ENOLL WEBINAR SERIES

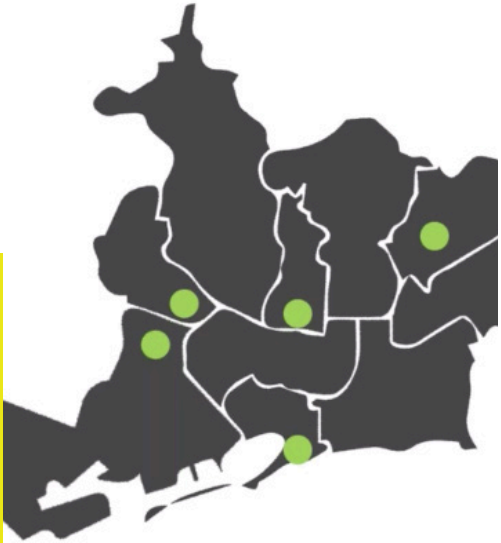
LIVING LABS AND THE MAKER COMMUNITY'S RESPONSE TO THE COVID-19 CRISIS (HELD ON 21ST APRIL 2020)

ENoLL community is actively working on the challenges that the COVID-19 crisis has brought to us. Our aim now, as it is for many others, is to react in an agile way and prepare our cities and communities now for the new societal changes that will take place in Europe and the World. The Webinar Series "Let us tackle COVID-19 together" starts analyzing how the Community of Makers, Living Labs and stakeholders are gathering around actual proposed solutions, the **current actions preparing our digital societies for a post-COVID future.**

Presented cases

Jordi Reynés, Clara Borràs, Martí Burriel: The infrastructure of cities maker spaces to the service of the maker community in Barcelona (Spain).
Elisenda Casanelles: Building up respirators for COVID19- from Leitat, Barcelona (Spain).
Wim de Kinderen: Engaging the 3D printing infrastructures and stakeholders in Eindhoven (Netherlands).
Juan Bertolín: Maker community and University's Living Lab University engagement in Castelló (Spain).

MODERATOR: Fernando Vilariño (ENoLL Chairperson, Library Living Lab)



Barcelona, Spain

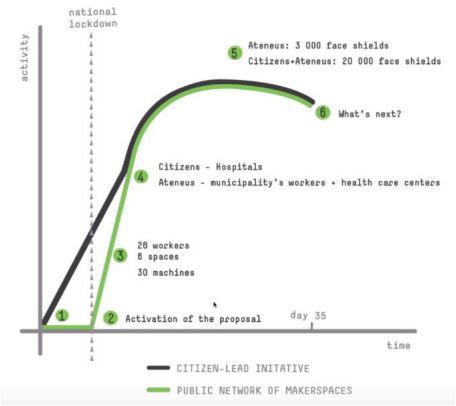
THE INFRASTRUCTURE OF CITIES MAKER SPACES TO THE SERVICE OF THE MAKER COMMUNITY IN BARCELONA (SPAIN)

Presenters: Jordi Reynes, Clara Borràs and Martí Burriel. Ateneus de Fabricació, Ajuntament de Barcelona

- Public network of maker spaces
- Team of 26 workers (engineers, educators, coordinators)
- Focus on social innovation and inclusion – empowering citizens in digital culture
- Teach, give information, develop projects with students from Schools of Barcelona
- Family Program – bringing technologies to homes
- Work in participating way with citizens; trying to give support to the citizens to develop their own programs, projects and ideas
- Reinvented their work due to Covid- 19

Website: https://ajuntament.barcelona.cat/ateneusdefabricacio/ca/

ATENEUS DE FABRICACIÓ



The Graph shows the evolution on what was done. A group of citizens in Spain familiar with maker philosophy came together to produce face shields; The organisation called Corona Makers, grew fast; were not able to structure themselves as one and divided into regions with headquarters (HQ) in Barcelona. People with 3D machines sent the objects to the HQ and from there to hospitals.

In a few days a whole initiative was structured, quick in responding and producing.

The Network of Ateneus de Farbicació is a Public institution and did not act in the first week because it had to convince the board to support the citizens' initiative; one week later were able to start producing and activate spaces.

A TEAM OF 26 WORKERS, 6 SPACES AND OVER 30 MACHINES WERE ACTIVATED

IN A NUTSHELL

The network of "Ateneus de fabricació" was able to coordinate the process of the citizens' initiative.
Over 3000 face shields have been created – not for hospital but for other front-line workers; requested to build door openers and masks .
Makers spaces are able to respond and adapt to every phase of the crisis.
The production that the citizens have is big; the maker space is one small part in what they have been doing; goal is to support the citizens in what they need with a profile of public administration .

