

opencare

playbook

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opencare Maker Playbook

co-designing care services: a practical guide

You can read the full book in your browser at this page:

<http://makerplaybook.opencare.cc>

Or download it as a:

- PDF
 - ePub
-



Epochal changes in science, technology and globalization have transformed traditional power structures in the world, opening the way for citizens to participate in society in a way that they could not before. And change is accelerating. While we do not know what

tomorrow's problems are going to be, we know there will be many, and we know we will need everyone equipped to deal with them. We all must be emphatic innovators, able to collaborate, create, and act in changing environments.

opencare Playbook aka "Co-designing care services: a practical guide" is a little contribute for all innovators who wants to start to make a change in their community.

The Playbook describes a general path for starting collaborative processes that you can adapt as needed. The playbook is related to engagement processes (local and online), co-design sessions, prototyping and sharing documentation as parts of the entire process.

- **Local** and **online** engagement as the citizenship involvement on specific issue (in this case: care);
- **Co-design** as the collective detection of troubles and solutions;
- **Prototyping** as a the making of a service or a device from a concept;
- **Sharing documentation** to facilitate replicability of processes and results.

The Playbook is a collection of notes, tools, tips and tricks about the [opencare.cc](#) project. It is a work in progress and it's organized in such a way so that everyone can start from here to replicate changing process of **opencare** project.

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[WeMake | fablab makersapace](#): is based in Milan (Italy) and provides a series of innovative services and training to the creative community of the region in the field of digital and traditional manufacturing, high-value technologies and access to a fully equipped Fab Lab. We foster the development of a new model of designer-producer (maker) and small-scale company by facilitating the engineering phase, the rapid iteration of design solutions, the on-demand production of physical/digital artifacts.



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The book has been built on top of the [gitbook](#) service.

opencare: a little bit of context

opencare is a European project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 688670.

For most of humanity's history, care services – which today we call health and social care – were provided by communities: family members, friends and neighbours would check on each other to make sure everyone was fine, keep an eye on each other's children or elderly parents, even administer simple medical treatments.

Starting from the second half of the 20th century, developed countries switched to systems where the care providers were professionals, working for the government and modern corporations. This new solution has achieved brilliant results, based on the deployment of scientific knowledge and technology. However, over the past 20 years it has come under growing strain: the demand for professional care (health care, social care, daycare for children, care for elderly people) seems limitless, but the resources our economies allocate to it clearly are not. Additionally, any attempt to rationalise the system and squeeze some extra productivity out of it seems to dehumanise people in need of care, who get treated as batches in a manufacturing process.

What if we could come up with a system that combines the access to modern science and technology of state- and private sector-provided care to the low overhead and human touch of community-provided care?

We are going to attempt to do just that. We are launching **opencare**, a two-year, 1.6 million euro research project to design and prototype new care services. We will:

- Collect experiences of community-driven care services;
- Validate them through open discussion, both online and offline;
- Augment them with state-of-the-art **maker technology** (3D printing, laser cutting, bio-hacking...);
- Combine everything we learn into the design and prototype of next generation community driven care services.

[Ezio Manzini](#), one of the world's most prominent experts in design for social innovation, said "Care referred to a special kind of human interaction".

[WeMake](#) is part of the **opencare** consortium with the following partners:

- [Edgeryders](#)

- [Città di Milano](#)
- [ScimPulse Foundation](#)
- [The Stockholm School of Economics](#)
- [Università di Bordeaux](#)

More info: [opencare.cc](#)

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How the maker movement is transforming care

Daelyn James, 14, likes to make things. With just some wooden sticks, an electric fan, and some plastic rings made with a 3D printer, Daelyn built a device to help kids with Cystic Fibrosis dry their nebulizers. An innovative solution homemade.

The maker movement demystifies and democratizes care device design. What's exciting about the maker movement in care is that the possibilities are endless and can come from anywhere. From low-tech to high-tech solutions makers are solving real problems for patients, often at a fraction of the cost of traditional medical equipment. And in many cases, citizens themselves are the makers, like Daelyn.

// An example of maker community-driven care

Franco [not his real name] is an Italian music teacher and engineering student. He suffers from severe visual impairment. He has two projects in mind: (1) building a kit of Lego-style components to quickly assemble and prototype electronic circuits designs; (2) learning how to 3D-design and 3-D print. The first project would help him with his studies, allowing him to sketch on-the-fly electronic circuits diagram without having to deal with small graphics symbols, which is all but impossible with his eyesight; the second project would enable him to build a small device to hold his white cane when he needs both hands (example: at the supermarket checkout he needs to handle his wallet, and there is no obvious place to rest his cane).

Franco got in touch with his local makerspace ([WeMake](#)) to figure out whether he can follow their digital fabrication and Arduino courses, and pursue his projects in spite of his disability. Together with WeMake, he decided to do so, following individual courses so that he becomes a part of the local maker community. At that point, he will lead on designing his two projects – he will likely carry out much of the work himself, but be helped by other makers who excel at specific tasks like soldering or 3D printing, as is normal in this community – and act as their “user zero”. If the projects are successful, and if Franco and the other makers think they might be useful to other people with the same impairment as him, WeMake will partner with him to build a small, open hardware-based business to produce and market those artifacts. Being open, any artifact Franco designs can be reproduced and improved upon in any makerspace in the world feeding his files to local 3D printers, laser cutters etc.

This bottom-up, open knowledge-enabled approach to care is not contemplated in the context of Italy's national health service. People in need of care are represented in existing care service systems as passive agents: “patients” or “beneficiaries”. In many cases, such services support them in buying artifacts, like white canes or wheelchairs, but not in buying

expertise to make or hack the artifacts they need. The cost for Franco's individual courses are carried in part by [WeMake](#), and in part by funds raised on the side, with the help of a local association of blind and visually impaired people.

Ezio Manzini about opencare project

The goals of **opencare** imply that the Consortium will be running an online platform to host EU citizens' conversation about their care needs, worries, and personal experiences, or ideas to work within the current welfare ecosystem, whether as practitioners, beneficiaries, or stakeholders. Ezio Manzini has written a [contribution on the opencare platform](#).

// Where does the idea come from?

Premise [by Ezio Manzini]

Since the beginning of human history, care has been exchanged (given and received) inside homogeneous, durable and relatively closed groups of individuals: families, clans, village communities, urban neighborhoods...

In the past century, in parallel to that, care has been delivered also by dedicated institutions: hospitals, kindergartens, elderly residences...

Today, for several reasons, the demand of care is growing and becoming more complex, while both the traditional and the modern offer of care are less and less capable to cope with it. Actually, in the contemporary fluid, hyper individualized societies, families, village communities and urban neighborhoods are weakening (if not totally disappearing) and individuals, given their life structure, have less and less practical possibilities to take care of others (even when, in principle, they would do it).

In turn, care institutions, which were supposed to substitute the traditional community and individual care, have less and less economic resources (and often political will) to do it.

The gap between the growing demand and the shrinking offer of care is the basis of the present care crisis: a lack of care that is not only practical (the caring system do not succeed in coping with the care demand), but also psychological (the sense of loneliness deriving by the lack of sense of care throughout the whole society).

To overcome this crisis a brand new care systems has to be imagined and enhanced. To move in this direction, a first step is to better understand caring activities, considering their nature and diversity.

// What is care?

[by Ezio Manzini]

Aside from being a word that we use regularly, the meaning of "care" might have different interpretations:

1. *Care referred to a special kind of human interaction*: someone (the care giver) gives attention to, and takes action for, someone else (the care receiver).
2. *Care referred to a set of artifacts*: the products and services of the system which, in a given time and place, enables the care activities (i.e. the care interaction of the point 1).

What is open?

[by Ezio Manzini]

Open source, open data, open knowledge, open mind...

What exactly is the meaning of "open" in the contemporary world?

A succinct summary from the *Open Definition* website (<http://opendefinition.org/>):

Open means anyone can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness).

Starting from this assumption, "open" could gain a more complex meaning within the field of care:

- A. *Open referred to the care system*: a system is open when different actors have the possibility to play a role. This can happen when the whole activity package is opened and divided into parts with the possibility, for these different parts, to be distributed among different actors.
- B. *Open referred to the information flow*: a system is open when the information on which it is based are open. This can happen when these information are totally visible, accessible and transferable to other systems.

// What is opencare then?

[by Ezio Manzini]

Considering the different meanings of "care" and "open" there is a clear correlation between 1 and A, and between 2 and B:

- A1. *Open care refers to the final result*. That is, it refers to the characteristics of the care system we intend to create: a care system where different actors (experts and non experts) are in condition to play a relevant role.

- B2. *Open care refers to the design/production process.* That is, it refers to the characteristics of a co-design and co-production process: the process leading to the realization of the products and services on which an aimed care system is based.

How to involve citizens in a local area?

Citizen involvement is a key part of the development of social innovations. Citizens are best placed to frame and articulate the nature of the social challenges they experience, so it is important that they are brought into any process of understanding needs.

In this chapter we talk about communities and fablab, **tools**, **method** and **tips** to engage citizens in co-design process.

// Why we talk about community?

Communities are groups of citizens who decide to share their time in real and virtual spaces for different purposes. They are therefore citizens who have decided to develop social ties. When you start a collective participation process the advice is to start presenting the issues, challenges, projects in different communities to engage citizens who are more readily willing to participate. The goal will be to create a new community ready to share experiences, knowledge and skills.

// Why a local community?

Developing a local community is necessary to focus the strategy on deep human connections among participants using an empathetic and narrative approach. And it's possible with a face to face collaborative action. Engaging citizens in the development of care solutions, in particular, designing and testing solutions in real life settings with target users should help make those solutions more effective. Furthermore, working with citizens, drawing on and developing their assets and capabilities, helps support society's resilience and capacity to act.

// Why building a local community in a Fablab?

The Fablabs are open innovative places . Who enters into a FabLab is always the right person: you do not need technical requirements, qualifications, specific skills. The communities that develop inside the Fablab are " learning communities". They are founded on the sharing of experiences and knowledge. In a Fablab citizens will produce light but meaningful social ties. Contexts in which light ties assume value generate inclusion and

cohesion: sharing of time and thoughts becomes significant . The awareness of acting in this context urges citizens to express themselves more freely ,in trust . Everyone learns something, increasing capability and empowerment.

How to engage people in local community?

// Your Greatest Resources

This will help to start citizen engagement process and create a new local community care-centered:

- Identify the minimum number of people who want to be involved (this shows number of contacts that I will turn on and the kind of promotion that I'll have to activate);
- The type of citizen who intends to involve (young, female, with specific characteristics...);
- The venues of the meetings (one, more than one, openspace, pubblic area...);
- The type of activity to be made in every place (presentation, needs analysis, solution identification, early design - ideas draft);
- The type of activity to be performed and the topics covered by group (more or less experiential, more involved, more frontal etc.);
- The type of output.

See [Tips](#) subchapter for more specifications.

// How many people I have to contact?

We recommend to map how many communities there are in your area and what are the characteristics of these communities: aims, age, gender and so on. The citizens involved in communities have the greatest skills in listening, and are used to collaborative practices. Then you have to choose four or five communities with different characteristics. The first step to involve citizens of different communities is inform and share goals, timing, methods and tools.

opencare local team ([WeMake](#) and [Municipality of Milan](#)) contacted four communities:

1. Elderly people with a common passion: dancing
2. Parents of disabled childrens
3. Migrants
4. A “Social street”

See [Engagement in opencare project](#) subchapter for more details.

What kind of event I have to organize to facilitate the participation of citizens?

Different approaches are needed to outreach and engage a wider public, including migrants, the elderly, disabled people and other social groups. To engage effectively with citizens, one needs to ensure that the process is genuinely open to heterogeneous groups, not only the digitally confident. This must be organically embedded from the beginning.

The first meeting with the citizens has to be an informal event: party, happy hour, an evening of dancing, an experiential workshop, a game...

// Why is a workshop good for the community and for you?

Why is a workshop good for the community?

- It makes people share an experience in a informal way, creating a space of trust and making them feeling less isolated as a result;
- It makes people collaborate to solve concrete problems;
- It makes people feel empowered when facing again at issues in their everyday life.

Why is a workshop good for you?

- It creates trust in you by the community;
- It makes the people in the community understand the limits of what you are planning to do;
- It gives you an opportunity to spot people interested in developing or testing the project;
- People might share their experience creating a natural amplification channel for the communication of the project.

See [How can I make a workshop happen?](#) subchapter for more insights.

// Keep the interest alive - how to keep the people involved?

Once citizens have agreed to participate, you will keep them connected. Regular communication about your project is important. It can keep your issue fresh and your meetings in the minds of the people, and improve the community credibility. Following are several ways to maintain open lines of communication with citizens:

- Newsletter
- Blogpost
- Social network

What kind of event I have to organize to facilitate the participation of citizens?

- Maililng list
- ...

Regular communication give them updates and make them feel valuable.

Methodology and goals

// Methodology - How involve citizens in a participatory process?

The goal must be to present yourself and the goal for which you require the participation. An informal meeting facilitates interaction and trust-building between people.

In the meeting we must provide time for talk about:

- Who you are
- What do you want
- Why did you choose that community
- How you intend to achieve your goal

You should not use technical language or too difficult. Express yourself in a simple way.

Within citizen engagement, participation and co-design methods, a usually reported challenge is related to bridging and translating professional and technical terminology into a language that can be easily understood and that people can connect to their daily lives and problems. The presentation should be short and possibly not frontal. Then you should sit down with the people and talk to them and verify that they have understood what you have said. We recommend using storytelling and bringing them solutions that can be touched to facilitate communication and to encourage an empathetic approach.

Every person who has an interest in, or who could be affected by, the issues under discussion must be encouraged to take part. Be clear at the start about what changes your project can or cannot promise and be clear about the mechanisms of the decision-making processes. Especially when a Public Administration try to engage citizens asking them to contribute to a project, it faces the problem to incentivize them with concrete benefits in exchange for their time, effort or behavioural change, signing a sort of implicit “pact”. Be sure you give people as much information as possible and explain where information is missing or is uncertain. Show respect for diverse views and cultures by making sure that minority views are taken on board. This is your opportunity to build trust by being courteous, empathic and helpful. Use existing channels to make sure that you report back to all interested people as fully and as quickly as possible. Put final decisions into action as soon as possible. This will strengthen participants’ belief that their involvement was worthwhile.

The location is very important. The first event can be hosted by the community you have contacted. You have to offer food, drinks, music or whatever.

// Goals - Why involve citizens in a participatory process this time?

To involve citizens it is necessary to establish a relation of trust and answer this question.

The reasons may be different:

1. To test a new methodology;
2. To inform people about something and collect their opinions;
3. To test a process or a product;
4. To design a new service or product;
5. ...

In **opencare** project the goals is to involve citizens in co-design sessions to encourage citizens:

- To bring out their needs or obstacles in life;
- To define solutions to respond to individual or collective problems.

Engagement in opencare project

Here, there is a list of all the **meetings/workshops/events** that we holded with local communities in Milan:

1. [Mare Culturale Milano](#) - March 12th, 2016 // meeting



The first public meeting of **opencare** project with a local community of **elderly people**, interested in Balera dance was a dancing evening with a singer.

2. [Villa Pallavicini](#) - March 17th, 2016 // meeting



Villa Pallavicini
ASSOCIAZIONE CULTURALE



It was a meeting with a **group of young new comers** at Villa Pallavicini. During which they had the possibility to look over the new methodologies about digital manufacturing and to approach for the first time to the **opencare** project.

3. [Fa' la Cosa Giusta](#) - March 18th, 2016 // workshop



The first **workshop** held during Fa' La Cosa Giusta, a fair of critical consumption and sustainable lifestyles. The participants realized, in few hours, an opensource remote monitoring and caring IoT service.

4. XVivaio - March 30th, 2016 // meeting



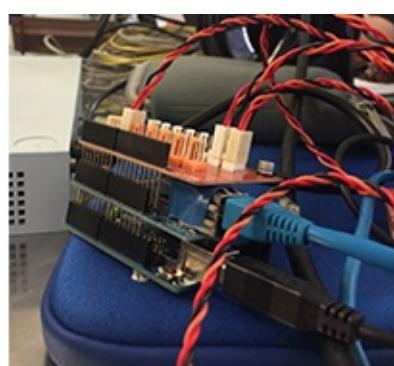
In this meeting we presented the **opencare** project to the community of **parents** of boys and girls with **special needs**. The meeting was organized at WeMake thanks to the collaboration with the Municipality of Milan.

5. Genuino Day - April 2nd, 2016 // event



Introduction of the **opencare** project, and its state-of-the-art, during the **Genuino Day** event. Genuino Day is an anniversary event of the most famous Italian open source platform in the world. The aim was to engage makers.

6. Forum delle Politiche Sociali - April 7th, 2016 // workshop



Our **second workshop** organized by WeMake and the Municipality of Milan at Forum delle Politiche Sociali. During this workshop, the participants were divided in 4 different two-people groups. They were asked to idealize and **prototype**, in just few hours, an opensource remote monitoring and caring IoT service.

7. [Social Street](#) San Gottardo - April 19th, 2016 // meeting



Last but not least, we had a meeting with the community named Social Street San Gottardo, a community of **citizens** who decided to live the neighborhood by re-activating and improving the social relationships towards a better liveability through exchange initiatives, entertainment and education.

Tips

If your project is inspired by an idea that helps your local community, make sure your emphasis the fact that it can help solve a problem or create opportunities in your local community:

- **Language** - Make sure you communicate in languages that are understandable by your local community;
- **Relate to your community problems** - present your project from the scope of the local community;

If you are replicating/localizing an existing global project make sure you localize your materials to make it easy to involve your local community.

- **Understand your local community** - Spend time understanding why they are interested in your project. Make sure you engage them in the scope they are interested in, for example: A geek who wants to tinker has a different interest from a person who wants to eventually use your project/product.

// Find your friends

1. Which **makerspaces** can help you work on your project?
2. If there is no makerspace nearby, can you host sessions in a near **co-working** space?
3. If you don't have makerspaces or co-working or any modern facility, can you meet at the library or community center in the **neighbourhood?** (with this approach, however, you need to have existing team and community to start with)
4. If your project relates to a medical cause, or industrial, or elderly, etc, layout the scope of your project, and reach out to **related organizations**, or groups.

// Connecting the dots

1. Make sure you **build connections** between the community of the makerspace and the new community that you bring for your project;
2. Ensure that the local community can **work together** nicely;
3. In tech projects, **female participation** could be challenging. Make sure females in your project are welcomed, trusted and can participate freely in areas that they are interested in;
4. **Follow up after the meeting:** Whether you have a facebook group, or another online venue that the local community is found together on, make sure you follow up and

remain in contact.

How to involve an online community?

Why build an online community? Where to target community and how to engage people in your project.

