT111***
1. Mapping local ecosystem challenges of each project partner ***Annex QR DT112***

**Makers meet Artisans in Trento, October 2017**

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## FabLabs Capacity Building

During the network building, we wanted to understand the differences and synergies between each partner. We asked all the FabLabs to tell us what they love to do the most to inspire others. We travelled within and outside the network to find cool ideas, and we started to construct our virtual factory, with the aim of giving visibility and access to partners in the local manufacturing infrastructure.

1. Collection of FabLab Good Practices ***Annex QR DT131***
2. Exchange on FabLab Management Practices and Tools ***Annex QR DT134***
3. Report on P2P Knowledge Exchange Visits: Vienna ***Annex QR DT136V***
4. Report on P2P Knowledge Exchange Visits: Munich ***Annex QR DT136M***
5. Report on P2P Knowledge Exchange Visits: Ljubljana ***Annex QR DT136L***
6. Report on study visit in France Fab14+ ***Annex QR DT141***
7. Report on study visit in Barcelona FabLab and Green Lab ***Annex QR DT142***
8. Proposed Values and Pooled resources report ***Annex QR DT143***

**Visiting Barcelona FabLab and Green Lab**

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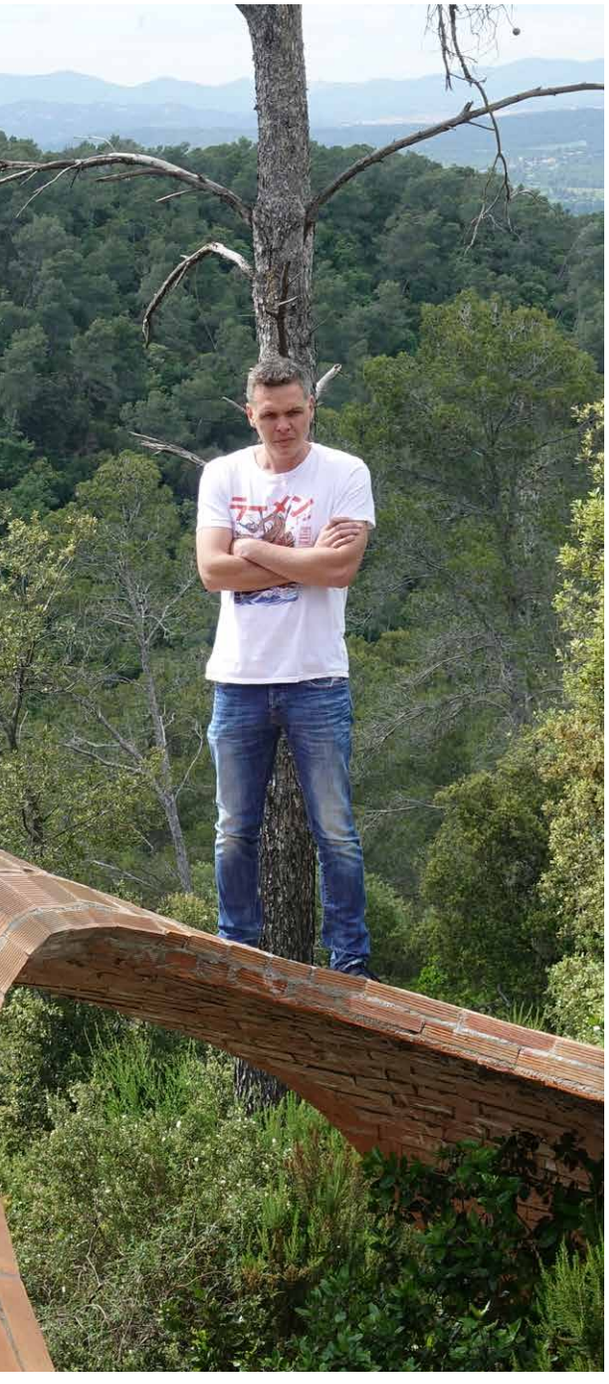
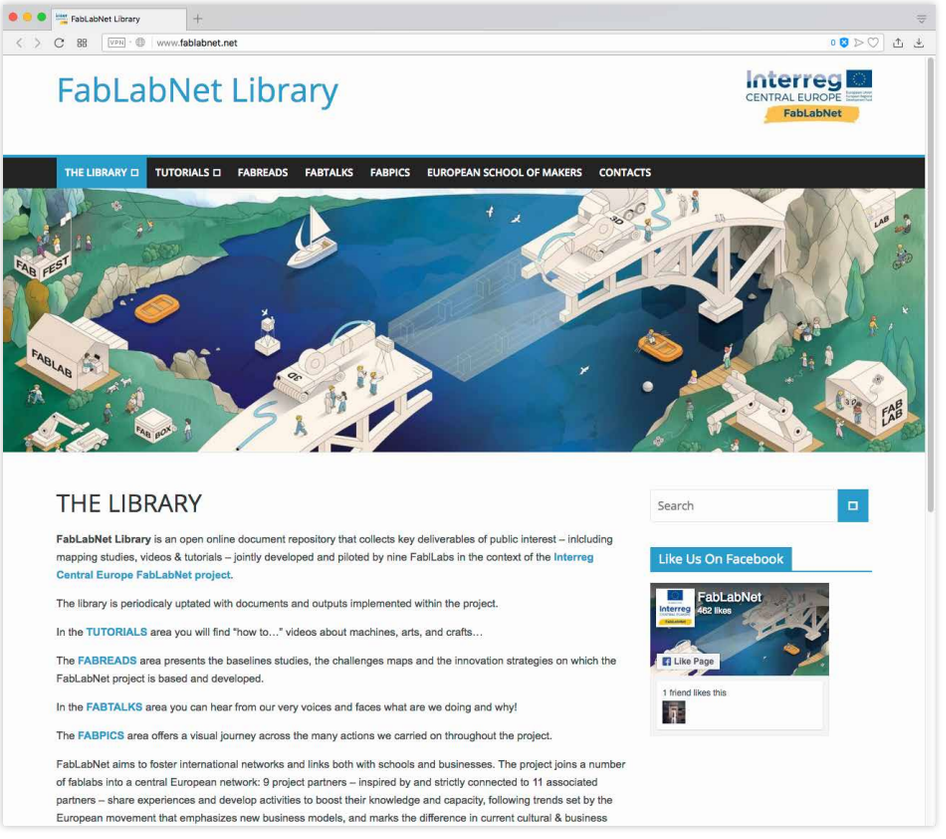


## Setting up Central European FABLABNET Network

One of the key outcome of the project FabLabNet is to establish a Central European network of fablabs/makerspaces.
Before accepting new members, we discussed between partners to answer to the following questions as a network: what each of the partners can propose and what he expects from such a network? What tools can we use for administration and communication purposes? What is the strength and weakness of our Consortium? What mission and vision statement do we want to commit to?

This methodology lead us to a cooperation agreement which stipulates all engagement and role of each member, explains the core activities of the network and defines the work processes and the financial scheme.

1. Exchange on the FabLabNet value proposition ***Annex QR DT133***
2. The FabLab Management Platform - modular system ***Annex QR DT135***




**The FabLabNet Library (www.fablabnet.net)**

Screenshot retrieved 25/2/2019

# 1.2 Linking actions to S3

## What are the S3 and why they matter

Smart Specialisation Strategies (**RIS3** or **S3**) set priorities at national and regional level to build competitive advantage by developing and matching research and innovation strengths with business needs, to address emerging opportunities and market developments in a coherent manner, while avoiding duplication and fragmentation of efforts.

They are also a backbone of national or regional research and innovation strategic policy frameworks in Europe.[1]

FabLabs should contribute to this by creating space for people to do innovative projects using sophisticated equipment, as well as discussing their problems with developing prototypes within the FabLab community.

**Marek Rozehnal**
Brno University of Technology

[1] *http://s3platform.jrc.ec.europa.eu/s3-design*

Ph: CC BY SA FabLab Bratislava

## S3 Consultations

### MUSE FabLab

**4 Topics**

Energy & Environment

Quality of Life

Mechatronics

Agrifood

**3 Consultations**

Artisans

SME

Policy makers

### Happylab

**2 Innovation objectives**

1 - City of opportunity: Vienna provides optimal conditions for innovation potential to develop in the metropolitan region

2 - Vienna is a place where different people meet

**3 Action areas**

Location for research and business, manufacturing and services; set up a network of spaces, info and networking platforms, visibility

**3 Consultations**

Political Strategy Unit STI Locations & Regional Policies

### FabLab Budapest

**21 Consultations in Strategy maker**

Education, Clusters, RDI Companies, Accelerators & Capital, Start-ups & Entrepreneurs, Co-working & Co-making, Academia

### FabLab Bratislava

**9 Categories of main stakeholders**

NGOs

Students of universities and institutions of higher education

Pupils and students of high schools and elementary schools

Interest groups (focused on youth, creativity, scientific skills, improving quality of life)

Hobby groups (robotics)

Professional groups (IoT)

Representatives of universities and institutions of higher education

Innovative companies, Innovation support organizations

**5 FabLab specialisations**

In line with regional innovation strategies:

Cooperation with high schools activities focusing on active aging

Promote rapid prototyping

Development of handouts

Incubation processes

### Brno University of Technology

**4 Areas**

Higher innovation performance of companies

Improved quality of public research,

Improved economic benefits of public research

Better Human Resources for innovative enterprise, research and development

**Innovative ecosystem made by**
Mechanical Engineering, Electrotechnics, Software development, Universities, Research Centres, Centres of excellence of excellence

### RogLab Ljubljana

**20 Main stakeholders**

Primary schools, University, Center for life-long learning, DIY enthusiasts community, FabLabs, SME, Technological Park Ljubljana, Municipality of Ljubljana, Cultural NGOs, Museum of Architecture and Design of the Republic of Slovenia

**9 Areas of change in 3 Specialisations**

Healthy working and living environment, Natural and traditional resources for the future, Industry 4.0

