DIGITAL
SOCIAL
INNOVATION

DIGITAL SOCIAL INNOVATION toolkit

Funded by
the European Union

DSI4EU Partners

nesta

Nesta is a global innovation foundation. It backs new ideas to tackle the big challenges of our time. Nesta uses its knowledge, networks, funding and skills - working in partnership with others, including governments, businesses and charities. Nesta is a UK charity that works all over the world, supported by a financial endowment.

www.nesta.org.uk

waag society

Waag Society — the institute for art, science and technology — is a pioneer in the field of digital media. Over the past 22 years, the foundation has developed into an institution of international stature, a platform for artistic research and experimentation, and has become both a catalyst for events and a breeding ground for cultural and social innovation. Waag Society explores emerging technologies, and provides art and culture with a central role in the designing of new applications for novel advances in science and technology. The organisation concerns itself not only with technologies related to the Internet, but also with those related to biotechnology and the cognitive sciences.

www.waag.org

University of Applied Sciences and Arts of Southern Switzerland

SUPSI

The Laboratory of Visual Culture (LCV) is the design research unit of SUPSI, the University of Applied Sciences and Arts of Southern Switzerland. The laboratory develops research on innovative learning models, exploring the convergence of technology and design via prototyping and the integration of bottom-up and community-driven approaches. LCV leads digital social innovation projects related to environmental sustainability and energy consumption, and international programs on interaction design, physical computing, open design and maker culture, DIY electronics, digital fabrication, data visualisation, interactive cinema and computational design.

www.supsi.ch/lcv

Impressum
DISCLAIMER By the European Commission, Directorate-General of Communications Networks, Content & Technology.
The information and views set out in this publication are those of the author(s) and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this study. Neither the Commission nor any person acting on the Commission's behalf may be held responsible for the use which may be made of the information contained therein.

Grant agreement no 688192.

Funded by the European Union

Authors on behalf of DSI4EU
Serena Cangiano,
SUPSI Laboratory of visual culture
Zoe Romano, WeMake

Reviewers
Peter Baeck, Nesta
Job Spierings, Waag Society
Matt Stokes, Nesta

Proofreading and editing
Roberto Landi

Graphic Design
Valentina Meldi,
SUPSI Laboratory of visual culture

Design digital toolkit
Matteo Loglio

Acknowledgements
This toolkit was made possible thanks to:

DSI4EU team:
Peter Baeck, Toby Baker, Amberley Barrington-Peek, Eddie Copeland, Gijs Boerwinkel, Gail Dawes, Frank Kresin, Job Spierings, Marleen Stikker, Matt Stokes, Daniel Pettifer

DSI workshop participants
Agnese Addone, Thomas Amberg, Massimo Banzi, Sabina Barcucci, Devoldere Bart, Greg Bernarda, Rajashekhar Bijja, Pramal Biswa, Yana Boeva, Valeria Borsotti, Paul Bristow, Stine Broen, Carmen Bruno, Marita Canina, Abhiruchi Chhikara, Gaia Colantonio, David Cuartielles, Tomas De Groote, Arnoud de Jong, Elena Deambrogio, Monica Del Basso, Jaromil Denis Roio, Lieza Dessein, Daniel Dobos, Anita Donna Bianco, Eszter Fakasz, Isabel Farina, Federico Ferretti, Paul Alexandre Fournier, Silvia Galfo, Pablo Garcia, Fanny Giordano, Serena Giulini, Daphna Glaubert, Nathalie Goethals, Davide Gomba, Valeria Graziano, David Green, Eman Haioty, Luc Hanneuse, Mikkel Holst, Irene Ingardi, Philip Koenig, TeeKay Kreissig, Frank Kresin, Bernard Lamon, Fiorenza Lipparini, Simon Lullin, Thomas Maillart, Dario Marmo, Simona Maschi, Maria Menendez Blanco, Massimo Menichinelli, Francesca Mereu, Max Munnecke, Edouard Naz, Susana Nascimento, Asger Nørregård Rasmussen, Abir Oreibi, Antonella Passani, Pasquale Pellegrino, Mirco Piccin, Alexandre Pólvora, Giovannni Profeta, Aruna Raman, Raffaella Rovida, Kavitha Sairam, Julian Salazar, Ilaria Scarpellini, Valentino Schio, Gowtham Selvaraj, Anna Seravalli, Anna Sienicka, Augustin Solioz, Alessandro Squatrito, Tuggle Rachel, Rachel Uwa, Christian Villum, Analisa Winther, Sopio Zheng

Workshop and talks hosting institutions
iMal, Center for Digital Cultures & Technology, Brussels (Belgium)
Maker Faire Rome, European Edition, Rome (Italy)
Casa Jasmina, Turin (Italy)
Underbroen Makerspace, Copenhagen (Denmark)
Danish Design Center, Copenhagen (Denmark)
Lift:Lab, Geneva (Switzerland)
WeMake, Milan (Italy)
Mini Maker Faire (Zurich)

Resources' authors
Graph Commons, www.graphcommons.com
UNICEF, ARM and frog, www.wearablesforgood.com
Loomio Cooperative Limited, www.loomio.org
Wevolver, www.wevolver.com
IDEO and Ellen Macarthur Foundation, www.circulardesignguide.com
Waag Society, www.waag.org
KaosPilot, www.kaospilot.dk
Paul Stacey, www.creativecommons.org
Abrar Burk and Refugee Academy, www.rebootberlin.com

1. AN OPEN DESIGN APPROACH TO SUPPORT THE GROWTH OF DIGITAL SOCIAL INNOVATION IN EUROPE

Given the rise of the digital social innovation network in Europe, this essay describes how the DSI4EU programme addressed the key challenge of creating strategies and tools to support its growth.

2. THE DSI SCALE

The DSI scale is a conceptual tool that tries to bring a bottom-up perspective to the problem of measuring and designing scaling in DSI projects, considering values such as knowledge sharing and technological openness.

3.RESOURCES & TOOLS

From networks mapping to open business models, this collection of resources and tools will introduce you to key subjects and skills that help DSI projects grow healthy and strong, in the current ecosystem of innovation for social impact.

4. PEER KNOWLEDGE

page 86

What are the obstacles and the successful strategies in DSI projects? Four women developing projects in the fields of open hardware, maker movement and tech education share their knowledge, best practices and problem-solving tactics.

5. GROWING YOUR DSI INITIATIVE: A PRACTICAL GUIDE

page 97

A short guide to support practitioners in three areas: understanding and engaging users; understanding, measuring and articulating impact; and planning for growth and sustainability.

6. HOW TO BECOME A DSI AMBASSADOR IN 10 STEPS

page 99

A short guide to scouting and awarding DSI projects at events dedicated to the maker culture, FabLabs, DIY technologies and civic tech communities.

DSI SUSTAINABILITY TOOLKIT

Across Europe there is a growing movement of people developing inspiring digital solutions to social challenges. We call this digital social innovation (DSI). These digital solutions have developed thanks to big advances in technology, such as the open source and open data movements, low-cost open hardware, crowdsourcing and Internet of Things (IoT). By empowering citizens and engaging them in civic action, they provide new ways of building social movements, delivering public services and creating social impact in fields as diverse as healthcare, education, democracy, environment, transport and housing.

The Digital Social Innovation for Europe (DSI4EU) project aimed to support this growing network of projects providing a bottom-up approach to tech development. To achieve this goal DSI4EU created the digitalsocial.eu platform, which showcases organisations and case studies, helps to identify funding and support opportunities and DSI-related events, releases all open data and visualizations tools to help understand and analyse the DSI networks. Alongside the digitalsocial.eu platform, the DSI4EU project developed a research on what the DSI landscape in Europe looks like, understanding routes to growth and scale; it developed a set of policy recommendations to support DSI. Finally, by holding a number of events and an experimental programme across Europe to bring together the DSI community, the project aimed at aggregating knowledge and tools to support digital social innovators, especially those involved in the open hardware movement.

The Digital Social Innovation toolkit is the result of this last project activity: an experimental programme that, from April 2016 to May 2017 involved makers, researchers, practitioners in workshops, talks and online meetups in which they collaborated with us to understand how open hardware and maker projects scale, taking into account societal and community good as a parameter.

During the programme we tried to face several challenges such as: how to support the sustainable scalability of projects that are initiated by groups of citizens, makers and associations that do not usually follow established organizational models, but are inventing new ones? What kind of approaches can facilitate growth, where the concept of scaling does not correspond merely to financial sustainability or business opportunities? These are the questions that inspired the release of the Digital Social Innovation Toolkit, a collection of case studies, tools, and curated resources to help scaling as digital social innovators.

The toolkit is based on the contribution of the people who participated to the DSI4EU programme. It is a toolkit featuring stories and resources from other people's initiatives, researches and projects. It is a toolkit of toolkits in which knowledge exchange is at its core because it is time to build upon what's already there instead of trying to reinvent the wheel from scratch, if a real impact has to be reached. It is an open toolkit whose resources will be expanded on-line in a continuous research work on how to support the growth of Digital Social Innovation in Europe.

1.

AN OPEN DESIGN APPROACH TO SUPPORT THE GROWTH OF DIGITAL SOCIAL INNOVATION IN EUROPE

1.1
THE GROWTH OF THE OPENNESS COMMUNITIES NETWORK

Digital social innovation enables people to collaborate using digital technologies; to co-create knowledge and solutions for a wide range of social needs and at a scale that was unimaginable before the rise of internet-enabled platforms (Bria, 2015). While business innovation is generally diffused through organizations that are primarily motivated by profit maximization (Mulgan, 2006), digital social innovation serves as an emerging umbrella definition to describe a nascent field where digital technologies are used to address societal challenges, and promote alternative models to the centralization of information, data and resources in the hands of a few big players in the tech industry.
A new definition emerges from the need to communicate the work of a large network of individuals, organizations and companies that is growing and spreading all over Europe, and whose potential impact has not yet been realized due to a lack of co-designed policies at a European level, as well as due to the complexity of identifying consistent development models (Bria, 2015). In Europe, it is possible to count about 1400 organizations and 700 projects that create social impact as a by-product of activities such as the invention of new ways of making goods; the distribution of more accessible and inclusive educational programmes; the development of hardware and software solutions that allow large communities to monitor environmental conditions, and the release of designs and architectural solutions made for all (Bria, 2015).
These organizations and projects operate in a multitude of fields such as open data, open knowledge, open hardware and software, and open networks in which usually the dominant value is the engagement and empowerment of people, through the use of open-source tools as well as practices based on collaboration, sharing and openness.

Given the rise of the digital social innovation network in Europe, some key challenges can be found on one side in the definition of policies to help this network flourish, and on the other in the creation of strategies and tools to support its growth.

Considering this second challenge, we experimented with the opportunity to develop a series of training programmes that specifically address the issue of defining what “scaling” means in the DSI context and that support bottom-up, collaborative and open growth.

1.2 BUILDING CAPACITY BY APPLYING OPEN DESIGN AS METHOD

Business design provides well-established techniques and models to train and help organizations and companies define effective business models to reach financial sustainability (Osterwalder, 2010). Alternatively, design thinking offers methods and tools to tackle complex problems through the co-design of strategies for the delivery of social innovation projects (Brown, et al, 2010). Furthermore, with the diffusion of open innovation models, design companies started experimenting with collaborative tools to solve societal issues such as food waste, or water and sanitation in developing countries (OpenIDEO, 2012).

In order to bring together the DSI constituency through the distribution of events and training programmes, we looked at research on P2P and user empowerment strategies (Bihanic, 2015) and we proposed to use open design as a method for implementing these experimental programmes.

Open design usually refers to a design artefact project whose source documentation is made publicly available so that anyone can study, modify, distribute, make, prototype and sell the artefact based on that design (Open Design Definition, 2016). Besides the reference to the paradigmatic shift in the design of physical objects on the internet and the digital fabrication age, open design can be seen as a new wave of design where collaborative practices focus on the documentation of the process of design activity, rather than on the results. Moreover, open design reflects and promotes the figure of the designer as facilitator: a meta designer who designs a multidimensional design space enabling the user to become a co-designer, even when this user has no designer experience or time to gain such experience through trial and error (De Mul, 2011, p. 34). Open design can refer to one of the "fifty shades of Openness" (Pomerantz and Peek, 2016) that goes beyond the mere release of an artefact's documentation to highlights the benefit of a process in which openness is a social practice.

We decided to translate open design concepts and practices into a method for designing training programmes, in a way which allowed us to experiment with the practices commonly used within the DSI communities; in particular, within the groups active in the field of open hardware, software and design.

Choosing open design as method entails collaborative and P2P practices and strategies for supporting the sustainable growth of DSI. In this framework, the training programmes were distributed through workshops and online meetups, and combined with the setup of an open-source digital toolkit enabling the documentation of the training process.

The experimental training programmes

Starting in April 2016, we organised a series of experimental training programmes to engage one of the target audiences of DSI4EU (i.e. makers and members of the open hardware and design community) in key DSI events and places across Europe.

The training programmes have been delivered in the format of workshops, lectures and online meetups. One of the programmes was combined with the organisation of the DSI distributed exhibition, curated collaboratively during Maker Faire Europe 2016 in Rome (Cangiano, Romano, 2016).

The training programmes involved two different target groups:

- Representatives of communities, associations and organisations that actively work or collaborate on DSI projects in Europe;
- Individuals who are developing technologies within the so-called Maker Movement (Anderson, 2012).

While the first target group includes people with knowledge of the development of projects for the societal good, the latter can be considered as a key player in the field of DSI, because of its interest and expertise in the development of bottom-up technologies for tackling social challenges through open hardware and open design approaches.

Two main tools have been designed to guide the training programmes and to facilitate mentoring activities during the workshop sessions: the DSI Scale and the Peer Knowledge Tool. The DSI Scale is a conceptual tool for self-assessment and assessment of DSI projects based on values such as knowledge sharing, technological openness and societal impact. The Peer Knowledge Tool is a conceptual survey that aims to capture best practices and problem-solving tactics within the field of DSI.

The tools intend to support participants in discussing and exploring strategies to scale their endeavours by stimulating a collaborative reflection by:

- sharing best practices, namely problem-solving tactics applied during the development of a project;
- sharing scalability strategies, namely actions for improving aspects of a project to reach a better impact.

Digital social innovation? You make it with Arduino?
Lecture, 2 April 2016, Milan

Size Matters? Evaluating prosperity and growth in digital social innovation projects.
Workshop, 31 May 2016, Brussels

“The level of openness and the community engagement can be assessed by measuring the conflict that is generated within a community. Conflict is a fundamental proof, a tangible indicator of how the community is managed (if there is a horizontal communication or hierarchy) and how the community is engaged in a digital social innovation project.”

Extract from the discussion session at the workshop Size Matters, Brussels, June 29th, 2016.

DSI hunt. A gamified workshop to discover the digital social innovators at Maker Faire Europe.
Workshop, 14 October 16, Rome

Internet of Things and Social Impact
Workshop, 4 February 2017, Turin

“The impact of open source projects does not depend on how much open source tools or contents or design you are using, but rather how much you are contributing to other initiatives. The impact of a digital social innovation project can be assessed by measuring how many people are actively contributing to the development of the project.”

Extract from the discussion session at the workshop Size Matters, Brussels, June 29th, 2016.

Open Making for Social Impact
Workshop, 14 February 2017, Copenhagen

Commons-driven business models
for social impact at Lift:Lab
Workshop, 1-3 March 2017, Geneva

“Community engagement should be based on the idea that people have the same opportunities. It should be democratic and promote transparent processes and procedures.”

Extract from the discussion session at the workshop Size Matters, Brussels, June 29th, 2016.

“An important point is to have a balance between online conversation and offline engagement. Participants shared their local experiences and agreed that the step-in process is as important as the step-up process. Understanding how to become part of a community has to be as clear as how to get more involved in its growth and what type of contribution is welcome.”

Extract from the discussion session at the workshop Size Matters, Brussels, June 29th, 2016.

1.3 FROM THE TRAINING PROGRAMMES TO AN OPEN SOURCE TOOLKIT

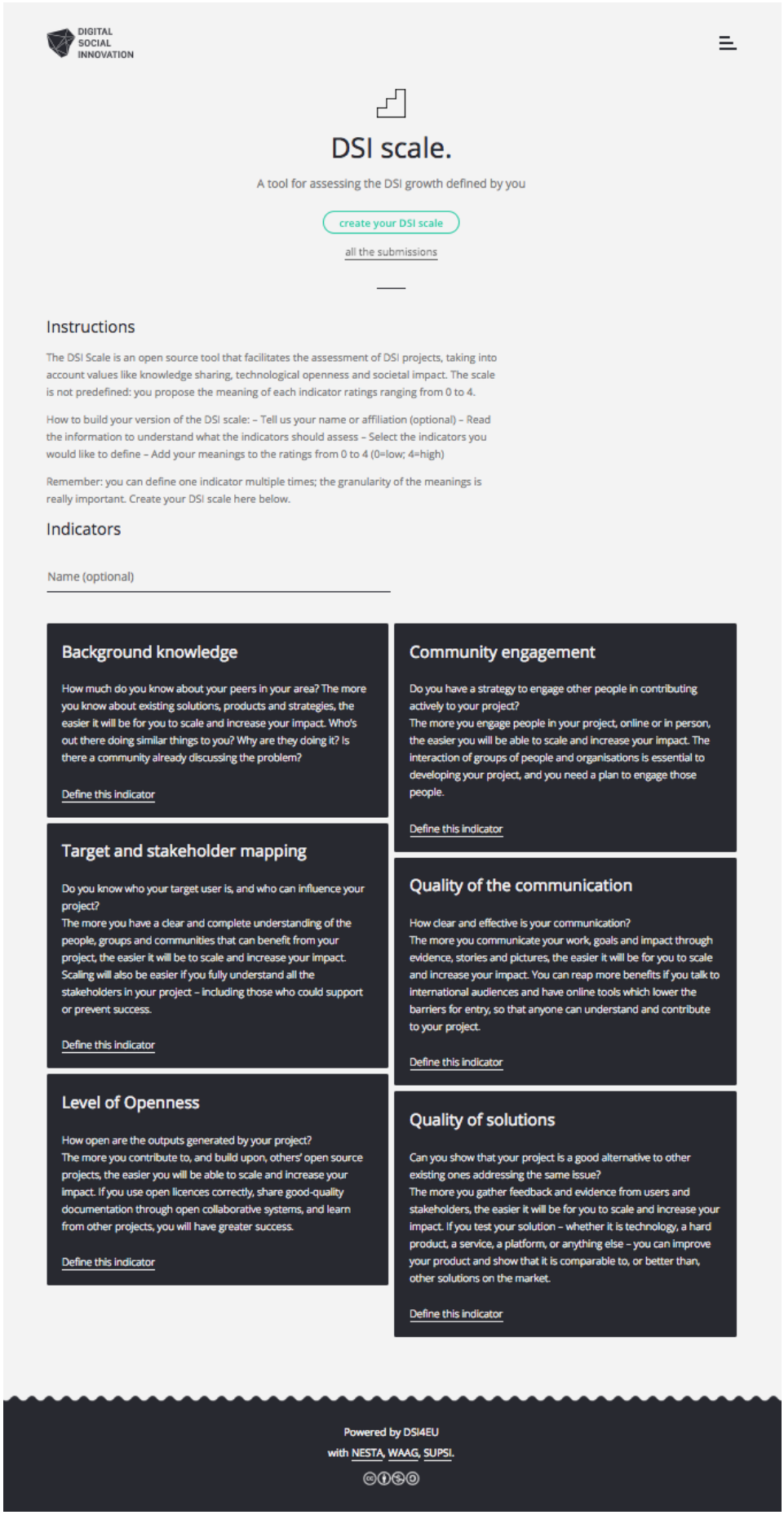
Toolkits are common deliverables in the field of design and design research. In the context of social innovation, a series of toolkits have been released which deliver methods and techniques for teaching designers how to design for solving societal issues (IDEO, 2013). Other toolkits focus on collecting techniques from several disciplines (social studies, business management, design thinking, etc.) to enable non-experts to quickly build capacity through a self-learning process (Nesta, 2014).