// Why an online community?

There is a number of reasons why you would want to consider having an online community for your project, mainly because it allows room for different experiences, and levels of tech expertise to be involved in your project. The level of involvement of your online community depends on the stage of your project. An established project with existing team, that seeks replicators, would need a different strategy from a starting project that is seeking team members. In the scenario below, we assume that you have a very small team on the ground and that the project is at a very early stage of development.

Where and how to target your community

// Where to target?

Building an online project footprint (have a reference about your project online) is your step one to reach out to your online audience. You can choose a combination of the below options:

1. A simple **landing page** with About and team sections. Where you elaborate on why you are building your project, what problem are you solving, and what resources do you need.
2. An account on one of the **documentation platforms**. Depending on familiarity and level of comfort, this could be an instrucatbels page or a github manual.
3. **Social media** accounts. If you have already kicked off some activities on the ground, even if a simple meeting, then you need to announce and document those on your FB and Twitter handle.

Once you have one or more of the above established, you need to focus on:

1. **Finding your online friends** - Here we don't mean finding people whom you know, but finding accounts for projects that are aligned with your efforts, target them and ask them to re-tweet, share, collaborate, etc. When you find a like-minded, make sure you reach out to their audience.
2. **Design your messaging** - Make sure you align your messaging with the stage of your project. An early stage requires different messaging from messaging after 3 month of running your projects, for example.
3. **Build your network** - Reach out individually to people who have liked to shared your project.

// How to target?

Now assuming that you have already built one of more of the online foot prints above. You need to focus on your messaging. Some hints on this:

1. Make sure you highlight the **WHY** of your project.
2. **Tell your full story** - Make sure you emphasize the different sides of activities that your project has. For example, don't put all your focus on the technology side, or the social side. Make sure you tell the full story. You want a developer looking for gig to knock your door, as much as you need a hobbyist who wants to become a beta tester.
3. **Don't waste your time** - If a strategy isn't working and you aren't getting followers and there are no signs of growth after 2 weeks, then, change your strategy immediately.

4. **Be responsive** - Very responsive to comments inquiries, etc.
5. **Document** - Have documentation for whatever stage you are in at your project. You don't have to finish your project to document. Your documentation starts on day one.

// Define your audience:

It should be clear in your mind who are your audience. Which people are you trying to reach to, and at which stage? If you are seeking beta testers, then design your simple outreach online strategy to help you find them. If you need tech collaborators, then you need to think of a different strategy:

1. **Language** - Ask yourself which languages you need to keep your communication in order to help you reach to your audience. If your local language isn't English, and you need online audience to join your next workshop, on the ground. Simple, don't write in English :). If you need a broad audience that can help replicate and tinker your project, then keep your outreach in as many languages as you can.
2. **Clear messaging** - Are you building an online community because you need people to backup your project on kickstarter? Or because you are building a networked opensource project? Or because you need to build a team? Align your messaging to achieve your target.
3. **Where is your audience?** - Social media works well for general outreach. But if you need Arduino tinkerers to know about your project, then maybe you need to drop a line at the Arduino forum, for example.

Now that you have reached out, how to keep the audience engaged?

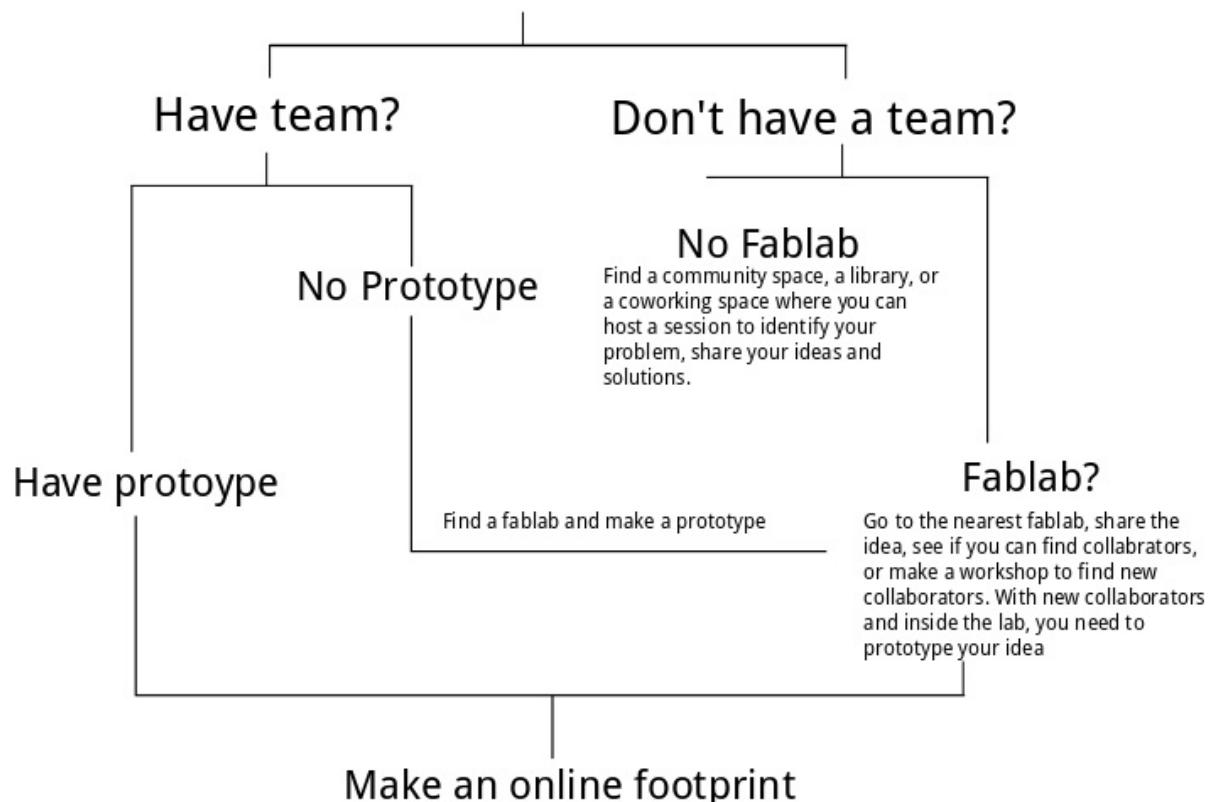
How to engage people?

Reaching out is the first step towards engaging people. However, you need to analyze your audience's different needs, in order to ensure that people will actually continue to be involved in your project.

1. **Make it clear where help is needed** if you need tech support, make it clear that your project is planning a next phase and collaborators are welcome. If you need replicators or testers, make it clear that you are here to help them throughout replication process.
2. **Acknowledge** Acknowledge all support that you receive. Post and share all replicators' work. Thank people publicly and regularly. Not only does it bring good Karma, but it helps people stay engaged with your project.
3. **Invest in relations** Dedicate time to follow up with replicators, past workshop attendees. Stay connected with your grassroot community. Over them components for free if you can afford it.

// A visual flow of a project time-line and options on how to start

Idea + You!



Using a simple **Wordpress** template, you can start a page that clearly elaborates on your **idea, documents** all steps you have taken so far, leave contact info and elaborate on clear items where you need help. Create social media accounts and make sure you maintain them well.

How can I make a workshop happen?

A hands-on workshop is usually a very good way to engage local communities and to find people interested in the project. However organizing a workshop is also usually time intensive and requires a lot of effort in terms of research, planning, logistics and communication.

Workshops can be approached in different ways according to the topic and methodology, but there are common issues that we can cover and analyze separately. A compendium of [best practices](#) has been collected to make your life easier!

At the end of the chapter you will also find a [brief summary](#) of our direct experience about organizing workshops for the opencare project. We hope it will help to give you a good place where start.

Workshop best practices

According to our experience in organizing and running workshops we have found some issues and best practices that we would like to share to make everyone's life easier. Actually they are also useful as a checklist and reminder whenever you find yourself in the work of setting up a workshop.

Please find here quick links to the most common issues:

- [Space](#)
- [Material](#)
- [Coaches](#)
- [Communication](#)
- [Documentation](#)

Workshop Space

There is no right or wrong space for a workshop, and usually a space can be finetuned to meet diverse needs. One thing for sure, **it's very important to make participants feel comfortable and give them a warm welcome**. You can use the space in many different ways according to the topic and the methodologies of your workshop. In general when setting up hardware prototyping, digital fabrication and design workshops we have found these practices very helpful:

Showing digital content - if you are planning to project slides and/or show digital content, be sure you have access to a projector and the correct cables and adapters (if words like VGA, DVI, HDMI, DisplayPort are unknown to you, then you might need to check this list before you start https://en.wikipedia.org/wiki/List_of_video_connectors).

TIPS

Prepare the material you want to show in a file format that is widely available and easily sharable. This is important in case you are not able to use your computer and you might need to use another computer to project your content. We have found **PDF files and Google Slides (when internet is available) are good ways to avoid file format issues**.

Be sure your material will fit the resolution supported by the projector. If you are showing text you want people to be able to read it!

As far as it may sound silly, **it's always a good idea to find a good surface (preferably plain and white) to project to, the size of it being big enough so that everyone in the room can see/read**. You only find out how disappointing it is to try to follow someone's speech referring to a slide when you can't see it, when you are attending such a workshop, and not when you are running it!

Last but not least, always try to be sure **the ratio between the brightness of the projector and the amount of light in the space is good enough so that everyone can see what you are projecting**. If your space is indoor and you can block sunlight with curtains, then you can probably rely on a cheap projector. If you are planning to project outdoor in the sunlight you might probably need a professional projector. Please refer to this brief overview to understand more about ANSI lumens, the unit that measures your projector light output power (https://en.wikipedia.org/wiki/Video_projector#Overview)

Sitting VS standing - Plan in advance to have enough tables and chairs if the participants will need some kind of support plane to work on.

Also, if your workshop requires participants to stand up it's still a good idea to have some chairs in case it last long or you have someone in the crowd who cannot stand up for long.

TIPS

If you are setting up a workshop where participants will work with hardware it's a good idea to have big tables and to reserve at least one square meter to any of the participants if they are working on their own, or bigger if they are working in groups.

Computers - If you are planning a workshop that will require participants to work on their laptop (very common in technology oriented sessions) don't forget to find a way to provide them with power, you can assume their laptop batteries will last long enough.

TIPS

Power plugs, extension cords and multi-outlets are a must need when participants need to use laptops or powered devices without batteries. **Rule of thumb here is "always bring one more"!**

Internet - Access to a WiFi network can also be considered a must have (apart from sessions where it is requested to avoid using the Internet, are there any?).

In case access to the Internet is fundamental to run the workshop (say for instance you are planning a workshop on Internet of Things tools), then please be sure to be ready with a plan B if the WiFi is not reliable.

TIPS

Always be sure to bring: ethernet cables + an access point you can quickly configure + bring a GSM modem for worst case scenarios

Workshop Material

The kind of material you might need to run your workshop can vary a lot depending on the topic and the methodology. One thing is for sure, **access to the right material is fundamental for a successful workshop**. Not providing participants with the right materials and tools will leave them feeling powerless and might highly compromise their learning process or creative flow.

TIPS

If you are running the workshop plan your BOM (Bill Of Material) in advance so you are sure you can deal with out of stock items. The best approach is to gather the money needed to acquire the material before the workshop and to buy it on your own, so that you are sure the participants can work with the material you have planned. When this is not possible compile a list with very precise info on where to get the goods so that the person responsible to buy it or the participants themselves won't struggle to find what's needed to attend workshop.

If someone else is running the workshop you are responsible for, ask them to send you a detailed BOM asap.

Whatever topic your workshop is about it's always a good idea to have at least a small amount of office supplies: paper, markers, pencils, scissors, post-its... They will be useful for participants to take notes or sketch ideas

Never underestimate the importance of tools, always bring more tools than you think you might need! This is highly topic and methodology independent and will save your life when in need of that small screwdriver or micro USB cable or red marker...

Workshop Coaches

Who's gonna run the workshop? - Are you running it? Are you sure you won't need help from someone else when having to jump from participants to participants asking you questions like there's no tomorrow? Are you sure you can deal with the amount of participants attending the workshop? These are the kind of questions you should ask yourself when setting up a workshop. They will help you decide the maximum number of participants, and they will make you understand how many coaches are needed to run the workshop successfully.

How many coaches? - Finding out how many coaches are needed for a workshop is not an easy job. It might depend on the kind of workshop, on the methodology, and the way you want the participants to feel about the workshop and their learning progress. For instance, [OpenTechSchool](#) (an organization offering free coding workshops) always try to have one coach every four participants.

TIPS

In our experience with workshops we have found out that a coach alone can hardly deal with more than 10-12 participants when they are working in groups in hands-on session. A different story is a lecture-style front-of-the-classroom kind of session, where one coach can deal with a larger number of participants (and the discriminating factor tends more towards the availability of the right technology to reach them all rather than the ability to fix their own peculiar issues)

Where can you find coaches? - Sometimes it might feel hard to find specialized people willing to share what they know, mostly when you don't have a big budget to hire freelance professionals. It is also true that this could compromise the pace of the project, and becoming a turn-down in the people involved. There are some tips that can help you overcome the problem.

TIPS

The first place to start looking for coaches is probably always your community - if people in your community got interested in the project it's very likely that they work in field that has some connections, or they started to learn on their own, or maybe they know someone in the field.

Go and find them on the field, where they hang out. For instance, are you looking for hardware prototyping or digital fabrication coaches? The local **Makerspace of Fablab** is probably a good place to go, they might have weekly/monthly meetings on specific topics as well. Are you looking for coding coaches? **Hackathons and local coding meetups** are probably full of them

Can't find it locally? Go online! Publish post on specialized forums or message boards or chat channels, you might find people who can point you to someone in your area.

Professionals VS academics - Never assume you need academics to teach technology. Professionals hold a huge amount of on-the-field knowledge and sometimes they might show a better versatility, practicality, and easier language and approach to non-experienced participants.

TIPS

It is very common to face rejection when asking professionals to teach something. They think they are not able to do it and no one made them think they are, because they didn't properly study for that. Ask them to tell you in precise details about something they do in their work everyday, or about something special that they have solved at work. When they are finished tell them you have just learned something new! They are ready to teach!

Hands-on approach - Always prefer from coaches a hands-on approach versus a more theoretical mnemonic one. It will make people learn faster while facing real problems. It will be more empowering at a personal level. It will make people remember longer because they can relate the learning to a specific context: the space, the tools, the people around them.

TIPS

structure the workshop so that you space out different moments of learning or creation with practical exercises to solidify the concept and to temporary relax doing something practical

let the theory comes naturally after the practical has been solved and understood and agreed upon from the class

sometimes it might be helpful to run a workshop for coaches on how to coach the workshop, so that the communication with participants or group of participants will be coherent and anyone will follow a similar workshop flow

Be respectful - It sounds obvious but it's not always the case, asking coaches to share the project vision is important as it is important for any of them to be highly respectful of diversity of all the human being involved in the workshop. Discrimination of any kind (gender, sexual orientation, religion, geographical and social background...) must always be out of the door. When this is not respected, apart from being hard to deal with personally and as a group, it will highly compromise the session itself, from a perspective of personal growth and cohesiveness of the group too.

TIPS

You never entirely know the story of your participants, please avoid stupid jokes. You might hurt someone

If you only think it could be necessary or helpful then make it clear with the rest of the coaches and establish shared guidelines

Make this clear with the participants too by saying in the beginning of the session that this is a discrimination-free area

Workshop Communication

You are ready to start your workshop, then don't forget to let people know your amazing workshop is taking place! When communicating your workshop is always a good idea to make clear:

- What is the topic in a clear and intuitive way
- Why your workshop is interesting and cool
- What they will learn/make during the session
- Who is teaching it
- Where and when it is taking place
- How they can sign-up (if it's for free or they have to pay a fee)
- What they need to bring

TIPS

Communicate your workshop to your community through the right online and offline channels depending on the demography of your peculiar target: newsletter, blog post, posts on social networks, flyers, postcards, sms...

In our direct experience we combined communication on different levels (weekly newsletter, blog posts, posts on facebook and twitter) since our target group was very varied. For more info on our experience please refer to [Keep the interest alive](#) chapter.

It's very important to keep the communication alive also when the workshop is over. A follow up with pictures, a video and wrap up is always a good idea to engage the participants in the project!

Workshop Documentation

It's very important, and quickly becoming a standard practice, to publish all the slides and visual/audio/text/code materials of the workshop, so the participants can refer to it after (and sometimes during) the session. Why is that?

TIPS

if you have ever attended a workshop you know how hard it is to be extremely focused for all the duration of the workshop. **Having the chance to look back at the content will make participants enjoy the workshop a lot more and will solidify their understanding of what was done during the session.**

some participants like to take notes when attending workshops, sometimes this practice will distract them from what is really going on, mostly in hands-on sessions. Sharing all the content with the participants will let them free from the taking notes struggle, and will make them focus more on what is happening in front of their eyes!

having access to workshop's content and to real time documentation of the session will give participants the chance to share it with others, amplifying the communication of the project

Sharing content - There are many tools out there in the internet jungle, that will help you hosting and sharing your content. Some are more specific for certain kind of media, some are more suited for your needs because of amount of space, pricing policies, licensing policies etc... It's very hard to cover them all, so we'll just suggest the most popular ones.

TIPS

To share presentations and slides you can always rely on services like [Google Slides](#) or [Slideshare](#). They will offer you the chance to send a link to the participants and eventually embed the presentation in your workshop communication (eg. in a blog post). Unfortunately there are no popular open source solutions we know of, yet.

To share text and notes you can easily rely on [Hackpad](#) or [Google Docs](#). You could also offer participants the possibility of adding notes to your document (and eventually contributing to it) to keep the conversation alive after the session.

To share code the best way to go is a Git based hosting service like [Github](#) or [Bitbucket](#) (or [Gitlab](#) if you have your own server). These version control services will let you host your code, take track of all changes with a permanent history and will let participants and other people not only download but also fork and work on your code to make it better or to create other applications starting from your example. If you just need a link to share your code and don't need the version control infrastructure, you can always use copy&paste services like [Pastebin](#).

Some files won't fit in the above examples, **you can always share an archive with all the files you have used during the workshop session using hosting services** like [WeTransfer](#), [Dropbox](#) or [OwnCloud](#). They will generate a URL you can share with participants to download all the content.

Documenting the session - It's also very helpful to document the workshop session itself.

You can do that by taking pictures, videos or streaming the session online so that the people who could not attend can still enjoy a part of the experience. Collecting shareable media about the session will make your communication more effective.