## FabLab Bielsko-Biała

### 13 Main stakeholders

Local authorities, ICT companies, Academic Business Incubator, Startup association, technical university, Faculty, High Schools, City board of Education, strategic consulting (Regional RIS consultant), Innovation and Technology Transfer Centre, economic university, Marshal Office, other FabLabs and the maker community

### 2 Priorities of RIS3

Increase and integration of existing potential of the region, Creating smart markets for technologies of the future

### 6 FabLab specialisations in line with regional and local innovation strategies

Medical industry, ICT, modelling prototyping and testing, automotive sector, air industry, textile manufacture

## UnternehmerTUM MakerSpace

### 9 Main group of stakeholders

Universities

Start-ups

Companies

Research and Development

Sponsors

Society

Members

Festivals and public fairs

Accelerator Programs

### 11 Objectives in the Thematic specialisations

Bayern Digital II

Munich Smart City

Digital infrastructure for the Gigabit-Society

Make Bavaria the European stronghold for and with IT security

New standards for digital core disciplines

Strengthen academic youth in digital core disciplines

Strengthen digital competencies throughout Bavarian middle-class

Conquer key fields in digital technology and applications

Leading region for intelligent digital mobility-concepts

World's leading location for digital medicine and care

Leader in modern and digital administration through E-Government

People represent the center of digital world

## FabLab.hr

### 7 Main stakeholders groups

University

Research centres

Higher education

Students clubs

Corporations

SMEs

Startups

### 5 Specialisations

Health and quality of life

Energy and sustainable environment

Transport and mobility

Security

Food and bio-economy

### 4 Fablab.hr specialisations in line with national innovation strategy

Higher innovation performance of companies

Improved quality of public research

Improved economic benefits of public research

Better Human Resources, for innovative enterprise, research and development

## Creating links to smart specialisation strategies and relevant policy players

Even policy-makers need to be influenced. We believe that understanding the idea behind FabLabs and the community-led solutions for sustainability help policy-makers to give a better approach to reach their strategic aims. We started a conversation with them and defined potential fields of cooperation.

1. Smart Specialization Strategy Consultations *Annex QR DT121*
1. Innovation Potential & Specialization Strategy Papers *Annex QR DT122*

**S3 consultations meetings**

Ph: CC BY SA MUSE FabLab

# MUSE - Science Museum
# MUSE FABLAB (IT)

## MUSE FabLab, a cultural soul

MUSE FabLab was established in 2013, as part of an unprecedented museological journey at the new Science Museum of Trento. MUSE - Museum of Sciences follows social and technological evolution from prehistoric times until today, with a view to technology as an applicable extension of human thought and a potential tool for tackling the challenges of the 21st century.
MUSE FabLab is a place inside the museum where ideas take shape: there are tools and skills for putting into practice those small or major innovations that can emerge from each of us. At MUSE FabLab, there are 3D printers, laser cutting and engraving machines, tools for electronics, programming, 3D drawing and also a classroom where students and adults can learn.

The cultural element is therefore the underlying theme that links all the activities offered and amplifies their meaning.
Economic sustainability is important but, of course, success is not made of economic balance alone.
We know our strengths: we are able to invent new proposals (sometimes new methods) that will allow our public to learn, be intrigued and have fun.
Our way of educating, communicating and engaging new audiences in the use of digital technologies (adult-child couples, seniors, primary school children and university students) is basically our manifesto.

The mainstay of our FabLab lies in education and in technological literacy.
We constructed and developed most of the activities around this pillar, with the participation of numerous schoolteachers in our refresher courses, the progressive increase in memberships and a precious increase in female attendance.
Working with common sense, enthusiasm and the desire to build something to believe in, has repaid us, in terms of presence, beyond all expectations.
The second and equally important mainstay is the social one.
So far we have carried out a service to citizens that has materialized in providing help to all those with an idea or a project and allowing them to fulfil it here with us: university students who have made prototypes for their thesis, young people about to create a start-up business or even simple model-makers or aspiring inventors who came here to give a shape to their ideas.

The challenge we now want to undertake is to give a broader social meaning through the development of projects in favour of vulnerable social categories. The construction of a FabLab capable of involving both people with physical or cognitive disabilities, as well as youths risking educational poverty.
Lastly, MUSE FabLab is also working towards another goal, which we had been


Ph: CC BY Benjamin Vitti

fablab.muse.it
david.tombolato@muse.it


chasing until now, and that we cannot achieve on our own: that of Open Innovation. We realised that this cannot be a mainstay of the MUSE FabLab.
We are not a space where small businesses in the territory can create/produce innovation at full capacity. On the contrary: we can act as collectors and catalysts; we can co-organize excellent Open Innovation events for ad hoc projects - together with the other local partners.
In this sense, we can use these events to make collaborations increasingly solid, thus creating a network, and direct companies towards Industry 4.0 technologies. It is the goal towards which the European FabLabNet project has committed itself, trying to understand which directions to take. We can therefore help small start-ups businesses to obtain more visibility, but we can only help make their product materialize if we involve external partners. In fact, if a small company needs to produce something that will be placed on the market, it is no longer us in the role of interlocutors, but other local entities. We can arrange dialogue between individuals and facilitate scouting, contact and mutual acquaintance. We are a place in which museum culture communicates with citizens, technology and business and, in this way, tries to innovate.

# 1.3 Shared Capacities

If you have ever been in a FabLab or Makerspace, there is a big chance that you saw some project going on or something working which you were not able to figure out how it does. Open labs are for sharing, not just the machines and the infrastructure (which is essential) but the mindset most important: questions and conversation. During the project, we had the chance to talk a lot. All the partners have a different background. The host institution, the model of operation, the financial setup, the business model, the main target group and the composition of tools is different. But the primary approach is to share common tools and processes is the same: a distributed laboratory for research and invention. How can we benefit from such diversity? There is a saying that there are three sides of every story; this one has much more! Most innovation happening from upstream. If we consider as fact that all labs are embedded to their local ecosystem, which is different from others, we agree that they all might have a unique tool to foster local entrepreneurship. This creates a value proposition on a network level: learning from each other. During the project, all individual lab shared their approach to access target groups and stakeholders; participated in creating a virtual factory based on distributed local manufacturing capacities and shared project ideas, because we believe that the knowledge of advanced manufacturing technologies helps us to explore new possibilities in arts, engineering, and social wellbeing. Sharing is cool!

**Dávid Pap**
FabLab Budapest

**Maker Faire Vienna, May 2018**

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## We shared things...

**50+**

Video tutorials e storytelling published on YouTube

**1600+**

Pictures released under Creative Commons licence

**3**

Baseline studies on Innovation eco-systems and FabLabs

**18**

Strategy papers based on stake-holders consultations and Smart Specialisation Strategies

**27**

Exchange of good practices

**175**

Courses database for a total of

**2000+** hours of trainings

**1000+**

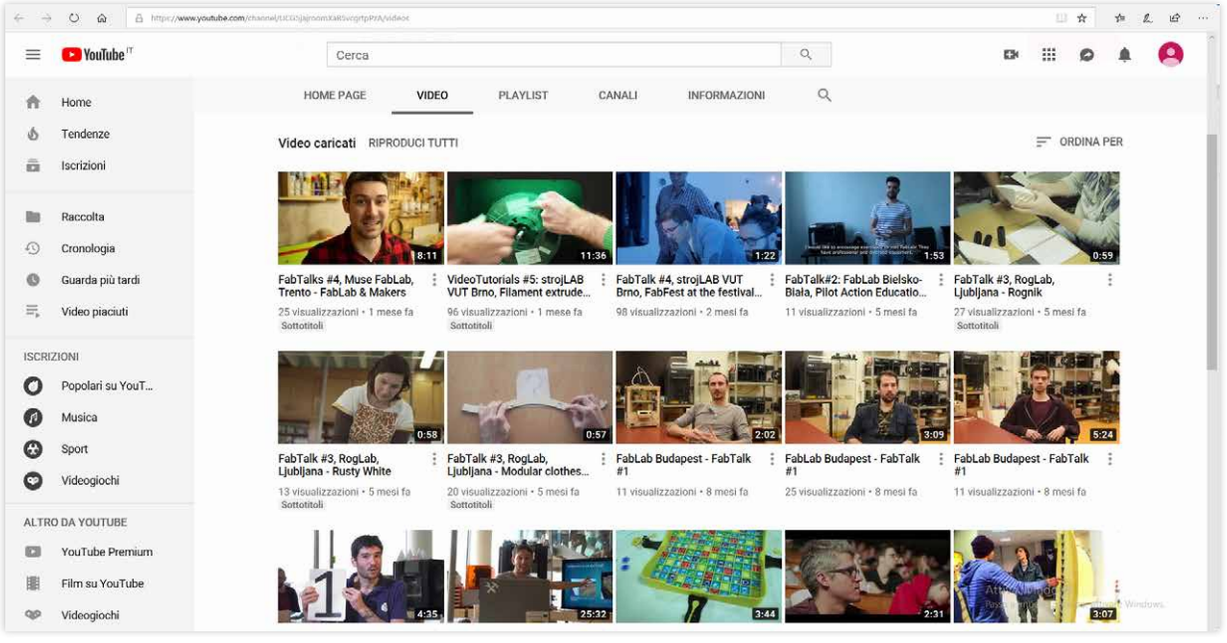
Persons trained within the Pilot Actions