We decided to experiment with the possibility of transforming the training programmes' tools into interactive features of a digital toolkit. In this section we describe how we designed a web version of the digital DSI toolkit to experiment with the opportunity to use a digital interactive artefact during the training programmes, and to integrate it as part of our methodology.
The digital DSI toolkit is a web-based toolkit that allows participants of the programmes to define their own DSI scale, and to share their best practices and problem-solving tactics by interacting with each other through an easy to use web interface. Released in October 2016, the web version of the toolkit has been used during the latest programmes and it has to be considered as a version 0.1 of the final toolkit, which is the final WP3 deliverable.
The digital toolkit v 0.1. works as a web interface that allows participants of the training programmes to upload content to the popular collaborative development platform GitHub. It features the interactive version of the DSI Scale: a set of digital cards that feature text fields for the input of indicators to which users can assign ratings from 0 to 4. By filling out the DSI scale cards, users contribute to the creation of "issues pages" that are listed in a specific section of the toolkit repository on GitHub. The same functionality is implemented to allow users to upload their problem-solving tactics using the Peer Knowledge tool.

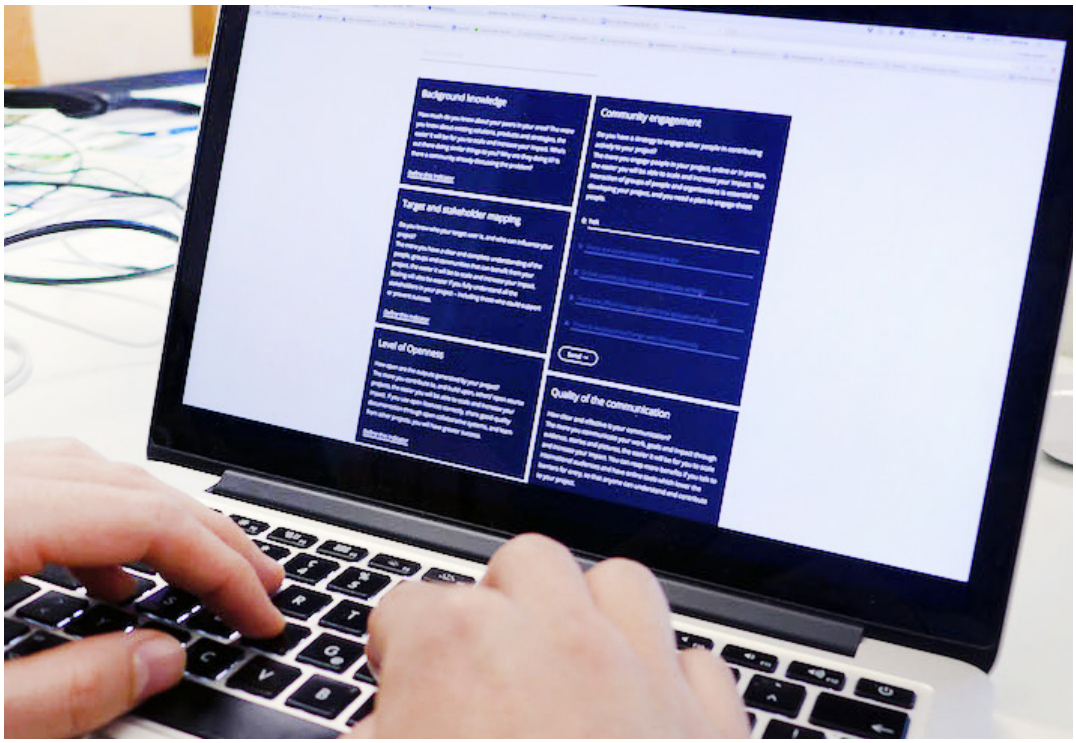
The digital toolkit v 0.1. has been released as an open source website. The assets and the source code are hosted on Git-Hub and the single pages are generated as GitHub pages. Because of the absence of a database or a dedicated server, user data is sent to the repository as issues from a bot, then organised through tags.

Through the design and implementation of the features that connect the digital toolkit with the GitHub repository, we aimed to:

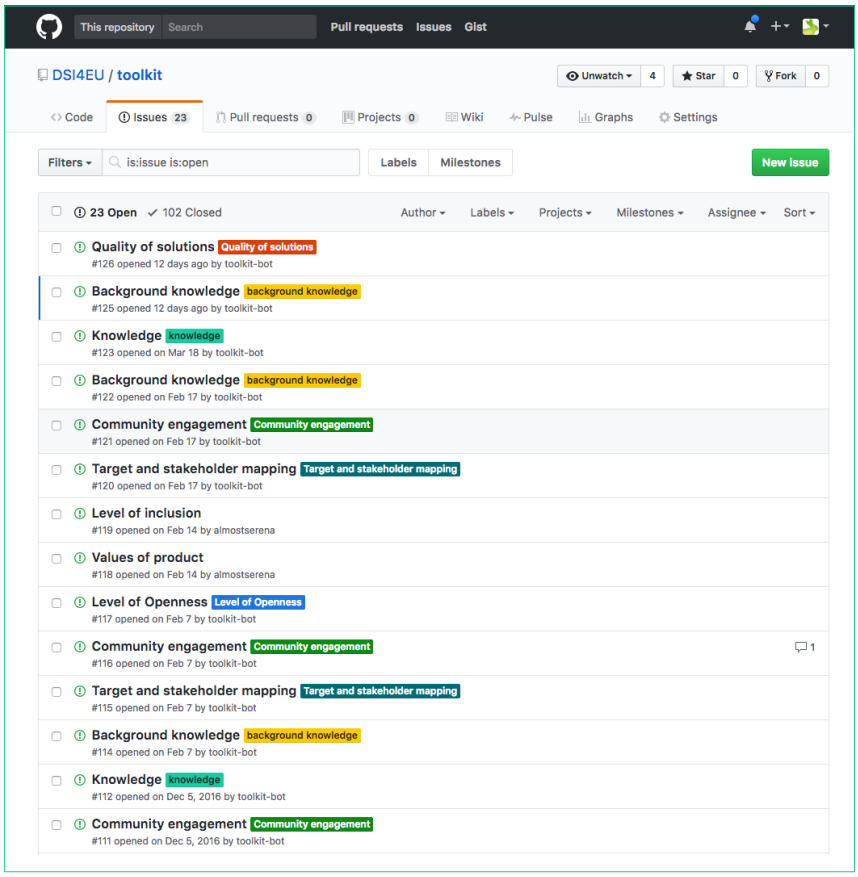
- support workshops participants in having a structured conversation on ambitions, scale and impact in such a way that the results from this conversation are shareable and to a certain extent can be followed up and even refined through time;
- create an open digital platform to support the documentation of the results of the training programmes, and to engage participants in the activity of sharing their knowledge in a public repository that is accessible to all;
- activate an open process in which members of DSI projects can continue exchanging knowledge after the end of the experimental training programmes;
- make the results of the training programmes available in a raw format to other researchers and organisations that are developing studies in the field of DSI;
- provide a user-friendly interface that enables people, whatever their experience of using GitHub, to share content and connect with a larger community of open software developers.



The web-based version of the DSI Scale



The web-based version of the DSI Scale available at: https://dsi4eu.github.io/toolkit/scale



List of the issues generated in a GitHub repository connected to the digital toolkit available at: https://github.com/DSI4EU/toolkit/issues

1.4
THE P2P MENTORING MODEL

The combination of training programmes based on (self) assessment and the use of the open source toolkit, led us to reflect on the mentoring activity in the context of DSI.

Mentoring usually refers to an educational methodology in which an expert helps a mentee in developing skills; it usually proposes a model based on the relation between those two actors, in which the first has the knowledge of a domain and the competencies to transfer this knowledge to the latter.

In the emergent field of DSI, the internet plays a fundamental role in the creation of communities that collaborate to create solutions to societal problems. In environmental data monitoring projects, for example, groups of experts such as scientists and hardware developers share instructions with non-experts on how to use tools and how to analyse data about air quality. The non-experts are, usually, citizens whose goal is to participate actively in the collaborative process of creating an alternative source of information on environmental conditions. The instructions on tools and data are shared online in such a way that other citizens' initiatives can improve and reuse this knowledge to replicate the project in other cities.

Considering this example we can hypothesise that P2P mentoring, enabled by the internet, could be a central element of the ability of DSI projects to grow; a way of embracing and implementing the real power of collaboration and knowledge exchange. Based on this concept, we defined a mentoring model for the DSI community. In our model, the mentoring is the result of offline and online P2P interaction among different communities, rather than a transmission of expertise and knowledge between mentors and mentees.

In the model, DSI4EU distributes training programmes to members of digital social innovation projects. These members participate in the programmes by creating DSI Scales and by sharing their knowledge through the Peer Knowledge tool. The results of the training programmes are documented in the digital toolkit that is accessible to everyone. Members of the DSI community access the digital toolkit and can contribute to the creation of more DSI scales, and share more problem-solving tactics by engaging with the interactive features of the toolkit and the repository of the open issues listed in GitHub.

This interaction among the DSI4EU mentors, the participants and the communities drives a process of mentoring that is horizontal, continuous and open.

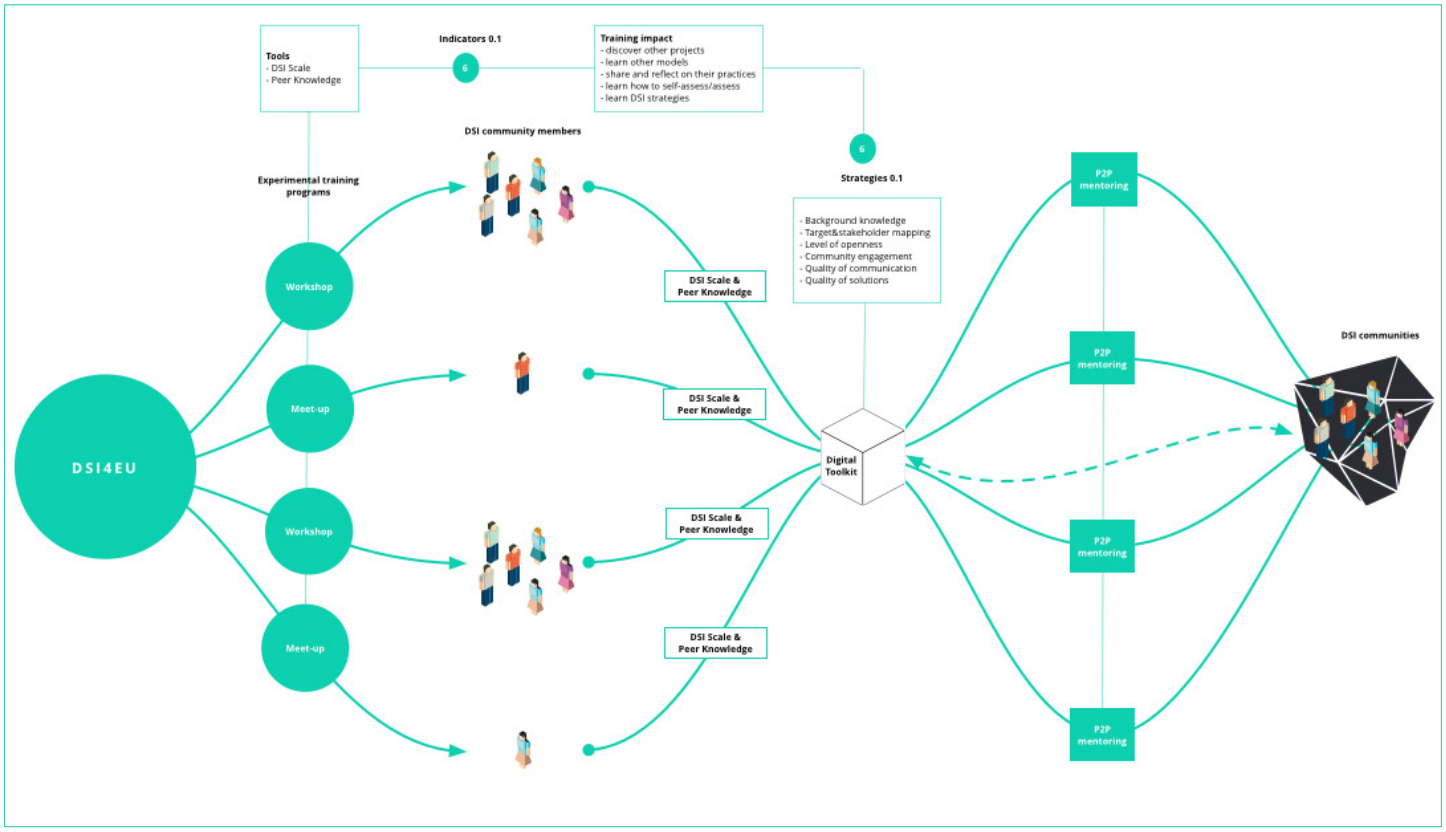


Diagram of the P2P mentoring model. On the left side, the DSI4EU project generates the training programmes, workshops and online meetups. Participants of the training programmes generate the DSI Scales that are documented in the digital toolkit. The right side illustrates the DSI communities that access the repository linked to the toolkit or contribute to the knowledge exchange by submitting new DSI Scales and problem solving tactics.

CONCLUSIONS

How can we build capacity in a network of communities that share the same values and abstract goals (societal good and change) but perform at the nexus of different disciplines? How can we support the sustainable scalability of projects that are initiated by groups of citizens, makers and associations that do not usually follow established organisational models, but are inventing new ones? What kind of approaches can facilitate growth in contexts where the concept of scaling does not correspond merely to financial sustainability?

We started with these questions to envision a process for designing and distributing experimental training programmes in a way that is close to the practices and principles promoted within the DSI network of open communities. We have built our method upon concepts coming from the field of open design, and we designed experimental tools and a digital toolkit to deliver programmes that are conceived to be part of a complete P2P mentoring model. This model proposes an original approach in which members of DSI communities are at the centre of a learning experience that enables the creation of a common background among initiatives that develop projects in different fields (i.e. open hardware, open software, open knowledge, etc.). We used open technologies and open licenses to make the results of the mentoring available to the larger community of open source software and hardware development.
All these elements are bricks of a growth strategy: our open source recipe for supporting the diverse group of organizations, initiatives and individuals that are making digital social innovation grow in Europe.

References

Bria, F. (2015). *Growing a digital social ecosystem for Europe*. Retrieved December 28, 2016, from http://www.nesta.org.uk/sites/default/files/dsireport.pdf.

Mulgan, G. (2006). *The process of social innovation. Innovations: Technology, Governance, Globalization*. 1(2), 145-162.

Bellini, F., Passani, A., Klitsi, M., Vanobberghen W. (2016). *Exploring impacts of collective awareness platforms for sustainability and social innovation* p. 19. Roma: Eurokleis Press.

Osterwalder, A. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. John Wiley & Sons, New York.

Brown, T., Wyatt, J. (2010, Winter). *Design Thinking for Social Innovation*. Stanford Social Innovation Review, 30-35.

OpenIDEO (2014). *OpenIDEO Impact Book*. Retrieved December 28, 2016, from https://issuu.com/nathanwaterhouse/docs/impactbook_1_9_14_nathan_test.

Bihanic, D. (2015). *Empowering Users through Design*. Cham: Springer International Publishing.

Menichinelli M., Kovač A., Troxler P., Childs S. (2016). *OpenDesign-WorkingGroup/Open-Design-Definition: v0.7 [Data set]*. Zenodo. Retrieved 29 March from http://doi.org/10.5281/zenodo.161559.

Pomerantz J., Peek, R. *Fifty Shades of open*. Retrieved 29 March 2017, from http://www.ojphi.org/ojs/index.php/fm/article/view/6360/5460.

Longshore Smith M., Seward R. *Openness as a social praxis*. Retrieved 29 March 2017, from http://firstmonday.org/ojs/index.php/fm/article/view/7073/6087.

De Mul, J (2011). *Redesigning design*. In Van Abel, B., Evers, L., Klaassen, R., Troxler, P. (Eds.), *Open Design Now: Why Design Cannot Remain Exclusive* pp. 34-41. Amsterdam: Bis Publishers.

Anderson, C. (2012). Makers: *The New Industrial Revolution*. New York, New York: Crown Publishing Group.

Lemola, T. Lievonen, J. (2008 Aprile). *The role of innovation policy in fostering open innovation activities among companies*. Vision ERA-NET.

Digital Social Innovation (2016). *Shaping the future of digital social innovation in Europe*. Retrieved 29 March 2017, from https://digitalsocial.eu/blog/14/workshop-shaping-the-future-of-digital-social-innovation-in-europe.

IDEO (2015). *The Field Guide to Human-Centered Design*. Retrieved December 28, 2016, from https://www.ideo.com/post/design-kit.

Nesta (2015). *Development impact and you*. Retrieved December 28, 2016, from http://diytoolkit.org/media/DIY-Toolkit-Full-Download-A4-Size.pdf.

2.
THE DSI SCALE

THE DSI SCALE

The DSI scale is a conceptual tool that tries to bring a bottom-up perspective to the problem of assessing DSI projects. The tool can be used in workshops and online meetups to help digital social innovators to self-assess the meaning of scaling, considering values such as knowledge sharing, technological openness and societal impact.

The tool consists of a blank scale in which it is possible to assign a meaning to a numeric scale that goes from 0 to 4. The meanings are descriptions of the actions that are or can be carried out by digital social innovators in six different areas:

- Background knowledge
- Target and stakeholder mapping
- Level of openness
- Community engagement
- Quality of communication
- Quality of product

These areas work as fictional indicators collaboratively selected and tested during the DSI4EU programs. These indicators helps to create assessment scales that depict the multiple point of view of individuals, organizations and companies in the DSI network that are scaling up beyond a mere financial growth.

In this section of the toolkit you will learn how to create your own DSI Scale by following these instructions:

Step 1: read the description of the fictional indicators
Step 2: read the example of DSI Scale
Step 3: learn about a case study and its key DSI features in relation to the indicator
Step 4: create your scale and assign your meanings by describing your actions and arranging them from 0 to 4, whereas 0 gives a value to a potentially weak action.

During the DSI4EU programmes, many scales have been collected using the online DSI digital toolkit. You can find examples of DSI scales in the list that can be found on the project's GitHub repository, available at: *www.github.com/DSI4EU/toolkit/issues*.

2.1
LEVEL OF OPENNESS

Openness is a condition created by owners of content and tools that allow other people to access, edit, publish and disseminate knowledge in order to facilitate social empowerment, economic progress and sustainable solutions. In general terms, openness is about changing how activities are organized and how content and tools are produced to avoid intellectual property restrictions and favour universal access, participation and therefore collaboration.

There are different degrees of openness which can be applied in different forms to encourage communities of people to actualize their right to make, own and control copies of the content (i.e. download, duplicate, store and manage); to use the content in a wide range of ways (i.e. in a workshop, in a class, in a study group, on a website, in a video); to adapt, adjust, modify or alter the content itself (i.e. translate the content into other languages); to combine the original or revised content with other material to create something new. The maximum level of openness facilitates the "communing", namely the capacity to contribute
to the creation and maintenance of shared resources, even with a commercial purpose. Openness expands its range of action to the domain of organizations that are open, if their decision-making processes are managed horizontally and in a transparent way.
At company level, openness relates to the possibility of making information about governance and finances accessible.
Openness entails also the value of inclusion:
your action is open when it lowers the barriers to the access and the engagement of more diverse groups of people.