TIPS

About documenting the session, **it's always a good idea to ask the participants if they desire to be photographed or not**. You can easily do that at the beginning of the session. Depending on the legislation about privacy of your country you might need to submit a paper to the participants that they can sign if they allow to be photographed or videotaped. Some info can be found here (https://en.wikipedia.org/wiki/Photography_and_the_law)

About pictures, **it's not important to have a professional photographer. Pictures taken with a smartphone are usually good enough** to be published and shared online. Nowadays it might happen that participants will take pictures as well, it's a good idea to ask them if they want to share the pictures with you so you can use them for communication purposes, that will generally make them feel more part of the project!

About videos, it's generally harder to make a good video without proper devices. **In our experience having a dedicated video maker for the session will make the video documentation exponentially better.**

See the [How can I share a project?](#) chapter for more info about documentation.

Our workshop experience

During our first months of the opencare project we held a series of workshops to help engaging the local community. We share here our experience with the hope that it will be useful as a starting point to set up more workshops, or as an experience that can replicated somewhere else in future opencare local communities.

// Abstract of the workshop

Taking care using open source tools. During this workshop participants will learn hands-on how to use one of the most common technology methodologies about creating open source care solutions. Plus they will create an IoT monitoring service in just a few hours. In an international setting where citizens' care and healthcare are considered growing social issues and cannot be guaranteed to anyone, opencare tries to find solutions to real life care issues leveraging on the experience and help of local and online communities using innovative, low cost and open source technologies.

// Why the topic?

From day one we wanted to set up a tech oriented workshop for two reasons:

1. We wanted to make people understand why a Makerspace is involved in a project related to care and healthcare, and what are the pros of having a maker skillset involved in a such a project.
2. We wanted to make people understand and try with their own hands how easy it is to create technology solutions on their own.
3. The hype and attention from the media around Internet of Things projects based on microcontrollers (Arduino to be more specific) is very high in Italy, where we held the workshops.
 - i. Plus it gives participants a lot of freedom to augment and customize the initial proposed idea.
 - ii. Plus we based the workshop on a lot of previous personal experience on the topic.

The **Internet of Things as a field of action** was picked because it is deeply rooted in the care field, and because long distance monitoring solutions often came out as a popular desire during meetings with the local communities.

Arduino as the technology of choice was picked because of its popularity, its flexibility, its smooth learning curve and our experience and expertise on it.

// The target group

The opencare workshop was not addressing a specific target group. To put it short:

- It was open to anyone with an interest in the topic or the technology
- No limitations to age, gender, skillset and background
- No prerequisites needed
- It was entirely for free and we brought the material that we lent to participants for the duration of the workshop.

// Places

The workshop was held in public places with the help of the local municipality, the city of Milan. We tried to go where we could find open-minded people ready to possibly embark on the project and commit to a more structured and durable effort.

- We held the first workshop at "Fa' la cosa giusta - The national faire of conscious consumption and sustainable lifestyles in Italy"
- We held the second workshop at "Forum delle politiche sociali" a series of meetings with the citizens organized by the local municipality

// Technology and issues

From a technology point of view we decided to structure the workshop around the Arduino platform, the reasons for this choice have been explained above. The participants were asked to bring their own laptop to join the workshop, then at the beginning of the session any of the participants received a kit containing:

- An Arduino UNO board
- An Arduino Ethernet shield
- A TinkerKit shield
- A series of Tinkerkit modules (sensors and actuators);
- A USB cable
- An Ethernet LAN cable

Running an Internet of Things is not always an easy choice from a tech perspective, unfortunately most of the time:

- Public networks have firewalls you need to deal with
- Public wireless networks don't like 20 devices trying to connect at the same time
- Public networks require multiple authentication which is hard when dealing with simple hardware like Arduino
- The errors you have to deal with when trying to connect and send packets of data over

a network are a lot harder to troubleshoot and fix

With some experience on our shoulder dealing with this kind of issues we came prepared to the workshop.

TIPS

We skipped the idea of using wireless hardware, even if more fascinating, from day one, so we could rely on a locally created network

We tried to connect to a LAN with no success and we tried to share the connection from WiFi to Ethernet from a laptop with no success

In the end **we shared the connection from a 4G GSM modem to all the devices** through a standard switch. This worked well enough for small packets of data like the ones that you send with such hardware.

// Response

The sessions were joined by around ten to twelve people each. Some of the participants were more intrigued by the technology on its own, some were more into the opencare project at large. The kind of feedback we received was diversified:

- On one hand, more openly, we received good feedback at the end of the sessions
- On the other hand, around half of the people that joined the sessions kept on coming back to the following co-design sessions with the local communities

// Documentation

(https://www.flickr.com/photos/wemake_cc/sets/72157666906850805)

How can I structure a co-design session?

// How is this chapter structured?

The aim of this chapter is to produce a general but at the same time complete overview on participatory design activities. We will provide the methodology, we will explain the details and we will show you how we have applied the theory to a practical/real life example.

(Beware: all the theoretical information is fundamental, especially if this is the first time that you are bumping into the co-design world.)

Therefore, first of all you will have the possibility to understand [What is a co-design session](#), by reading its **Definition** and reflecting on its real meaning. Once you will have got the essence of the topic, you can read throughout the different **Characteristics** of the collaborative design discipline. We will then complete the methodological section by listing the different and peculiar **Typologies and approaches** of co-design.

In order to make you understand in an efficient way the theory we will move to a practical example, [Our experience in co-design field](#). In this subchapter we will introduce our tangible experience and right after it we will explain the reason [Why we decided to organize a co-design session](#).

Once you will have completed the Introduction you will have a basic knowledge of collaborative design activity.

This may be enough for you, but in case your aim is to organize and develop a participatory design session, we warmly suggest you to keep reading the [Tips](#). These are pieces of cakes, simple rules that, if correctly followed, can allow you to achieve your goal in the most efficient way.

Each Tip will be divided in two: a general/theoretical description and a practical example related to our co-design experience.

In the end, in order to sum up all the contents mentioned above, we will provide a [Survival table of contents for a co-design session](#), based on our [opencare](#) experience.

What is a co-design session?

// Definition

As we can read in the research essay *The Dynamics of Collaborative Design* (written by specialists from Massachusetts Institute of Technology and New England Complex Systems Institute):

Collaborative design is performed by multiple participants (representing individuals, teams or even entire organizations), each potentially capable of proposing values for design issues and/or evaluating these choices from their own particular perspective.

(<http://necsi.edu/research/engineering/ceraj-02.pdf>)

Therefore we understand that in this participatory act all the different actors try to move through an **innovation process**. Every person has the potential and the capability of exploring and defining problems, as well as focusing on solutions and evaluations.

The design process can be defined collaborative when the closed and hierarchical mechanism is replaced by an **open** and **flat** one, taking distance from the exclusivity of designers, researchers and developers, in order to involve some or all the people that the research is directly or indirectly concerning.

// Characteristics

A complete collaborative process, however, is characterized by an alternation of moments, which can be close/open and hierarchical/flat. Even though participative activities are meant to be open and extended, the core and substantial decisions have to be taken by the research/design/development team since they may require tighter control in order to meet the project deliverable.

Therefore we will have different steps (referred to a standardized co-design process):

- **Discover** (closed and flat): a chosen group shares ideas and contributes together;
- **Define** (closed and hierarchical): an authority decides which idea will be further developed;
- **Develop** (open and flat): anyone can contribute to the innovation process;
- **Deliver** (open and hierarchical): anyone can contribute but the final decision about the project to deliver is in the hands of the person/company/organization in charge.

We can state that a phase of a project can be:

- **Open**, when the subject area is not well defined;
- **Closed**, when the subject area is well defined and it is possible to determine the most appropriate contributors for the project.

In addition, the governance of collaboration, in order to be successful, requires the participants to agree on same goals (**flat**), or have their own goals within the hierarchy (**hierarchical**).

(<http://www.designingcollaboration.com/>)

// Typologies/approaches

Generally speaking, we can distinguish two different types of **approach**, which are characterized by different levels of innovation and exploration:

A “passive” approach

Co-design is often used by trained designers who recognize the difficulty in properly understanding the cultural, societal, or usage scenarios encountered by their user.

(https://en.wikipedia.org/wiki/Participatory_design#Co-design)

This is more similar to the “classic” design thinking approach: the designer approaches the user trying to understand better the issues and to observe the user to gain more insights about the user environment. It follows a rework of the notes by the designer, a brainstorm for solutions, and only then proposing possible solutions to the user. After this phase the iterative process comes into play feeding back the idea with test results, coming to the best possible deliverable (for the user and the designer as well).

An “active” approach

[...] the key attribute of participatory design, a process which allows multiple voices to be heard and involved in the design, resulting in outcomes which suite a wider range of users. As planning affects everyone it is believed that ‘those whose livelihoods, environments and lives are at stake should be involved in the decisions which affect them.

(https://en.wikipedia.org/wiki/Participatory_design#Community_planning_and_placemaking)

This approach is probably harder to implement when compared to the “classic” design thinking approach. It involves a concentrated activity where any of the involved actors can share and discuss their problems (and solution in some cases) and understand the other

participants' point of view. A moderated collective discussion will follow trying to shape the stream of thoughts into deliverables for the start of the prototyping session. The participants will be involved in the user testing session(s) and possibly in the prototyping phase as well.

These two approaches are trying to cluster a number of shades that, unfortunately, it is impossible to explode and analyze here one by one. You may want to commit yourself to participatory activities because you want to **differentiate** your product from competitors' invention; or because you want to develop **new solutions**, drastically different and powerfully innovated; or still because you want to **implement** a project; or just because you want to **experiment**, learn or stimulate creativity.

Whatever your reason is going to be, always keep in mind that collaborative design has 4 main potentials:

- **Participation** (it empowers the user to create innovation);
- **Inspiration** (it manages to stimulate creativity of designers);
- **Information** (it is useful to frame challenges);
- **Dialogue** (it is a powerful way to create a conversation among organizations and not only).

Keep in mind: there is no one-size-fits-all rule regarding collaborative design: every characteristic may change according to different aspects, such as aim, motivation, problem, context, exc. Even though following subchapters will regard the specific situation of **opencare**, we will try to provide some general tips that will help you shaping your sessions accordingly.

Our experience in co-design field

Since January 2016, thanks to **opencare**, we had the great opportunity to launch and spread a two-year research project, aiming to design and prototype new care services in Milan, Italy.

As **WeMake**, we are going to approach different challenges, such as:

- Collect experiences of community-driven care services;
- Validate them through open discussion, both online and offline;
- Augment them with state-of-the-art maker technology (3D printing, laser cutting, biohacking...);
- Combine everything we learn into the design and prototype of next generation community driven care services.

How are we going to face them? Easy, by using a so-called **strategic design** approach.

During the last **six months** we organized and divided our **timetable** into four main phases:

1. **Inspiration** phase;
2. **Ideation** phase;
3. **Implementation** phase;
4. **Recognition** phase.

// Inspiration phase

During this first step, we did a lot of research at the same time both online and offline. On one hand, we searched for the most popular **methodologies** and **strategies** used and known in **co-design discipline**, in order to build a general background material and information about what is already done and what can be customized for our specific experience; on the other hand we organized, thanks also to the **Municipality of Milan**, a lot of **meetings, workshops** and **events** in order to engage and reach many *qualitative* people as possible. It gave us the possibility have face-to-face meetings and to get in touch with different kind of **citizens** and their **communities**.

See [How to involve citizens in a local community?](#) for more details.

// Ideation Phase

Once we had identified the communities, we defined what kind of **communication** and **interactions** we want to test in the next phases and, according to them, we designed **new tools and materials**.

While we were typing this playbook, we found very useful to distinguish the designed tools into two categories: **passive** and **active** tools. The first ones, are more about the tools used by the **WeMake's staff** in order to show, explain and get in touch with the different audience; the second ones are those tools and materials used by the **participants** during the two co-design sessions.

See [Tips](#) and [Survival table of contents for a co-design session](#) in order to gain deeper insights.

// Implementation Phase

It is time now to test and use in real time the tools and the schedule designed for our **first co-design experience**. During the two co-design sessions, we had the possibility to dialogue and work with people from many different Milanese communities and with different interests, issues and needs. For example, some of them were interested in caring and **everyday well-being**, others in **tinkering stuff** and, still, others in more **health issues**.

Our aim was to create a **temporary community** composed by different kind of citizens. So, we decided to divide the co-design into **two main sessions** (May 4th and 11th, 2016) lasting maximum **4 hours each** (from 6 pm to 21 pm). This because we wanted to receive as many participants as possibile, since most of the people were parents and/or workers. Moreover, after this two encounters we organized even a last one, a "closing" **aperitif** during which we announced the winner project that will be prototyped in the next month (July), explaining and showing our methods and strategies to the participants. All the sessions were hosted by WeMake.

First co-design session - May 4th, 2016

During the **first co-design session**, we hosted altogether 27 participants (15 women and 12 men) divided in 3 groups, which have been pre-formed in order to ensure a balance of genders, age and background. The groups were called "Hammer", "Pincer", "Screwdriver", to evoke object's most common use in a manufacture. Each group was assisted by one **facilitator**, who had to be able to create an environment for effective communication, keeping discussion focused and providing opportunities to all voices to be heard.

We divided the session into three main parts:

- The first part was very **individual**, each participant was asked to focus on one or at most two practical needs in the sphere of daily care activities;

- The second part was more **collective**, since participants were asked to “validate” their issues/needs through a **group discussion** and choose one for each group;
- Then, the third part was a **plenary session**, in which one member per group were asked to present the concept of the selected need.

After this **teamwork** experience, the Municipality of Milan offered a delicious buffet organized by the center of **Formazione San Giusto**. It gave all the participants and the operational staff the possibility to relax and enjoy the time spent together.

Audio and video of the meeting has been integrally recorded.

Second co-design session - May 11th, 2016

During the second meeting, we hosted altogether 20 participants. First of all, there was a **tight slide presentation** about:

- A list of the **different issues**, revealed from the first session and divided into three macro-areas;
- An **explanation** about the **tools** that they were going to use during the session;
- A **general overview** about the **evaluation matrix** that the staff will use for selecting the project to prototype.

Then, the participants were divided into three groups according to their interest in one issue instead of the other ones. Then, the participants were asked to collaborate and work together in order to define better their idea and **concept** through the tools. Obviously, they were supported by the mentor. *Don't be afraid to get your hands dirty!*

As the first session, in this second one there was the **planery session** as well, during which one member per group explained to the other groups its concept. Moreover, the break-time was combined with the teamwork time, since the participants were very into it.

// Recognition phase

As said above, after the two workout sessions, we decided to organize a last meeting, more like a **pleasant time**, in order to **appreciate the efforts** of the participants and to improve their **confidence** in us.

Aperitif - June 1st, 2016

The last meeting with the communities was totally different from the previous two collaborative sessions. This one was more like an **aperitif**, during which the **atmosphere** was very **relaxing** and enjoyable. We hosted 15 participants and even some **newcomers** (few professors and experts interested in **opencare** topics). The aperitif lasted more or less three hours (from 6 pm to 9 pm).

But it is not all, there was even such a kind of "**tension**" between participants, because they knew that during this last meeting we were going to state the project that will be *prototyped* in the next month. It was very funny feeling a sort of competition between the past groups! Some of them were also a bit sad when they heard that their project wasn't chosen.

Moreover, we didn't talk just about the result of the co-design sessions, actually during the presentation, we showed them how we analyzed and select the final project. Accordingly to our *train of thought*, we explained our selection process, illustrating the evaluation matrix and all the other related tools, with **transparency** and **clarity**. We showed them how **opencare** community is actually acting, through what kind of channels both online and offline. At this point we get a bit in troubles, since the european project is held in english and our audience is mostly composed by elderly people. But we were able to manage the situation explaining them the reason why.

At the end of the presentation, there was a delicious buffet organized by the center of **Formazione San Giusto**, which gives the possibility to end this experience in the authentic **milanese way**.

Why we decided to organize a co-design session

Since our first effort in the **opencare** project is to *collect experiences of community-driven care services*, after many researches, we realized that a co-design session would have been perfect to accomplish our main purpose. This because, as explained above in "**What is a co-design session?**" subchapter, collaborative design is an **innovative process** which has all the characteristics useful and necessary for discovering, defining, developing and delivering **new product service systems** realized by means of collaborations between common people and professionals.

Collaborative design allowed us to get in touch with real people, with real issues and needs. It gave us the possibility to **perform various tasks and roles** according to the different situations. We were asked to make people/participants feel active and involved in the process, from the beginning to the end of it. We were asked to be able to ask questions and listen all the answers and amazing thoughts. We were, sometimes, like a **teacher**, other time more like a **psychologist** or a **friend** and still other times we were just **silent auditors**.

We must take always into account the so-called **empathic approach**. But that is not all, through co-design and empathic approach we didn't just put ourselves in someone's shoes, we gained a better understanding about other people's feelings, emotions, needs in order to make THEM (the participants, the citizens, the people) able to visualize and propose an **effective solution**, and its concept, to an existing "care" issue.

Well, nuff said, if you want to organize a your own co-design session, don't be afraid of it. Read the following tips and you will be able to customize your own one.

But keep in mind: *don't try this at home!*

Tips

// Introduction:

If you have decided to keep on reading until here and further, then it means that you really want to test yourself and structure a co-design session (or you are just very curious and thirsty for knowledge, which is also great and well accepted).

Below you are going to find 9 tips, each one is structured as it follows:

Title (*simple rule-to-follow*)

KEYWORDS (*regarding the contents*)

// Description (*explanation of the rule*)

// In other words (*summarized elements and topics that you need to pay attention to*)

// opencare experience (*tip applied to our real experience in the **opencare** project, with pictures and comments related to the topic*)

The aim of this core section is to give you information and proper knowledge in order to **get familiar** with the **strategic design** and emphatic activities. Please, always keep in mind that collaborative design is not an **exact science**, and that every single element may vary depending on a number of factors. Take this as an **inspiration tool**, as a starting point, and then **jump** into the discipline, start testing, experiment, fail and then try again. Only in this way you will find the proper way to accomplish your real goals.

And remember: *have fun!*

Pay attention to the context

VARIETY - TONE OF VOICE - LANGUAGE

// Description

One of the first things that you need to understand is the **type of community** that you are involving or willing to involve.

See [How to involve citizens in a local community?](#) in order to gain deeper insights.

If you decided to structure a co-design session it means that you have an aim, a strong reason; whether you are trying to **gather information** about a specific topic, or you are willing to **improve** the characteristics of your product/service with the help of your customers, or again you want to find an **innovative solution** to an identified problem, you need to **involve** a community of people. Understanding your community is one of the first fundamental steps, because according to it you will have to **shape your tone of voice**.

Some people, for instance, may not understand technical terms on which your research is based on. In this case you may want to choose one of the following options: **simplify** your language; **explain** during the process the meaning of those terms; **prepare** your audience in advance, giving them the possibility to face the reality they will have to jump into. Therefore, if you are leading a research project you may have to work with people that are not necessarily experts/specialists, and that may have difficulties to understand the general context, if your language is too structured.