**18**

Exchange visits among EU FabLabs

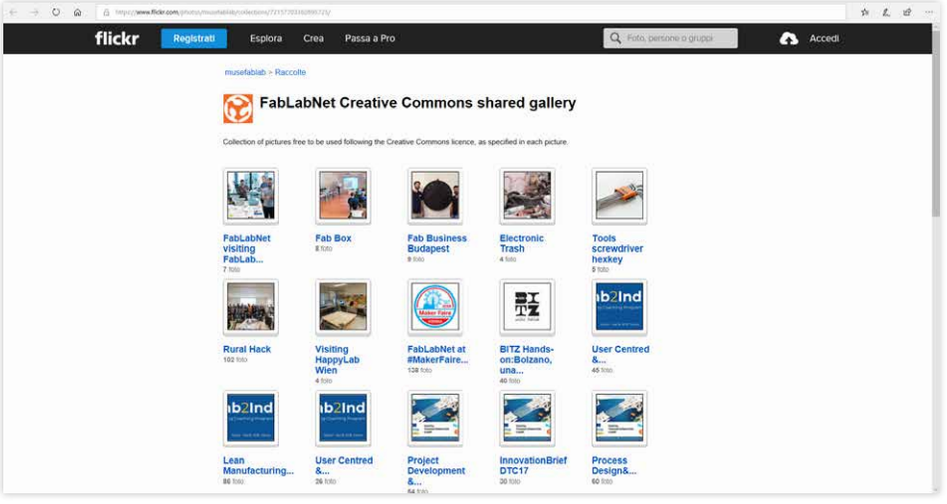
**2**

Study visits to Barcelona FabLab and Fab14




**FabLabNet YouTube channel, a primary source for sharing information and tutorials within and outside the project**

Screenshot retrieved 25/2/2019




**The FabLabnet picture archive, proudly presented under “Free Cultural Works” licences**

Screenshot retrieved 25/2/2019

**Visiting Roglab in Ljubljana**

Ph: CC BY SA Joanna Kowolik

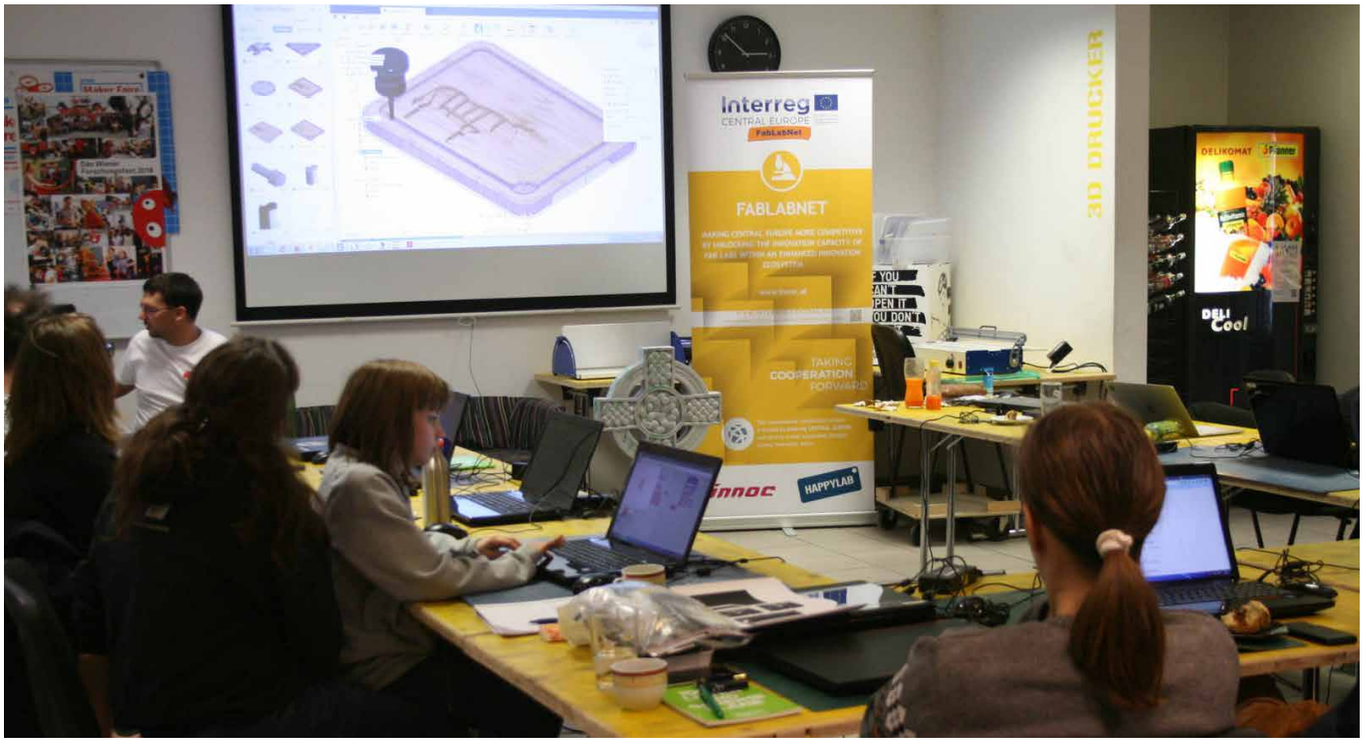
# INNOC - Austrian Society for Innovative Computer Science Happylab (AT)

happylab.at
karim.jafarmadar@happylab.at

Ideas need space to be developed and brought to life. Happylab not only offers this space, but also the equipment needed to realize your own ideas. As a FabLab, makerspace and open workshop it provides the wider public with access to digital fabrication tools - such as 3D printers and laser cutters, CNC milling machines, and cutting plotters. At Happylab, start-up entrepreneurs develop prototypes, students build architectural models, designers realise their creative ideas, makers create personalized presents - and many other ideas are materialized.

Happylab was founded by the Austrian Society for Innovative Computer Scinces (INNOC) in 2006 in Vienna as Austria's first FabLab. It provides cost-efficient access to digital fabrication tools at its locations: 3D printers, laser cutters, CNC milling machines, cutting plotters, electronics workstations, a workshop with common hand tools and a store with selected consumable materials are available as the basic equipment.

But Happylab is more than just a space with workstations and machines that can be used. Important aspects are the possibility to exchange ideas and know-how within the community and easy access for people without technical expertise. In regular guided tours, trainings and workshops Happylab conveys the needed know-how so that you can use the digital fabrication tools for your own ideas and projects. Over 2.000 active members use Happylab's infrastructure at its locations in Vienna, Salzburg and Berlin.



# 1.4 Joint Mission Statement

## The Joint Mission Statement

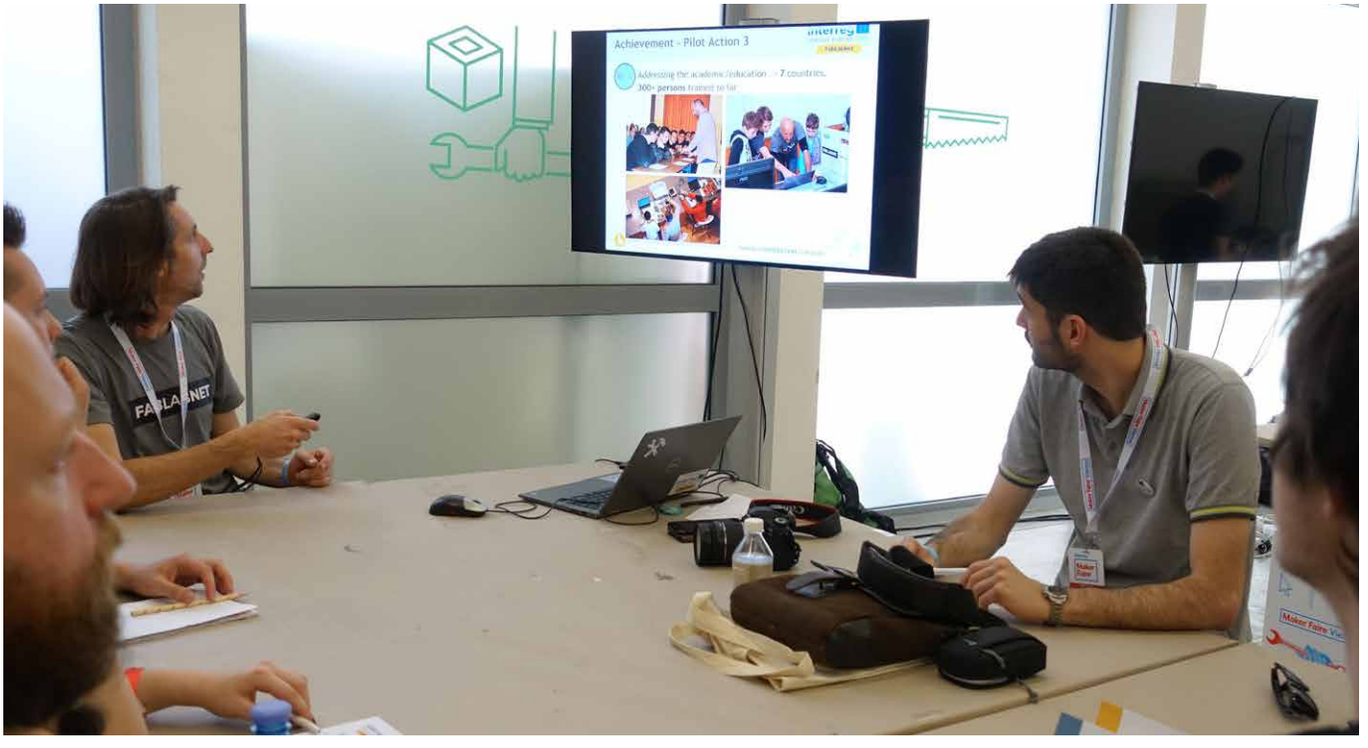
**Meta Stular**
**and François Friderich**

RogLab

After 2 years of research and practical activities involving citizens, educational institutions and businesses, the FabLabNet project has reached the stage where the partners had to decide what would be the Mission of the network. As simple as this task might seem, constructing a mission statement, even if in most cases it consists of one sentence, is not simple. In the case of FabLabNet the partners have accumulated precious experiences and research material in over two years, just to be able to respond to few simple questions: What is a FabLab network? Who are our beneficiaries? What can we offer to future members of the network? What do we want to do? And finally, what are we willing to invest to do what we want? Based on previous research a workshop with project partners was organised in Ljubljana during the Thematic meeting on September 27, 2018.