Example

Author: M. Menichinelli

0.
a documentation of a design artifact, and the manufactured or final design artifact

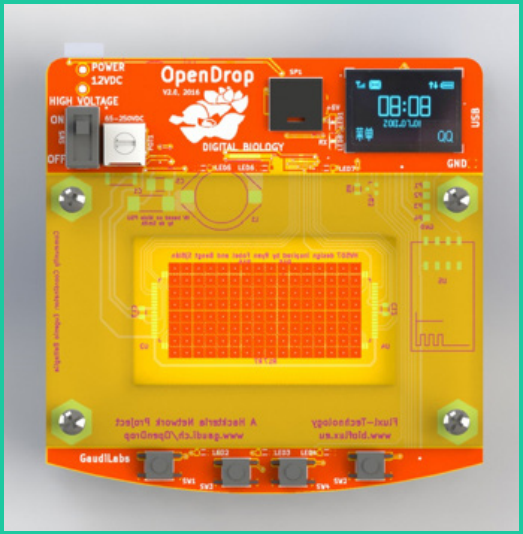
1.
an open, collaborative and openly documented process that manages the whole life-cycle of a design artifact

2.
an organization (community, company, foundation, (...) that extends the work of the founders of the project with participation, discussion, contribution

3.
an open, collaborative and openly documented budget that allocates costs and revenues

4.
an open, collaborative and openly documented governance that manages the processes, participation and budget of the project

Case study



Key DSI features

Open Drop only uses standard and widely available components, materials, and production processes. The assembling does not rely on parts that are not available to individual customers or processes that require expensive setup costs. The fabrication is also accessible: the design files and software required to operate the hardware are released under open licenses. The development is shared and facilitated by the project initiators through the presentation in public events, the involvement of different communities and initiatives, the organization of interdisciplinary workshops.

GAUDILABS
www.gaudi.ch/OpenDrop

OpenDrop is an open hardware-based design for microfluidics analysis. Microfluidics is the study of how fluids behave and can be controlled at the very smallest levels.

The device uses recently-developed technology called “electro-wetting” to control small droplets of liquids. Using this technology, users can carry out digital biology experiments in the lab and in their own home.

While the uses of the OpenDrop are currently quite specific and niche, its significance lies in the principles of openness, accessibility and collaboration which lie behind it.

Inspired by other equipment like the DropBot and Microdrop software, OpenDrop was designed with a DIY and low-cost approach, and is part of a larger ecosystem of digital biology initiatives whose aim is to make digital biology and lab automation accessible to people. It was designed in accordance with the best practices for Open-Source Hardware (OSHWA) and the GOSH (Global Open Science Hardware) Manifesto.

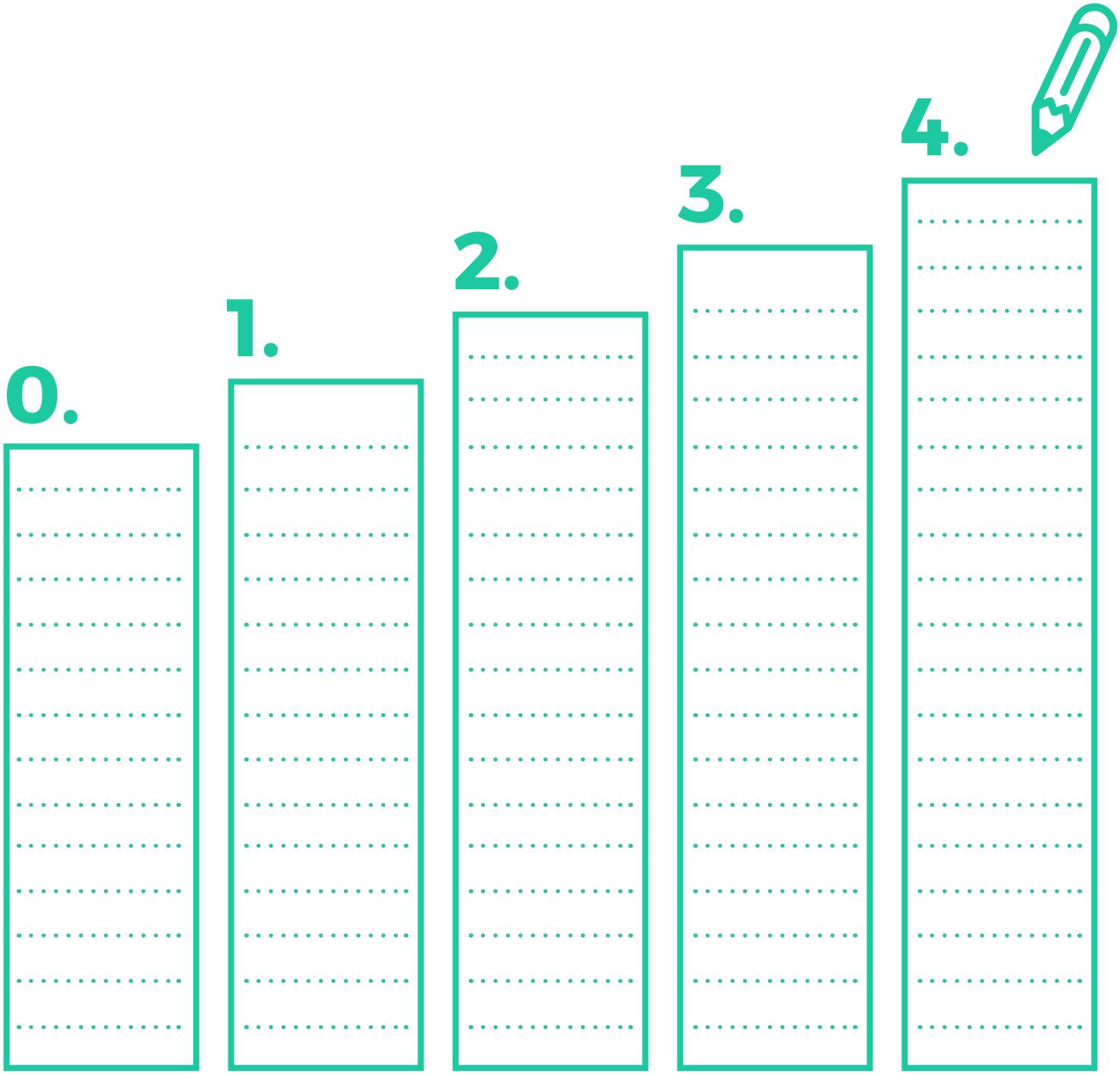
The development process is continually shared and facilitated by the project leaders through presentations at public events, through involving different communities and initiatives, and through organizing interdisciplinary workshops.

Initiated and developed in Switzerland, the project is currently at its second release and has been developed through the collaborative efforts of an international network of organisations and communities of biohackers, scientists and artists. Thanks to this collaboration, its applications now spread beyond science to fields such as art, music, games and education.

The project was initiated by Urs Gaudenz (Gaudilabs) and developed by several communities including hackteria | open source biological art, BioFlux and digi.bio.

CREATE YOUR OWN DSI SCALE

ASSIGN A MEANING TO THE RATINGS



2.2 COMMUNITY ENGAGEMENT

Community engagement is considered a planned process with the specific purpose of working with identified groups of people, whether they are connected by geographic location or specific interest, in an online or offline environment. When connecting the term 'community' to 'engagement', the aim is to shift the focus from the individual to the collective, with the implication of ensuring consideration of the diversity of actors that exists within any community. When it comes to innovation and making, the value of community engagement resides in the definition of the best conditions for everyone to participate in a process, being they non-technical or potential users, experts or developers, enthusiasts or just curious. Community engagement in the field of open hardware and open design, for example, is about proactively engaging with external participants and supporting their ability to contribute. The process of engagement is usually successful when it is able to decentralize governance to those most closely involved with the project. Developing skills in community engagement means learning how to provide support to the external project contributors with feedback and answers, by being responsible for long-term planning and coordination; moderating horizontal conversations through online communication media; training ambassadors and releasing guidelines for replicating your actions; releasing useful content and tools that enable community members to develop their own project or getting conversations started without your direct involvement.

Example

Author: Rachel Uwa, School of MAA

0. You do not have your own community, but you are connected with communities of other initiatives

1. You organize both online and offline events

2. You open off topic discussions by talking about relevant societal issues to make sense of what you do in your everyday action

3. You invite people that are not in your preferred target group such as immigrants or homeless people

4. You give your personal time and you offer your mentoring by also encouraging people to start their own project, not really related to your initiative

Case study

Key DSI features

Every node of OpenTech School in Europe uses Meet-up as the main platform for sharing information about workshops and events. A curated web platform allows people to access all open source material and teaching resources that are shared on GitHub and translated into many languages. The initiative provides a hands-on learning experience in which people create projects in a welcoming learning environment.

OPENTECHSCHOOL
www.opentechschool.org

OpenTechSchool (OTS) is a distributed community that opens tech education to everyone. The initiative offers educational courses on technology through hands-on events taking place all across Europe. While the technology community has sometimes been guilty of excluding women and the elderly, OTS is actively inclusive and open to enthusiasts of all genders and ages.

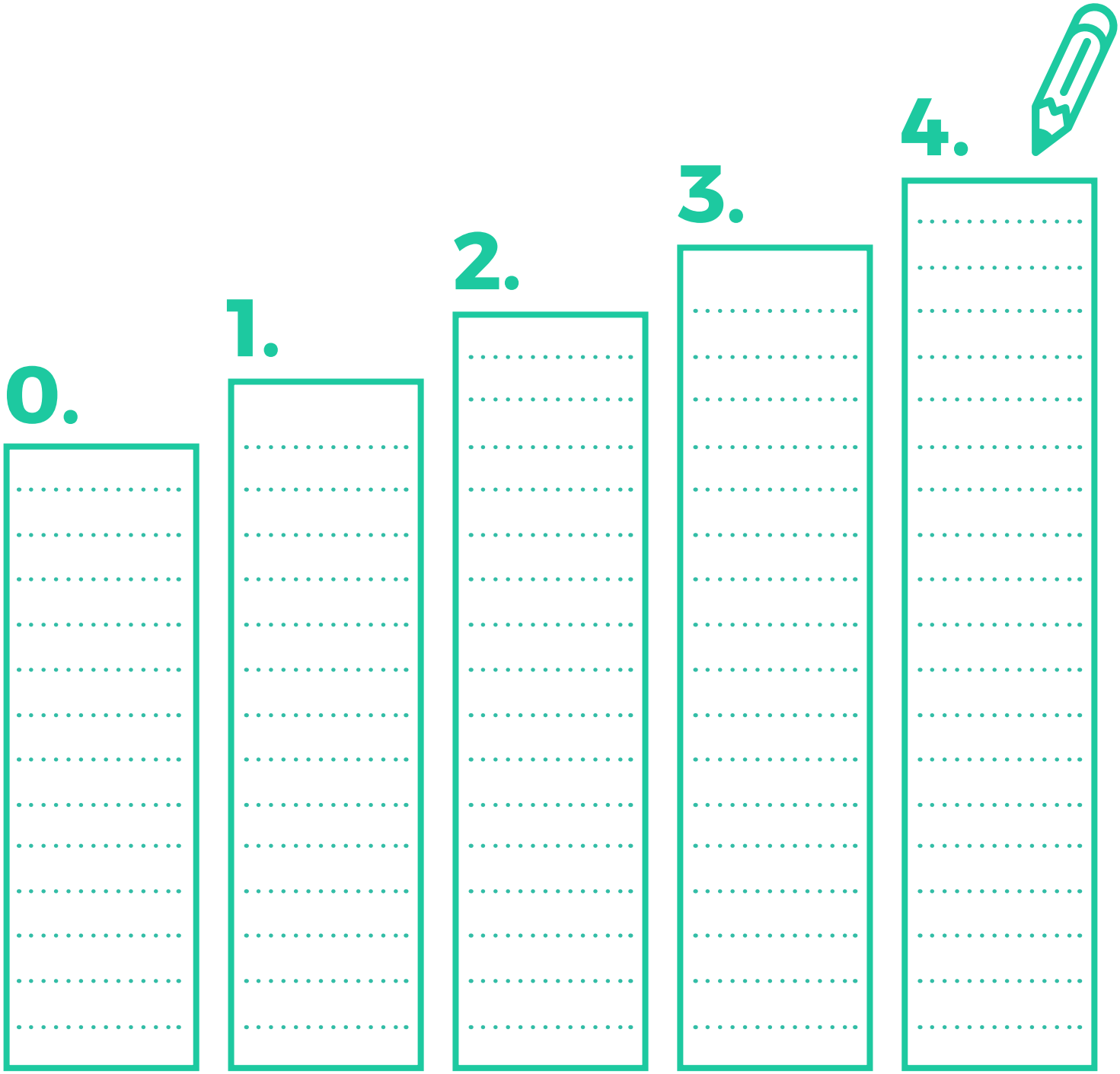
OTS is a community initiative established in Berlin in April 2012. The idea came during a local RailsGirls event, a free tech workshop dedicated to an audience of women of all ages and backgrounds.
The goal of OTS was to expand this concept of openness to all tech topics and to an audience of all genders and experience levels.
Given this challenge, hundreds of people joined OTS as coaches, learners, organizers and sponsors in eight cities across Europe: Berlin, Bristol, Brussels, Dortmund, Göttingen, Hamburg and London.

OTS's mission is to make tech education more accessible and inclusive. Programming is often viewed as something inaccessible, especially by people who have not attended university: this is a misconception OTS wants to break. Their events provide opportunities for adults to try coding by working with their peers in a safe learning environment, where volunteer coaches work with small groups.

The core values of OpenTechSchool reflect the spirit of digital social innovation in the field of education: the training material and all resources are shared with open licenses; the learners are empowered by a progressive learning process that enables them to become coaches themselves; the guidelines to organise workshops with other organisations are also shared, in order to facilitate the creation of a distributed network of similar initiatives. OTS promotes non-profit education; coaches and team members donate their own time for the greater good of the learners and the community. This approach makes the programmes accessible and low-cost.

CREATE YOUR OWN DSI SCALE

ASSIGN A MEANING TO THE RATINGS

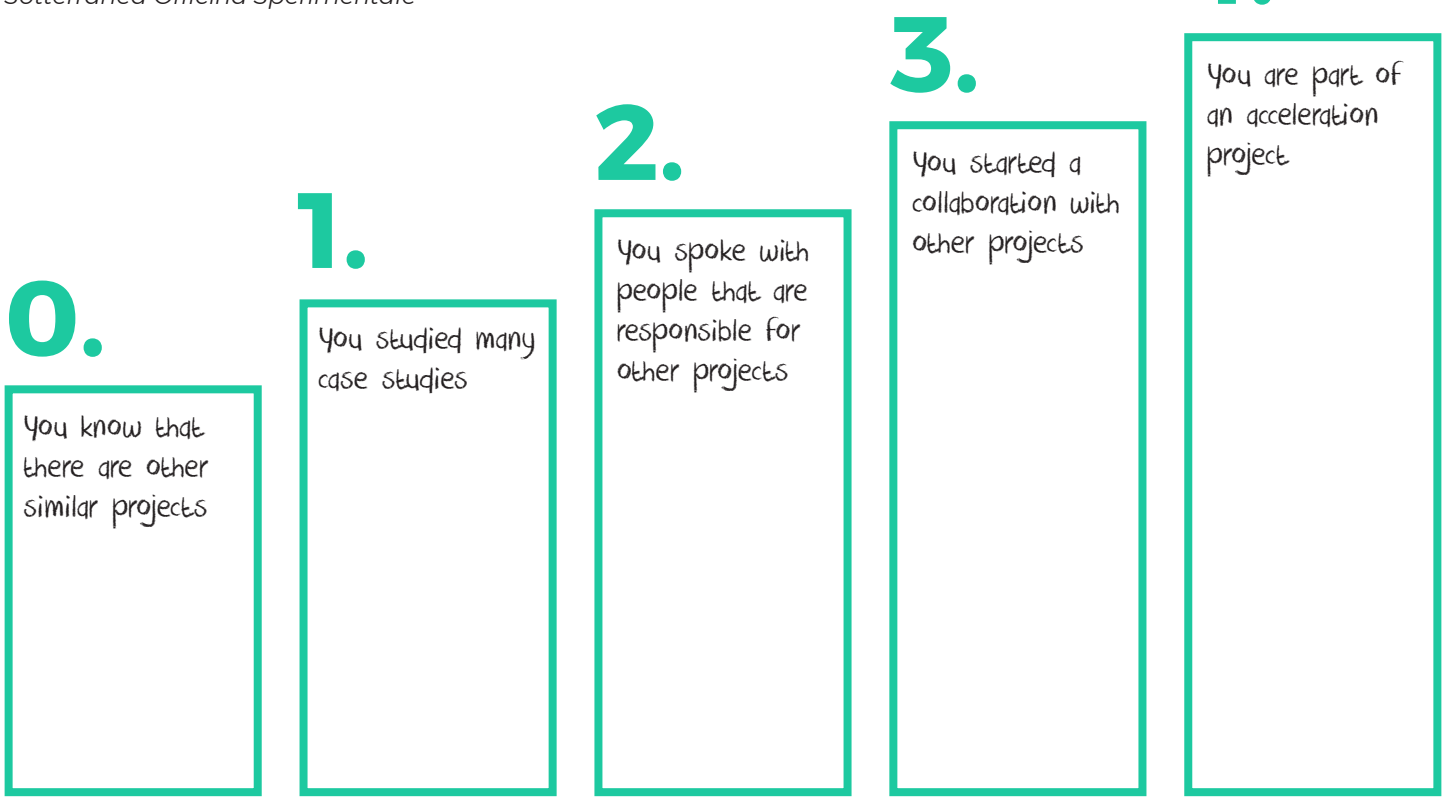


2.3 BACKGROUND KNOWLEDGE

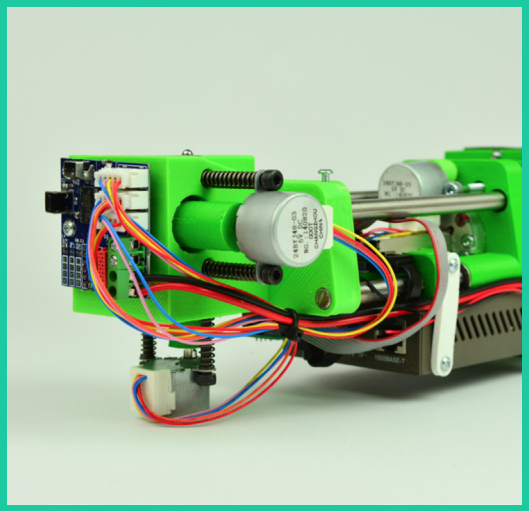
Background knowledge is the essential knowledge necessary to understand a situation or a problem. Background knowledge reflects the condition of acquiring more information about the topic or the problem that a project aims to tackle and solve. In the internet age, building background knowledge can refer to the ability to connect with people that are experts in a field, to access platforms documenting existing solutions and to know global and local trends via social media.
Increasing background knowledge means to step back in the development process of a project to see, for example, if other people have already found a solution or if they are asking questions that are similar to yours but formulated from a different perspective. Background knowledge can be considered synonymous to what we know or learn about a field by researching online resources on a topic or a problem and the most recent solutions, products and strategies tackling them. Being up to date about a context or a problem is a way of building good background knowledge. Connecting with experts and mentors via online groups and forums or social media can facilitate the process of gaining enough background knowledge before starting a project: if you are developing a new wearable that can be manufactured in a lab, you should ask yourself if this product can be compared with other similar projects; if there are already DIY versions of the same product typology and if you have the knowledge of that specific digital craft technique you want to use.
If you are developing citizen science projects, you can ask scientists to jump into your process to provide the necessary knowledge that can enable your project to scale.