Another element you need to be careful about is the **delicacy** of the topic you are working on. If you are willing to involve people in an activity that partly violates their **privacy**, or that regards personal information, you need to let them know in advance and we suggest you to be careful about the terms/activities you may want to use. It is important to protect them first, and then yourself, by being transparent with them about the use of the data and about sensitive information.

Lastly, consider the possibility of having a **various audience**. In this case you will have to adjust the tone of voice and activities in order to make every participant at the same level (if this is your aim, obviously). Remember that the aim of the collaborative design activity that you are structuring has to **be clear** to every single attendee, therefore your explanations will have to be structured in order to be understood by all of them.

// In other words

- **Modulate** your tone of voice according to your audience;
- Make the aim and structure of the activity **clear** and **understandable**;
- Pay attention to the **privacy** of participants and sensibility of the topic;
- Evaluate the **variety** of the participants and shape your tone of voice accordingly.

// opencare experience

During the definition of our co-design session we had to take into account a number of elements and characteristics that were crucial in order to obtain a successful activity. First of all we had to relate with **various communities** and groups of people, characterized by **different ages** and **life experiences**. Since we are talking about our **local experience**, it is important to underline that the main language we used was Italian. Some words, however, were written and pronounced in English (first among everything the title of the project: **opencare**). This was one of the main obstacles that we encountered, because some participants didn't know the **foreign language**, therefore they had problems with understanding the meaning.

Another obstacle was related to the **complexity of terms** that are daily used in fablab/makerspace environments, but rarely in common situations. In order to fix this problem on the one hand we **simplified** the language, on the other hand we organized some meetings and workshop with the aim of making the participants **get close** to the technologies and terminologies relevant for us.

Lastly, **privacy** has been a pressing issue for us. Since **opencare** co-design session regarded personal stories related with **health** and **social care**, we clearly talked with the communities involved and pointed out that their stories would have been anonymously published on our online platform EdgeRyders, and that we would have recorded the activity itself with microphones and cameras. Those people who agreed signed a paper which stated that they had been informed and that they accepted to share all the generated content. In this way we managed to protect both parties.

**INFORMATIVA SUI CONTENUTI E SULLE IMMAGINI
SESSIONE DI CO-PROGETTAZIONE - PROGETTO OPEN CARE**

Io sottoscritto/a _____ dichiaro di avere ricevuto le informazioni in merito alla finalità di ricerca dell'iniziativa a cui sto partecipando. La ricerca non prevede la raccolta di dati personali, né di dati riconducibili alla mia persona.

Sono stato informato in merito:

- alla raccolta anonima di storie personali, bisogni e problemi legate all'ambito di cura;
- alla divulgazione dei bisogni espressi in forma anonima attraverso in sito internet del progetto europeo Opencare per favorirne la condivisione, la soluzione e le fasi di ricerca ad esse connesse. Le storie saranno scritte a mano, su schede anonime, da ogni partecipante che intende condividere la propria esperienza nell'ambito di cura. Gli scritti saranno quindi copiati in forma integrale in formato digitale, e le copie manoscritte saranno riconsegnate al partecipante, per garantirne l'anonimato. I testi saranno pubblicati sulla piattaforma di progetto www.opencare.cc .
- alle riprese e le fotografie effettuate durante le sessioni di co-progettazione che saranno rese pubbliche in chiaro attraverso la piattaforma di progetto (www.opencare.cc) e sui social dei partner di progetto per scopi di ricerca. In merito a queste attività prendo atto che è possibile una mia identificazione, in quanto partecipante alla sessione di co-design.
- al fattore di rischio relativo all'opportunità di inserire, o meno, nei miei interventi orali o scritti dati personali che riconducano alla storia da me condivisa;
- al suggerimento di non citare per nessun motivo, prestando particolare attenzione, alla possibilità di inserire, nei propri interventi, dati che possano rivelare, anche indirettamente, l'identità di terzi, quali, ad esempio, altre persone accomunate dal medesimo problema o patologia, esperienza umana o percorso medico.

Preso visione delle finalità di ricerca e della volontà degli enti organizzatori di voler tutelare l'anonimato dei partecipanti acconsento a partecipare alla sessione di co-design nell'ambito del progetto Europeo Opencare.

Firma_____

Opencare, progetto europeo finanziato dal programma Horizon 2020, accordo N. 688670. Partner:
Comune di Milano, WeMake di Milano, Edgeryders, Fondazione Scimpulse, Università di Bordeaux,
Università di Stoccolma.



Pay attention to the context

Point out the desired outcomes

GOALS

// Description

After understanding the context you are going to operate into it is time for you to think about the reason why you decided to structure this activity and the **deliverables** that you want to get once it will be finished. This is an important step, because it will allow you to define the activities and the actions to undertake from now on.

If you will not define all the desired outcomes in a proper and satisfying way you may risk to end up with **nothing in your hands** (we know, it sounds like a dramatic sentence but it is more real than you can imagine).

Therefore try to answer to the following questions in the most detailed way:

- Why is a co-design session a **useful tool** for me?
- Who do I want to **involve**?
- What **kind of involvement** will I require from them?
- Why are these groups/communities/people important for the **achievement**?
- What do I want to **learn** from them and with them?
- What kind of materials do I necessarily need in order to **proceed with the work** after the session?
- Will I need any **visual** material?
- Will I need any **written** material?
- exc.

These are just some of the possible questions that you may try to answer. Some questions may not be useful in your specific case, some others may be crucial. The most important thing is ending up this phase with a **detailed list of outcomes**.

// In other words

- Ask yourself in detail what kind of **deliverable** you expect obtaining;
- Write down the **answers** in order to refer to them at any time;
- Make a list of your **essential goals**.

// opencare experience

WeMake's role inside the opencare project was, and is, mainly related with **collecting experiences** of community-driven care services.

The collection of experiences, however, is a previous step to another important action that we have to accomplish, which is the creation of one or more **prototypes**, based on the needs/solutions identified with the communities. The development of the prototype was indeed a **steady focus point** in the editing of the list of outcomes.

Here you can see ours, that was later enhanced once we defined better our tools:

Deliverables

1. Detailed brief with:
 - i. References to user needs
 - ii. Proposed solutions (including the ones that have not been selected)
2. Important documents related to the brainstorm session(s):
 - i. Transcriptions
 - ii. Sketches
 - iii. Flow charts
3. A list of possible testers;
4. Eventually a list of people who will participate in the prototyping phase and the skills that they can bring to the table.

Define the elements/features

MODERATOR - ROLES - DATES

// Description

Arrived at this point you should have understood who you want to involve and what you want to accomplish/obtain. It is now time to start defining how to run your co-design session. Before defining the tools that you are going to use, that we will see in depth in the next tip [Find the right tools](#), you should think about the **base** and the **frame** of your activity.

Who are you going to work with?

In case you won't be alone it is a good practice to define the **roles** during the collaborative activity. Arguably there will be a **supervisor/leader**, some **moderators**, some people recording the activity (like a **photographer** or cameraman). Defining these roles is certainly important, because it will help you organizing the work flow and it will support you throughout the entire process.

How much time are you planning to commit to this session?

In practical terms, *how long is the collaborative activity going to last?* Obviously there are plenty of variables that will shape this answer, starting from the amount of time that you want/can dedicate, but first of all you have to think about the **typology of participants**. Always keep in mind that keeping the attention and commitment level of a group of people is a very arduous task. Anyhow, it all depends on the **involvement** of your community and the rewards you are offering them. If these variables are high, then you may want to involve them for longer periods. If, on the other hand, the motivation of your participants is not well-founded, then you shouldn't ask them a long and tiring effort, since it may compromise their future involvement.

Now, let's say that you have decided to focus your activity in one day only, for about 5 hours. We suggest you to go back to the previous tip [Point out the desired outcomes](#) and **double check** if your goals may presumably be reached in your schedule and time frame. We know that you may not have enough elements or experience to define a proper necessary time, but a rough double check is going to be more than enough for now.

What is the age span of the participants?

Answering this question is going to be crucial in order to understand in which moment of the day you may want to insert your activity. If you are addressing adults and **workers**, then it would be better to schedule your session during the week end or, if this is not possible, in the evening, right after the working day. If, instead, you are addressing **elderly** people, choosing a morning within week days would be more than fine.

Once you will have got all the answers you will have defined important elements, such as duration, dates, roles, that are going to be precious for further steps.

// In other words

- Define the **roles** for the session among people of your team;
- Schedule roughly **how long** the activity is going to last;
- Delineate a suitable **moment of the day** for the co-design session.

// opencare experience

When we had to define these elements in order to structure our co-design session we started answering those questions simultaneously.

Since our involvement regarded different people, from different communities, we immediately understood that it was crucial to find a moment in the day that could be fine for all the participants. In our specific case we involved adults, teenagers and also elderly people, therefore we thought that the best option could be planning the activity during the **evening**, specifically from 18 to 21.

We also realized that the expected outcome required an amount of work and involvement that would have not been possible in just one day. Therefore we scheduled the activities in **two days**.

First day - Wednesday 4/05/2016

We planned to introduce the project to all the participants, and to divide everyone in 3 working groups, in order to think, analyze and select their personal needs related to care, in a very broad way.

See [Our experience in co-design field](#) for more details.

With this planning in our mind, we defined our roles within the session, by allocating at least one **moderator** and one **analytical observer** in each group, in order to lead the activity and to record/analyze all the actions and behaviours of the people.

Second day - Wednesday 11/05/2016

We presented the results of previous session and we divided once again in different groups according to the interests of participants. Everyone of our team followed and recorded the groups, helping them to **reach our main goal**: finding at least one solution for one of the needs encountered during the first day.

All in all the accurate planning and division of the roles, **before** (preparation of tools, contacts with participants, definition of the catering for aperitif, exc.) and **during** (leading the session, taking signatures for privacy reasons, recording the activity, exc.) the collaborative meeting, was fundamental for its success.

Find the right tools

CARDS - METHODOLOGIES

// Description

Now you have the **Who** (participants), the **What** (goals), and part of the **How** (elements/features). We need to define the other half of the How, which are the **design tools**.

These are the instruments that you will use to play your **symphony**. You will have to tune them harmoniously and they will help you reaching the goals. Collaborative design, as you know, is a discipline. And like any other practice it requires the user to **learn, discover and test** different ways, in order to find the most suitable one.

We have already said before that **this is not an exact science**, therefore it will be impossible for us to suggest you a set of tools that will be perfect for your activity. You will have to dive deep and discover by yourself which one is fitting your requirements at its best. Don't worry, we will assist you in this path as much as we can.

Let's start thinking about what you have so far: Who, What and ½ How. In the previous tip you set the duration and repetition of the activity. Keeping this in mind, you have to find the best way to reach your **desired deliverables**. One way could be sitting around a table and talking with your participants about your project/topic/idea until you have got enough insights/information. But co-design is much more than this. Therefore we suggest you to take a look at some interesting and useful set of tools, that may be just right for you.

Part of the selection will be **supported by what you have defined so far**: if you have just 2 hours of availability then you are not going to choose a prototyping experience, that may take much longer than that.

A very useful and inspiring set of tools that you can check is the **method cards**. In particular, we suggest you these two toolkits: [IDEO Method Cards](#) and [FROGDESIGN Collective Action Toolkit](#).

- The first one is a deck of cards that you can purchase online. There are 51 cards, and each card represents one tool. The tools are split in 4 different categories: **Learn, Look, Ask, Try**, according to your aim.

Furthermore, the tool itself is structured as follows: **HOW** (description of the action), **WHY** (reason why you should use it).



dexigner.com

- Collective Action Toolkit, on the other hand, is a PDF that you can download. As well as the previous one, every tool is split in different categories: **Clarify your goal, Build your group, Seek new understanding, Imagine more ideas, Make something real, Plan for action.**

The toolkit is very well structured because it suggests simple or more articulated sequences of tools. Every single tool is divided into steps, that will help you structuring the activity. Other aspects are also pointed out, such as **Time, Roles and Materials**.



These sets of tools will be able to **inspire** you and give you the possibility to **select** properly according to your aim, time, participants, exc.

Design method is a world that **needs to be discovered**, and that is a great way to start.

Another interesting website, but unfortunately a little bit outdated, is www.servicedesigntools.org. Here you will be able to navigate and explore a variety of methods and connected case studies.

Even though these databases are rich of useful hints and tools, there is the possibility that none of them satisfies completely your needs. Unfortunately, these kind of situations happen.

In this case we suggest you to get inspired and then try to **design your own tools**. In order to do that you need to have some knowledge of collaborative design and surely even a little experience.

Secondly, you need to work with a **team**. Having different competencies is precious, and would become helpful in moments such as this one.

Beware, this way is risky and may imply failure. But don't be afraid of this, just take your time to experiment and test your tools before the activity.

// In other words

- Sum up your **Who**, **What** and **How**, that you have defined until now;
- Search among **existing tools** the one that is more efficient for you;

- Try and **experiment** it before the activity;
- Design **your own tool**, taking inspiration from existing ones.
- Take advantage of the **competencies** of a well assorted team

// opencare experience

What we have explained above is exactly the path that we followed in the **opencare** project.

In order to define our tools we firstly started **checking the existing ones**, we analyzed them and got inspired. At the moment of team discussion we pointed out all the benefits of the various tools and we evaluated them. However we understood that they were not perfectly fitting our needs. For this reason we decided to **design our own**.

Our co-design session was meant to involve a variety of people in order to identify care needs/issues and related solutions. As we mentioned before, we decided to split the sessions in two days; each activity lasted nearly 4 hours. During the activity planning we tried to understand what kind of tools would have been helpful for us.

1st session

In the first session we wanted our participants to feel **comfortable**, to **learn** about the project and understand clearly what would have happened during these two meetings.

At the end of the first session our aim was to get a list of personal needs that we could analyze and rearrange in order to be a starting point for the second session.

To achieve this we prepared some **slides** that we decided to present to all the audience at the beginning of the evening.

See Be clear and complete about the project/meeting/outcomes for more details about our slides.

We also designed 4 **posters** representing:

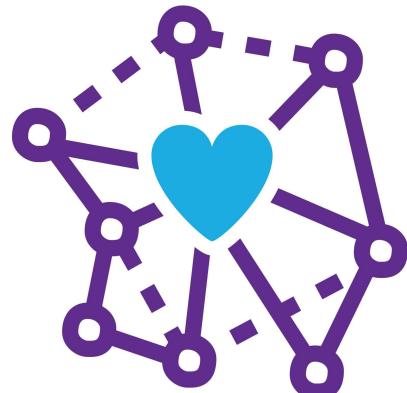
- What is opencare

Che cos'è opencare?

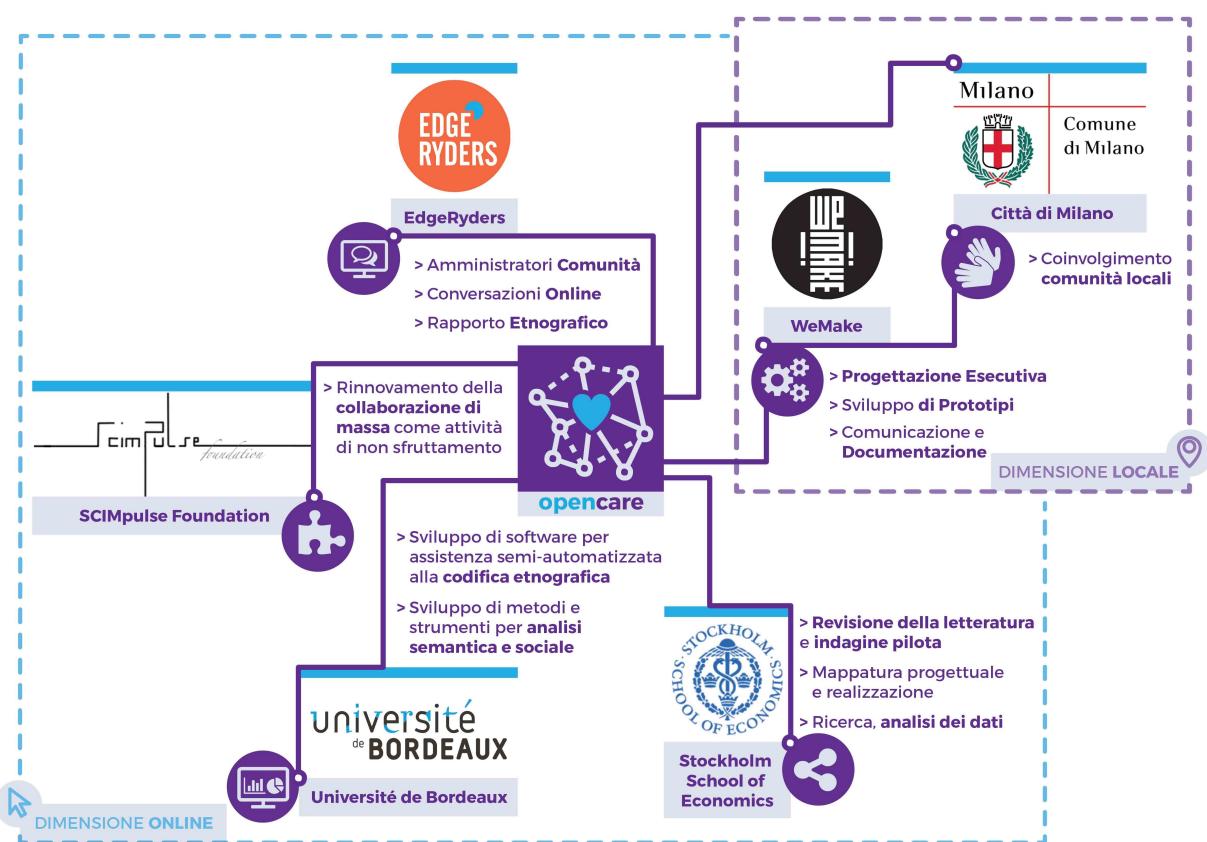
opencare è un progetto Horizon 2020 di due anni che ha ricevuto dall'EU 1.6 milioni di euro di finanziamento e che, a partire da Gennaio 2016, ha cominciato a lavorare basandosi su questi elementi fondamentali:

- > raccolta di esperienze su **servizi di cura dal basso**, che partono dalla comunità;
- > validazione di essi attraverso la **discussione online e offline**;
- > uso della **fabbricazione digitale** e delle tecnologie open hardware e a basso costo;
- > combinazione dei dati raccolti per la **prototipazione** della prossima generazione di servizi di cura dal basso.

opencare vuole coordinare un processo di individuazione di tematiche e problematiche, aperto a tutti, con l'aiuto delle comunità già esistenti che fanno innovazione nella società (hacker, artisti, attivisti, designer, tra gli altri).



opencare



Questo progetto è stato finanziato dall'Unione Europea nell'ambito del programma per la ricerca e l'innovazione Horizon 2020, accordo N. 688670.