At the end of the workshop the partners have agreed on the following Mission Statement of the FL Network:

**"Connecting Central European Creative Labs to boost local innovation capacity".**




**Sharing goals to multiply impact**

Ph: CC BY SA Muse FabLab

## Gathering forces

Each FabLabNet member shares a pool of machines, spaces, tools, know-how, programmes, community, networks, and skills.

**1** survey on **9** FabLabs characteristics and policies

**150** training courses for almost **2.000** hours of training opportunities

**13** shared tools for practically managing the network

**11** Associated partners

| Associated partner | Partner of reference | Field |
|---|---|---|
| **Slovak Business Agency** | Slovak Scientific and Technical Information Centre | |
| **Slovak University of Technology in Bratislava, Faculty of Informatics and InformationTechnologies** | Slovak Scientific and Technical Information Centre | |
| **Design Terminal - National Center for Creative Industries** | Fabrication Laboratory Ltd. (FabLab Budapest) | |
| **The National Research, Development and Innovation Office** | Fabrication Laboratory Ltd. (FabLab Budapest) | |
| **Elementary School Borovje** | FabLab.hr | |
| **South Moravia Innovation Centre** | Brno University of Technology | |
| **Computer agency o.p.s.** | Brno University of Technology | |
| **INDUSTRIO Hardware Startup Accelerator** | MUSE - Science Museum | |
| **Coburg University of applied Science and Arts, Department of Design, Integrated Product Design B.A.** | MakerSpace GmbH | |
| **Primary School Tone Čufar** | Museum and Galleries of Ljubljana | |
| **Public Institute for Lifelong Learning Ljubljana - Cene Štupar** | Museum and Galleries of Ljubljana | |

## 13 International Networks of FabLabs for joint coordination

Réseau Français des FabLabs

Stichting FabLab BeNeLux (Benelux Fab Foundation)

UAE FabLabs

Rede FabLab Brasil

Fab Foundation

Fab Lat KIDS

Fab Antipodes

Swiss FabLabs

Fab Lat

Fab City Global Initiative

FabLab Hub

FabLabNet Central European network of innovative and creative labs

International FabLab Association

# Fabrication Laboratory Ltd. FabLab Budapest (HU)

fablabbudapest.com
davidito@fablabbudapest.com

FabLab Budapest has been operating as an open innovation center since 2011 and provides services to existing industries especially in prototyping. In 2018 the second location opened with industry grade tools for small scale production in the old industrial sector of Budapest providing stimulus for local entrepreneurship.

The founders' and management believes in upstream and grassroots innovation. Therefore the business model is dual: they provide education programs on design thinking, digital manufacturing, rapid prototyping, robotics, digital apparel and traditional woodworking for students and young entrepreneurs and giving affordable lab time; but also do research and development and digital prototyping, manufacturing for companies, including start-ups. In the past years their technological incubation programme that helped start-ups to develop their product or service. Together with Design Terminal, they launched the successful Central European annual event 3D Printing Days to foster the additive manufacturing projects of the region. Long term cooperation with Hungarian Ministries, Government Agencies and Venture Capital Funds helped the decision makers to realize the potential in the maker's movement to accomplish by decision makers. As an active member of international FabLab community, the project results were disseminated widely.

FabLab Budapest's goal is to become a regional leader in rapid, high quality and affordable hardware prototyping & incubating for businesses in their growth & establishment stage or above. They are unwaveringly working on an open source mobile lab, which will conquer the word they believe!

Chapter 2

# Fostering growth

## New kids on the (innovation) block

**Marco Fellin**
MUSE FabLab

Cooperation between individuals is one of the key factors for survival and evolution in millions of species. Sharing work, knowledge and skills allows all animals to create marvellous artefacts. Humankind has brought this cooperation to the top level, creating marvellous inventions and creations since thousands of years ago. From the pyramids to space exploration, our lives have been full of innovations, inventions and great engineering milestones.

Innovation traditionally comes from academia (universities and schools), research institutes, industries and citizens themselves. Since 2001 there is a new kid on the block: the FabLab. A place for realizing prototypes from ideas: where ideas becomes real. A space for sharing tools, machines, know-how, and programmes. A space for students, designers, start-ups, communities, developers, hobbyists, and companies.

Despite its promise, this new player has yet to prove its worth in the traditional innovation system.

The FabLabNet Pilot actions were designed to put FabLabs in connection with existing business and educational communities.

**Digital Transformation Camp in Trento, October 2017**
Ph: CC BY SA MUSE FabLab

# 2.1 A joint concept for Pilot actions

## Piloting together

**Jan Sienkiewicz and Patrycja Węgrzyn**

FabLab Bielsko-Biała

FabLabNet piloting led us to a common purpose: spreading knowledge about digital fabrication and building community around FabLabs. We wanted to boost the technological spirit of our regions and create an ecosystem of innovation, with FabLabs at the centre. With three types of pilot actions – Community, Business, and Education - we've reached all relevant stakeholders: entrepreneurs and start-ups, the world of academia and makers or want-to-be makers from the community.
Having all those on board and piloting together, but with different, tailor made approaches are the key factors of success!

### Demonstrating the role of FabLabs in the Central European innovation ecosystem

As a key practical part of the project, the three Pilot Actions had the goal of stimulating the central Europe innovation ecosystem, targeting the communities, the education and the business players.


**Pilots 1**
were developed in 4 countries for involving **com**munities, using the FabLabs equipment and mentors for turning their design ideas to prototypes.

**Crash test Brainstorming!**

Ph: CC BY SA MUSE FabLab

**Pilots 2**
were developed in 5 countries for involving start-ups and business oriented domains, to coach mature prototypes to be ready for the market.

**"FabLab2Industry" in Trento, March 2018**

Ph: CC BY SA MUSE FabLab

**Pilots 3**
were oriented to education, and was developed in 7 countries. FabLabs tested new approaches to the educational framework by introducing rapid prototyping and problem solving by making.

**A classroom in FabLab Bielsko-Biała, November 2017**

Ph: FB FabLab Bielsko-Biała

**More than 1.000 people participated to FLN Pilot actions.**

1. A Joint Concept developed for the three types of Pilot *Annex QR DT211*
1. Individual Pilot 1 2 3 Plans prepared for each Partner *Annex QR DT213*


**Each pilot was introduced by a presentation of the FLN Network and its Joint Pilot Concept**

Ph: CC BY SA MUSE FabLab

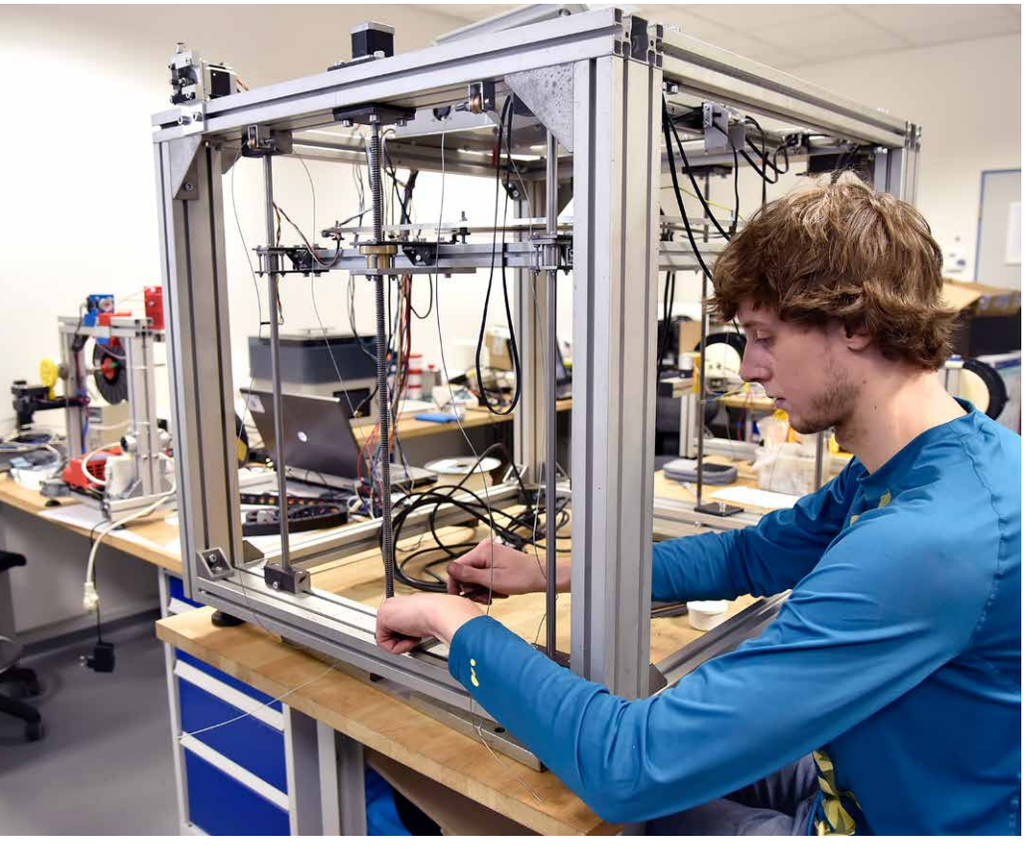
**Meetings with companies, preparing MoUs**

Ph: CC BY SA Eva Vaskova

# Brno University of Technology strojLAB (CZ)

www.vutbr.cz, www.strojlab.cz
Contact Assoc. Prof. David Paloušek, palousek@fme.vutbr.cz

The Brno University of Technology (BUT) was established in 1899 as the first Czech higher education institution in Moravia. It has become an important centre of teaching and research, greatly enriching the life of Czech society and offering a cutting-edge education based on the latest scientific and professional knowledge. Currently Brno University of Technology has around 24,000 students, 8 faculties and 3 university institutes. In the project the Netme Centre (**www.netme.cz**) – operating the FabLab since 2011 - will represent the University. NETME is a regional research and development centre based on high quality research and development conducted at the BUT Faculty of Mechanical Engineering. The mission of NETME is to deliver technology solutions through applied research collaborations, increase competitiveness of the region and promote regional knowledge economy.