Example

Authors: Silvia Galfo, FabLab Torino; Ilaria Scalpellini, Experientia; Valeria Francescato, Sotterranea Officina Sperimentale



Case study



Key DSI features

Koruza device is also distributed as a scientific DIY kit meant for researchers who are able to replicate, understand and modify it in order to gain the necessary skills in equipment construction. It has been designed starting from the analysis of a missing tech solution in the field of fibre communication and the problems of connecting dense urban areas.
The project is supported by the local community organisation WlanSlovenija Development that helps to apply a vast scientific knowledge to the creation of effective and affordable systems.

KORUZA
INSTITUTE IRNAS RAČE
www.koruza.net

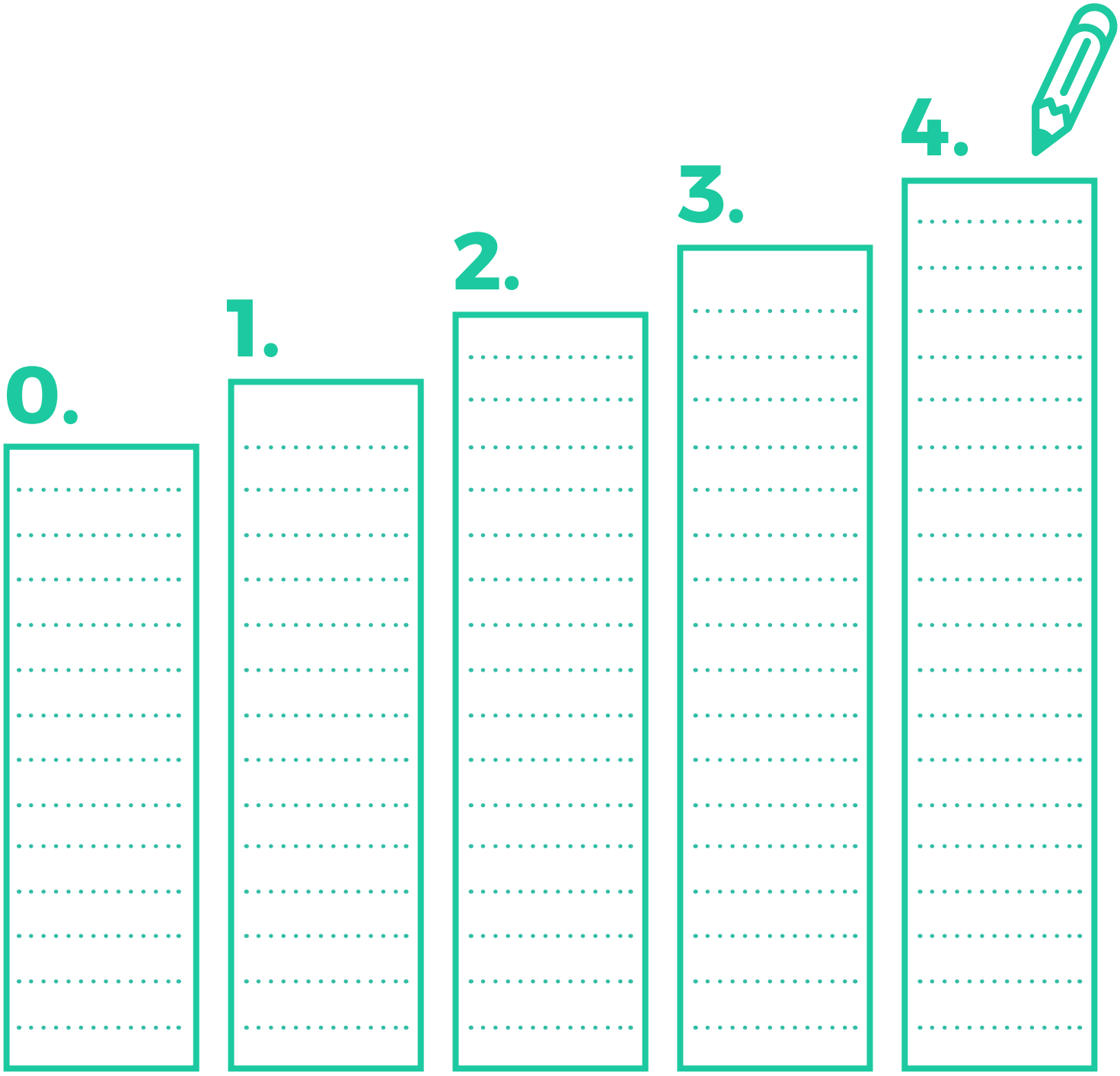
Koruza is a DIY-friendly wireless optical communication system that offers a cheap and open-source alternative for connectivity in urban environments, connecting locations at up to 150 meters distance.
The device is a solution to the challenges of the cost of fibre installation and other infrastructure in dense urban areas. It provides an alternative for urban communities who want to create a local and independent internet infrastructure and local internet based services.
Koruza has up to 1Gbps capacity - enough to support a large number of moderate internet users - and can be used to build large wireless networks.

The DIY version of Koruza device features a modular design with 3D-printed components designed in OpenScad, an open-source 3D modeling software. It is available to order as a kit, while the assembly instructions and technical documentation are released online for free. Researchers – and indeed anyone with an interest – can replicate the device easily, understand its operation and modify it for their own purposes.

The Koruza project was developed by IRNAS, the Institute for Development of Advanced Applied Systems, in Maribor, Slovenia.
The institute's mission is to develop open-source and affordable systems that can solve real problems by empowering the masses. Since 2015, its founder Luka Mustafa has been a fellow of the Shuttleworth Foundation, which allowed him to work full-time on the development of Koruza.

CREATE YOUR OWN DSI SCALE

ASSIGN A MEANING TO THE RATINGS

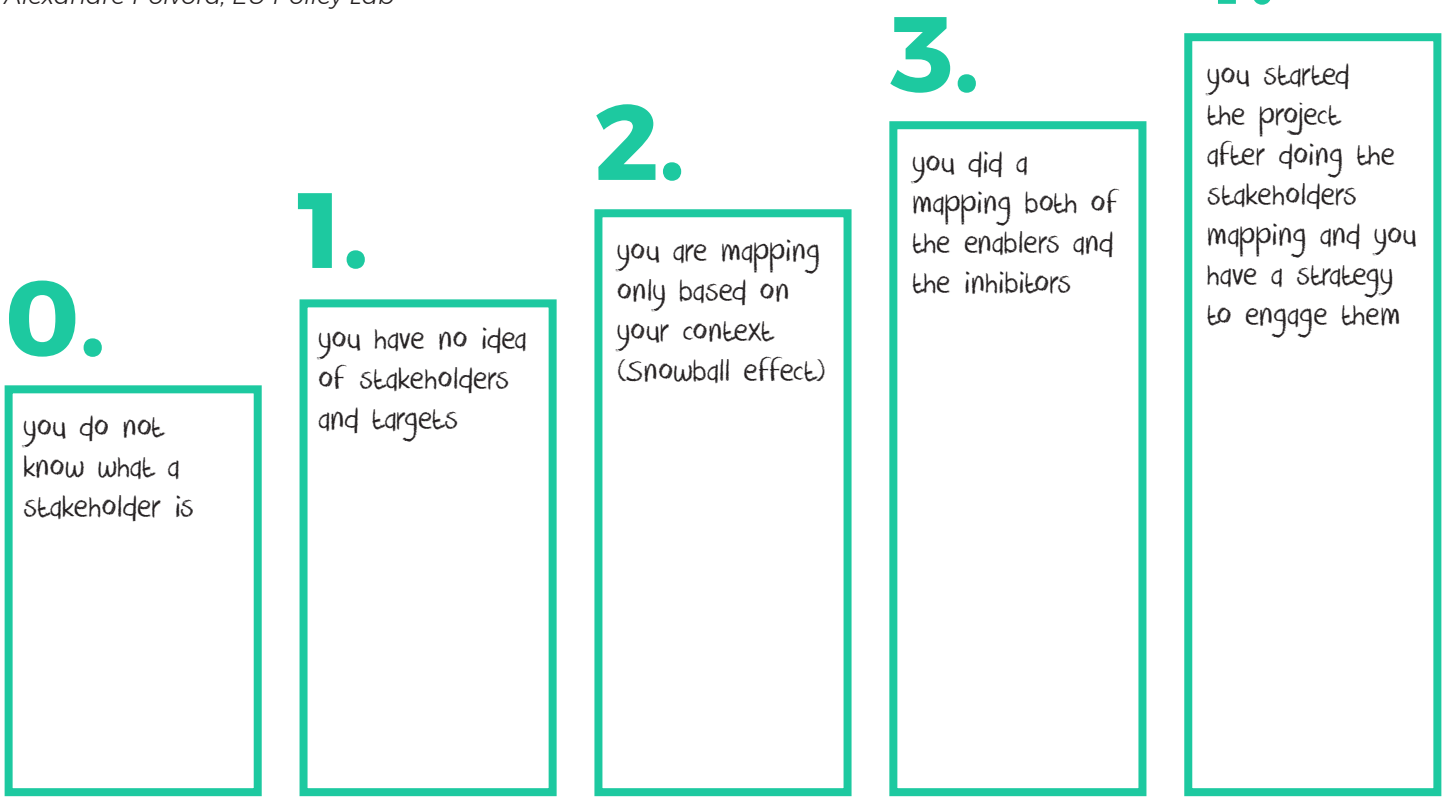


2.4 TARGET AND STAKEHODERS MAPPING

Target and stakeholders mapping is a key activity for a project in his initial phase, or a good way to start reflecting on the impact of a project idea: it focuses on understanding who is going to benefit from a project and who can support or prevent its success.
The better understanding you have of the people, groups and organizations that can be involved with or can influence a project, the more it is possible to design an effective strategy, as well as anticipate risks and opportunities. Mapping stakeholders and targets can be done collaboratively by involving other people or members of other communities, and it can be based on discussions guided by the use of analogue tools. Thanks to the availability of easy to use software, it is possible to map targets and stakeholders by looking at data and gaining knowledge out of social networks analysis. The mapping activity helps to have in mind that the target is not only the user of a technological solution, but also a community of developers that can contribute to its development; the network of associations; the various bodies from which you receive (or are seeking) funding. Peers in a local area also have a key value, as well as local and international support networks. Leveraging local, national and international connections might help you overcome problems such as designing a project only according to your context and only around yourself and your needs, and to avoid including only people who are similar to you. This helps to push a project towards those who can multiply its beneficial societal impact.

Example

Authors: Susana Nascimento and Alexandre Pólvora, EU Policy Lab



Case study

Key DSI features

Too Wheels is an open source DIY sports wheelchair that can be made in a FabLab. It has been designed to fulfil the needs of multiple targets: from people with disabilities doing sports and organizations developing projects in developing countries, to charities and community organizations who will purchase premade wheelchairs, which are easily adjustable on site to fit individual needs.
It is a project built upon the idea of distributed peer production for social good, and connected to key stakeholders such as the international FabLab network, the maker community and the organizations promoting sport activities for disabled people.

TOO WHEELS
FABRIZIO ALESSIO
www.toowheels.org

Too Wheels is an open-source DIY toolkit to build a sports wheelchair. It is low-cost, adaptable and easy to build. Too Wheels provides a low-cost and adaptable DIY alternative to expensive ready-made sports wheelchairs. Makers are able to download the open-source wheelchair blueprint, adjust the design based on their unique measurements and build the finished product from cheap and easily available materials such as plywood, metal tubing and bicycle wheels. If built correctly, for as little as €200 anyone across the world can own a sports wheelchair with the same performance as that of a €2,000 pre-made alternative.

Fabrizio Alessi, founder of Too Wheels, first started designing the DIY wheelchair as a student after spending time volunteering with a disability charity. Although state funding in Italy, Fabrizio's home nation, provides standard wheelchairs for disabled people, the more expensive wheelchairs required for playing sports are not covered. Using Too Wheels, children and adults alike are able to play a host of games including basketball, tennis, softball or rugby.

Too Wheels connects the ideals of open-source technology with the culture of making. There are two methods for building a Too Wheels sports wheelchair:

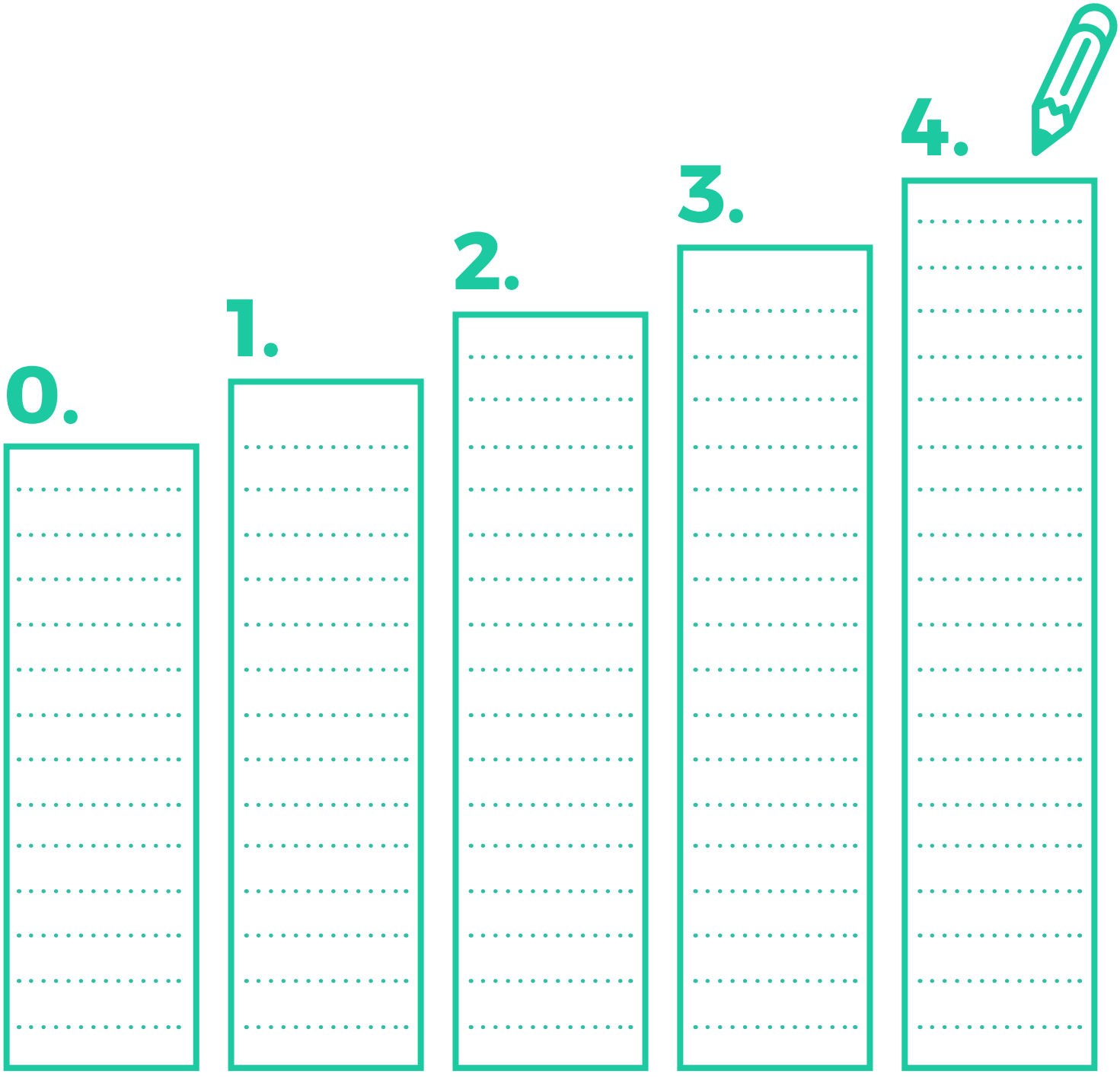
1. Download and print the A4 manual. When the printed pages are arranged in the correct order, they form a 1:1 template of each individual part. Creators can then use materials and tools from any local DIY store to cut individual pieces to the required dimensions, based on their own body measurements. No specialist skills are required. Once the component parts are attached together, the sports wheelchair is ready to use!

2. A maker has access to a Computer Numeric Control (CNC) machine (found in your local FabLab) and she or he can download the design in a digital format. When the digital design is input into the CNC machine, individual parts can be cut automatically.

Sports wheelchairs have been built using the Too Wheels open-source design in various locations across the world; for example, a Too Wheels wheelchair was built in Ecuador's FabLab Yachay through a grant from the Fab Foundation. Elsewhere, students at India's Gujarat Technological University have built their own sports wheelchair.

CREATE YOUR OWN DSI SCALE

ASSIGN A MEANING TO THE RATINGS



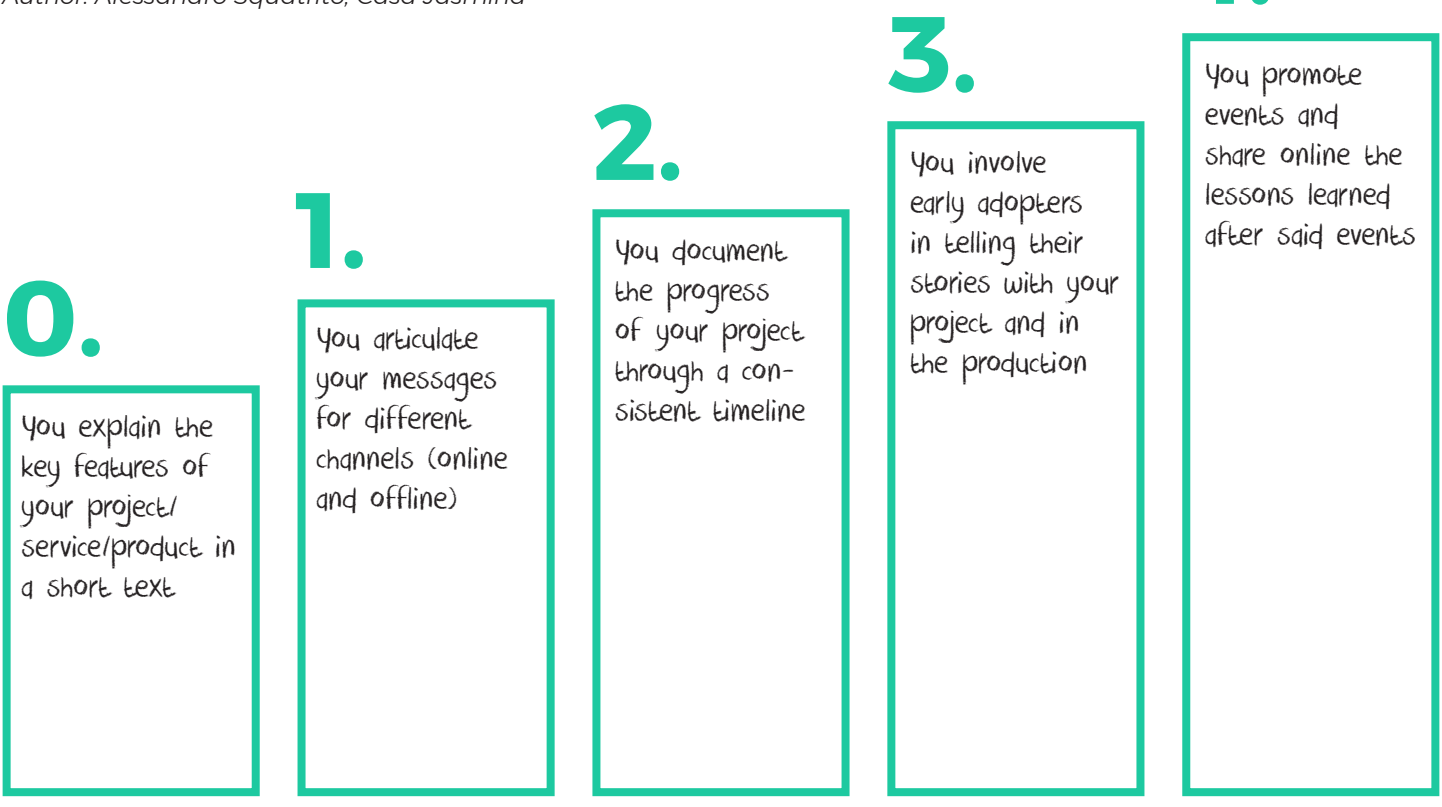
2.5 QUALITY OF COMMUNICATION

Communication is effective when it helps individuals, organizations and projects to meet their core objectives. When it comes to projects which are fostering engagement and collaboration, clarity of information regarding what the project's aims are, what and who it is for and what makes it different from others, is a big challenge.
Providing this information clearly is often forgotten or underestimated. Public engagement is not just about communicating a project or a product to interested audiences, it is also about involving a wider part of society in understanding the social, ethical and innovative challenges of a project from the start. Reaching out and engaging the public in conversations related to a specific field makes any project more impactful.
A good communication strategy is the beginning of a process by which people can start participating, and makes it easier to get new contributions from the start.