- Who we are and Who you are

Chi siamo noi?



"I maker affondano le proprie radici culturali in questo mondo, in cui i cittadini, con le loro competenze, studiano i meccanismi, guardano dentro alle cose e cercano di migliorarle.

WeMake, in **opencare**, mette a disposizione le tecnologie per facilitare la creazione di benessere nelle comunità. Tutto il progetto è completamente accessibile sia nei risultati che nei processi."

Costantino Bongiorno
Co-fondatore WeMake

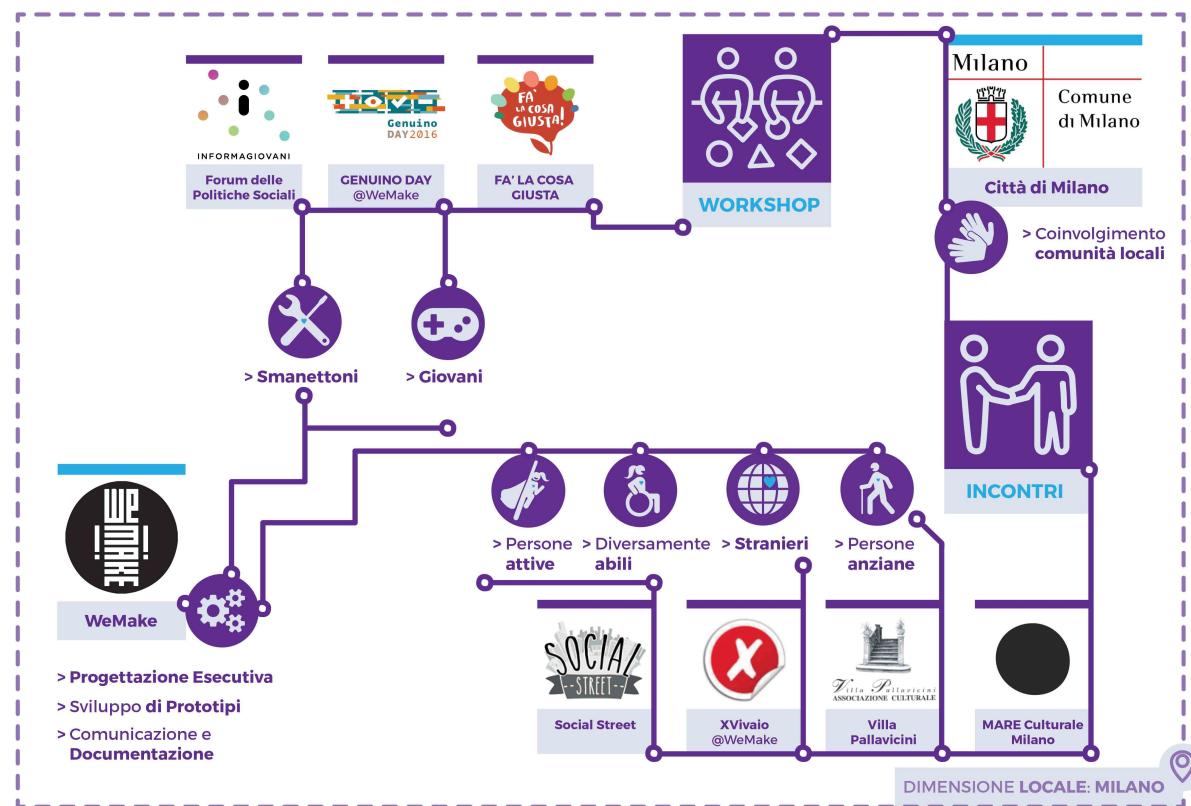


Comune
di Milano

"L'obiettivo di **opencare** è sperimentare nella nostra città nuove soluzioni ai bisogni di cura. I servizi tradizionali spesso si presentano come troppo standardizzati e riescono a rispondere solo in maniera parziale ai bisogni dei cittadini. L'Amministrazione

[...] intende coinvolgere i milanesi e le comunità interessate per costruire e immaginare insieme soluzioni innovative, efficaci e personalizzate che riescano a rispondere alle singole necessità."

Cristina Tajani
Assessore alle Politiche per il Lavoro e Sviluppo economico



Chi siete voi?

> **MARE Culturale Milano** - 12 marzo 2016
incontro con gruppo di anziani appassionati di liscio ambrosiano.

> **Villa Pallavicini** - 17 marzo 2016
incontro con gruppo di giovani immigrati

> **Fa' La Cosa Giusta** - 18 marzo 2016
workshop aperto a tutti

> **XVivaio** - 30 marzo 2016
incontro con gruppo di genitori di ragazzi e bambini con disabilità

> **Genuino Day** - 2 aprile 2016
incontro con appassionati e curiosi della scheda elettronica Genuino e della fabbricazione digitale

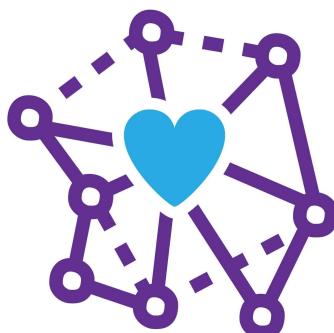
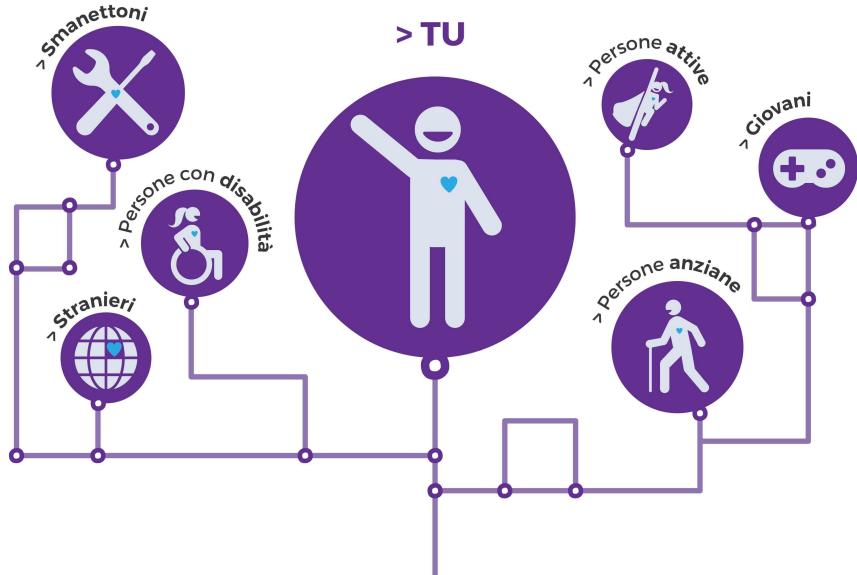
> **Forum delle Politiche Sociali** - 7 aprile 2016
workshop aperto a tutti

> **Social Street San Gottardo** - 19 aprile 2016
incontro con gruppo di residenti di via San Gottardo, via Meda e dintorni

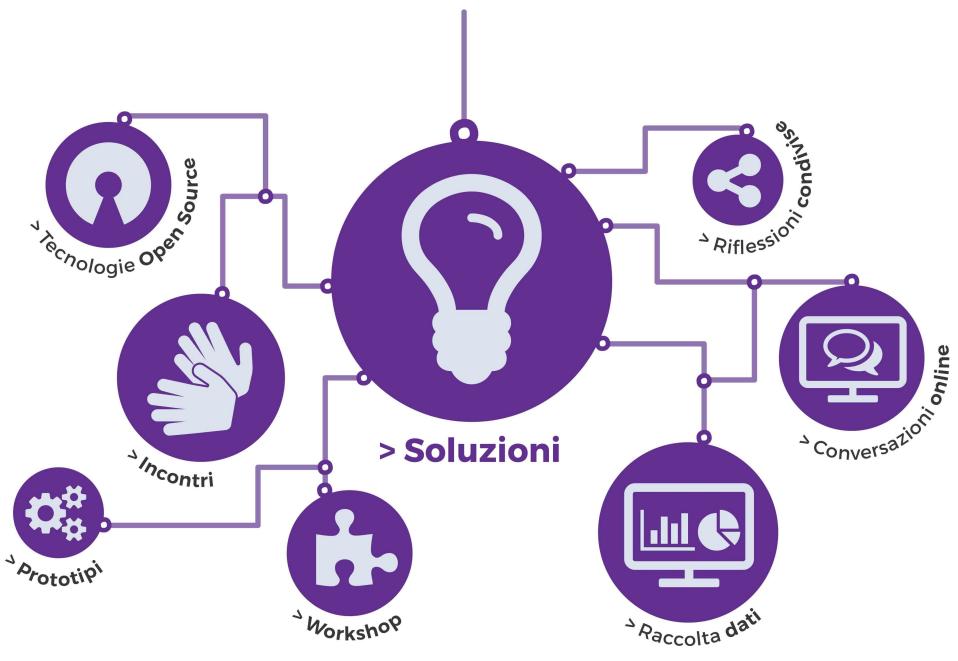
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- opencare light System Map.



opencare



The last poster was about two case studies well representing the spirit and ideology of **open source care solutions**. They were all stucked on the walls, in order to be seen by everyone entering in the makerspace.



I consigli di #opencare

L'apribottiglia



#QUOTIDIANITÀ

#MIGLIORALATUAVITA

#DOITYOURSELF

Difficoltà

Lo sapevi che?

Molte persone utilizzano lo schiaccianoci come apribottiglia. Lo schiaccianoci non è sempre efficace e può rovinare i tappi delle bottiglie in plastica impossibilitandone l'apertura.

...sei consapevole che esistono **molte alternative** realmente efficaci?

Ad esempio, alcuni **studenti** del Politecnico di Milano hanno ideato e creato un oggetto in grado di facilitare l'apertura delle bottiglie di plastica e non. Tale oggetto è realizzato tramite un programma di modellazione 3D ed è realizzabile grazie ad una qualsiasi **stampante 3D**.

Sai che puoi crearlo tu stesso?

In che modo?

Semplicemente scansionando il QR sull'immagine! Essendo un progetto **Open Source** chiunque può scaricare il file 3D dell'oggetto, modificarne le caratteristiche e realizzarlo per davvero tramite una stampante 3D, presente in ogni FabLab/Makerspace.



Amazon Dash Button



#QUOTIDIANITÀ

#MIGLIORALATUAVITA

#HACKERARE

Difficoltà

Lo sapevi che?

È possibile modificare un dispositivo esistente sul mercato e dargli nuove funzionalità scelte proprio da te?

...sei consapevole che esistono **molte alternative** realmente efficaci?

Ad esempio, una coppia di genitori, intraprendenti e "smanettoni", insoddisfatti delle applicazioni disponibili sul mercato per monitorare il proprio neonato, ha deciso di "hackerare" un dispositivo molto semplice ed economico che si chiama Amazon Dash Button. È un dispositivo che permette di acquistare e di ricevere direttamente a casa propria dei prodotti specifici semplicemente cliccando sul pulsante del dispositivo.

Sai che puoi crearlo tu stesso?

In che modo?

È possibile seguire un tutorial (in inglese) su come modificare il proprio Amazon Dash Button, semplicemente scansionando il QR sull'immagine! Essendo un progetto Open Source chiunque può scaricare i file necessari per hackerare il proprio dispositivo, modificarne le caratteristiche e realizzarlo per davvero. In caso di dubbi, è possibile contattare direttamente il proprietario del progetto o richiedere assistenza ad uno staff competente, presente in ogni FabLab/Makerspace.

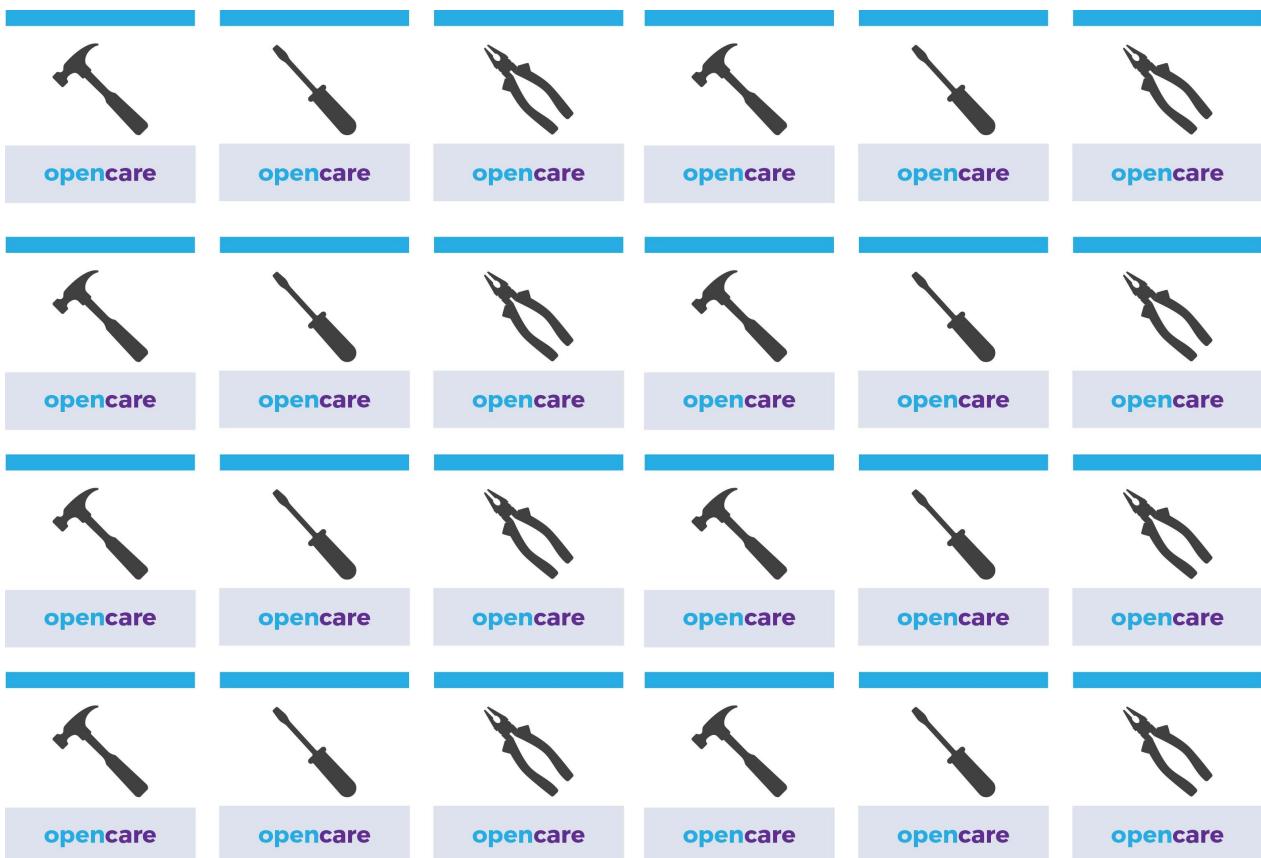


Questo progetto è stato finanziato dall'Unione Europea nell'ambito del programma per la ricerca e l'innovazione Horizon 2020, accordo N. 688670.



Since we planned to work in 3 groups we prepared some **stickers** representing the three names of the groups: "Hammer", "Pincer", "Screwdriver". The stickers were meant to be given to the participants at the beginning of the activity, in order to be placed on their t shirts

and to **create the groups**. (The distribution of the people within the groups was decided by us, to create clusters with different people according to age, profession, competencies, exc.)



We decided to divide the session in three parts: **individual** one, **collective** one, **plenary** session. We wanted the first one to be very **intimate**, lasting more or less 15 minutes, in order to let each participant focus on one or at most two practical needs in the sphere of daily care activities.

The tool that we designed for this purpose was the **Obstacle Paper**. On this paper we asked them to write or draw a specific need that together we could have found a solution to. After filling the sheet we wanted each group to **discuss** about the different needs, and decide, with the help of a moderator, which specific needs they wanted to take care of and present to other groups during the plenary session. To take this decision we provided them **big blank sheets of papers and sharpies**. These tools were useful to inspire them and help them delineating on a poster their flow of thoughts.

2nd session

The second meeting had the goal of finding with the participants **three solutions** to three previously identified problems. Before the session we rearranged the material in order to summarize the work completed the week before. We structured an A4 paper with the **issues emerged**, clustered by topic.



Ostacoli



Ho bisogno di avvisare qualcuno (sono in grado di avvisare)	Coniugare estetica a utilità strumenti di accessibilità
Ho bisogno di avvisare qualcuno (NON sono in grado di avvisare)	Difficoltà di accesso alla domotica
Ho bisogno di un aiuto in caso di attacchi di panico	Esigenza di igiene personale quando impossibilitati
Difficoltà di orientamento per cittadini ciechi o ipovedenti in ambiente urbano	I bagni pubblici destinati ai cittadini indigenti sono spesso guasti/intasati
Difficoltà di mobilità per cittadini in carrozzina (anche con accompagnatore) in città	Informazione e condivisione (di consenze-buone pratiche per dare autonomia a chi non ne ha)



Questo progetto è stato finanziato dall'Unione Europea nell'ambito del programma per la ricerca e l'innovazione Horizon 2020, accordo N. 688670.



The aim was to give everyone a copy of the Obstacles to refresh in their memory the different needs and help them choosing the one they were more interested into. We also prepared 9 **slides** to present them, before starting the activity, all the tools that we would

have used, to make them more familiar.

After the presentation the participants decided which group they wanted to join, according to their preference and personal opinion. They divided themselves, and started discussing about the issue.

The first tool they had to use was the **Project Sheet**, an A3 paper regarding some questions and characteristics that the group would have had to fill, in order to delineate the solution in a more precise way. The questions of the Project Sheet were:

- **name** of the project
- **people** addressed
- the **obstacle/issue** that they wanted to solve or overcome
- estimated **cost** of the prototype
- estimated **time** to develop it
- description of the **solution**
- **characteristics** of the project
- description of its **functionalities**
- notes

Schema idea progettuale



Nome del progetto:	Descrizione della soluzione:	Caratteristiche del prodotto (grandezza, materiali, interattività, adattabilità ad altri strumenti o oggetti, etc.);
Destinatari (diretti o indiretti):		
Descrizione ostacolo-problema (il problema che si intende risolvere):		
Note (appunti o disegni):		Descrizione delle funzionalità (il progetto facilita il beneficiario nel .. , ottimizza la seguente azione .. , serve per .. , avvisa attraverso .. etc.);
Costo stimato per prototipo: <input type="checkbox"/> da 100 a 500 euro <input type="checkbox"/> da 500 a 1000 euro <input type="checkbox"/> più di 1000 euro		
Tempo di sviluppo stimato per il prototipo: <input type="checkbox"/> una settimana <input type="checkbox"/> un mese <input type="checkbox"/> più di un mese		

Questo progetto è stato finanziato dall'Unione Europea nell'ambito del programma per la ricerca e l'innovazione Horizon 2020, accordo N. 688970.