It offers unique competences related to the project topic. By collaborating with other faculties of BUT it brings in interdisciplinary knowledge on science and technology. Through its educational activities it is in contact with over 4,500 graduate and undergraduate students and has a longstanding cooperation with promising young researchers. It has effective collaboration with various industry partners and local SMEs and with the City of Brno as a centre of engineering and trade. The FabLab's main focus is additive manufacturing, especially in orthosis and prosthetics, industrial design, rapid prototyping and robotic manufacturing. NETME has an outstanding knowledge in 3D printing of metals in the Czech Republic with very well equipped laboratories (technology Selective Laser Melting, 3D optical Digitalization and robotooling).
Moreover, there are successful student teams representing BUT via the Formula Student project and Pneumobil project.

Ph: CC BY SA Brno University of Technology

# 2.2 Pilot 1 “Connecting to Communities”

## From bits to atoms, from ideas to prototypes

Technological innovations are making an enormous contribution to the progress of humanity. Ideas are not only born within facilities where they can be developed and become devices available for all - they often pop up in citizens’ minds. FabLabs therefore act as a cradle for ideas, where they can be supported and developed into working prototypes. The Pilot action 1 was designed to involve normal citizens of the various local communities around the FabLab for learning how to transform ideas into prototypes and then to manufacturable products.
The process was called “ideas 2 prototypes 4 manufacturing” and demonstrated the role of FabLabs and communities as a source of grass-root innovations.

**Marco Fellin**
MUSE FabLab


Ph: CC BY SA MUSE FabLab

## Pilot 1 in numbers

### MUSE FabLab

**56** mentorship hours
**4** prototypes
**4** mentors
**23** participants

**Group photo of the Italian Digital Transformation Camp, October 2017**

Ph: CC BY SA MUSE FabLab

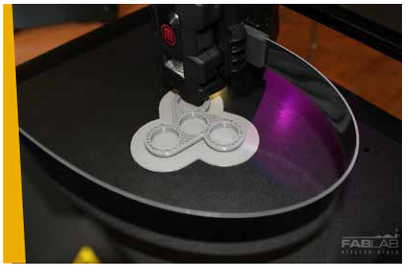
### strojLAB

**3** months of mentorship
**4** prototypes
**4** mentors
**8** participants

**3D printing with Kuka robot**

### FabLab Bielsko-Biała

**150** mentorship hours
**2** prototypes
**1** mentor
**582** participants



**2017 kids oriented 3D printer design: fidget spinner, of course :)**

Ph: CC BY SA FabLab Bielsko-Biała

### RogLab

**3** months of mentorship
**4** prototypes
**7** mentors
**43** participants

**“Creathon” in RogLab, December 2018**

Ph: CC BY Domen Pal

**652**

**Total participants to Pilot 1**

# Regional Development Agency in Bielsko-Biała (PL)

www.fablab24.pl
Jan Sienkiewicz
jsienkiewicz@arrsa.pl

The Regional Development Agency in Bielsko-Biała (RDA) was established to initiate, organize and support the development of South Silesia and its national and international promotion. Its relevant thematic competences include regional policy development, business environment creation, assistance with technology transfers and complex, pro-innovation services. It is a relevant part of regional ecosystem of innovation, maintaining a wide network of international, national and regional organisations and authorities, science parks and clusters.

One of the core RDA activities is operating a FabLab in Bielsko-Biała. It supports the development of smart specialisation through the pursuit of high quality in science, technology and innovation, and promotes the unique knowledge and resources of the region. It contributes to the popularization of 3D printing and rapid prototyping in the community, SMEs, educational institutions and R&D sector in the region by providing professional tools and knowledge.

FabLab Bielsko-Biała, established in 2014 was one of the first in Poland and throughout the years has become a significant educational and technology transfer entity in the region. It provides training sessions and workshops in 3D printing, spatial modelling and rapid prototyping for different target groups – from children and young people, through students and world of academia to business environment representatives.

Representatives of FabLab Bielsko-Biała participate as experts in various regional, national and European events organized by the makers' community as well as schools and universities, start-ups and institutions related to regional development and innovation support.

FabLab Bielsko-Biała wants to become an open access space for students, designers, entrepreneurs and everyone who wants to develop an idea right through to the product stage, get familiar with cutting-edge technologies, or participate in DIY creative workshops for fun.

Thanks to the FabLabNet project, we are on the right track to achieve this!


Ph: FB FabLab Biesko-Biała

# 2.3 Pilot 2 “Connecting to Business”

**Dávid Pap**
FabLab Budapest

There is growing interest in the potential of FabLab’s grassroots innovations to play a role in the local digital transition to sustainable production and consumption systems. The basic principles composed by, doing with others, learning by doing and using open source models and sharing infrastructure create real value for entrepreneurs and local ecosystem.
The infrastructure makes the lab a ”swiss-knife laboratory” for R&D while sharing ideas and knowledge helps sparks to become rapidly products ready to enter to the market, or social innovation to reach the society as quickly as possible. The flow of experience with fewer barriers than conventional systems helps to create communities and builds flexibility which serves as a green room for multidisciplinary ideas.

## The FabBusiness Format

**2**

**FabBusiness**
events were carried out
in Budapest and Bratislava

FabBusiness lasted **4 days**

**1**

**international jury selected**
was enrolled for selecting
among the Pilot 2 participants
start-ups the beneficiaries
of these international events

**10 beneficiaries**
had the opportunity of a boost coaching,
meeting with potential investors and
to present their projects to a specific
wide audience

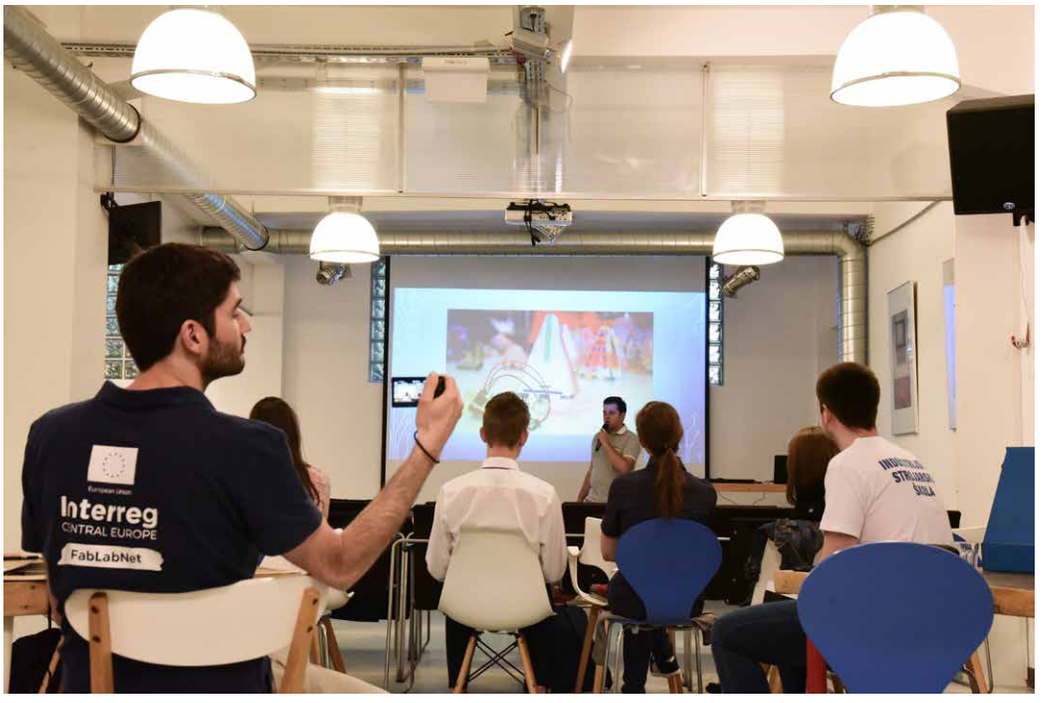
**2 most brilliant project**
were selected for participating
to the TechFest in Munich


**MUSE FabLab Pilot 2**

Ph: CC BY MUSE FabLab

**FabLab Bratislava Pilot 2**

Ph: CC BY FabLab Budapest




**FabLab Budapest FabBusiness in Budapest**
Ph: CC BY FabLab Budapest


**FabLab Bratislava FabBusiness in Budapest**
Ph: Eva Vaskova, 2017

# 2.4 Pilot 3 “Connecting to Education”

## Brave new competences for a strange new world

In the future it will be possible to design sneakers, furniture and jewellery online, download and print them in 3D. Digital production tools such as laser cutters, 3D printers and CNC mills are influencing the global production landscape and will become more and more important in future decades. FabLabs offer a glimpse into this brave new world and help schools to show new and emerging occupations apart from hairdressing and auto mechanics.