Communication means transparency of objectives and plans and also the ability to present them in a readable and clear format: an effective communication strategy takes into account the audience's language and does not include only experts, but also potential users or facilitators coming from different fields. Communication means also using design skills through different media: in the digital realm the quality of communication depends on the dissemination of your content on multiple platforms and on the distribution of evidence, stories and pictures. You can increase the impact by talking to international audiences and using online tools that lower the barriers for entry, so that anyone can understand and contribute to your project.

Example

Author: Alessandro Squatrito, Casa Jasmina



Case study

Key DSI features

The plan and core scope of Precious Plastic is stated clearly in the project's website, which has been designed to deliver all contents and documents that are necessary to allow other people to replicate the line of plastic recycling machines.
The communication of the project is based on the combination of simple design and radical transparency that allows readers (and potential contributors) to understand the plan: to create a network of workshops in which recycling really happens, rather than a platform for selling design objects.

PRECIOUS PLASTIC DAVE HAKKENS www.preciousplastic.com

Precious Plastic is an open hardware and design project that offers a new way to recycle plastic. By releasing designs for a family of open source machines, the project promotes and supports the spread of personal and local workshops for the creation of objects out of raw recycled materials.
The Precious Plastic machines allow users to transform plastic bottles into flakes that can be compressed, injected or extruded to create new things. The only limit to what can be made is people's imagination.
All machines are designed to be inclusive and modular, enabling an easy building process; they are open source and all blueprints and instructions are released under the MIT License.

Initiated by Dave Hakkens in 2013 as a thesis project at the Design Academy Eindhoven, it took him two years to scale from a research project on materials recycling to the prototype of the machines, and finally to a real functioning ecosystem of machines, blueprints and a community.
From the mechanical drawings to the web video tutorials, all of the project's components are developed collaboratively by volunteers and by the Precious Plastic community which is building and customising machines all over the world. Key to its success is the documenting process carried out through an online platform.

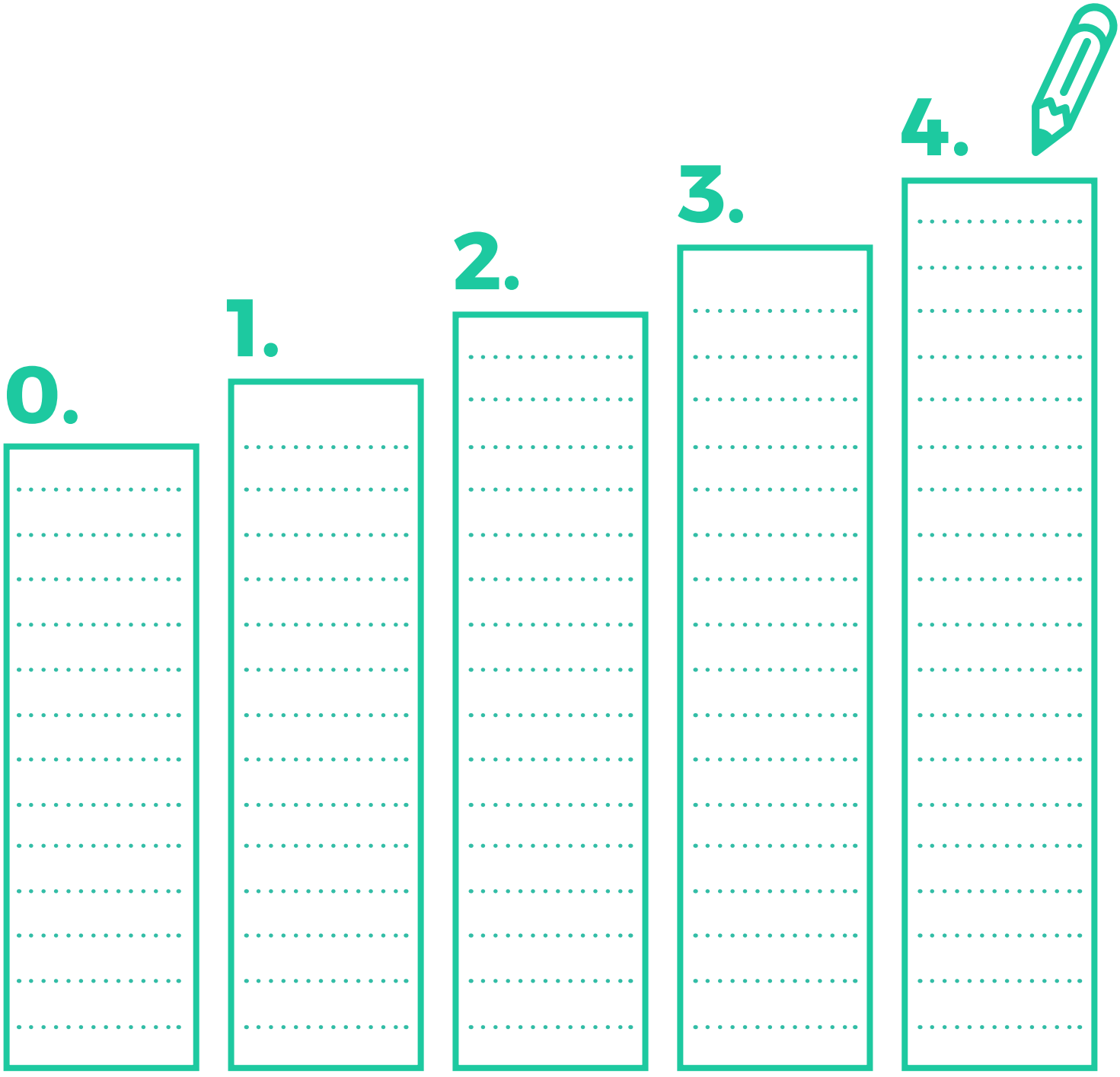
The website also features an updated map that shows all the contributors who are participating in the initiative, with the goal of cleaning the world of plastic waste. Currently, there are machine makers in thirty-six places across six continents; not only in the world's richest countries (like the US and Western Europe) but also in the Maldives, the West Bank and Sri Lanka, for example.

Precious Plastics launched a MONEY and PEOPLE campaign to spread plastic recycling around the world by:

- creating a series of products that can be made using their machines, with online tutorials to guide people;
- developing their online platform to make collaboration easier;
- providing starter kits to help people build Precious Plastic machines more easily;
- developing business models that will enable people to make a living through the use of plastic waste.

CREATE YOUR OWN DSI SCALE

ASSIGN A MEANING TO THE RATINGS



2.6 QUALITY OF PRODUCT

Since the beginning of mass production, testing processes have been designed to ensure the quality of product according to a set of standards.
The quality of product refers to the features and characteristics of a saleable good for consumer acceptability.
In the digital age, products, platforms and services can match certain basic requirements of quality when they reach a level of usability, accessibility, pleasurability and an effective user experience via a design process based on research, iteration and testing. To reach good quality of product it is necessary: to start a project by using research tools aimed at investigating the target needs via interviews and focus groups; to apply design principles to define the right technology to choose according to the user journey; to define a creative concept or co-created project ideas through collaborative sessions which include experts and users alike, during the initial ideation phases of project development; to keep designing and implementing the project's prototype utilising continuous feedback from users. Interacting with online communities of potential users is also a way to test prototypes of products, platforms and services. In the context of projects involving the use of digital technologies, the quality of product can be reached when the project's touchpoints, such as a hardware device or a digital mobile application, are conceived as part of an ecosystem in which people are at the centre.
The more you gather feedback and evidence from users and stakeholders, the easier it will be for you to scale and increase your impact. If you test your solution – whether it is a technology, a hard product, a service, a platform or something else – you can improve your product and show that it is comparable to, or better than, other solutions available on the market.

Example

Author: David Cuartielles, Abierto.cc project

0.
The solution is still under conceptual development and it is being tested against a series of "personas"

1.
The solution has been implemented and it is being tested with a reduced group of users

2.
The solution has been implemented and it is running as open beta, but it lacks considerations about scalability

3.
The system is running as a scalable solution, but it still needs to implement mechanisms for federating content like RSS feeds, JS inlays, iframes, etc.

4.
People are using it and have at their disposal mechanisms to contribute back to the further development of the system

Case study

Key DSI features

Prusa i3 is one of the most used low-cost 3D printers in the world. The original Prusa i3 printers are shipped in ninety countries all around the world each month. The project started scaling because the technical quality of the 3D printer enabled the Prusa machines to compete with other existing, non-open source solutions available on the market. The founder and young maker, Joseph Prusa,worked on improving the user experience of a fully open hardware maker product, to provide a friendly procedure for assembling the hardware kit. Furthermore, the machines are upgradable so that people can turn their existing printer into a new model without having to a buy a new one.

PRUSA RESEARCH JOSEPH PRUSA www.prusa3d.com

Prusa machines are open-source 3D printers built upon the open hardware global initiative RepRap, which makes self-replicating and low-cost printers accessible to all.

Prusa Research is a company founded by the young maker Joseph Prusa, who started developing his first open hardware 3D printer when he was only 26. It now provides an open-source alternative to proprietary 3D-printers and its models have rapidly grown to become the most widely used internationally.

The Prusa 3D-printers derive from the RepRap printer, which is made of 3D-printed parts so that anyone can copy and make their own self-replicating machines, democratising access to this new technology. The machines rely on a full open-source ecosystem of tools and are fully compatible with software tools such as Slic3r slicer, developed by the Italian Alessandro Ranellucci and Cura, developed by the Dutch 3D-printer firm Ultimaker.

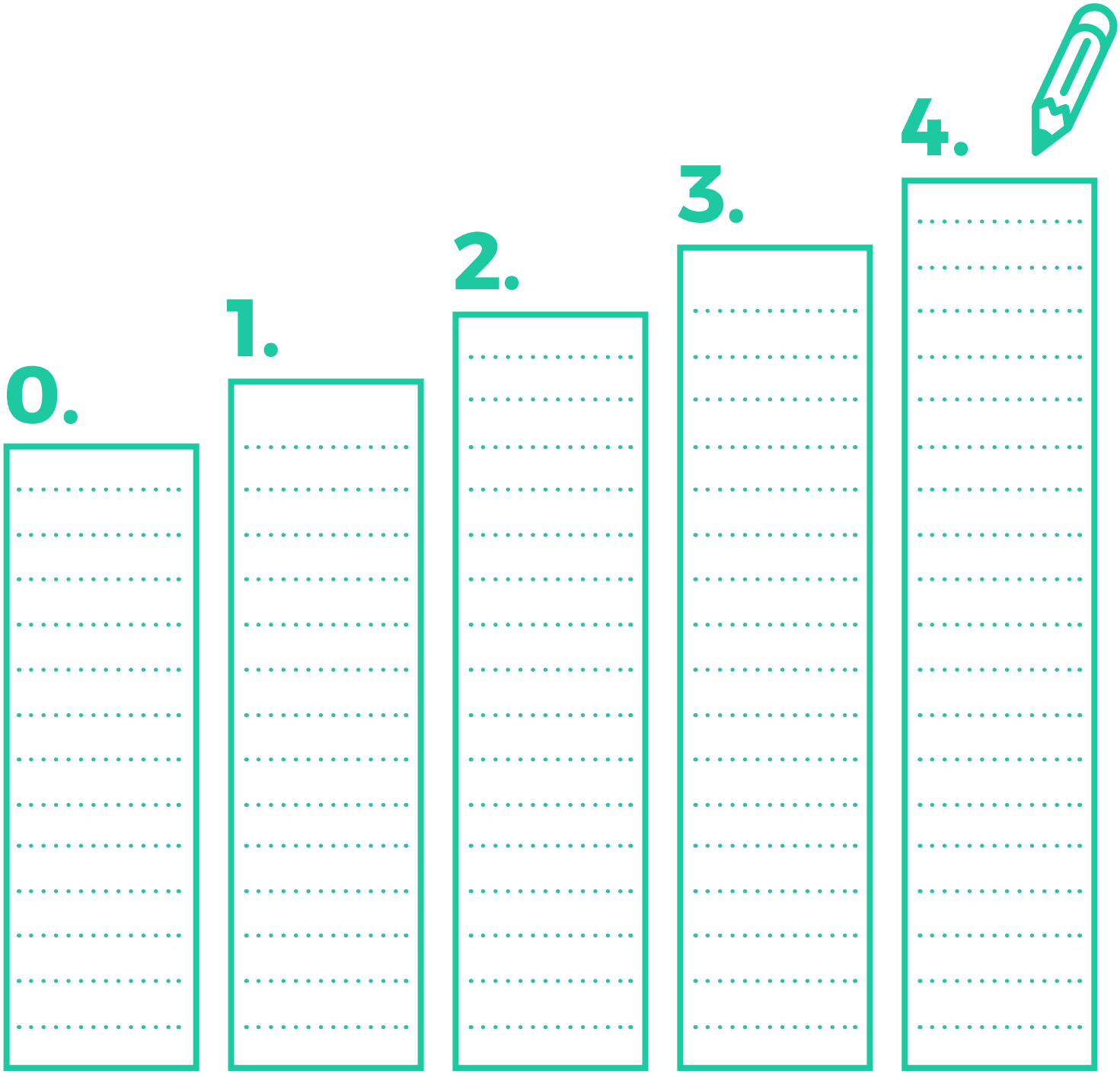
The company has rapidly grown from its base in Prague: it now employs 40 people and offers customer service support to users as they assemble and customise their printers. Prusa was able to grow without a sales team, through word of mouth and with the support of the international maker community. Its models are direct competitors to the big names of the industry, which are based on proprietary models.

According to 3DHubs, an online 3D-printing community service, the Prusa i3 is the most used 3D-printer in the world and is now shipped to 90 countries.

Prusa Research's machines are open source, community driven, but they are also very good products: the latest machine offers a bigger build volume and faster printing. The quality of product is also related to the fact that this maker company based in Europe releases disrupting technological inventions all around the world, such as the full metal nozzle and the famous red PCB heated bed.

CREATE YOUR OWN DSI SCALE

ASSIGN A MEANING TO THE RATINGS



3.
RESOURCES & TOOLS

Resources and Tools

In this section we reissue a set of up-to-date resources and tools that can help in starting a process of capacity building within DSI organizations or initiatives, focusing in particular on open hardware and design. All resources have been selected because they have been tested in programs and workshops organized within key DSI related initiatives.
This curated selection offers an overview on key subjects and skills that can help DSI projects grow healthy and strong in the current ecosystem of innovation for social impact. The covered subjects span from social media mapping and the creation of business models that promote openness as a key advantage for scaling, to the use of collaborative approaches to facilitate the integration of diverse groups of people.
Some resources are issued from projects that propose the use of digital online tools, while others are taken from toolkits that help to scale as digital social innovators.

With this collection you will be able to make your knowledge stronger and to deepen what you have learned in the DSI scale section: you will learn how to “Map & Discover” more about the network in which you operate (scale indicator: Target and Stakeholder Mapping); how to “Define & Analyse” your project’s key elements (scale indicator: Background Knowledge); how to “Collaborate & Facilitate” inclusion with a horizontal approach (scale indicators: Community engagement, Quality of communication) and how to “Make your project open” by opening your assets, business and processes (scale indicator: Level of Openness, Quality of products).

The subjects covered in this collection are:
- Networks mapping
- Innovation principles
- Circular design
- Open business models
- Collaborative decision-making
- Workshop mentoring
- Integration facilitation
- Openness discussion
- Projects documentation
- Design for openness

This collection is only a first version. You can suggest more resources and tools by sending a feedback at contact@digitalsocial.eu or by adding your reference via the toolkit’s repository issues page (label Resources and tools): www.github.com/DSI4EU/toolkit/issues

3.1
THE MORE YOU KNOW ABOUT **THE ACTORS INTERACTING IN YOUR NETWORKS**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Networks matter today because electronic and software based communication tools make networks measurable. From online networks analysis, you can get qualitative information by understanding actors and their relations, as well as do quantitative analysis by computing its connection structure. By doing so, you can learn more about the organization, the individuals, the association that can benefit from it or prevent your project from having an impact. If you want to understand with a creative and critical approach how a network works, you need for example to map its relationships in a diagram whose nodes and links form a network, which is by its very nature the fabric of most complex systems. This resource offers an introduction to the fundamental concepts of network mapping through the use of online digital tools in four different steps: understanding the field; detecting the actors and relationships; compiling data and making the map; analysing Network Maps.

Type:

#digital tool

Subject:

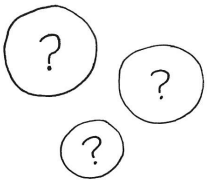
#network mapping

Keywords:

#network analysis #network visualisation #social media mapping

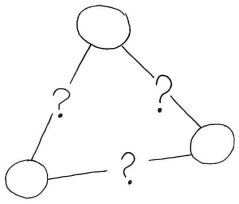
STEP 1.
Understanding the field

Who are the dominant actors in your field?



The actors can vary from real persons to concepts, from institutions to inanimate objects. Let's say that your project is about low-cost open devices for people with disabilities: the relations between individuals with disabilities, the associations of therapists and companies producing technical devices and how this ecosystem operates, are relevant for you to map their interaction and how they influence each other.

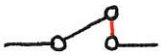
STEP 2.
Detecting the actors and relationships



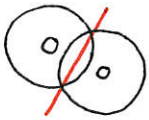
What are the critical relationships that can scale?

The second step is to come up with relations that make the interaction possible between the actors. These could be from interactions like "collaborating" and "influencing", to affiliations such as "being a member", "belonging to a category", "similarity". For instance, if one is interested in understanding the lobbying activities of a certain community, one would expect to find official as well as organic links that make up the bigger social network. There are four general categories to help you think about relationships:

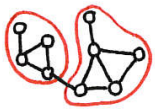
Transmission Networks
Something actually flows: water flows, electricity flows, money flows, and news flows... They are usually physical and they could be broken, like a pipe.



Interaction Networks
The connection is an event at a specific time. You email someone; you buy something; we do an exhibition together... Something is passed during a contact.



Attribution Networks
The connection is an expression of a relationship. You are my friend, I love you, you trust him, she recognizes you... Visible only if you state it.



Affiliation Networks
The connection is a belonging to a group or category. We are in the same school; things are in the same category; organizations connected by board members... Linked by correlation, similarity or membership. Implicit.

The relationships you choose will more or less fall into one of these categories. Needless to say, these categories are here as guidance to start thinking about relationships; you can get creative and introduce relationships outside of these categories.