Every group, as in the previous session, worked with a moderator that helped them to keep the focus.

Another tool that we decided to provide them was the **Evaluation Indicators** and **Evaluation Cards**. This tool was particularly important for us. Our aim, as we said before, was to end up the co-design session with 3 solutions to 3 existing problems. After analyzing and evaluating each solution proposed we had to decide which one of those three solutions we would have prototyped. In order to make this selection we designed a deck of cards with the indicators that we took into account during the decisional process. Here you can read our evaluation principles:

**Evaluation matrix for project ideas during co-design session
(ENG)**

- Ability to help people (30 points)
 - Total population
 - It doesn't have to be precise data from scientific sources (a google search would do the job), it's more an evidence or comparison of the size of the potential target group
 - Impact to quality of life of an individual
 - How does your idea make the life of an individual better? For instance, is it solving entirely a big everyday issue or is it impacting more on the large number and not really changing the life of the single?
 - Help to care movement
 - How much do you think this will improve current processes in the care movement? For instance, is this a game-changer in the field or just fine-tuning a process making it more affordable/more precise?
- Feasibility of the project (30 points)
 - BOM (both hardware and software)
 - How much would more or less the material cost to produce the solution? If it's too hard to understand try a comparison to an existing solution and give a broad indicator.
 - Production time
 - How long would it take more or less to produce the solution? If it's too hard to understand try a comparison to an existing solution and give a broad indicator.
- Development strategy (10 points)
 - Tech risk
 - How big is the potential tech risk towards the receiver/user of the care solution? For instance, in case of a 3D printed bottle opener a tech fail will turn into the inability of opening a bottle (= low tech risk), whilst in the case of a peacemaker a tech fail will turn into the inability of the person to bring oxygen to the brain, hence a possible pristine death (= high tech risk)
 - User testing potential
 - How easy would it be to find interested people in the community willing to test the proposed solution? This could be determined by the:
 - delicacy of the topic,
 - level of risk in adopting the solution,
 - Impact of the test on daily routine
 - Possible contraindications
- User acceptance (10 points)
 - How willing will the users be in accepting the proposed solution? Will it be a natural adoption? Will it need some kind of push (ie marketing campaign)?
 - This could be determined by:

- Cost (or reproducibility)
- Immediacy in recognizing the value of the proposed solution
- Delicacy of the topic,
- Level of risk in adopting the solution,
- Impact on the change of daily routine
- Possible contraindications

• Opensourceness (20 points)

- Forkability
 - How is the solution ready to be taken on and improved by third parties?
- Reproducibility
 - How easy will it be to reproduce the solution somewhere else?
 - This could be determined by:
 - Interchangeability of components
 - Interchangeability of tools and technologies needed to produce the solution
 - Availability of components and technologies
 - Skills of the single needed to produce the solution

This tool was shared with the participants to make them shape their solution in a more appropriate way, trying to think about a **feasible** project and to help them following a path. Many participants, indeed, didn't have any experience of design thinking and generating solutions. This tool was designed to **simplify** and lead the process.

Indicatori



At the end of the second session all the groups completed the **Project Scheme** and presented their solutions in plenary session through another last tool which is the **Project phrase**.



“ _____ [nome del progetto] _____ ”

aiuta _____ [destinatari] _____

che vogliono _____

[indicazione dell'attività che le persone intendono svolgere]

attraverso _____

[indicazione delle principali funzionalità del progetto]



This tool aims to **facilitate the explanation** of the group's concepts during the sharing phase. So, participants could easily expound the concepts following the **same format**.

After this all the decisions were depending on us. We took few weeks to **evaluate the projects** and research about existing products solving similar problems. Therefore we elaborated a new tool, used by our team, that we called **Evaluation Rubric**. This document helped us assigning points and understanding which project was the most suitable to be prototyped. We then scheduled a third meeting, to communicate our decision and further steps.

For all the above mentioned activities we referred to the **Open Space Technology**, which was adapted to our tools and can be defined as:

a process that focuses on expanding time and space for the force of self-organization to do its thing. Although one can't predict specific outcomes, it's always highly productive for whatever issue people want to attend to. Some of the inspiring side effects that are regularly noted are laughter, hard work which feels like play, surprising results and fascinating new questions.

(https://en.wikipedia.org/wiki/Open_Space_Technology)

See this **PDF** if you want to get more information about Open Space Technology.

Keep the interest alive - Part I

WEBSITE - LANDING PAGE - NEWSLETTER - BLOGPOST

// Description

Once you have defined which kind of **communities** and **people** you are going to **collaborate** with, you are ready to start improving and enhancing the **relation** between your staff and your further participants. Obviously, there are plenty ways to engage and contact people, but keep in mind that the two main strategies, the online and offline one, are complementary since both of them are not totally efficient. One requires the other one and vice versa. In this tip we are going to talk about the **online channels** that we used to get more in touch with people.

See [How to involve citizens in a local community?](#) if you want to know more about the offline activities.

So, moving on, thanks to the new technologies, there are now many tools available to create links and connections between people. Moreover, there are plenty of channels given by the **global network**, such as: social networks, newsletters, blogs, forums, websites, exc. It is mandatory to choose the **right channels** in order to set up the right basis for a collaborative design approach. The choice mainly depends on which kind of informations you want to spread through those channels and to whom.

Here some examples of the current *online* channels:

- **Website:** it allows the final target to get the **most important informations** about the project. It must be as more clear, *functional* and understandable as possible.
- **Social networks:** like “Facebook”, “Twitter”, “Google+”, “YouTube”, “Instagram” and so on. They are all different, but all of them lead to the same purpose which is to make a **large number of people** (even with different age) aware about some **imminent topics**. They must be updated continuously.
- **Newsletter:** it can have different goals, like sending some discounts, updates, invitations to an event, exc. Be careful! It requires a *mailing list* and it must contain an interesting and winsome topic, otherwise it will be considered as **spam** and binned immediately.
- **Blog:** it allows people to have an unfading **database** of informations and past events. It can be like a *diary* or a list of occurrences. There should be the possibility to leave a

comment in order to allow people to start a discussion about a specific topic. It must be tidy, in other words, the staff must pay meticulous attention to organize all the posts and stories, they should be divided into categories by tags, dates, places, actors, keywords, exc.

- **Forum:** as all the other online channels explained above, also the forum requires continuous *maintenance*. Maybe more than the other ones. It allows people to *discuss* about various topics, but still it is a perfect place to make **questions** and receive **replies** from both experts and principiants. This last point may be considered both a pros and cons, since the forum visitor can reach the accurate information required. It must have, especially at the beginning, some "**moderators**" who have to manage and oversee all the discussions.

Try to answer to the following questions, they may give you the starting point which are useful to define your best online strategy:

- Which kind of **informations** do I want to spread?
- **Who** do I want to contact/inform/invite/...?
- Which is the **best channel** for my "target"?
- Does (Facebook) **fulfill** my purposes?
- How (Google+) can **contribute** to my project?
- exc.

After choosing all these **key factors**, keep in mind that a pipeline will be more than appreciated. It is almost necessary to organize the releases in a strict **schedule** since it will make your staff able to define the roles and the timelines, who does what and when. It is a bit a time consuming at the beginning, but it will avoid further wasting time. Trust us, it is very helpful!

See [How to involve citizens in a local community?](#) for more details.

// In other words

- Define **who** you want to get more in touch with;
- Decide which kind of **informations** do you want to spread;
- Choose in which **channels** do you want to share your infos;
- **Schedule** a pipeline of the content releases.

// opencare experience

Since the beginning of our co-design experience, we have had to create a **solid online strategy**. Not only to involve the current online communities but even for bringing new local communities into it. We had to design and adapt all the contents, from time to time, to new channels according to the different phases of the co-design. In these last six months of activities we moved through two main parallel directions, one based on the **engagement** and the other one based on the aim to provide a **basic knowledge** about **opencare** project.

So, first of all, we engaged people by means of **invitations** and **general posts** shared on social networks (Facebook, Twitter, Google+ and YouTube), emails and our **blog**.

The screenshot shows a website page for 'opencare'. At the top, there's a navigation bar with links: WEMAKE, COSA FACCIAMO, MEMBERSHIP, PARTECIPA, CALENDARIO, BLOG, STORE, ENTRA, and a shopping cart icon showing '0'. Below the navigation, a large section header reads 'PRENDERSI CURA CON STRUMENTI OPEN SOURCE: WORKSHOP'. Underneath this, a smaller text line says 'posted on MARZO 15TH 2016 in NEWS & OPENCARE & WORKSHOP with 0 COMMENTS'. A photograph shows a group of people gathered around a table, working on laptops and discussing something. The background features various banners and signs related to the workshop, such as 'SHARING CITY' and 'WE MAKE'. At the bottom of the page, there are buttons for 'READ ARTICLE' and 'Privacy & Cookies Policy', along with a question mark icon.

Then we found out that an appropriate **basic knowledge** was necessary in order to have an efficient co-design with citizens, so we started to revise and re-design the **opencare website** and its **landing page**.



(<http://opencarecc.github.io/OpenCareLandingPage/>)

WEMAKE COSA FACCIAMO MEMBERSHIP PARTECIPA CALENDARIO BLOG STORE ENTRA 0

OPENCARE

COMMUNITIES | TECH & SCIENCE | HEALTH & SOCIAL CARE



COS'È OPENCARE?

opencare è un progetto europeo che coinvolge direttamente tutti i cittadini europei. opencare nasce dalla volontà di sperimentare soluzioni pensate dai cittadini per altri cittadini.

Parliamo di soluzioni relative a piccoli e grandi problemi che incontriamo quotidianamente nella nostra vita: legati al benessere della persona, alle sue relazioni e alle attività che deve compiere.

opencare è un progetto Horizon 2020 di due anni che ha ricevuto dall'EU 1.6 milioni di euro di finanziamento e che da gennaio 2016 a dicembre 2017

Privacy & Cookies Policy

(<http://wemake.cc/opencare/>)

But that is far from enough, we started sending a **newsletter** about some projects that might be useful for gaining a **first approach** and a **better understanding** of the wide world of open source products and services for care. In these newsletters we used colloquial words and expressions in a *three-questions template*. This because, since our “target” was mainly composed by “no-tinkerer people”, we wanted to make those projects as more comprehensible as possible to them. We wanted to **arouse curiosity** but at the same time

we wanted to **make people feel valuable**. At the end of the newsletter we always put our *contacts*, and sometimes the invitation for a specific event (the two co-design sessions, some other workshops, exc).

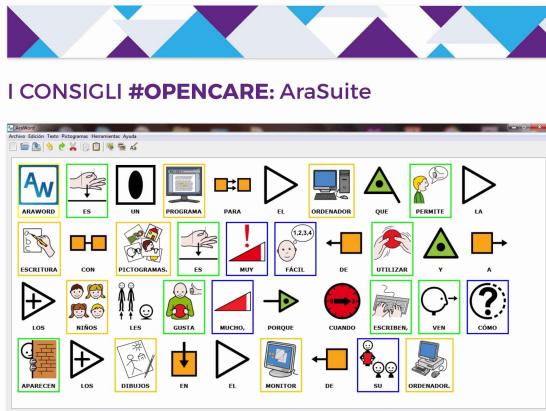
Da: WeMake opencare opencare@wemake.cc
Oggetto: I consigli #opencare: AraSuite
Data: 21 giugno 2016 09:31

WO

miglioramenti funzionali ed ha reso disponibile alcune funzioni come la scrittura vocale.

Sai che questo software è gratuito e puoi scaricarlo anche tu? In che modo?

AraSuite è già utilizzato da bambini ed adulti con disabilità cognitiva, congenita oppure sviluppata in età adulta, in seguito a traumi o malattie. Puoi scaricarlo cliccando su questo [link](#), altrimenti puoi cercare di implementare e migliorare il software esistente, andando su [GitHub](#). In caso di dubbi o perplessità non esitare a contattare uno **staff competente**, presente in ogni **FabLab/Makerspace**.



#COMUNICAZIONE #AUMENTATIVA #ALTERNATIVA

Lo sapevi che?

Le persone affette da **disabilità cognitiva** possono avere **difficoltà a comunicare**, apprendere ed esprimere scelte e sentimenti.

...sei consapevole che esiste uno strumento per aiutarli a sviluppare una competenza verbale?

Tra i numerosi, e spesso costosi, software per la CAA (**Comunicazione Aumentativa Alternativa**) si distingue AraSuite. Questa è un'applicazione sviluppata dal Dipartimento di Informatica e Ingegneria dell'Università di Saragoza, rilasciata con **licenza GPL** (che permette di eseguire, modificare, condividere e distribuire il software). Nel 2014 Oscar Pastrone ([Progetto Radis](#)) ha [forkato](#) AraSuite, ovvero sviluppato un nuovo software partendo dal codice sorgente di quello già esistente. Così facendo ha apportato dei

Ti piacerebbe contribuire a nuove soluzioni ai bisogni di cura e di benessere con noi?

Visita il [sito wemake.cc/opencare/](#) per conoscere tutti i dettagli e le ultime novità sul progetto **opencare!**

TI ASPETTIAMO!

Il team di WeMake

Questo progetto è stato finanziato dall'Unione Europea nell'ambito del programma per la ricerca e l'innovazione Horizon 2020, accordo N. 688670.



I consigli #opencare by WeMake opencare
WeMake Via Stefanardo da Vimercate 27/5 Milan, MI 20128 Italy
Sent to silvia.dambrosio22@gmail.com — [Unsubscribe](#)

Delivered by
TinyLetter

Don't underestimate the details

COORDINATION - DAY SCHEDULE - APPS

// Description

As you can see in the previous tips, a **coordinated team** is mandatory during each co-design phase. The team must always be able to communicate in the easier and most effective way. Moreover, the current design approach is requiring more and more kind of collaborations between people from different cities and/or even countries, and a **tidy coordination** would be a great help.

There are a lot of **digital applications** that enable all the team members to collaborate even in remote working. These applications are not just useful to communicate, but they are also perfect in **organizing** the *timetables*, dividing the *roles*, accomplish the *tasks*, and so on.

So, try to not be afraid about these “innovative” apps that use up your *gigabytes*, infact they are designed for helping you in not underestimate the details of an entire project. Search for the best one for you, try and test it with your project managers and then share it with the rest of the team. You should trust in these apps. But if you prefer mostly the traditional tools, we recommend you to take a piece of paper and write down the classical “**To do list**” (explaining who-when-how) in order to not forget anything.

// In other words

- Look for **new tools** that help you in organizing your and others' work;
- **Try and test** these apps with your project managers and then **share** them with all the team;
- Make the **communication** and the **collaboration** between all your team members easy and effective;
- Write down all the **tasks and roles** of a specific project, dividing them in a **timetable**;
- Handle and hold the team as more **coordinated** as possible.

// opencare experience

In our experience, we have tested and used a lot of applications, mainly both for smartphone and laptop. Here there is a **list of some tools** that we are still using, keep in mind that it is not a promotion work, it is just a sharing of our successes and failures:

- **Slack**: we use it to *communicate* to each other. It is very useful because it allows us to organize **different chat channels** according to the key sections of the main project. Within its pros, there is the fact that it is possible to create **bots**, which can send specific *notification* even from other applications.
- **Hangout**: at the moment it is the best app to make sync and **video call**. It is especially recommended for *remote working*. It has also a chat window that allows the members to share and type *external links*.
- **Google documents**: thanks to **Google Drive**, we are able to share and manage a huge amount of folders and file. We use **Google applications** mostly for everything, from typing a *meeting minutes* to organize a *co-design session*. Therefore we use them as parallel support of other applications.
- **Asana**: it is very useful but at the same time it is a bit time consuming, especially at the beginning. But after a while it creates such a kind of *dependence*. It allows people to organize their own **tasks** but even to assignee some tasks to others. Surely, the strength point of this app is that everyone can see and check others' tasks and set them according to a specific **deadline**. It has still some cons, but we are sure that Asana will be improved.
- **EventBrite**: it is not the first time that we use EventBrite. It is very useful when you have to **organize an event** and you have to invite many people. It is a functional way to have an immediate feedback on who did the registration and who didn't. But it is not just useful in preparing the event, it is very effective during the **check-in** too. It is a fast way to know is someone will show up in the event.

Obviously, you have to keep in mind that most of the time not all the registered people will show up in your great event! Then you have to be prepared to extemporize. But just to not be totally lost in this situation it might be very useful, especially a co-design session, a **timing sheet** about who does what, how and when. Of course, it should be written and showed to all the staff members before any kind of event, well in advance and preferably in a relaxed way.

GIORNO 1

FILE DELLA MINUTA

RACCOLTA DELLE SCHEDE OSTACOLO

Report di Rossana (con Alberto)

Info e preparativi

- Chiara e Silvia stanno preparando dei cartelloni A3 da appendere in cui si spiega cos'è oportene e cosa sono le sessioni di co-design.
- Io ho preparato l'[informativa](#) per la privacy
- Abbiamo i fogli firme per le presenze
- ho predisposto la [scheda per la rilevazione](#) dell'ostacolo
- abbiamo preparato dei gettoni con i nomi dei gruppi di appartenenza. Per il momento i gruppi sono: martello, cacciavite e pinza. L'idea è quella di consegnarli all'ingresso dopo la registrazione.
- al momento ci sono 15 iscritti + 3 in forse + 9 noi...
- rox ha organizzato il catering
- rox sente l'operatore
- procurarsi almeno 8 fogli-cartellone e post-it

[17.00 - 18.00] incontro staff per formare ed aggiornare i gruppi con gli ultimi partecipanti.
Sistemazione location.

[18.00 - 18.15] accoglienza (foglio firme per controllare le presenze e partecipazioni + informativa privacy+gettone gruppo)
Chiara, Silvia, Cristina, Rossana, Gisella

[18.15 - 18.30] inizio:
- presentazione del progetto OC - Rossana
cos'è Opencare, finalità del progetto, cosa faremo in due anni

[18.30]

- **presentazione co-design session**
 - presentazione gisella Architetta esperta in progettazione partecipata
 - cosa significa coprogettare
 - perché progettare? Per prototipare? Quanti prototipi. Uno.
 - Si parte dai problemi/ostacoli emersi da voi nella prima sessione (oggi) e nel prossimo incontro cercheremo insieme delle soluzioni.
- **obiettivo** del co-design in oportene --> riuscire a trovare soluzioni attraverso idee progettuali che partono dalle esperienze individuali
 - obiettivo prima sessione: individuare problemi per cercare una soluzione
 - come lavoreremo: tempi e articolazione dell'incontro:
 - individuale (individuazione degli ostacoli max due per persona)

- di gruppo (presentazione degli ostacoli nei gruppi, discussione e scelta di massimo due ostacoli per gruppo. approfondimento sugli ostacoli con indicazioni utili per la soluzione, compilazione dei cartelloni per la presentazione, scelta di chi relaziona in plenaria gli ostacoli individuati)
- plenaria (presentazione degli ostacoli/bisogni individuati per ogni gruppo)
- fine primo incontro

- chi saprà dei bisogni ostacoli espressi?