**Karim Jafarmadar and Roland Stelzer**

Happylab

## Education is important!

**Partners gathered together a portfolio of**

**175**

courses on more than **60** topics, targeting a vast public, from primary schools pupils to retired professionals

**2.000**

Total training hours

**During the Pilot**

**3.500**

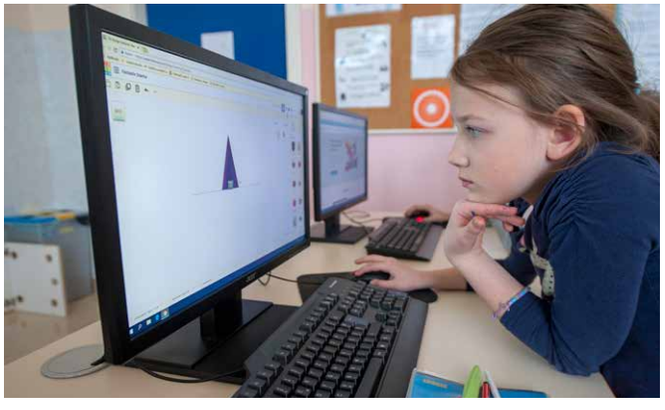
hours of training were carried out during **32** courses

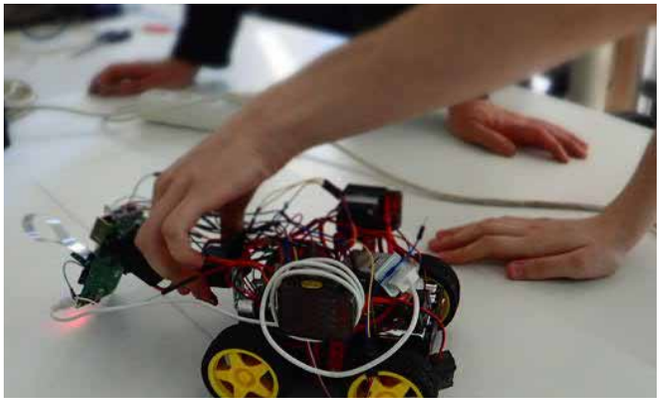
**320**

Total participants in 7 countries

| | |
|---|---|
| **Italia** 76 | **Slovenia** 36 |
| **Austria** 8 | **Slovakia** 82 |
| **Czech Republic** 35 | **Hungary** 67 |
| **Poland** 16 | |







**Hands on education!**

# Were the Pilots successful?

## Yes!

They proved that FabLabs are the ideal places to experiment innovative dialogues among different figures of society!

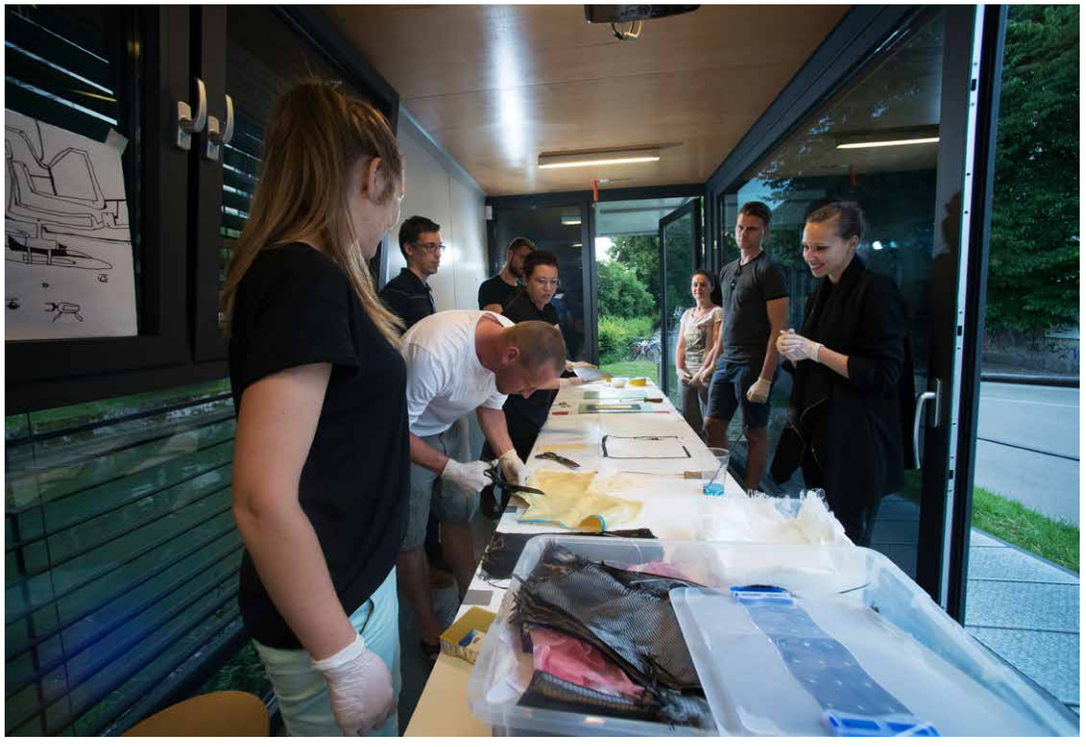
Want details?
**Here you are:**

| Evaluation reports of the Pilot Actions<br>*General report Annex DT253* | Pilot 1: community | Pilot 2: industry | Pilot 3: education |
|---|---|---|---|
| LP - IT - MUSE FabLab Trento | *Annex QR DT252LP1* | *Annex QR DT252LP2* | *Annex QR DT252LP3* |
| PP2 - AT - Happylab | - | - | *Annex QR DT252PP23* |
| PP3 - HU - FabLab Budapest | - | *Annex QR DT252PP32* | - |
| PP5 - CZ - Brno University of Technology | *Annex QR DT252PP51* | - | *Annex QR DT252PP53* |
| PP6 - PL - Regional Development Agency Bielsko-Biała | *Annex QR DT252PP61* | - | *Annex QR DT252PP63* |
| PP7 - SI - RogLab Ljubljana | *Annex QR DT252PP71* | - | *Annex QR DT252PP73* |
| PP8 - SK - FabLab Bratislava | - | *Annex QR DT252PP82* | *Annex QR DT252PP83* |
| PP9 - HR - FabLab Zagreb | - | *Annex QR DT252PP92* | *Annex QR DT252PP93* |
| PP10 - DE - UnternehmerTUM MakerSpace Munich | - | *Annex QR DT252PP102* | - |

# ROGLAB (SI) at Museum and Galleries and Galleries of Ljubljana

www.roglab.si
info@roglab.si

RogLab is a creative hub established in 2012 as a prototype for a future institution in the listed Rog factory building in the centre of Ljubljana. As a collaborative platform providing an encouraging environment for creators with its 3D workshop, RogLab responds to the challenges of today's society and the urban environment by producing creative projects, while broadening the scope of its programme through a network of partner institutions. RogLab, Slovenia's first public MakerLab, gives creatives of all ages access to production tools and encourages the innovative use of maker technologies. In its first six years, it has hosted more than 4,500 individual users, 70% of whom are women, while more than 200 children take part in its workshops yearly. In 2018, RogLab received the prestigious Eurocities Innovation award. RogLab is part of the Museum and Galleries of Ljubljana.



Ph: CC BY SA Miran Kambic, Nika Kurk, Hana Josic, Domen Pal

Chapter 3

# Widening the impact

## We think that FabLabs are relevant for society

**Karim Jafarmadar and Roland Stelzer**

HappyLab Wien

In the foreseeable future, when robotisation and automation will be a regular feature in our professional lives, DIY could give new meaning to our actions. By becoming Makers, we do not lose jobs, we simply reinvent them - thus preserving our independence. The maker movement is living out the future today. Analogue and digital ideas fertilize each other. Computers and robots are the natural tools of any maker, and openness to new technologies sets them apart from simple hobbyists.

Just as computers came to the desks of private individuals in the form of PCs in the 1980s, FabLabs and Makerspaces make digital production technologies such as CNC mills, 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 things. Thus, after the democratization of information, there is now also a democratization of the means of production.

Ph: CC BY SA RogLab

# 3.1 Bringing FabLabs closer to Society

**Roberto Vdović**
FabLab.hr

## Three tools to make an impact

FabLabs' essential role is to build communities. Whether orientated towards business, the local community or education, FabLabs need tools to build their community. FabLabNet partners developed three level of tools, specific for each sector: Fab Box, an all-in-one toolbox or workshop that can be oriented toward schools or the local community; Fab Fest, an event-style tool to engage and impact a wider community and various stakeholders; and Fab City, a more complex tool in the form of a conference or even long-term activity to bring all stakeholders together and have a significant impact on society.

## Gathering forces

A total of 12 events were planned to engage the audience in innovative way through 1 Joint methodology for stakeholders engagement *Annex QR DT311*

**4 Fab Fest**
in IT, AT, CZ and DE

**5 Fab Box**
in AT, HU, PL, SI, HR

**3 Fab City**
in IT, HU and DE

**For a total of 31.147 participants.**

### Participants in details:

| | Fab Fest | Fab Box | Fab City |
|---|---|---|---|
| **MUSE FabLab** | 2.000* | - | 30 |
| **Happylab** | 12.000 | 13.050 | - |
| **FabLab Budapest** | - | 59 | 11 |
| **strojLAB 2.051** | 2.051 | - | - |
| **FabLab Bielsko-Biała** | - | 74 | - |
| **RogLab** | - | 120 | - |
| **FabLab Bratislava** | - | - | - |
| **FabLab.hr** | 250 | 1.300 | - |
| **MakerSpace** | 30 | - | 242 |
| **SUBTOTAL** | **16.331** | **14.544** | **272** |

** estimated audience, the event was held in May 18-19 2019 in MUSE during the FabLabNet Big Fest*

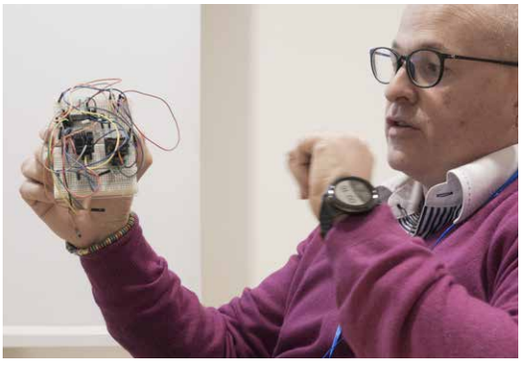
## Did Fab Fest, Fab City, and Fab Box work?