BUILDING UP RESPIRATORS FOR COVID- 19 IN BARCELONA (SPAIN)

Presenter: Elisenda Casanelles, Leitat

Leitat is a technological centre with activities mainly focused on RDI. The Health Care Living Lab Catalonia is focused on promoting the scientific and technological knowledge within the health sector using the user/patient-centred approach. In terms of innovation – there is room for improvement. In addition, need to improve on translation of research to implementation

RESPONSE TO COVID- 19

- Response on the Covid19- challenge and shortage of medical equipment: Leitat developed a Mechanical Ventilation System. Leitat has designed a 3D-manufactured emergency ventilator to make this essential device available for the healthcare system.
- Coordination of existing capabilities of partners; a complex solution has been done quickly.
- This **respirator** has parts which have been printed in 3D. Leitat has a history in **3D printing** and have an incubator of companies that want to explore the 3D field. Designed pieces and created a prototype. In normal conditions Leitat does not manufacture – only prototype. In this situation Leitat produced the pieces. Electronics – decided to buy pieces already on the market.
  Clinical validation – with health agency in Catalonia and two hospitals from the Living Lab; this allowed to pass all regulatory validations needed in order to manufacture the product.

Picture credit: Leitat

THE RESPIRATOR WITH 3D PRINTED PARTS IS BEING USED IN 13 HOSPITALS

3D VENTILATOR: MEDICALLY VALIDATED AND INDUSTRIALLY PRODUCIBLE

This is an emergency ventilator, called LEITAT 1, in which its design and components have been simplified to the maximum so that they can develop a robust, useful and less complex medical device, facilitating its production and coupling.

HOW WAS THIS INNOVATION POSSIBLE?

It is a result of a unique collaboration of partnerships for a complex solution that can be produced anywhere. With the manual for 3D pieces, anyone can print pieces and buy electronics to produce solutions.

IN A NUTSHELL

The pandemic has set a precedent.
Great innovation capabilities in Barcelona; can quickly react to complicated challenges.
This has been possible because of the right network of partners. An asset for the close future.
Aagile reaction is possible; there are complexities which we can overcome.

ENGAGING THE 3D PRINTING INFRASTRUCTURES AND STAKEHOLDERS IN EINDHOVEN (THE NETHERLANDS)

Presenter: Wim de Kinderen, Brainport Eindhoven

VANGUARD INITIATIVE

Network of industrial regions collaborating on the industrial agenda. Looking how regions can collaborate to install own regional funds to support innovation. Demonstrate large scale projects. Goal is to build a European Network of Demonstrators.

HTTPS://WWW.S3VANGUARDINITIATIVE.EU/

3DP PAN EU

3DP PAN EU is a platform designed to map 3D printing test and demonstration facilities in the EU, describing in detail the equipment and services that are available for use by third parties.

HTTPS://3DPPAN.EU/

The “3D Printing” is a Pilot Project of the Vanguard Initiative. It follows the Vanguard initiative ‘common methodology’ (learn-connect-demonstrate-commercialise).

Picture credit: 3DP PAN EU, https://3dppan.eu/facility-centres

THERE ARE 271 FACILITIES REGISTERED FROM 27 COUNTRIES

- Portal creating transparency on the offer test and demonstration facilities on 3D printing in Europe. Bringing supply and demand of 3D Printing services together.

- The portal launched in March 2020. Because of the Covid emergency, the call is extended also to production facilities. Focusing on health care organisations, but not limited to those. Opened an additional feature which offers production facilities to add good examples.

- 3DP PAN EU is a platform designed to map 3DP test and demonstration facilities in the EU, describing in detail the equipment and services that are available for use by third parties.

- Companies and organisations throughout the EU suffer supply chain problems as a result of the Covid19- crisis. When stocks run out and you have difficulties buying parts or components from your regular suppliers, 3D printing may bring you the solution. On the platform you can detail your production offer or specify your 3D printing demand.

MAKER COMMUNITY AND UNIVERSITY'S LIVING LAB UNIVERSITY ENGAGEMENT IN CASTELLÓN (SPAIN)

Presenter: Juan A. Bertolín, Espaitec, eLivingLab UJI

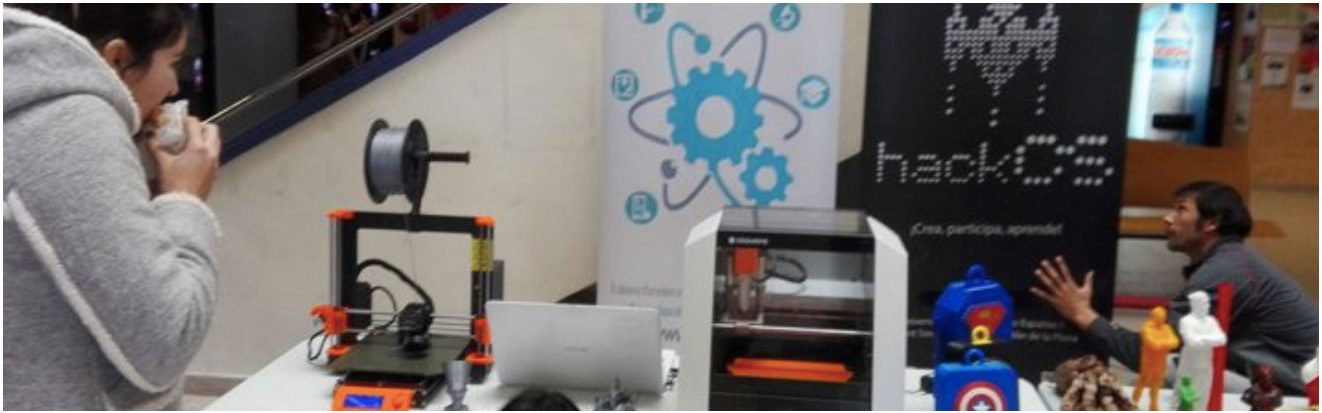
Espaitec, the Science and Technology Park by means of the Vice-Rectorate of Research and Transfer, along with the Universitat Jaume I, has made available all the equipment of its FabLab (3D printers, laser cutters, milling machines) to the Generalitat Valenciana's Health Authorities to manufacture parts for face shields and masks, and to automate manual breathing systems.