- i bisogni saranno pubblicati in rete in maniera anonima, questo per favorire diverse soluzioni alle storie raccontate . L'anonimato è garantito dalle schede non nominali, dalla trascrizione del manoscritto.

- durante l'incontro riprenderemo e faremo delle foto per scopi di ricerca.

Cristina

Gisella chiama i gruppi per nome e li fa posizionare nel fablab.

[18.30 - 19.45] **scrittura della storia-ostacolo (individuale)**

e lavoro di gruppo

Ogni facilitatore consegna le schede per la rilevazione e spiega. Consegnare delle "schede ostacolo" - max 2 schede per persona. Dieci minuti vengono dati ai partecipanti per compilare le schede.

Consegnare i cartelloni, post-it e pennarelli e avviare presentazioni

Cristina, Gisella e Rossana moderano gli incontri nei quali saranno presenti anche Silvia, Chiara, Alessandro e Costantino.

Ogni facilitatore deve presentarsi, tenere i tempi, permettere a tutti i partecipanti di intervenire, non deve sposare nessuna posizione ma facilitare relazione e confronto, e anche sollecitare o limitare interventi di persone prepotenti. Ogni gruppo dovrà registrare l'audio dell'incontro.

output: 2 poster per gruppo - in cui ci sia un titolo, una descrizione argomentata e dei suggerimenti

Discussione all'interno del gruppo per condividere i problemi e scegliere 2.

Definire chi parla in plenaria.

[19.45 - 20.15] **break**

[20.15 - 21.00] **plenaria** (presentazione idee individuate)
moderazione Gisella

Saluti finali di Costantino e appuntamento all'11 maggio

Be clear and complete about the project/meeting/outcomes

CLARITY - OPEN TRANSPARENCY

// Description

During each phase of a collaborative design experience, from the first [Inspiration](#) to the last [Recognition Phase](#), you may have the possibility to meet and talk to many people with difference in age, expertise, needs and passions. Probably at the first time, they might be not very interested in what you are going to propose and offer to them, just because **they don't feel properly at ease** with such a kind of topic, especially if it is strictly related with **personal arguments** or it is **too far** from their everyday life.

As explained in the previous tips, there are many subtle strategies for making people feel more aware and comfortable about a specific project and/or discussion, by means of informing them through default newsletter and quick blog posts.

See [Keep the interest alive](#) tip for more insights.

But when you are face to face with a **diverse audience** you might need a **presentation support**. It can be structured through different forms, the most common ones are the **slide presentation** and explanatory **videos**. Both of them can be very useful during a meeting, workshops or other kind of events. Often, they are used in the **first part of the meeting**, during which the staff are going to present *who they are, what is the project, why they are there and what they are going to do* with the guests/participants.

It is crucial to **adapt the tone of voice** and the **presentation style** according to the kind of audience.

See [Pay attention to the context](#) tip.

In any case, you have to try to **not be too dispersive** and **repetitive**, the presentation support should be designed for **catching the attention** and **provoking audience participation and interest**.

You have to be as clearer as possibile, from the beginning to the end of the speech. So, try to make a **list of contents** following the **Ws**. Put some **inspiring pictures** and **keywords** in order to make a funcional visual aid. Be aware, don't insert too much text, otherwise the guests/participants might get bored or they can loose the thread of the conversation. Set a **specific speech time** for each topic and exercise yourself in advance. Futhermore, divide the topics among **different speakers**.

Lastly, give the audience the possibility to **ask questions** and explain freely their doubts. Be ready to **answer** without lose the focus and the aim of the meeting. Keep in mind the **pre-established Q&A time**, giving covertly a look to a timer is a perfect way.

// In other words

- Prepare a **list of contents** for the presentation support;
- **Adapt the contents** according to the type of audience and situation (Is it a meeting? a workshop?);
- **Make the presentation support** (slide and/or video) interesting, engaging, **comprehensible** and **inclusive**;
- **Don't use too much text** into the visual presentation;
- Set a specific **speech time**;
- Divide the topics among **different speakers**;
- Go through the **Ws**: who are the actors, what they are going to do, why and how;
- Be ready to the pre-established **Q&A time**.

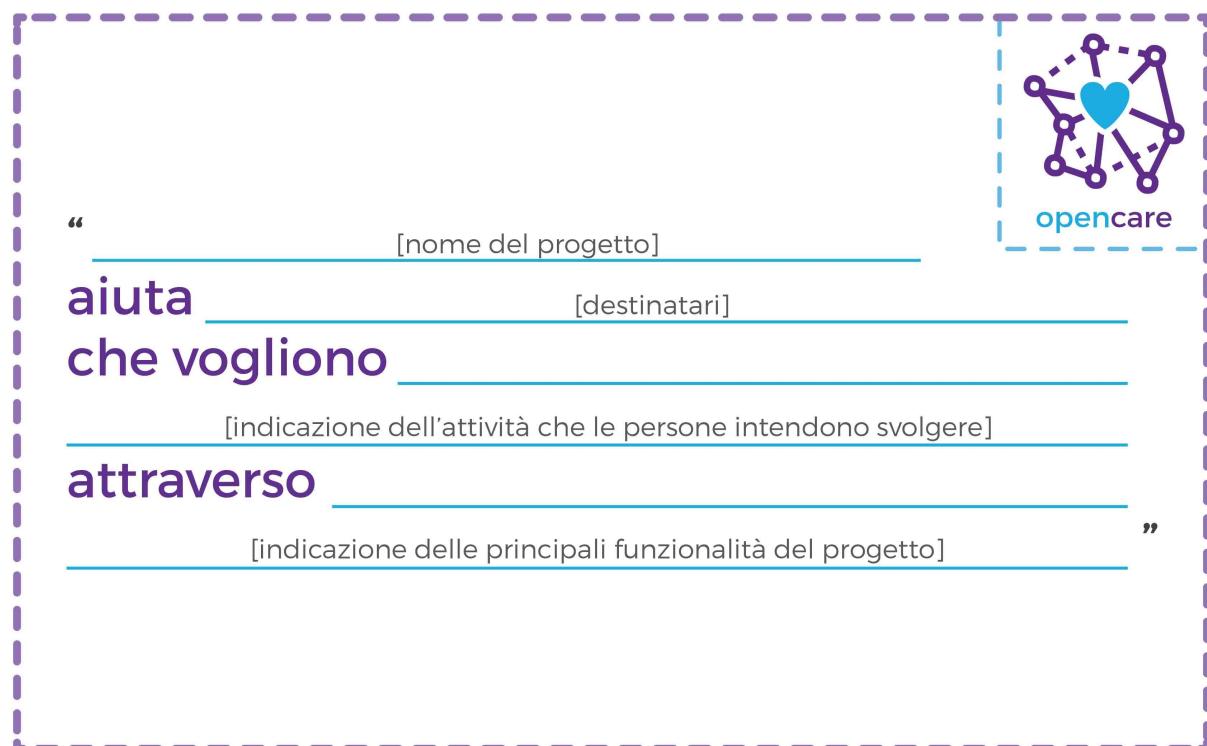
// opencare experience

In the following picture, you can see one slide of one our presetation for an **engaging meeting**. During which, we explained what is **opencare** project and how it is going to act. We showed mainly **inspiring pictures** and **few necessary informations**. It was quite effective, but the selection of pictures requires a bit of **sensibility** and attention. We even embed a **video**, which was on one side very useful and interesting for the audience, but on the other side a bit complicated to handle since it was in english and the audience was composed most of the time by italian, foreign and elderly people.

Ma cosa intendiamo quando parliamo di cura? (Cristina)
- tutto ciò che gravita e influenza il benessere della persona: le relazioni, l'autonomia, la salute, il diritto al lavoro e all'istruzione, la cultura, l'ambiente. Il concetto di cura è

We always used **Google Slides** for many reasons:

- The possibility to **edit** the presentation with others at the same time;
- To get the files **instantly** while on the meeting place (be aware, it requires an **internet connection!**);
- As all the common slide applications, it gives the possibility to add hidden **notes** in each slide (it is very helpful to not lose the thread of the conversation).



In this second kind of slide presentation, that we showed during the **co-design sessions**, we had a more structured **visual identity** and different informations to explain. About the first point, we set all the presentations according to the new graphic layout in order to give **continuity** to all our **artifacts**. Then, we showed and explained the participants the different steps of the sessions and all the tools that the participants were going to use during the teamwork, how and why we designed them.

See [Find the right tools](#) tip for more details.

Have fun but don't lose the focus

BREAK - RELAXED ATMOSPHERE - REWARD

// Description

In every step of a co-design session, from the check-in to the check-out, it is very important to have a **flexible attitude**. In the meaning that the organizational team has always to keep in mind that the **participants might not be familiar** in doing some activities and reasonings which are required by the collaborative design approach.

Therefore, it might be very appreciated having some **quick breaks** in the meanwhile of the meetings/sessions. This will surely help the guests/participants to **be more active and efficient**. These breaks change according to the situation, they can be just a *light joke* during the presentation or a *delicious buffet* at the end of the teamwork.

The breaks must be organized in the advance, possibly together with the **schedule/timing** of the session. So, the team is going to be as **tidy** and **coordinated** as possible.

See [Don't underestimate the details](#) tip for gaining more insights about the timing sheet.

But please be aware and don't underestimate the **unpredictable aspect** of the participatory design. The organizational staff (composed mostly by mentors, moderators, organizers, speakers and designers) has to be able to understand when it is time to change tone of voice, being more ironic or **playful** and when it is time to have a more serious and **demanding** attitude.

Another way to make participants more focused is to give them some **spot rewards** during the entire session. The "reward" can **satisfy** various requirements and/or **expectations**. The reward can be just a **moment** in which the participant can **have a say** and express his or her doubt or insight; it can be a **tasty snack** during the workflow or a common **gadget** that people can bring at home and use it as a precious gift, indispensable tool or another useless "souvenir".

Don't forget to go back to work!

// In other words

- Make the participants **feel comfortable** and **active**;
- Provide them the right **assistance** and **tools**;
- Understand when it is time to have a **quick break** and when it is time to go **back to work**;
- Be able to **handle** and **interchange** the playful and serious moments;
- Define, organize, give some **spot rewards** to the participants.

// opencare experience

During the entire co-design experience, from the *engagement* to the *involvement* phase, we had to **reach different set of goals** from time to time.

According to the kind of audience, place, time and activity, we **employed many attitudes** and **perform different roles**. Sometimes we were very **playful** and ironic and in other times more serious and **hard-driving**. We had a lot of fun, but at the same time we always did our best to reach our goals without losing our focus.

Keep the interest alive - Part II

FEEDBACKS - UPDATES

// Description

Congratulation! If you are reading this last tip you have arrived at one **great point** for your participatory design, but there is still something else to do.

A complete co-design experience needs also a "**post-phase**", that we called "**Recognition Phase**", which requires a **strict maintenance** and an **organizational capability**.

As **before** the actual co-design sessions (during which people get their hands dirty) there is, most of the time, a *determined strategy* in engaging and involving people by means of meetings, newsletter, etc as **after** the co-design sessions there should be an *ambitious strategy* as well.

This strategy can be handled in various ways and through different tools, but it always has a specific goal: making people aware about the **project updates** by receiving and exchanging feedbacks. **Offline and online involvement** are both pretty efficient.

The tools might be the same of those used for the involvement of the communities, but, obviously the informations are going to change in the *layout* and in the *content*. The new informations should be still interesting and able to **provoke the curiosity** of the people.

See **Keep the interest alive - Part I** tip for more details about the different involving online channels.

// In other words

- **Don't lose the contact** with the participants;
- **Keep them involved** even after the sessions;
- **Show them the results, exchange feedbacks** and keep them **up to date** about the past sessions and the further project;
- **Make a list** about the **new ways** and **tools** that you want to use in this phase;
- Be **captivating**, spontaneous and clear;

- **Schedule** a timetable.

// opencare experience

After our two co-design sessions, we tried to **not lose the contact** with the participants, who were very interested and **enthusiastic** about the co-design experience. So, first of all, we decided to organize a third meeting **after few days** from the second session. This because we found out that after two evenings of **great workout** a more **relaxing and sharing time** is the least we could do to **appreciate their efforts**.

This meeting was totally different from the previous two collaborative and productive sessions, it was more like an **aperitif** open to *discussions* and **prompt feedbacks**.

We didn't declare just the winner project, we explained and **illustrated** to the audience how we have managed **the entire selection process** indeed. In this way we gave them the possibility to be aware and to feel **integral part** of the project. Therefore, after the slide presentation, the participants were **ready to start a discussion**, explaining their doubts and considerations about our choice and decisions. It was a very interesting moment of sharing knowledge and ways of thinking.

After the presentation and **exchange of views**, we enjoyed greatly the end of the meeting and the end of our first co-design experience with a delicious buffet.

See [Recognition Phase](#) paragraph to read any detail of the meeting.

Last but not least, we continued to publish some **blog posts** and send the **newsletter** about some case studies, in order to **keep the interest alive** until we are going to start the **prototyping phase**.

Survival table of contents for a co-design session

		PRE	CO-DESIGN / Day 1	CO-DESIGN / Day 2
GOALS		<i>Create awareness, catch the attention, create empathy</i>	<i>Make people feel valuable and comfortable</i>	Make people able to be active and productive
STRATEGIES				
	> TOOLS (passive)	Face to face presentation, newsletter, blog-posts	Posters, stickers, slide presentation	Slide presentation
	> FORMAT (kind of interaction with the communities)	Meetings, events, workshops	<i>Mini-workshop</i>	<i>mini-workshop</i>
	> TOOLS (active)	/	Issue sheet	Indicators sheet, project sheet, phrase sheet
FUNDAMENTALS				
	> AUDIENCE	Local communities	Active participants	Active participants
	> DOCUMENTATION	Contacts sheet	Attendance sheet, privacy sheet	Attendance sheet, privacy sheet, availability sheet
	> RWARD	<i>buffet</i>	<i>buffet</i>	<i>buffet</i>

How can I make a prototype?

Hard to say! Jokes apart, there are many ways to approach the making of a prototype and in the end it really comes down to which one is the best for YOU to create a prototype.

Because of this it's hard to learn that from a book, you rather learn by doing instead, which in the end means failing, and repeating, and iterating over and over to perfect your project and your methodology at the same time!

Also, it really depends on what kind of prototype you are going to work on. In our experience with the opencare project we quickly found ourselves facing a wide variety of possible projects:

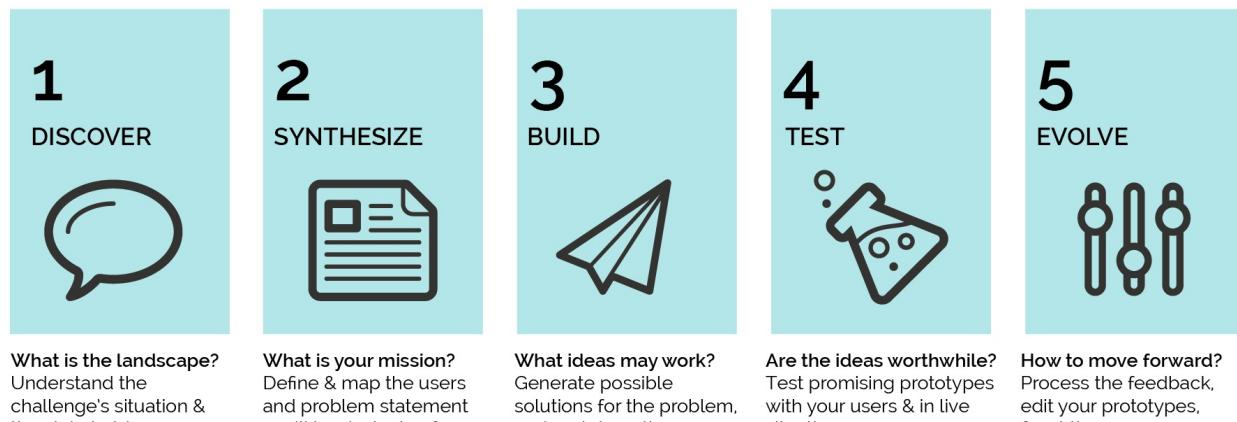
- Mobile or desktop apps and online services
- Artifacts and tools
- Physical devices with embedded digital electronics
- Interactive devices with analog electronics
- Mechanical devices

That said, in this chapter we'll try to give you an overview of what we have found to be a [good methodology](#) and [useful technologies](#) to prototype hardware solutions using tools and machines like the ones available in a Makerspace or Fablab.

Is there a process I can follow?

In our experience of years of making projects, helping people to make projects and teaching students how to make projects, we have found out that the **Design Process** is the one that covers all the basic aspects of prototyping solutions. It usually works seamlessly in a variety of fields, contexts and technologies involved.

A user-centered design process usually follows these five steps:



(<http://www.legaltechdesign.com/LegalDesignToolbox/develop-a-new-project/>)

Rather than being a strict set of rules it's more like a series of different stages of a flow that ends up in a possibly endless loop of iterations. Sometimes it tends to feel so natural you won't even feel you are following a methodology.

// How does it work then?

Discover - Sometimes you start with a brilliant idea, lucky you! Most of the times you actually start by just facing a need or a series of needs. Those needs they usually have emerged in a certain context. As the first step you define this context, the area you are going to work in.

You analyze and try to find out:

- Who are the stakeholders involved
- What kind of characteristics does the context have

For instance, an issue deeply related to shortness of breath may have a bigger impact on a community of people doing fatiguing manual labor rather than a desk job.

Synthesize - If the first phase of research will help you focus on the area of the problem, this second phase will help you define the problem and the people affected by it, the people you are gonna work for and with, your users.

After researching your potential users, you represent the archetype of your average user.

You brainstorm around the needs and the users and you go deeper adding details, like use cases and scenarios.

TIPS

Creating personas will help you visualize what your users do really care about

There are many ways to approach a brainstorming session, usually we experienced that the oddest from your usual scenario you go, more interesting the thoughts will be! In other words embrace talking, confrontation, trying to feel part of the problem

Try to experience the scenarios to understand more about the real needs

Look around and take inspiration from good examples

Build - With your best ideas try to create quick prototypes, so that you can see with your own eyes and touch with your hands if it's something worth to spend more time on or not.