Yes! All three formats proved to be very effective in the open innovation culture! Do you want details? Here you are:

| Evaluation reports of the Engagement formats | Fab Fest | Fab City | Fab Box |
|---|---|---|---|
| MUSE FabLab Trento | *Annex QR code Library** | *Annex QR code DT314LPC* | - |
| Happylab | *Annex QR code DT312PP2F* | - | *Annex QR code DT313PP2B* |
| FabLab Budapest | - | *Annex QR Code Library** | *Annex QR Code Library** |
| strojLAB | *Annex QR code DT312PP5F* | - | - |
| FabLab Bielsko-Biała | - | - | *Annex QR code DT312PP6B* |
| RogLab | - | - | *Annex QR report* |
| FabLab Bratislava | - | - | - |
| FabLab.hr | *Annex QR code DT312PP9F* | *Annex QR code DT312PP9C* | *Annex QR code DT312PP9B* |
| MakerSpace | *Annex QR code DT312PP10F* | *Annex QR code DT312PP10C* | - |

** reports are expected to be uploaded to the FabLabNet Library in June 2019*

## MUSE FabLab Fab City RuralHack

Ph: CC BY SA MUSE FabLab

**MUSE FabLab Fab Fest** (Trento, 18 and 19 May 2019)

## **Happylab Fab Fest** (organized in the context of Vienna Maker Faire 2018)



Ph: CC BY SA Miran Kambic, Nika Kurk, Hana Josic, Domen Pal

## ...and Fab Box

## FabLab Budapest Fab City

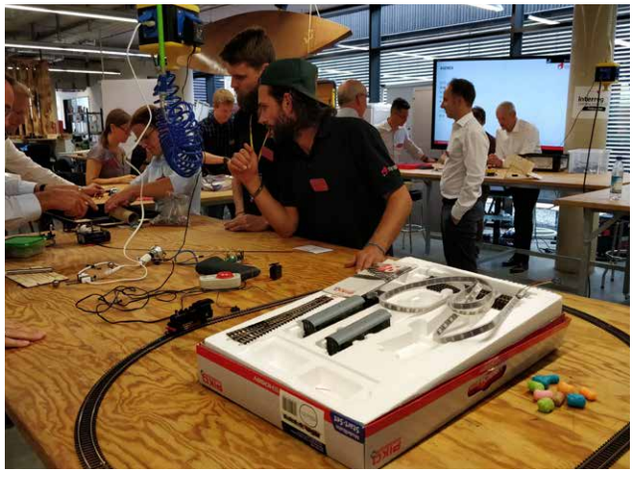
## strojLAB Fab Fest


## FabLab Bielsko-Biała Fab Box


## RogLab Fab Box


## Makerspace Fab City...

## ...and Fab Fest




## FabLab.hr Fab Fest...

## ... Fab Box...

## ... and joining the Fab City global initiative

# Slovak Scientific and Technical Information Centre FabLab Bratislava (SK)

www.fablab.sk - www.cvtisr.sk
Jozef Vasko jozef.vasko@cvtisr.sk

The Slovak Centre of Scientific and Technical Information (CVTI SR) is the national information centre and specialised scientific library of the Slovak Republic focusing on technology and natural, economic and social sciences. It is directly managed by the Ministry of Education, Science, Research and Sport of the Slovak Republic. CVTI SR fulfils the following roles: National Centre for Popularisation of Science and Technology in Society; Technology Transfer Centre with nation-wide operation; PATLIB – Centre of Patent Information in Slovakia; Support unit for the research and development organisations' evaluation; Depository Library of the OECD, EBRD and WIPO; European Documentation Centre. It does not perform economic activities on the market. CVTI SR operates the first and only FabLab in Slovakia (opened in 2014) as a pilot program realised in Bratislava region.

Through its activities it supports students, scientist, designers, artists and other interested parties to create their design products and prototypes by providing machines and staff to assist them in the development of their projects. Furthermore, it informs various target groups about new technologies through excursions and organises seminars and thematic workshops. CVTI SR is the best actor to bridge the different figures in the regional innovation ecosystem. Being a flagship initiative in Slovakia, FabLab Bratislava is supported by different public actors such as the Municipality of Bratislava, the Slovak University of Technology and the French institute in Slovakia. Moreover it has intensive co-operation with other initiatives in Slovakia active in related fields (e.g. start-up support initiatives, designers, etc.).


Ph: CC BY Marco Fellin

# 3.2 The European School of Makers

## Teaching what we have learnt

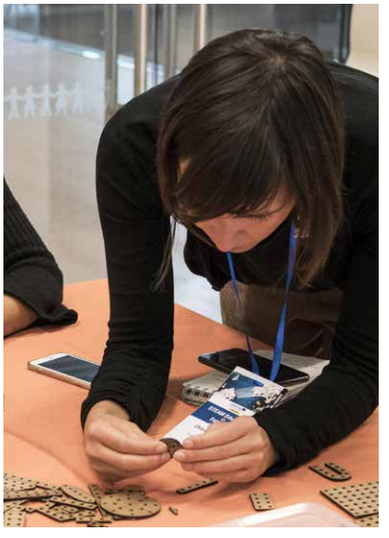
**Karim Jafarmadar and Roland Stelzer**

Happylab

FabLabs are a very diverse network and the individual labs have very specialized knowledge in certain areas. With the European School of Makers we want to use this huge advantage of the network to give every Maker access to a workshop and training program that a single FabLab itself could never offer. Each lab contributes its expertise and at the same time has access to the know-how of specialists from all over the network.