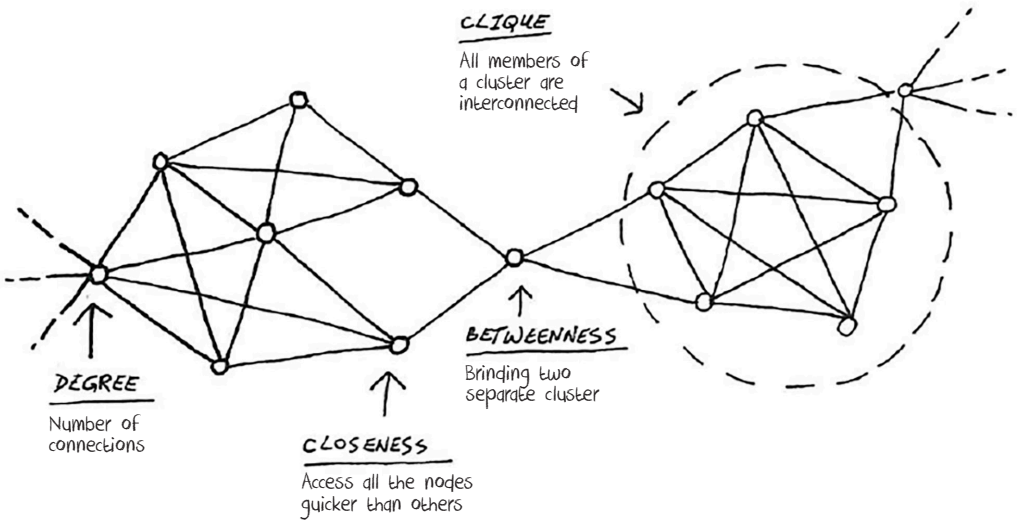
STEP 3.
Compiling data & making the map

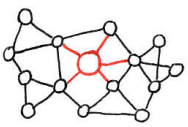
Start gathering data after you have listed the actor and relation types. The best way to organize your data is to put it into a spreadsheet: a list of relations. On each row, starting from the left, "from" node types and names, to the right "to" node type and names; at the centre a single column Edge Type to represent the relationship in between. Also, add weight if you need to.

Hand drawing the network helps a lot. Start drawing circles, writing names and connecting them with lines, so you can generate a sketch for your network map.

#	1	2	3
Node Type	Person	Person	Person
Node Name	Sara Wilson	Ahmad Suphi	Sarah Wilson
Edge Type	COLLABORATES	COLLABORATES	LIKES
Node Type	Person	Person	Person
Node Name	Ahmad Suphi	John Travolta	John Travolta
Edge Weight	1	1	2

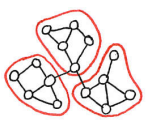
STEP 4.
Analysing Network Maps





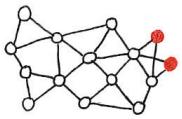
Centrality

Who are the most important actors and what are their locations in the network? Who are the connectors, leaders; who bridges, who isolates? What is the position of actors within clusters; who is at the core of the network and who is on the periphery?

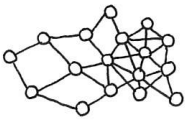


Clusters

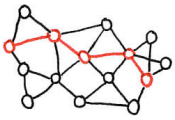
What organic groups or clusters exist in a network? The structural holes between the clusters as well as the bridges between them are as important as the clusters themselves.



Equivalency
Which actors are alike?
Determining actors who play a similar role and have similar positions.



Graph Density
How well connected is a network compared to other networks? Comparing the density of networks, as well as the connectivity of different regions within a single network.



Shortest Paths
What is the distance between two actors?
What indirect relationships exist?
Revealing normally invisible connections and the degrees of separation between actors.

Graph Diameter
What is the longest path in the network? Finding the reach: how long it will take at most to reach any node in the network.

About the digital tool: Graph Commons

**Graph Commons is a collaborative platform for making, analysing and publishing network maps.
It empowers people and organizations to transform their data into interactive maps and untangle complex relations that impact them and their communities.
Graph Commons members have been using the platform for data research, investigative journalism, strategizing, organizational analysis, civic activism, archival exploration, art curating and other similar things.**

www.graphcommons.com

Source:

Graph Commons, Part I: Creative and critical use of complex networks, Part II: Mapping Networks, Part III: Reading & Analyzing Network Maps, www.graphcommons.com/help

Related tools

**Gephi, www.gephi.org
Graph Tools, www.graph-tool.skewed.de**

3.2
THE MORE YOU KNOW ABOUT **CIRCULARITY**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

A circular economy is an industrial economy that promotes greater resource productivity, aiming to reduce waste and avoid pollution. Making your product, service or organization more circular can help you build small successes and scale your solution over time. The design thinking approach allows you to explore new ways to create sustainable, resilient, long-lasting value in the circular economy – giving you the creative confidence to redesign the world around you.

This resource will help you scaffolding your approach to the project you are about to take on. It helps to identify small, measurable opportunities to design for circularity.

Type:

#tool

Subject:

#circular design

Keywords:

#project challenge definition

#circular economy

#design thinking

Instructions

STEP 1.

Start by picking a product, service or a business challenge to focus on.

STEP 2.

Start by writing down what your product or service is trying to solve.

STEP 3.

Go through the series of questions to help you find opportunities for circularity. If you answered 'yes' to any of the questions, write down a few considerations for each opportunity that could be realised within your organization.

STEP 4.

Based on the considerations for each answer, do any of your opportunities stand out as a good place to start?
What feels most immediately achievable with potential for improved customer and business value? It might be helpful to get input from others on which opportunity to pursue.

STEP 5.

Using the circular opportunity worksheet, create an outline for what you might pursue, asking yourself the following questions:

- Would this innovation improve the customer experience in some way?
- What would this system require that doesn't currently exist?
- How might this affect your business strategy and financial needs?
- What roles or collaborators might I need to make this happen?
- What's the next step to get this process started?

Worksheet 1.

Look for opportunities to become more circular.
Answer each of the following questions.
Remind yourself of what core needs your offering is solving.

PROLONGING PRODUCT LIFE	N	Y	CONSIDERATIONS
Can your product become a service in some way?			
Can you make it easier for your users to repair it themselves?			
Can you design your product to be more modular so individual components can be upgraded or replaced easier?			
Can you provide a maintenance service to sustain the life of the product?			
Can you work directly with your manufacturer to restore your products after their first use cycle?			

PURPOSEFUL INPUTS & OUTPUTS	N	Y	CONSIDERATIONS
Can you utilise waste or recycled materials for your materials?			
Can any of your materials be sourced more locally?			
Can your production be more localised?			
Can you minimise the waste stream your product produces?			
Can your product contribute to the biocycle in some way?			

Worksheet 2.

Pick any opportunity you identified on the previous sheet and flesh it out.

THE CIRCULAR DESIGN GUIDE

IDEO

ELLEN MACARTHUR FOUNDATION

WORKSHEET

Circular Opportunities

Pick any opportunity you identified on the previous sheet and flesh it out.

MY CIRCULAR OPPORTUNITY IS:

WOULD THIS INNOVATION IMPROVE THE CUSTOMER EXPERIENCE IN SOME WAY?

WHAT WOULD THIS SYSTEM REQUIRE THAT DOESN'T CURRENTLY EXIST?

HOW MIGHT THIS AFFECT YOUR BUSINESS STRATEGY AND FINANCIAL NEEDS?

WHAT ROLES OR COLLABORATORS MIGHT I NEED TO MAKE THIS HAPPEN?

WHAT'S THE NEXT STEP TO GET THIS PROCESS STARTED?

About: Circular Design Guide

IDEO and the Ellen MacArthur Foundation released the first design thinking guide for the circular economy. Created to drive awareness of the circular economy, the practical guide encourages innovators, entrepreneurs and corporate change-makers to ask new questions about value creation and long-term business health, and apply circular principles to their own organizations.
The tool includes 24 methods and a resource bank enabling change makers, entrepreneurial innovators and students to get to grips with the circular economy.

www.circulardesignguide.com

Source:

Circular Design Guide, Circular Opportunities Worksheet, Ellen MacArthur Foundation and IDEO, www.ellenmacarthurfoundation.org/assets/design/Circular_Opportunities_Final.pdf, Copyright © Ellen MacArthur Foundation 2016

Related resources

Restart project wiki, www.therestartproject.org/wiki/Main_Page

3.3
THE MORE YOU KNOW HOW TO SOLVE **WIDE REACHING PROBLEMS**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Design and innovation principles provide useful constraints to those considering solutions to wide-reaching social problems. Design principles can work as best practices that inform the design of technology based projects that aim to reach social impact. You can set your own constraints and define your design guidelines or have a look at the general principles provided in this resource.

While reading the principles, do not forget to tick the ones that you are applying to your project. If the list appears to be complete, you are growing healthy and strong. It helps to identify small, measurable opportunities to design for circularity.

Type:

#guidelines

Subject:

innovation principles

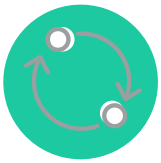
Keywords:

#design constraints

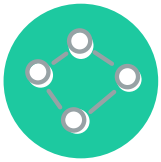
#problem solving

#best practices


Design with the User

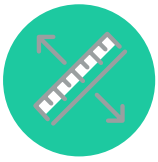

Build for Sustainability


Reuse and Improve


Understand the Existing Ecosystem


Be Data Driven


Do Not Harm


Design for Scale


Use Open Standards, Open Data, Open Source, and Open Innovation


Be Collaborative

Design with the User

- ☐ Develop context appropriate solutions informed by user needs.
- ☐ Include all user groups in planning, development, implementation and assessment.
- ☐ Develop projects in an incremental and iterative manner.
- ☐ Design solutions that learn from and enhance existing workflows and plan for organizational adaptation.
- ☐ Ensure solutions are sensitive to, and useful for, the most marginalized populations: women, children, those with disabilities and those affected by conflict and disaster.

Understand the Existing Ecosystem

- ☐ Participate in networks and communities of likeminded practitioners.
- ☐ Align to existing technological, legal and regulatory policies.

Design for Scale

- ☐ Design for scale from the start, and assess and mitigate dependencies that might limit ability to scale.
- ☐ Employ a “systems” approach to design, considering implications of design beyond an immediate project.
- ☐ Demonstrate impact before scaling a solution.
- ☐ Be replicable and customizable in other countries and contexts.
- ☐ Analyse all technology choices through the lens of national and regional scale.
- ☐ Factor in partnerships from the beginning and start early negotiations.

Build for Sustainability

- Plan for sustainability from the start, including planning for long-term financial health (e.g. assessing total cost of ownership).
- Utilize and invest in local communities and developers by default and help catalyse their growth.
- Engage with local governments to ensure integration into national strategy and identify high-level government advocates.

Be Data Driven

- Design projects so that impact can be measured at discrete milestones, with a focus on outcomes rather than outputs.
- Evaluate innovative solutions and areas where there are gaps in data and evidence.
- Use real-time information to monitor and inform management decisions at all levels.
- When possible, leverage data as a by-product of user actions and transactions for assessments.

Use Open Standards, Open Data, Open Source and Open Innovation

- Open data and functionalities and expose them in documented APIs (Application Programming Interfaces), where use by a larger community is possible.
- Invest in software as a public good.
- Develop software to be open source by default, with the code made available in public repositories and supported through developer communities

Reuse and Improve

- Use, modify and extend existing tools, platforms and frameworks when possible.
- Develop in modular ways favouring approaches that are interoperable over those that are monolithic by design.

Do No Harm

- Consider the context and need for privacy of personally identifiable information when designing solutions, and mitigate accordingly.
- Assess and mitigate risks to the security of users and their data.
- Ensure equity and fairness in co-creation and protect the best interests of the end-users.

Be Collaborative

- Engage diverse expertise across disciplines and industries at all stages.
- Work across sector silos to create coordinated and more holistic approaches.
- Document work, results, processes and best practices and share them widely.
- Publish materials under a Creative Commons license by default, with strong rationale if another licensing approach is taken.

Which other design principles will you add to this list?

About: UNICEF innovation principles and 'Wearables for Good'

The 'Wearables for Good' challenge was promoted by UNICEF, ARM and frog to demonstrate how wearable technology can be used to solve some of the most pressing challenges facing children. The challenge proposed a global call to action to developers, designers, community partners and problem-solvers to identify and develop solutions for areas where wearable devices can generate tremendous social good. Announced in November 2015, the two winners of the challenge – Khushi Baby and SoaPen – successfully demonstrated how wearable technology can address some of the fundamental challenges children face in the areas of immunization and water and sanitation, respectively.

www.wearablesforgood.com

Source:

UNICEF & frog, Wearables for Good Use Case Handbook, www.wearablesforgood.com/wp-content/uploads/2016/08/WearablesForGood-UseCaseHandbook.pdf, copyright: UNICEF & frog

Related resources

Ethical design guide, www.ind.ie/ethical-design

3.4
THE MORE YOU KNOW **HOW TO TAKE DECISIONS COLLABORATIVELY**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Practicing effective, inclusive decision-making can change organizational dynamics at a global scale. Collaborating on the process of taking decisions together can be done with relational skills, but also with the combination of digital tools that help people to share, moderate and facilitate complex processes that aim to end in an action.
This resource helps you take decisions collaboratively through following specific steps.

Type:

#digital tool

Subject:

#collaborative decision-making

Keywords:

#open source organizational development

#open processes moderation

#online group moderation

1.
Describe the context

Every discussion thread should start with all the context-setting information that your group needs to participate meaningfully. Use the thread context section to provide relevant background information, so everyone understands the purpose of the discussion.

2.
Mention who is going off-topic

Notice when people are going off topic and, if necessary, create separate discussion threads for topics that diverge from the core discussion.
Don't be afraid to @mention people to keep the conversation on track.

3.
Launch proposals

You can use proposals to get engagement, test ideas and clarify an issue, even if the solution might not be apparent yet.

4.
Specify what it means to agree or disagree

When starting a proposal be as specific as you can, so everyone knows what it means to agree or disagree. If appropriate, include information on who will execute a proposal, not just what the proposal is.

5.
Set proposal deadlines consciously

Think about when you need the decision to be made and how the proposal's closing time will affect engagement from your group members. For example, you might want to time the proposal so it closes before a meeting or avoid closing on a weekend.
You can always extend the closing date if need be.

6.
Ask or define the blocks (serious objections)

You and your group can define for yourselves what a block means in your context.
A block is used to indicate a serious objection that a person would like to see addressed.
For some groups (particularly small consensus-based groups) the block is used as a veto.

7.
Ask for ‘abstain’

Sometimes there’s power in simply knowing that your voice would be heard if you wanted to raise it. Using ‘abstain’ can be a powerful way to demonstrate your trust in the rest of the group to make the decision without you.

8.
Describe the proposal outcome

When your proposal closes, you’ll be prompted to set a proposal outcome.
You can use this as a way to remind the whole group what you agreed to do together.

9.
Invite quiet people to contribute

There are a lot of little things you can do to help a discussion to get to a productive outcome. Notice when the same voices are dominating the discussion, and invite some of the quieter people to contribute by @mentioning them and asking them what they think. You can make a complex discussion easier to engage with by updating the thread context section with a summary of the key points.

About: Loomio

Loomio is a simple, user-friendly online tool for collaborative decision-making. Loomio allows to host discussions online, invite the right people to participate, come to timely decisions and transform deliberation into realworld action. Loomio is an open source software, built by a worker-owned cooperative social enterprise. The cooperative is based in Aotearoa, New Zealand, and is part of the Enspiral Network.

www.loomio.org

Source:

Loomio school, 10 tips for making great decisions with Loomio https://blog.loomio.org/2015/09/10/10-tips-for-making-great-decisions-with-loomio, CC BY SA

Related resources

Loomio group: Action for Sustainable Development - A Global Civil Society Platform www.loomio.org/g/uJd5wTXQ/action-for-sustainable-development-a-global-civil-society-platform

3.5
THE MORE YOU KNOW HOW TO BOOST **INCLUSION AND INTEGRATION**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Maybe your project is addressing a diverse group of people and aims to facilitate the integration of those groups. The meaning of 'integration' can be open to interpretation, but you should probably ask yourself the real question of what people want from the process of integration you would liketo facilitate. There are many initiatives addressing the various interpretations of integration, that unfortunately have trouble to reach many of the people they intend to help.

These guidelines help running workshops that support a personalized integration in which groups of people, like refugees for example, can articulate their interests and aspirations in order to facilitate the dispensation of relevant and specific information.
These workshop guidelines enable communication in spite of language barriers, through the use of picture cards that trigger further conversation and interaction.
They aim at empowering refugees and help them think about the path they want to choose to achieve integration in a new city.

Type:

#tool

Subject:

#integration personalization

Keywords:

#workshop facilitation

#group moderation

#inclusion

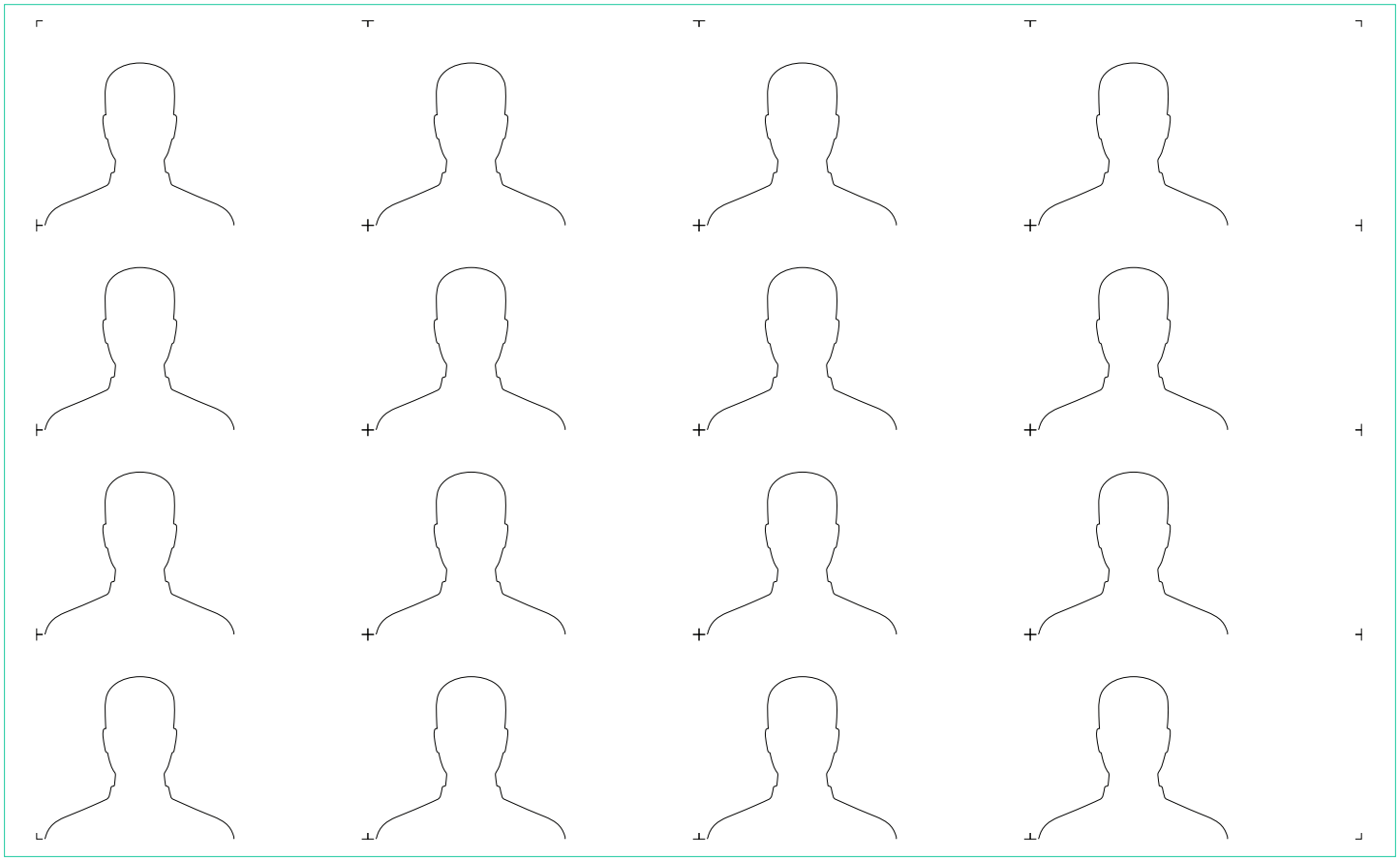
1.
Ice breaking and warm-up

Name Tag Collection

When the participants enter the venue, give them a ‘name tag’ in return.