TIPS

Fail early. The faster you get to a working prototype the least time you will waste on a possibly pointless idea

Finding the right balance between working too much or not enough on a prototype is tricky. **Try not to waste too much time on details but be sure you have all the main features**

For more info on how to build a prototype you can refer to the [next part of the chapter](#)

Test - This is possibly the most important and too often forgotten phase of the whole process. Once you have a working prototype in your hands you are only at the beginning of your trip. *Now, go out and test it!*

- In every possible condition!
- With any possible users!

Testing is not easy, it requires time and logistics to organize the testing sessions, experience in talking to people, and improvisation so that you can **make any of the interviews useful for your research**.

Evolve - The last phase is also the first of a new loop. Analyze the feedback received and use it to learn and move forward, iterate your prototype and then test again until you have something that satisfies your users!

As easy as it may sound this could probably be the hardest time of your process. Accepting your possible failure is tough.

TIPS

Try not to make your special baby out of your idea, and prototype. It's just the first one of a series, really. It will grow and be better and more solid thanks to the other world, just like your baby!

Be flexible, you're probably not this great mind you might have thought of, don't overestimate your intuitions. It's with feedback from others, and sometimes conflict, that you can produce a better solution that will actually answer to a real problem.

Be patient, it might take a lot of iterations and blind trial and error before you get to the right solution

At some point you might have a prototype that will actually answer to your users needs, congrats! But, unfortunately this is not guaranteed. You might spend a lot of time iterating and not finding the solution you are looking for. Maybe you can go back and try with one of the other discarded ideas!

// Conclusions

The design process is powerful because it puts the user at the center. The technology, the methodology, the materials fall inevitably to the background.

A brilliant technological solution without users will just be a well executed excercise (or maybe a study), an innovative device that won't be used by people will just be a mass of decaying particles.

The user-centered design process will give you and your idea the legitimacy to go ahead and invest in the project.

What kind of technologies can I use?

Creating a prototype usually means you are working on an artifact that will soon go through a series of iterations. As a consequence you won't probably focus on small details and finishing (unless they are specifically needed for testing purposes), and you will try to have a working version as soon as possible.

Most of the time rapid prototyping techniques will do the job to produce your prototype. A series of technologies will come in hand to rapid-prototype your idea:

- [3D printing](#)
- [Laser cutting](#)
- Milling (coming soon)
- [Microcontrollers](#)

// 3D printing

3D printing is a technology used to create plastic shapes from 3D models. There is a wide variety of 3D printers available, that start from as cheap as 150 Euro to as expensive as 10K Euro. Stability, speed, and quality of finished product are all factors that control the price. For simple prototyping we need a machine that can produce decent results, you can use the guide here for comparisons on which machine to buy <https://www.3dhubs.com/best-3d-printer-guide> and what results to expect.

The file format for your files needs to be in STL, which you can generate using a wide variety of software, starting from commercial pro packages such as Solidworks, or other 3D alternatives such as Opencad, or for simple prints you can use a cloud service such as [Thingiverse](#).

// Laser cutting

Laser cutting is a technology used for cutting flat surfaces of wood, plastic, or cardboard and paper. Metal and resins (and of course mirrors!) are not materials that you can use laser technology with, to work with those you can explore other technologies like milling.

Depending on the laser power of the machine you are using (from 40W to 100W mostly) you can adjust the laser power and speed to get perfect results with your material thickness.

Adjusting speed and power we can also use laser for engraving or etching, which is simply used for drawing on a surface. The machine operator is familiar with the adjustments needed for each machine based on experience, and guidebook. If you are using the machine for the first time, allow time for trial and error. Laser cutting uses 2D files in different formats. Below are a few links that include tips on how to use and fine tune your operation:

- <http://www.instructables.com/id/10-Tips-and-Tricks-for-Laser-Engraving-and-Cutting/>
- <http://www.instructables.com/id/How-to-Use-a-Laser-Cutter/>

// Microcontrollers

(Arduino, friends & cousins)

Technically a microcontroller is a

"small computer [...] on a single integrated circuit containing a processor core, memory, and programmable input/output peripherals."

(<https://en.wikipedia.org/wiki/Microcontroller>)

What non-professionals of the IT fields usually refer to when they talk about microcontrollers are actually microcontroller-based platforms that will let you connect electronic components like sensors and actuators and read/write data through the input and output ports of the chip.

Why are these pieces of electronics interesting and useful? Simply put, they can make an artifact "smart":

- They can sense, process and react to events taking place in an environment;
- They can make a human interact with a device on a deeper layer, for instance recalling different settings, programming it according to specific inputs or generating desired outputs.

The list of electronic components you can connect to one of this boards is potentially infinite.

For instance you can have:

- A light sensor trigger a motor when the sun has reached a certain position and moving a blind;
- An accelerometer detect the fall of a person and trigger a phone call to a doctor.

The most popular hardware prototyping platform to create physical interactive devices is probably Arduino. It features a hardware board where you can connect the electronic components, and a software you can use to program its behavior.

What made Arduino stand out is the accessibility and ease-of-use, in fact it was designed and developed to let non-programmers do a programmer work. Also, being an open source project it generated an environment of derived boards, plugins and add-on modules. Using this modules and the examples provided sometimes you don't even need to know about electronics and programming at all.

Another platform growing in popularity is Raspberry Pi. The computational power on this platform is harder when compared to an Arduino, at the same time it requires higher programming skills.

How to choose a microcontroller? - Hard to say, it really depends on the needs of the project. Things to consider are:

- Amount of inputs and outputs that are needed to connect all the sensors and actuators
- Computational power
- Size of the device
- Destination of the device (eg. wearable device)
- Your own programming and electronics skills
- Particular tech needs (internet connection, audio processing capabilities etc...)
- Costs

Here are two useful articles to help you choose the right board for your project:

- <http://makezine.com/2014/02/07/which-board-is-right-for-me/>
- <http://makezine.com/comparison/boards/>

TIPS

Power is nothing without control. Do not aim for the most powerful boards just because more power is better. Try to find the best pick for your projects needs!

Smaller is not always better. If you have room, don't go for the smallest board just because it's cool, you might find yourself in need of adding more components while iterating on your prototype and you will need more inputs/outputs

Look around for ready made solutions. Most of the times you would like to have your prototype ready as soon as possible. If your coding and electronics skills are not the best, then why not opting for a board or module that works (almost) out of the box. You will always have the time to make it more PRO at a later iteration

Documentation is extra important. When finding a platform always go and check their documentation, activity of the community and availability of examples. You don't want to find yourself lost or with a broken piece of technology because you misused it!

How can I share a project?

How to share and document the process and the work of your project

// Why document?

Honestly, documentation isn't an easy task. Once you are focused on the job you are doing and the tinkering it sometimes becomes a burden that you have to worry about making documents of how stuff has developed and how things work, but documentation isn't a burden, it is a real treasure, and here is why:

1. The clearer your documentation, the more engaged online community you can grow;
2. The more you document, the more you tell the story of your product, which is a great asset for media coverage, supporters, and again, your online community;
3. Documentation helps you (yes, you!) keep track of your thoughts, how and where you have started and how you end now;
4. If you can't present it, then something is wrong. Being able to organize your thoughts and guide your community through replicating how following your project is a skill that you have to master in order for your project to survive.

Documenting your activities

// Real time

Your documentation starts from day one of your project. You need to document your activity to help you build and engage your community, and you need to document the process of thinking and developing your project. As far as activities are concerned here are some helpful tips:

1. Take **pictures** of your event (but check if your attendees are OK with it);
2. Keep your pics of **low resolution** (unless you need high resolution) so that you save time converting them for online usage afterwards;
3. **Videos** are great if possible. You can also make a video of your pics if video editing is a hassle;
4. Keep things **short, but continuous**. You don't have to write the most elaborate blog, but it is great to blog something after every event and in planning.

Documenting your actual project depends on the nature of the project. Do you have a hardware prototype? It is a social initiative? A platform? In any case, make sure you have the following:

1. **Language**. Make a clear and early decision of your language. If you are running a local initiative, there is no need to document in English unless it is your first language.
2. If your project is opensource, it is helpful to document your **early trials**, and even things that didn't go wrong. Use diagrams to help explain your decisions.
3. **Keep things visual**, when possible, add diagrams and drawings to your tutorials
4. **Talk to newbies** don't assume every reader knows about hacking. Make things super simple, introduce every concept and technology and add references to read more about it.

Documenting your project online

Here you can find our [InPe tutorial](#), an example of good documentation you can be inspired from.



// Tool to use:

There is a variety of tools and platforms that you can depend on, in order to document your projects. Here is a sample of a few:

1. [Wordpress](#) A simple blogging tool that has free template which can help you create an initial landing page for your project. You can easily install it on your server through your domain provider. You can link your blog to your social media accounts where you post images and videos about meetings and progress.
2. [Instructables](#). An open community of people who make things. You can find projects shared by others and an easy way to document your project step by step.
3. [Hackaday](#) is another place that can host your tutorials and work on progress. It is good to use different online documentation platforms as it helps you grow your online community base.
4. [Arduino forum](#): If you are Arduino base, make sure you drop a line about your project in the Arduino form. Something along the lines of "Hey, I am currently building this" or ask for help or simple ask for feedback.

// Examples of documented projects:

Below are samples of hardware opensource community oriented projects that share a very detailed documentation, making it easy for others to replicate their ideas, join their efforts, or at least engage and understand what they are building:

- **Microslicer**

So, [Microslicer](#) is a very small laser cutter, that is fully opensource. It is developed by one person, who shared his experience in details in an [instructables post](#):

1. First, the initial lead part of the post, makes it clear, in a glance what this project is about;





About This Instructable

40.300 views
278 favorites

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SilverJimmy
TheLittleBox.co

Bilo: A passionate maker of things. Chief engineer for the BigBox 3D printer and inventor of the MicroSlice Mini Laser Engraver & Cutter. I spend my time ... [More](#)

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Tags: microslice, laser cutter, kickstarter, gbl, engraver, arduino, gilding, gold, dye, plywood, gold leaf

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The MicroSlice V1 | A tiny Arduino laser cutter
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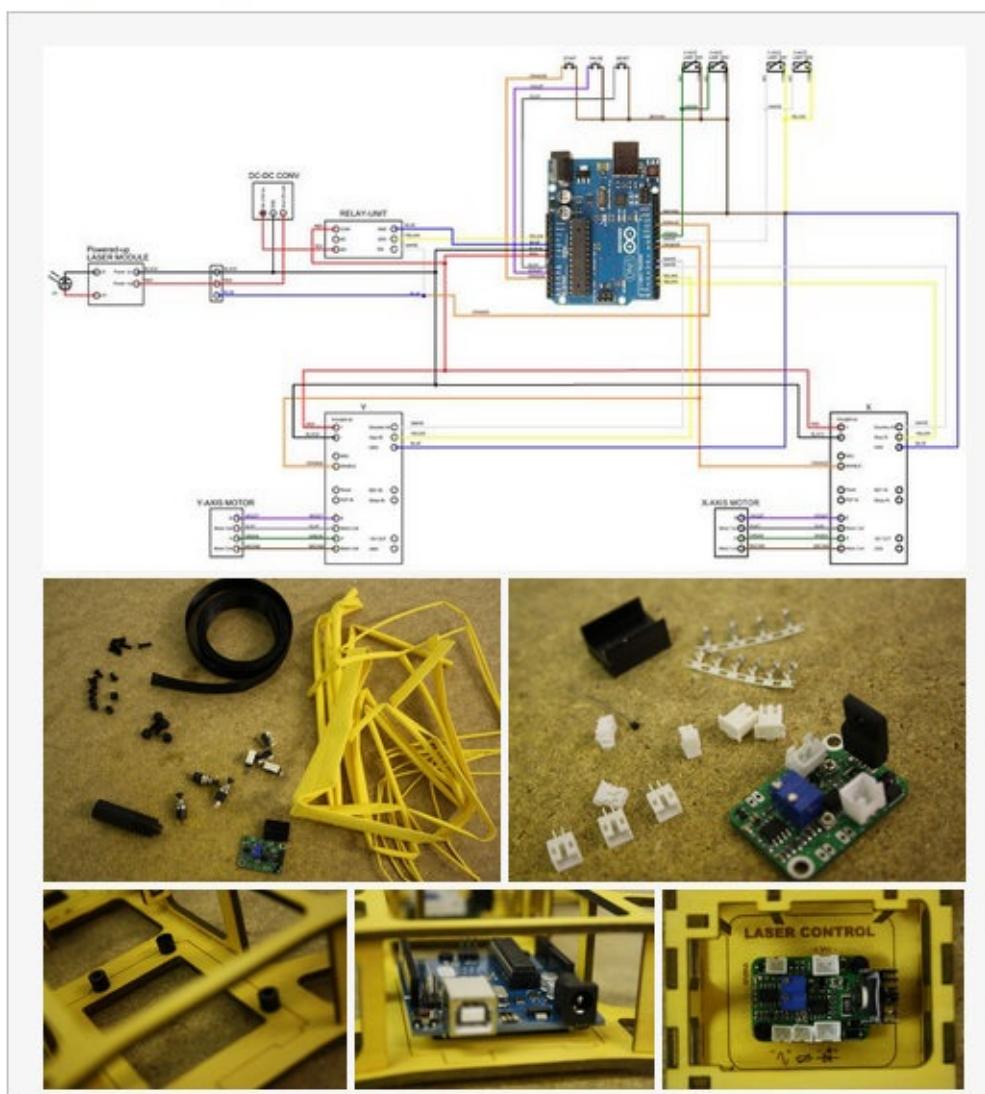


ZelosLaser Cutter 2.0 : Open Source, Sturdy &...

1. The Bill of materials is very detailed and supported by images and links to where to buy from;

2. Details. Everything is super detailed, even a tiny detail such as how to color your parts without making a mess;
3. Details are important, and things could get tricky if you are explaining something like circuitry and you want to make it newbie friendly.

Step 9: Wiring.



Well, the target of documentation here is not to give an intro to electricity. When you document your hardware project, the target is to make things as clear and as legible as possible for other to follow the logic and become able to replicate it. Use images and easy plug and play techniques, AND, use advanced schematic wiring, for those who are able to dig more.

- **Piccolo**

[Piccolo](#) is a tiny wonderful bot that can be used as a drawing bot. It is made entirely of laser cut parts joined together. The parts are small and it has lots of details, but the clear and detailed documentation makes it easy for other to follow and copy the project. Lets start by

where documentation resides and how it works:



The lead section of their landing page, makes it easy to understand what this project is about. In 3 seconds you can understand what is the project, watch it in action, and even check how to build your own.

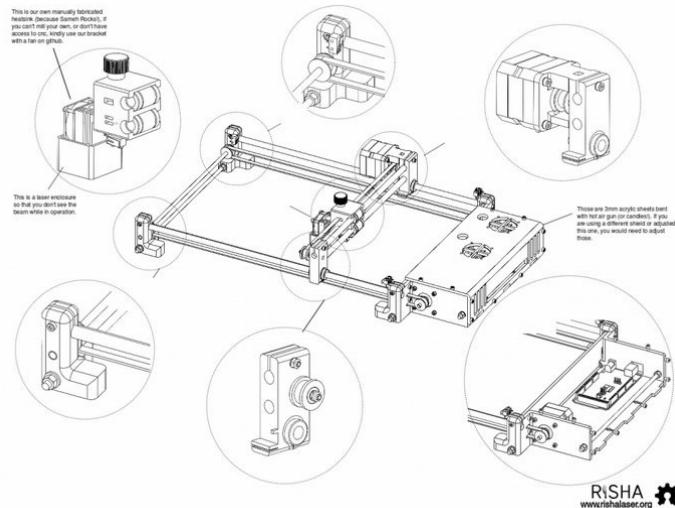
- **Rishalaser**

[Rishalaser](#) is an opensource laser cutter that works via mobile. Their website is hosted on a wordpress template, and they use a mediawiki plug in, for their documentation page. Their documentation is mostly visual, with a plug and play style.



3. Build your mechanics

Following the sample guide below, you can simple put your parts together. Kindly note that we milled our own heatsink. If you don't have access to a cnc, or to the raw material, please use our alternative laser bracket with a fan for your laser mount and Z axis.



RiSHA www.rishalaser.org

- **Ultimaker**

Well, even complex project that have now gone commercial do have a clear and detailed documentation of their opensource project. [Ultimaker](#) the best selling 3D printer, offers a comprehensive and super detailed guide to how to build each of their designs.

Black wired limit switch

To attach the black wired limit switch, perform the following actions:

1. Take the back panel.
2. Place the black wired limit switch with the lever pointing to the left.
3. Loosely attach the black wired limit switch with two bolts M3 x 16mm and two washers.

The fine-tuning of its position will be done at the end of the assembly process. Hold the limit switch against the frame while tightening the bolts.

Note: Make sure the flat (sharp) side of the washer is towards the wood.

Links

Below are some links which you can find useful, in the context of developing your opensource project and the community around it.

// Design thinking and where to start:

Design thinking is a practice that helps people visualize the different aspects of their project, the project impact, and how to test and evaluate. If you have an idea, design thinking workshop, might be one practice that can help you, explain your idea to your audience and makerspace where you present, and helps you grow a community around your project. It also helps you plan your testing in order to evaluate your thinking.

[IdeoU](#), a platform run by [IDEO](#) the leading design for humans company. It offers courses, and useful classes.

[DesignKit](#), another kit developed by [IDEO](#), that helps understand and plan concept of design research, even if you are not expert in the field.

[Collective Design](#), similar to the above, but adopting a different methodology, the kit is developed by Frog, another leading human centered design agency.

[Design thinking](#) via coursera, a free guide on how to plan, your project.

// Making things:

We already explained a some techniques on how to make your prototype, below are links to further technologies that you can use, and will be useful to learn about, in order to plan what technologies and processes do you need.

[Arduino](#) is a treasure board that empowers anyone to work with sensors, data and devices, without even necessarily being an engineer.

[Fritzing](#), a very easy tool that helps you design your circuits, explore concepts and learn about electricity.

[Fab Academy course](#), a great resource to learn about how to use the different fabrication technologies and how to design basic circuits.

[Processing](#), a very easy programming language, that helps you understand how to work with data, and how to visualize and build simple effect. Go through the tutorials step by step, this will be a great asset to you in further understanding about Arduino and programming in general.

// What is being developed as open hardware?

[Open Satellite](#), you can literally send data to space using opensource blue prints and guidelines

You can build a [Quadcopter](#), from opensource hardware guides

[Lasersaur](#), You can build a high power laser machine using opensource technologies, with the cost of nearly \$5K !

[Ultimaker 3D printer](#), you can build your personalized version of the world's leading 3D printer, it is opensource.

[DIY mobile phone](#), well, literally you can build your mobile phone yourself using open schematics.