**1** European School of Makers ESOM | **39** Free courses | **427** Participants

## MUSE FabLab ESOM courses



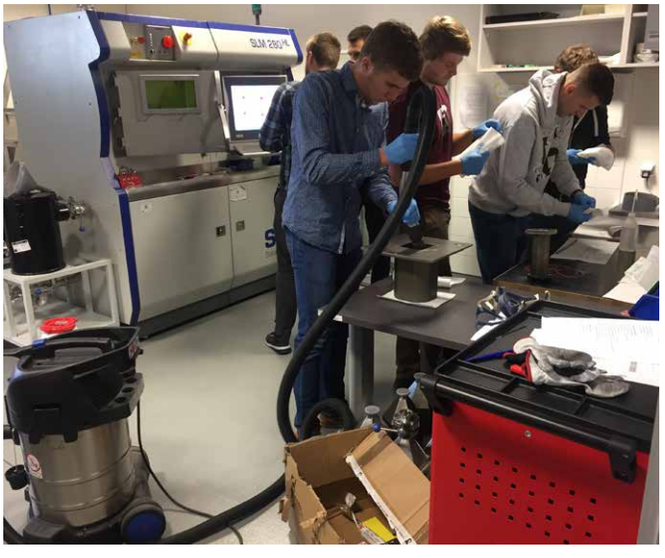
Ph: CC BY SA MUSE FabLab

## Happylab Vienna ESOM course


Ph: CC BY SA HappyLab

## FabLab Budapest ESOM course


## strojLAB ESOM course



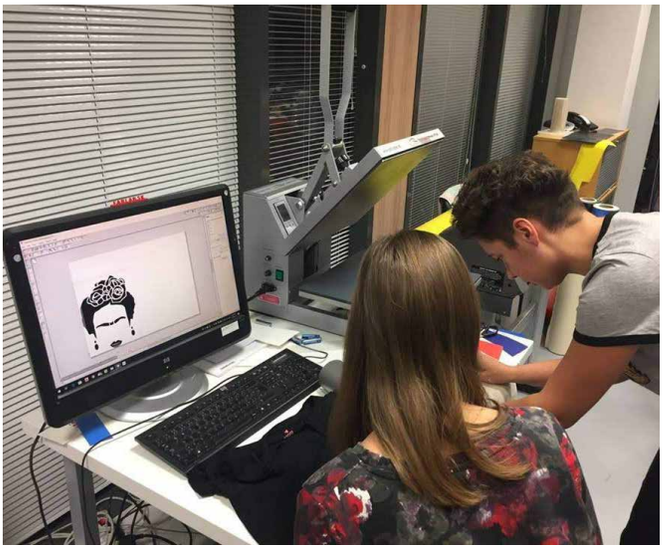
Ph: CC BY SA strojLAB

## FabLab Bielsko-Biała ESOM course

Ph: CC BY SA FabLab Bielsko-Biała

## RogLab ESOM course

## FabLab Bratislava ESOM courses



Ph: CC BY SA FabLab Bratislava

## FabLab.hr ESOM course


Ph: CC BY SA FabLab.hr

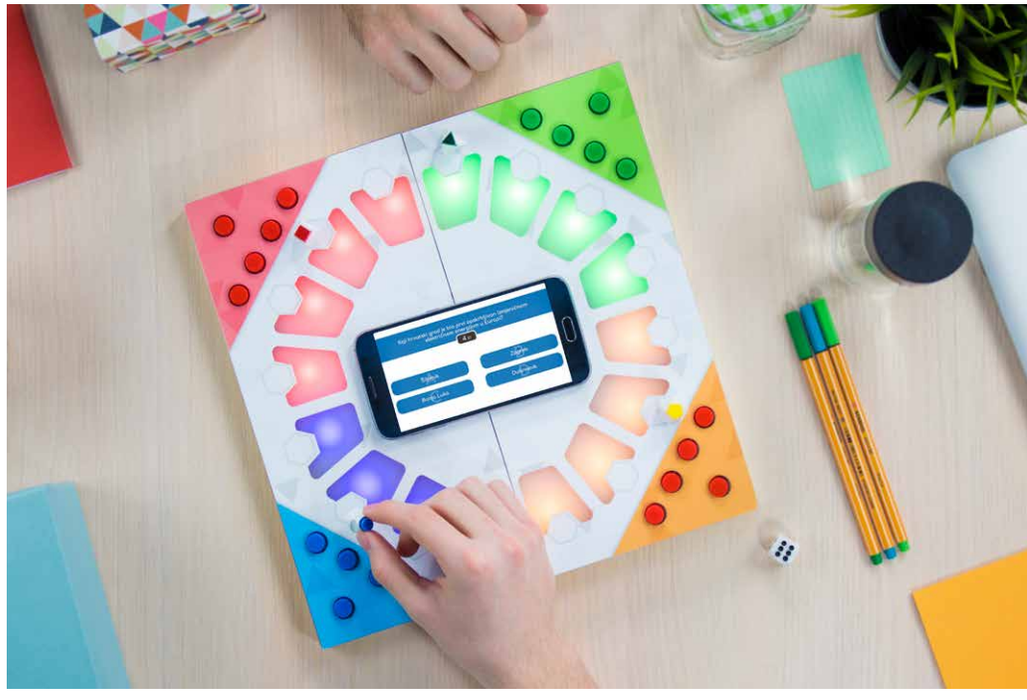
## MakerSpace ESOM course


Ph: CC BY SA MakerSpace

# FabLab - Association for Promoting Digital Fabrication FabLab.hr (HR)

www.fablab.hr
info@fablab.hr

As the only FabLab in Croatia, FabLab.hr has been operating with the support of the Faculty of Architecture University of Zagreb since 2013. FabLab.hr promotes digital fabrication by informing, educating and collaborating in innovation with a special sensibility for social interest groups. It focuses mainly on digital fabrication innovations in the field of architecture and construction. It organises workshops and thematic activities linked to digital fabrication with the purpose of education for all who are interested. It supports architecture students by providing the infrastructure needed to build out and prototype their ideas. FabLab Zagreb has both internal and external capacities. Internally, it is equipped with professional equipment (laser engraver, 3D printers, and electronics). Externally, it has around 30 active members from all over Croatia, mostly school and university educators with great experience in teaching students and pupils. This include all STEAM aspects, and more specific competences such as basic and advanced CAD and 3D modelling, visualization, FEM-a, generative and parametric design, digital fabrication, 3D printing, and 3D scanning. FabLab.hr is in a crucial position within the regional innovation ecosystem and it has the capacity to involve the different actors needed to increase the level of innovation. It has direct contacts to the relevant ministries in Croatia (Ministry of Science, Education and Sport; Ministry of Entrepreneurship and Crafts) and it also cooperates with the city administration of Zagreb. Thanks to its activities carried out on a regular basis, it has the link to the maker community, too, and as part of its operation it also collaborates regularly with the business sector.



Ph: CC BY SA Josip Vukičević

# 3.3 Roll out strategies

**Nina Bratkova**
FabLab Bratislava

## How we rolled out

With aim of scaling-up the results of the FabLabNet project, partners developed specific strategies to incorporate their findings into existing service portfolios using the knowledge they gained while testing new pilot actions and innovative tools. These strategies showcase the findings and tools developed, tested and critically reviewed on a transnational level with the aim of transferring the knowledge into product and service portfolios of FabLabs, education and policy papers in the CE.

## FabLabNet Roll out Strategy *Appendix QR Library**

** report will be uploaded to the FabLabNet Library in June 2019*


**FabLabNet Thematic Meeting in Bratislava, September 2017**
Ph: CC BY SA FabLab Bratislava

# UnternehmerTUM MakerSpace (DE)

www.maker-space.de
Dr. Helmut Schönenberger,
Dr. Dirk Rossberg

With UnternehmerTUM MakerSpace, UnternehmerTUM provides a unique infrastructure for implementing ideas and innovations in the form of prototypes and small-scale production. MakerSpace, a 1,500 m2 high-tech workshop that is open to the public, gives start-ups, engineers, architects, designers, and makers access to machinery, tools, and software, as well as to a creative community. This open workshop concept, which was once the first of its kind in Europe in this size, was brought into being at the Entrepreneurship Center in Garching, near Munich, in cooperation with the BMW Group.

MakerSpace offers a variety of work areas, such as machinery, metal-working, and wood-working shops, as well as textiles and electrical processing. Using 3D printers and laser and waterjet cutters, new forms can be fabricated using all types of materials. For the purposes of support and networking, the MakerSpace team offers training and consulting services for members at all skill levels.

With its bright, spacious project space and the somewhat smaller event space, MakerSpace offers the perfect location not only for company conferences and workshops but also for other group projects, like hackathons. The MakerSpace team offers event concepts for members, companies, students, and trainees that are designed to meet the occasion and needs, as well as public events.

Ph: CC BY SA MakerSpace

Epilogue

# Our vision for the coming years

**The FabLabNet Consortium**

The nine partners have a shared vision for the future of the informal CE FabLab Network: **“To become the most important network facilitating mobility and knowledge exchange of FabLabs/makerspaces staff in Central Europe”**. In order to pursue this vision, the partners have agreed that they will promote DIY (Do It Yourself) and DIT (Do It Together) culture, keep their spaces accessible to various audiences, share knowledge, foster interaction and cooperation between different industries and promote the mobility of makers. Once a year partners will meet at their own expense to exchange news, consider collaboration possibilities, and plan shared activities for the following year.

During these three years our FabLabs grew considerably. Each of us explored fields out of our comfort zones, becoming more capable, more connected, and more relevant at a national and international level. The feedback from our communities led us to think that our FabLabs are here to stay, as a vital part of future innovation and education facilities.

Ph: CC BY Benjamin Vitti

## FabLabNet Fact Sheet

**Acronym** FabLabNet

**Full title:** Making Central Europe more competitive by unlocking the innovation capacity of FabLabs within an enhanced innovation ecosystem

**Duration** > 36 **months** (1 July 2016 - 30 June 2019)

**Number of partners** > 9

**Number of Associated partners** > 11

**Project budget** > € 2.6 Million

**ERDF funding** > € 2.2 Million

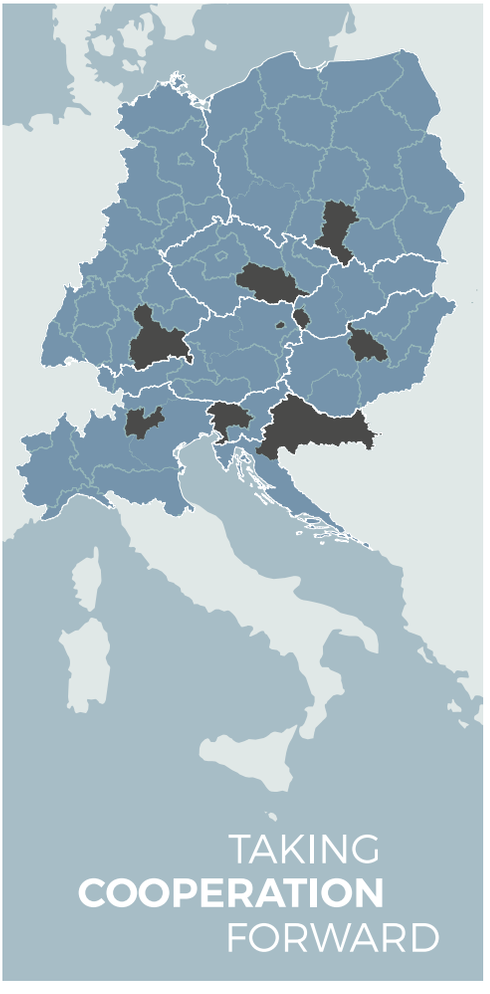
### The project in 40 words

FabLabNet project connects the FabLabs around Central Europe for best practice exchanges. Sharing capacities and attracting new users through new engagement formats are the practical results that enable **FabLabs to become a tool for regional innovation.**

### Outputs overview

FabLabNet's main objective is to bring the FabLab concept to new, existing and future innovators across Central Europe and **connect them on a transnational level.** Through the network, FabLabNet connects with organisations and individuals from business, education, society and policy for smarter innovation.

In order to achieve the project's objectives, FabLabNet focused on capacity building (e.g. training, study visits) for all the partners involved, tested new services (prototyping and business valorisation) and embedded FabLabs in the existing innovation ecosystems by connecting them with stakeholders and policy makers.



### Strategies and action plans

FabLabs are small-scale fabrication facilities devoted to bottom-up research and open innovation, where prototyping and production equipment is made accessible to the wider public and their non-standard needs. The project aims to contribute to the new manufacturing model, more distributed and at hand, through a set of transnational actions to build up, support and strengthen local innovation ecosystems.
Therefore, the FabLabNet agenda aligned with small and medium sized technological enterprises, and with the strategies of education and knowledge institutions such as schools, universities, and research centres.

### Capacity building and networking

**Baseline studies**: mapping challenges and the innovation potential of FabLabs.

**Virtual Factory**: through infrastructure investments, FabLabNet created a 'Virtual Factory' that connects partners' tools and services.

**Networking**: FabLabNet aims to create a strong Central European network to exchange best practice and promote the role of FabLabs in sustainable, Regional innovation.

**High Level Training**: FabLabNet created a digital training catalogue - the European School of Makers (ESOM) - with schemes and modules designed for every attendee, including both professionals and the general public.

### Pilot actions

A set of three Pilot Actions tested and demonstrated the activities by which the FabLabNet could better connect and serve local communities, business and education.

**Connecting to Community**: engaging and inspiring local people and future entrepreneurs through a mentoring programme.

**Connecting to Business**: provide opportunities for businesses to develop prototypes into market-ready products.

**Connecting to Education**: offer training and information on FabLabs and innovation culture for educational institutions.

### Achieving long-lasting effects

FabLabNet developed and tested innovative formats to attract and engage new, existing and future users:

- **Fab Boxes**: small, mobile FabLabs allowing people from remote areas to experience the technology at first hand
- **Fab City**: a workshop series bringing together smaller, specialized local labs to explore collaborations and public outreach projects
- **Fab Fest**: local fairs and festivals, introducing digital fabrication to people of all ages and backgrounds

### Who funded us

FabLabNet is funded by the Interreg CENTRAL EUROPE Programme that encourages cooperation on shared challenges in Central Europe.
With €246 million of funding from the European Regional Development Fund, the programme supports institutions to work together beyond borders to improve cities and regions in Austria, Croatia, Czech Republic, Germany, Hungary, Italy, Poland, Slovakia and Slovenia.

**FabLabNet Lead partner**

**MUSE - Museo delle Scienze**
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38122 Trento - Italy

fablabnet@muse.it

www.muse.it

## Discover more about FabLabNet

www.interreg-central.eu/Content.Node/FabLabNet.html

www.fablabnet.net

www.facebook.com/fablabnet.net

## Annex QR

Here you can find the direct link to the original project deliverables

| Page | Code | QR Code |
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*“Go make something”*

**Phil Handy**

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