From FabLab, the Universitat Jaume I prototyping laboratory is following action protocols and also testing preliminary open-source designs. It is also waiting to know the official mechanisms from Health authorities to produce and deliver materials against COVID- 19.

Running a science and technology park within a University Jaume I in Castellón, Spain. Asking Universities to provide manpower in R&D, 3D printers in Valencia region. Started to analyse the manpower and task force which can be provided.

Working together with a student association supporting coronavirus initiative to make respirators, face shields and masks.
One only person was able to work at the lab at a time due to strict restrictions.
The health regional government of Valencia was waiting for regular and professional masks – 3D printer giving masks still needs to go through certification criteria.

The hospitals are reluctant to use the materials unless they don't have anything else to use. They use the certified units; when those are over they use home-made units. It could be dangerous to use a non-sterilized mask. Conflict appeared with hospitals, with regional and national health government. It was an interesting initiative to see that beyond the FabLab and Living Lab, within the University there were around 1000 researchers involved in related actions.



Picture credit: espaitec, https://espaitec.uji.es/en/espaitecs-fablab-collaborates-with-innovative-initiatives-against-covid19-/

NEW PROJECT: UJI>LAB

Helped Coronavirus Makers community in Spain in which 20,000 people are engaged

3D PRINTERS IN CASTELLÓN

Between 300-200 people in the City of Castellón helped by providing their 3D printers

CERTIFICATION CRITERIA

3D printer made masks still needs to go through certification criteria. Hospitals use certified equipment.

Q&A

.01

WHAT IS NEXT? WHAT ARE THE STEPS TOWARDS DIGITAL SOCIETY POST-COVID?

Leitat

- General feeling: Things are going to change and must change.
- We can overcome all the problems; the pandemic is not over yet, we hope it will be soon; strong partnerships have been created: to be kept in mind because we might/will have to act again.
- We are starting to see the light in Spain, but in other countries the pandemic is blowing up.
- Leitat is exploring international collaborations as next step.
- Urgency: finish dealing with the pandemic; act together if it is needed again; improving user experience.
- We are contributing with some institutions in Catalonia in order to collect all initiatives that are going on; intention to select those that make more sense in order to have them clear in case another pandemic comes; those who can make a change in the health care system are interpellated.

Ateneus de Fabricació

- Demands are decreasing now.
- We have to think what happens now, at close and mid term.
- Won't be able to resume normal activity until September.
- Need to reinvent ourselves as a public service.
- There are a lot of people in Spain and Barcelona printing; so one of goals is to empower citizens and connect.
- We have seen that most people are empowere,d but we have the challenge to continue empowering all the parts of the ecosystem.
- Goals: to develop different materials for students and the school; all citizens to continue in the objective inclusively.
- Ateneus proved that they are agile (despite being a public body); right now they are focusing on making videos for people to get to know the organisation more.

.02

WHAT WILL BE THE ROLE OF UNIVERSITIES IN THE FOLLOWING MONTHS?

- Universities are aware of the upcoming change; Universities can switch between offline and online mode – most courses are online now.
- All governments at the University are reviewing how the future will be post-Covid.
- How to change the model of teaching and researching in terms of the sanitarian crisis.
- October will be the same, unfortunatelly; impact will be lower, though we will have the same problem.
- Laboratories are the weakest link; protocols and procedures will be put in place to give support to researchers; Universities are trying to design a new way of working

.03

HOW TO GIVE VISIBILITY TO THE SOLUTION PROVIDED BY THE MAKERS?

- Portals such as the one proposed by Wim de Kinderen (Brainport Eindhoven) allow for integrated visibility (impact).
- Potential roles of SMEs; companies want solutions close-by, though we evolved to a day-by-day contact through the Internet to a Global Virtual Wold, these connections being the mainstream. How is this going to affect us in the future?

FURTHER DISCUSSION POINTS

Covid is highlighting the importance of certain skills – what skills will need to be developed?
What is the relationship between emergency, maker response and certification systems?
There have been some reductions in supply of PETG (material) in Bristol. Has anyone used recycled PETG and /or worked with waste recycling centers to upcycle plastic (bottles)?