Name Tags

Time: 10 - 15 min.
Ask participants to write their names on this name tag and complete the profile picture by drawing themselves.
The drawing can be anything that they think is the best representation of ‘themselves’. This activity is just for them to have fun and relax. Once they are done, they must pin the tag to their chest.



Name Tag template sheet

Introductions

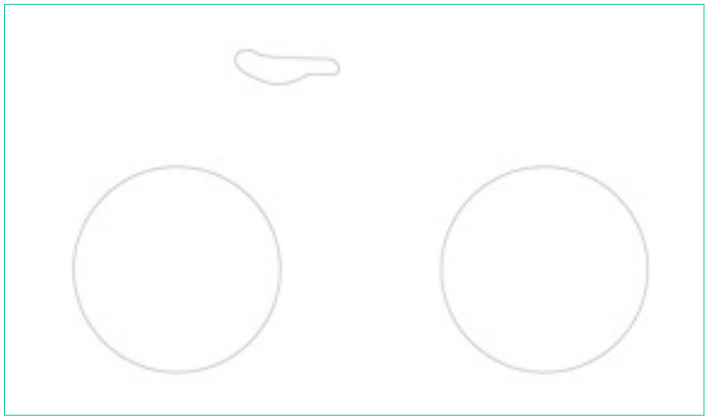
Time: 10 - 15 min.
Round of introductions. Everyone introduces him/herself: name, where they come from and one story about why they love or hate the city they currently live in.

Corner of Comfort

Set up three thematic posters with the labels Social work, Creative work and Technical work.
Ask participants to choose a workspace at any of the three corners.

Draw

Time: 15 - 20 min.
This is the last of the ice-breaking activities. Communicate to the participants that they have to complete the drawing based on their interpretation of what it is/should be in the picture. After they are done, they must sign it off with their name and pin it onto the 'common board'.



Draw activity sheet

2. Digging deeper

Aspirations

Time: 7 - 10 min.
Give the participants a stack of 'aspiration cards' with pictures and names of various possible aspirations that one could have.
Ask them to browse through the cards for a few minutes, choose four of their aspirations for the future and place them on the 'individual board' in order of priority (1st, 2nd, 3rd and 4th). In case they have an aspiration that is not illustrated in the stack, then they can write/draw it on the blank cards that are also provided.

Interests/Skills

Time: 7 - 10 min.
Hand out a stack of 'interest cards' to each of the participants.
Ask participants to forget about the aspirations that they had selected, then ask them to select three interest cards according to what they consider their skills and strengths.

Example of Interest Card

Interests | Hobbies

Time: 10 - 15 min group.
Once the participants have selected their skills, ask them to go through the 'interest cards' once again, but this time ask them to set aside five interests that are their hobbies/ things that they like to do. They could also be something that they are interested in learning about or pursuing in the future.

Finding Links

Time: 10 - 15 min.
Each participant's individual board should display four selected aspirations, three selected skills and five selected hobbies.Ask the participants to take a few minutes to look at their selected aspirations and interests. Now they must find links between their interests and aspirations in whatever way they see fit. They can make their own rules and based on those, connect interests to aspirations. To make these connections they must simply place the interest cards next to the aspiration cards on their individual board, thus creating their 'future map'.

Share

Time: 20 - 30 min.
Once their individual boards are completed, the participants can form groups and start discussing their future maps: their choices, their chosen links, etc.
Based on these visual 'future maps', they could suggest to each other relevant organisations to get in touch with or activities. During these discussions each participant must feel free to realign their interests and aspirations, if they feel it necessary. At the end of this activity, they will have their 'FINAL FUTURE MAPS'.

3. Consolidate

From Tomorrow I Will...

Time: 7 - 10 min.
Each participant is provided with a blank card 'From Tomorrow I Will...'.
Based on these final future maps and the consequent self-reflection and conversations, ask participants to write down 3-5 things they will try to do from the next day onwards.

"From Tomorrow I Will" Card

About: Re:boot

**This is a kit that facilitates a cross cultural and personalized integration of refugees.
Re:boot is a workshop kit that facilitates progressive refugee integration through a personalized and easy-to-access information delivery system, that engages them in their integration. The kit was developed and tested in a workshop organized in November 2016 by Refugee Academy in Berlin. It was ideated and designed by Abrar Burk, a young interaction designer from India, who developed a research for his master thesis. The project included a larger ecosystem with a data collection device for the digitation of the workshop results; a mobile app for making accessible the integration events and an interaction kiosk to make the events accessible to non-smartphone owners.**

Source:

Abrar Burk for Refugee Academy, Re:boot Workshop Kit, www.rebootberlin.com, CC BY SA

Related resources

Inclusive Design Microsoft Toolkit, www.microsoft.com/en-us/design/inclusive

3.6
THE MORE YOU KNOW HOW TO **FACILITATE COLLABORATION AND CO-CREATION**, THE EASIER IT WILL BE FOR YOU TO SCALE.

You are creating amazing solutions, new tech products and services that require the development and use of people's participation. You would need to know how to transfer the information about your system, and how to engage and facilitate a learning experience in which other people can become ambassadors of your project and in turn teach others to do the same. This resource can help you learn how to facilitate collaboration and knowledge transfer in a group, through hands-on activities.

Type:

#workshop guidelines

Subject:

#maker learning

Keywords:

#mentoring hands-on courses

#creative learning

#knowledge transfer

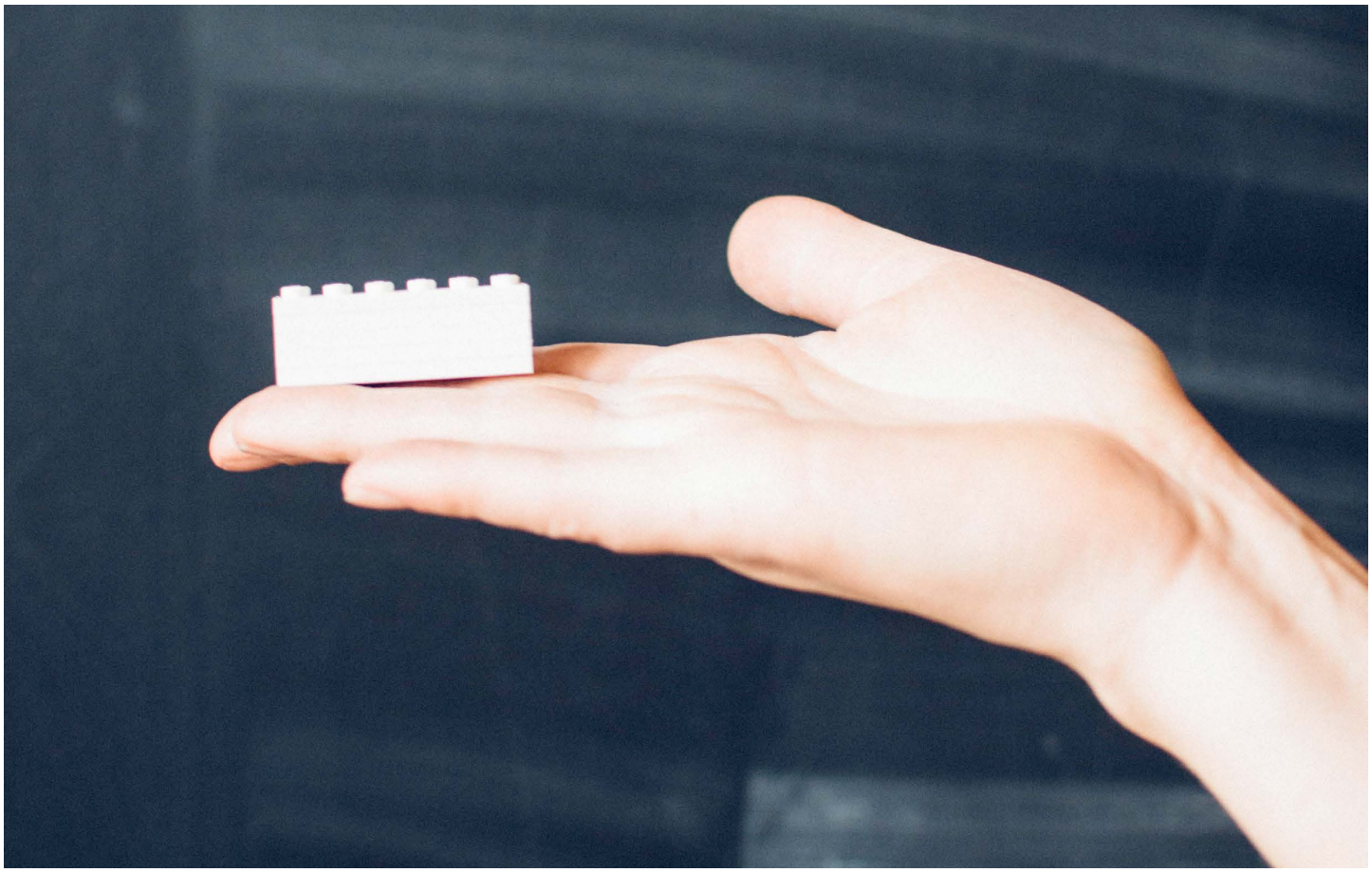
Lego Challenge

What:
Accomplishing an individual and group task without verbal communication.

Why:
Collaboration is essential in maker education.
This challenge shows how groups work together and what skills are important while collaborating and working on a complex task.

Time: 45 - 60 minutes.

Necessities: One kit per group: LEGO blocks, LEGO board, printed assignments. Optional: flip-over charts and pencils.



1.
Put a kit on each table and form groups of 8 to 14 people. No more, no less.

2.
There must be absolute silence from the time you explain the overall group task and give out the individual assignments. No talking from that moment on.
Before assignments are given, explain what a layer is and what a brick is. When each person receives their assignment, they must read it in silence. If they do not understand the task, they may ask the instructor for clarification. It is crucial that each person understands their assignment because if they don't and proceed anyway, they may cause the entire team to fail.

3.
Proceed to give the following instructions: "You are now, as a group, going to build a structure with the LEGOs in front of you. In a moment, you will each be given a note with an assignment on it. This is your personal assignment during the exercise. The message on the note is to be kept secret from the other members of the group."

4.
Give the notes to the candidates.

5.
Give some more instructions: "You will now have 15 minutes to build your structure. The work will take place in complete silence. I will let you know when there are just 3 minutes left". Allow an additional 5 minutes if needed.

6.
When a group is finished, ask them to place their hands behind their back and on the count of three, ask them to show on their fingers the level of completion of the task, with ten fingers up meaning that their task is 100% complete, nine fingers up meaning 90% and so on.
If they are not all finished, then request that they support each other to complete as many tasks to a 10-finger level as possible, in 5 minutes.

7.
After 5 minutes, read this out: "You will now, individually, read out your assignments to the group, and explain whether or not you completed them. Then explain how you view your group's ability to work together."

8.
Optional: reflect on the collaboration by discussing the positive attributes the team needs to perform, and the negative attributes that need to be left behind.

About the cookbook: Teacher Maker Camp

In 2015, FabLab Amsterdam organized the first Teacher Maker Camp at the Waag. In this four-day program, participants learned how to turn teachers into makers; how to transfer the passion for and the experience with maker education to teachers, and how to help teachers develop a maker mindset, so they also hone their technical and creative skills. The cookbook includes resources from other initiatives voted to the management of co-creation processes.

www.waag.org/en/project/teacher-maker-camp

Source:

Lego Challenge from Kaospilot.dk in M. Hamelink, I. Boszhard, K. Vermeulen (2015), Teacher Maker Camp 10 recipes to help teachers (re)discover their inner-inventor and get skilled in maker education, Waag Society, www.waag.org/sites/waag/files/public/media/publicaties/teacher-maker-camp-cookbook_0.pdf, CC BY NC SA

Related resources

Waag Co-creation Toolkit, www.co-creation.waag.org
Lego Challenge, Kaospilot, www.kaospilot.dk

3.7
THE MORE YOU KNOW HOW TO DO **BUSINESS AROUND OPEN RESOURCES**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Creative Commons is a non-profit organization supporting the use of open licensing of creative works available for others to build upon legally and to share.
CC licenses are free copyright licenses which creators apply to their own work, enabling the public to reuse it under certain conditions. Sometimes CC licensing is core to a business strategy and sometimes it is simply a way to increase the number of eyeballs on some work.

CC is already working with a handful of businesses and organizations to evaluate existing business models and develop new ones. You can develop a business model that integrates the use of CC licenses and the consequent social good. The open business model canvas can help you define the model for your business with a social impact.

Type:

#tool

Subject:

#business model generation

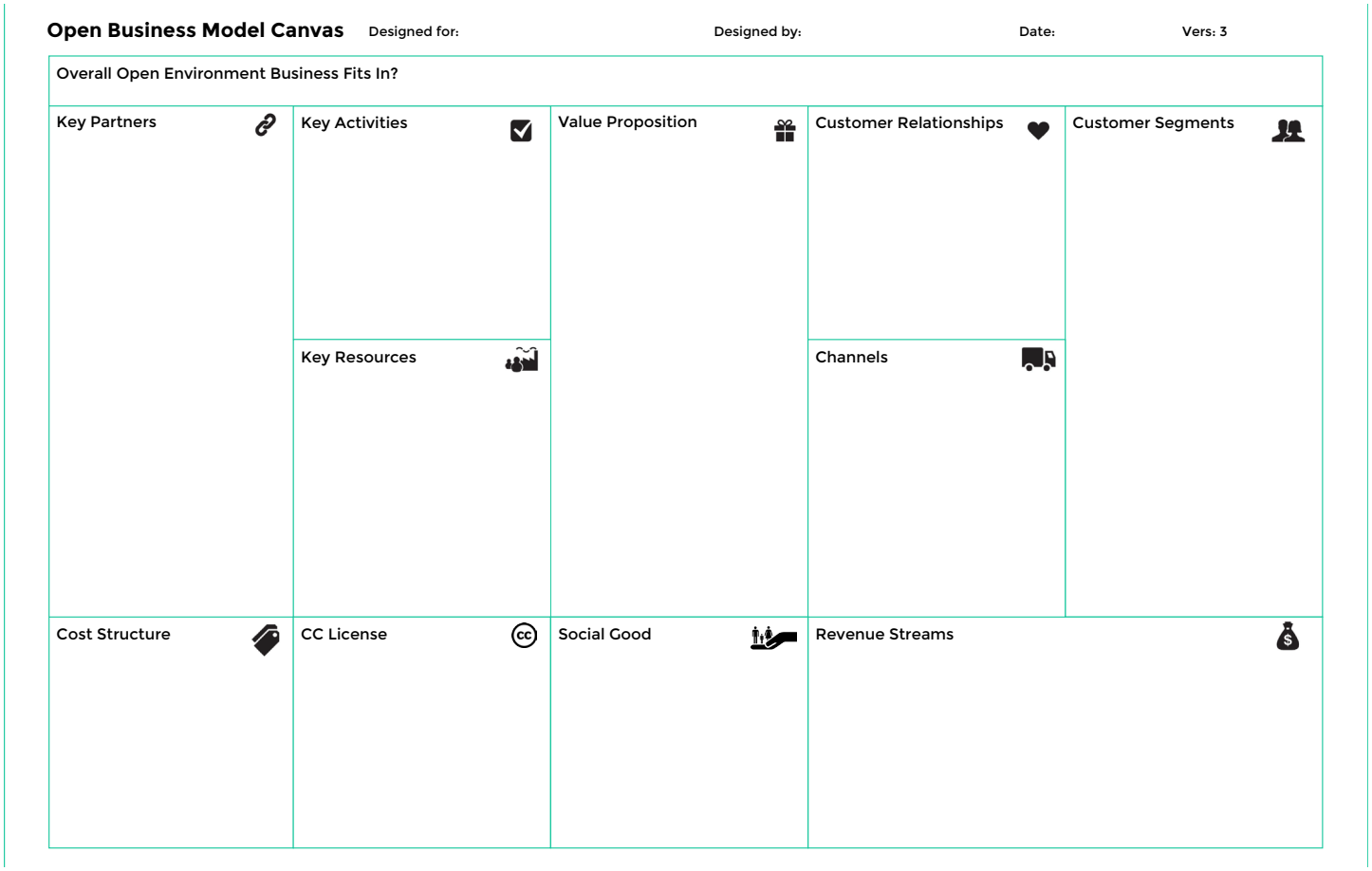
Keywords:

#open business modelling

#use of Creative Commons

#use of business model canvas

Open Business Model Canvas



How to fill the blocks

Overall do open environment businesses fit in?
What is the bigger open context your business sits within?
What open movements exist already that your open business will build on and participate in?
What is the shared outcome sought and how is it mutually beneficial?

Value Proposition

What value do we deliver to the customer?
Which one of our customer's problems are we helping to solve?
What bundles of products and services are we offering to each Customer Segment?
Which customer needs are we satisfying?

Key Partners

Who are our Key Partners?
Who are our key suppliers?
Which Key Resources are we acquiring from partners?
Which Key Activities do partners perform?

Key Activities

What Key Activities do our Value Propositions require?
Our Distribution Channels?
Customer Relationships?
Revenue streams?

Customer Segments

Who are our most important customers?

Key Resources

What Key Resources do our Value Propositions require?
Our Distribution Channels? Customer Relationships?
Revenue Streams?

Customer Relationships

What type of relationship does each of our Customer Segments expect us to establish and maintain with them?
Which ones have we established?
How are they integrated with the rest of our business model?
How costly are they?

Channels

Through which Channels do our Customer Segments want to be reached?
How are we reaching them now?
How are our Channels integrated?
Which ones work best?
Which ones are most cost-efficient?
How do we integrate with customer routine?

Cost Structure

What are the most important costs inherent in our business model?
Which Key Resources are most expensive?
Which Key Activities are most expensive?

Revenue Streams

For what value are our customers really willing to pay?
For what do they currently pay?
How are they currently paying?
How would they prefer to pay?
How much does each Revenue Stream contribute to overall revenues?

CC License

Which Creative Commons license will I use?
How does license choice affect the business?

Categories

Public Domain Mark
CC0
CC BY
CC BY-SA
CC BY-ND
CC BY-NC
CC BY-NC-SA
CC BY-NC-ND

Social Good

Beyond revenue and profits, what social good is generated by this business?

About: Open business model canvas

The Creative Commons open business models initiative aims to show how CC licenses can, and are, used by businesses, non-profits, and governments. The initiative is focused on expanding the open business model concept covered in the Business Model Generation (Alexander Osterwalder, Yves Pigneur, 2013) by introducing blocks that involve the active engagement with a network of users and collaborators using social norms that differ from those of competition and profit. This Creative Commons open business models initiative aims to make these Creative Commons open business models and their social norms evident.

www.creativecommons.org/2015/03/06/open-business-models-call-for-participation

Source:

Related resources

Made with Creative Commons, madewith.cc
Getting Paid for Open Source Work, www.opensource.guide
Business model generation, www.strategyzer.com

3.8
THE MORE YOU KNOW **HOW TO OPEN UP YOUR PROJECT**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Open-source software development is built on peer production and the value of making product elements, such as blueprints and documentation, available to the public. This model has been successful in software development, but also for physical product development, by enabling the growth of economically sustainable companies.

