

FAB CITY Rural Hack

DT314 - LP - Report on Engagement Tools
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Version 1
12 2018





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General information

Engagement tool: FabCity

Location: Trento, MUSE Museum of Science

Date: November 16th and 17th 2018

1. Short overview

The *city* where Trento insist is constituted by a diffuse rural area, whereas the Agriculture, Food, Winery, Dairy, Farming sectors provide a vast percentage of the GDP. These sectors are also the one where bottom up innovations is more challenging, although on the territory insists an agriculture institute which provides high schools courses, professional courses and high level trainings. This Centre, Fondazione Edmund Mach, provides also Technological transfer and it is well recognized and trusted by professionals. For this reason we have involved it in the organization.

For this reasons MUSE FabLab has decided to dedicate an entire workshop to unlock the potentials of using coding, robotics and electronics in the agricultural domains. The 2 days workshop used Arduino as a main platform, linked with various motors/relais and sensors for the remote sensing and controlling of a greenhouse, a field, a process. During the course, the participants learnt how to data-log and how to use these informations with online services, and they successfully programmed Telegram bots capable of providing informations, showing graphs and issuing alerts.

We have involved a number of participants higher than the expectations. They were farmers, engineers, university students, high school teachers, professionals, researchers.





2. Lessons learnt

The low cost and open source technology available on the market today, makes the bottom up innovation easier. The role of FabLab is crucial for diffusing the latest cutting edge technologies, and for helping citizens mastering the digital innovation techniques. All the workshop was based on sharing of data and knowledge, so the role of a transnational cooperation is fundamental.

The workshop was prepared in details, and runned pretty much smoothly. Having 30 persons with more than 30 devices to be connected to a secured WiFi, providing power outlets for all of them, tools, electronic kits etc, is not that easy, but the few issues were solved within minutes.

The Fondazione Edmund Mach involvement was very easy and interesting for the part related to agriculture. It was pretty much laborious for the part related to the official use of the logo and the help in diffusing the news through their official communication channels.

Stop Doing

- Last minute acceptance of a participant.
- Focusing too much on technology and less on Agriculture. Adding a dedicated day specific for Agriculture could be ideal.

Keep doing

- Use of an electronic blackboard for sharing course materials (Slack or others)
- Asking for photo usage (GDPR) with a signature at the very beginning, together with the registration
- Mixing the participants in small groups where they help each others, based on the competences declared in the registration form.
- Using the local catering, very flexible for last minute change.
- Using a very large room, with space for eating and working in two separate areas of the same room.

Start doing

- Having a member of the team dedicated to the problem solving of new problems.
- Using handheld PMR radios for communicating among the organizers.
- Providing a booklet with the relevant info and examples acquired during the course.
- Creating a real personalized project. A dedicated half or entire day should be added.
- Insert mini-workshops inside the regular activities in order to transfer some practical knowledge. E.g. participants enjoyed a lot the soldering basics course, which is a very good starting point for future implementation of other's FabLab courses.

3. Outcomes

The course allowed participants to create from scratch a functioning system for monitoring and controlling remotely a device. The experience was very positive since many of them learned from each other, and the mutual learning is one of the FabLab's keys.

After the course most of the participants were enthusiasts of having learned Arduino, some basis of electronics and electronic circuits, a bit of informatics and a little of agricultural related knowledge. The majority of them declared the course gave them the tools for continuing working independently in the future, using the FabLab and its community for perfecting the skills which are still needed.

The participants become in this way ambassadors of the capabilities of the FabLabs in those domains. They can involve other stakeholders and associations, and introduce these innovation directly in their professional domain.







4. Sustainability and Transferability

The experience is repeatable in future, by using the FabLabs equipment and the professionalism acquired during the course. During the course, held by an external expert, FabLab's personnel has been trained as well. The experience becomes readily repeatable in future. Costs may be covered from a number of stakeholders.

At first it can be paid by participants themselves. As for any course for professionals, participants are used to pay for it.

It should not be a challenge to involve some association to sponsor the course: Farmers associations, winery associations, artisanat associations can all provide the resources for repeating the course in future, ensuring a free participation for their members.

The concept of the Rural Hack is also easily repeatable in other zones of the EU: agriculture, farming, fishery, forestry, diary, food productions are sectors present everywhere in the world, and this course gives the possibility for improving the quality of the product and/or the quality of life of the workers (e.g. automatizing some process).



5. Benefits

Local communities have learnt the existence of a new tool for introducing innovations in their domains. The FabLab is the place where cutting edge technology is readily available, a community is present for ensuring a mutual learnt of new technologies, and for providing help in designing and prototyping solutions. The overall course can be repeated in future as is by all the FabLabNet partners.