Learning how to leverage the openness of a project means to understand how to benefit from the interaction with communities and from the complete or partial sharing of the resources of your project.
The openness discussion tool helps you define and discuss an openness strategy that can enhance the effect of a project development.

Type:

#tool

Subject:

#open source innovation

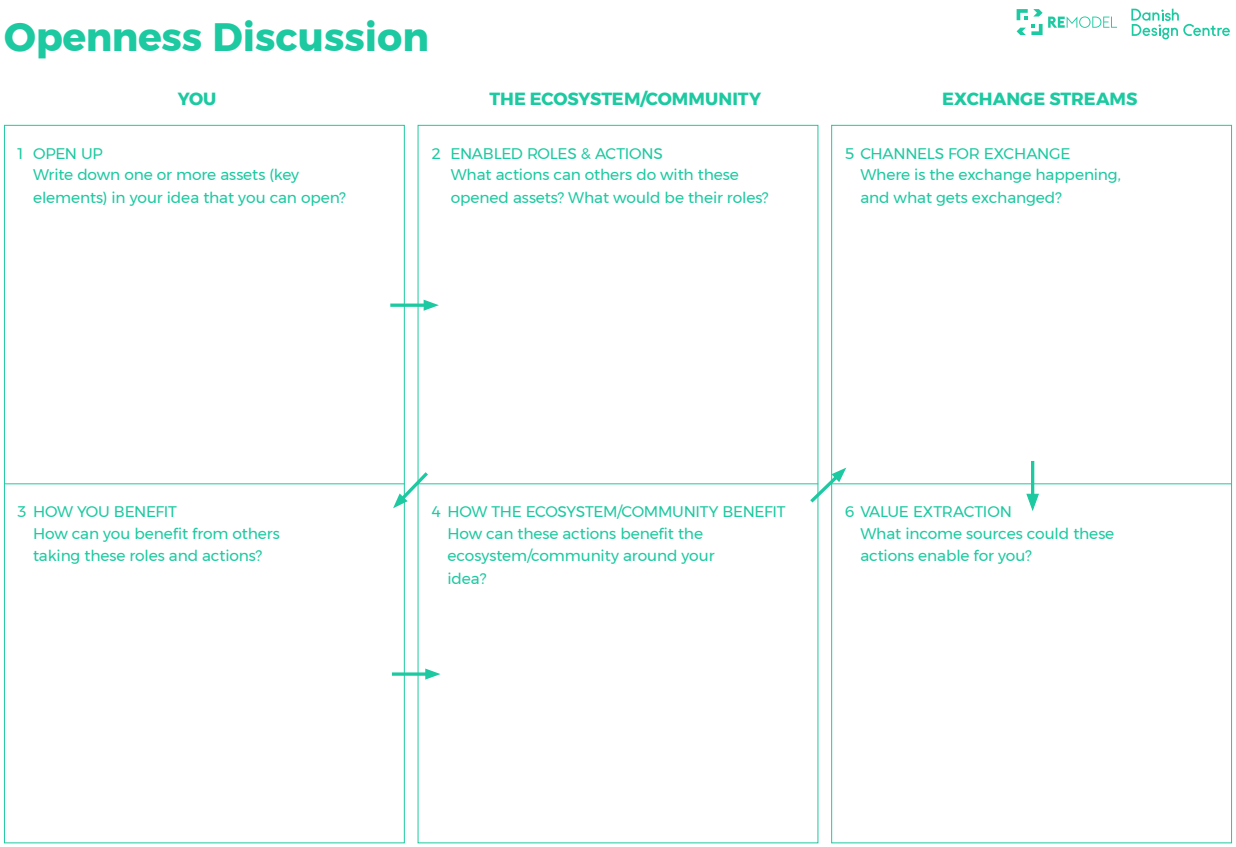
Keywords:

#open business design

#community-driven business modelling

#design thinking

Openness Discussion



Fill the blocks

Block 1

Open up

Write down one or more assets (key elements) of your idea that you can open

Block 2

Enabled roles and actions

What actions can others do with these open assets? What would be their role?

Block 3

Benefits for you
How can you benefit from others taking these roles and actions?

Block 4

Benefits for the ecosystem
How do these actions benefit the ecosystem/community around your idea?

Block 5

Channels for exchange
Where is the exchange happening and what gets exchanged?

Block 6

Value extraction
What revenue streams could these actions enable for you?

About: Remodel

Remodel is an initiative to explore how manufacturing businesses can use open source methodology and principles to develop environmentally sustainable and economically sound business models in the manufacturing of physical products. REMODEL is a project that is part of the Danish Design Centre's 'Future Fabrication' program, which explores how the design methods and new manufacturing technologies of the maker movement - including its fundamental open source currents - hold the potential to significantly revolutionize the manufacturing business worldwide.

www.danskdesigncenter.dk/en/remodel

Source:

Remodel Toolkit, Openness discussion worksheet based on Open Platform Design FlowChart by Lars Zimmermann, CC BY SA

Related resources

Open Source Business Models for Circular Economy – Video Series, www.community.oscedays.org/t/tool-video-open-source-business-models-for-circular-economy-video-series/4625

3.9
THE MORE YOU KNOW **HOW TO DOCUMENT AND SHARE YOUR PROJECTS**, THE EASIER IT WILL BE FOR YOU TO SCALE.

As an individual or organization, you are able to collaborate globally and develop technologies needed to overcome challenges and start new ventures. Decentralized, collaborative hardware development can generate the innovations that our society needs.
Using a web-based versioning system for sharing the documentation of your product or service will allow you to facilitate its reproducibility and dissemination.
Good documentation enables other people and communities to help you address the societal challenges you are tackling. This resource is a how-to that helps you to approach the documentation of your software or hardware project with an open and transparent culture.

Type:

digital tool

Subject:

#project documentation

Keywords:

#collaborative product development

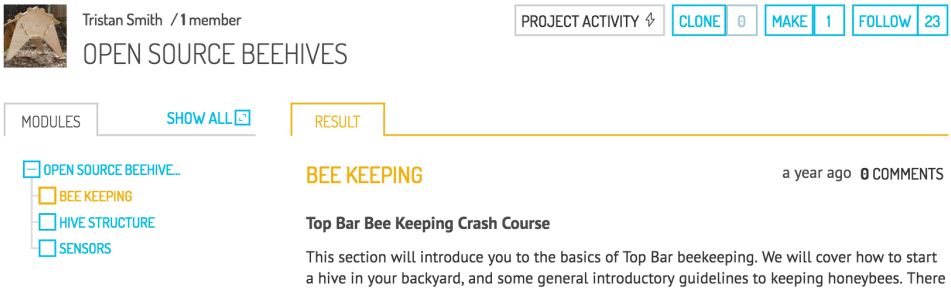
#hardware specifications sharing

digital tutorials writing

How to document an open hardware project on WeVolver

1. Describe your project

Describe the project in separate modules such as, for example, the general description, the problem description, the hardware specification and the sensors.

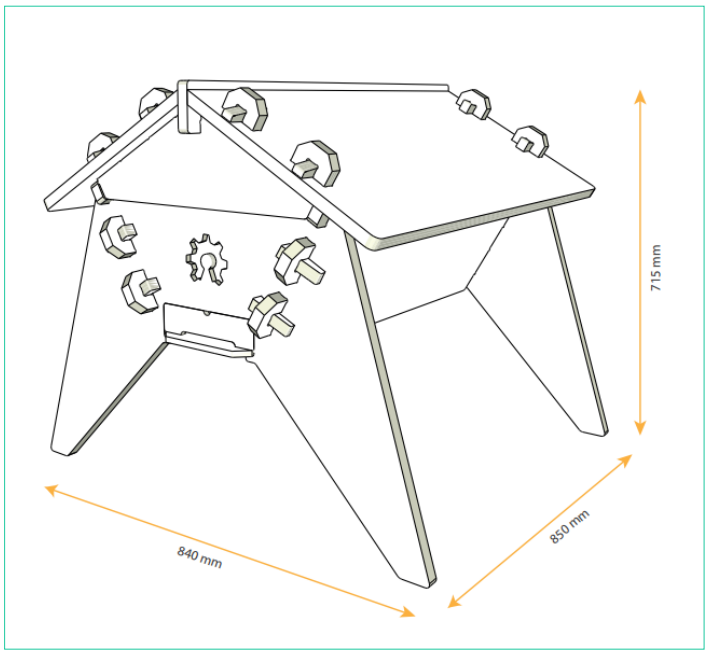


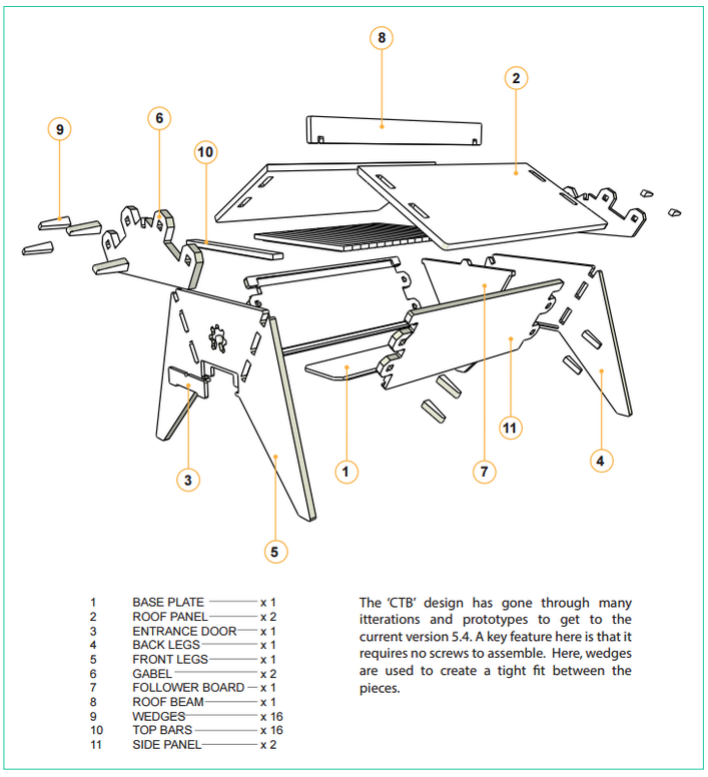
2. Create a bill of materials

The bill of materials should include the link to the online suppliers.

3. Include the blueprints

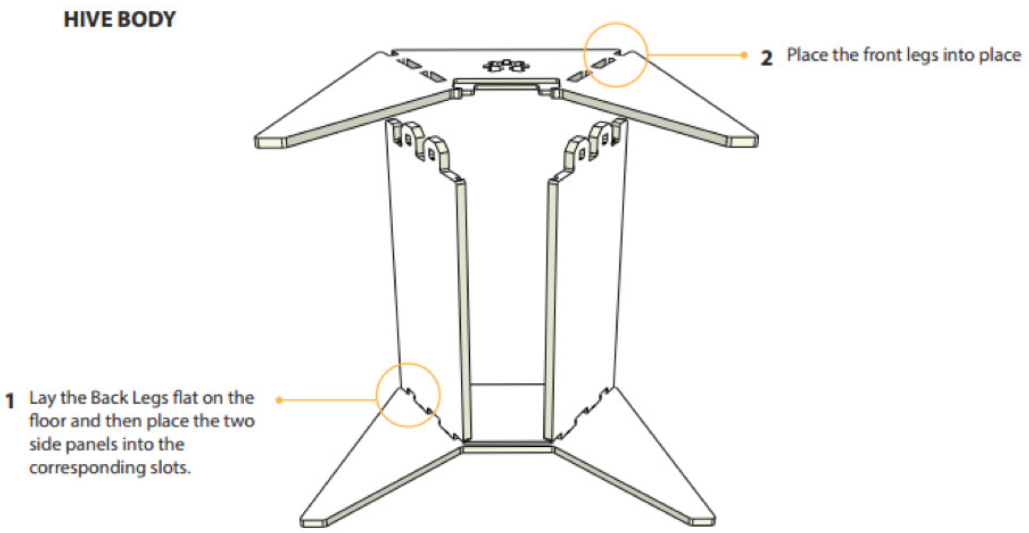
A blueprint is more friendly if it is provided with the exploded version of the design parts





4.Describe the assembling process

Provide a step by step guide to support the assembling of the parts.



5. List the files and explain the differences

Provide information about the 2D and 3D file formats that you generated.

(Note: 20mm Metric / 19mm U.S.)

CTB - v5.4 - 3DModel - 20mm.3dm

Rhinosauras software has been used to generate this 3D model. Here you can play and tinker with the original designs.

CTB - v5.4 - Nesting - 20mm.3dm

A nesting file is essentially a flat version of the design laid out to generate cutting strategies and tool paths. Adjust this file to callibrate it for different woods and machines.

CTB - v5.4 - 3DExport - 20mm.stl

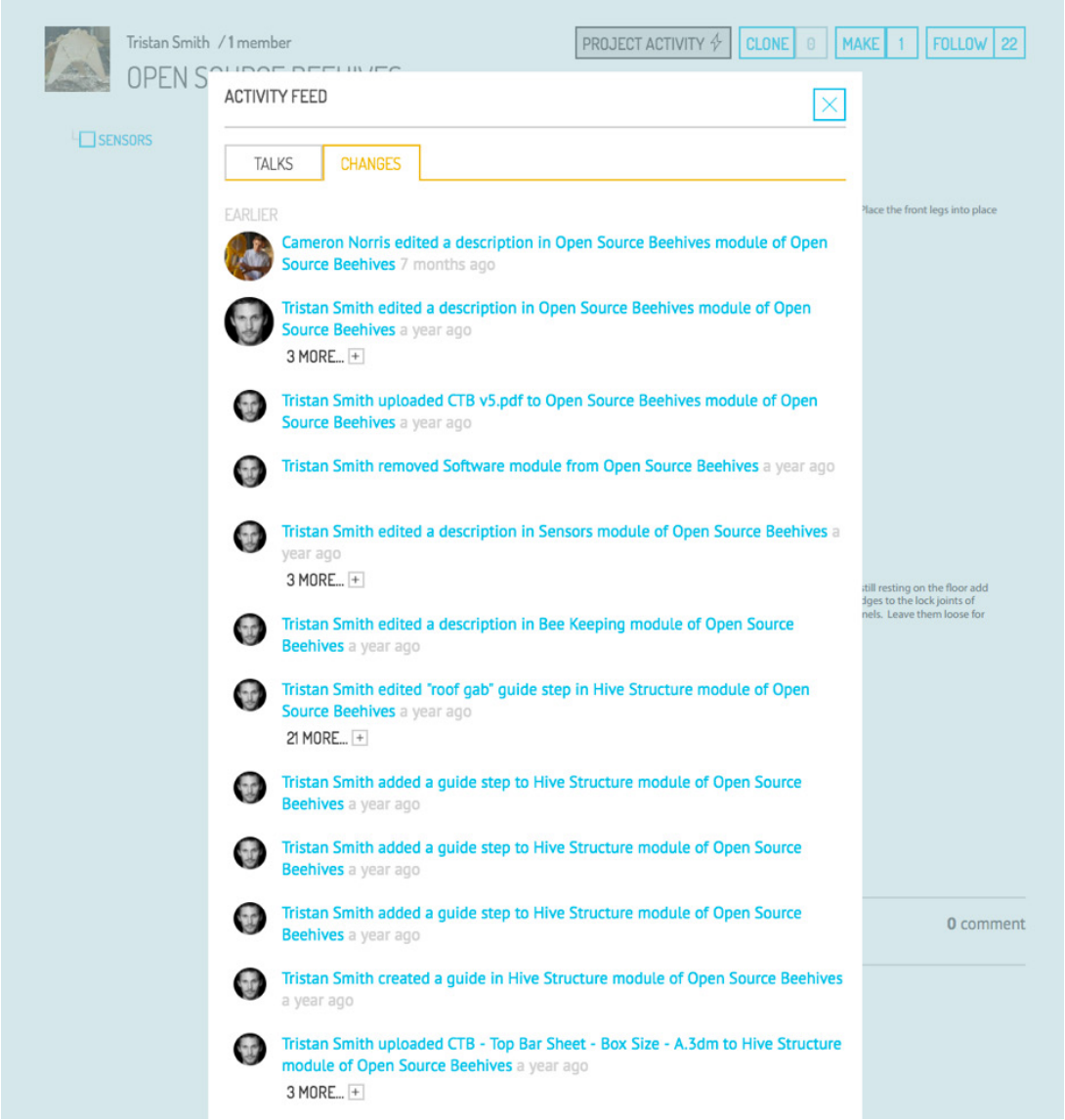
The STL export file provides an easy way to load the model into web viewers. This is not a place to edit the design.

6. Enable clones

Use functionalities that help other people cloning your project and help you tracking who is making it.

7. Communicate changes of version

The documentation of an open hardware project is constantly evolving. Do not forget to update it and communicate the changes to your community.



About: Wevolver

Wevolver is a web platform enabling decentralized collaboration on hardware development, in open communities or private teams. We provide a central repository for sharing all projects' documentation including files, design descriptions, assembly guides and a Bill Of Materials. A Version Control system enables effective and secure iterations on the same project in parallel by multiple people. A large collection of public hardware projects and our community of open hardware developers provide resources and knowledge, empowering people to make, improve and collaborate on great technology.

www.wevolver.com

Source:

Tristan Smith, documentation of the project Open Source Behive on Wevolver, www.wevolver.com/tristan.smith/open-source-beehives, CC BY NC SA

Related resources

Github, www.github.com
GitLab, www.about.gitlab.com

3.10
THE MORE YOU KNOW HOW TO **DESIGN FOR AN OPEN ECOSYSTEM**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

What are the design opportunities generated by the open source ecosystem: hardware, software, platforms and communities? Practices related to open source hardware and software, open design and digital fabrication demonstrate new ways of designing and producing things. Similarly to open source prototyping platforms such as Arduino, you can create “products-platforms”: projects featuring several interactive layers that enable people to access, reconfigure and build upon the physical parts, behaviours and interfaces of the product itself. This design framework is aimed at encouraging you to reflect on the opportunity of creating open projects that can be modified or built upon by users, thanks to an ecosystem of shared documentation, services and licenses.

Type:

#framework

Subject:

#design into the openness

Keywords:

#open source ecosystem

#open hardware and design development

1. Define the project idea

What do you want to make?
Which existing open source projects are you interested in developing?

2. Define the key requirements

By answering the questions, define the requirements that make your project:

- Programmable: other people can have access to the code and parts and reconfigure them;
- Reproducible: other people can recreate your project in another place;
- Generative: other people are enabled to create multiple and diverse derivatives out of your project parts, thanks to the information you shared and the solutions you designed.

3. Understand the users' attitudes and motivations

Once the requirements are defined, understand whom you are designing for and their motivations when interacting with your solutions. The five attitudes describe the orientations of potential users of your project; the eight motivations describe why potential users would interact with your project. Select one attitude and one motivation.

Key requirements Products as Platform V.0.1

Key design requirements – Products as Platform worksheet V.0.1

A. Reproducibility	B. Programmability	C. Generativity
- Is your product featuring standard interfaces and communication protocols? - Is it embedding hardware and software components whose documentation is accessible online? - Is the product using technological solutions shared by a large development community? - Does the product integrate modular parts that are smart and reconfigurable?	- Are you using open licenses? - Are you sharing the assembly instructions? - Are you providing the documentation on the production technologies and procedures? - Are you sharing the documentation through many web channels? - Are you implementing or using interface solutions that enable collaboration? - Did you design modular parts that can be easily replaced? - Is the production based on digital and personal fabrication processes?	- Are you enabling the creation of derivatives of your products? - Are you enabling the creation of derivatives that modify the functionalities and the user experience of the product? - Are you using or developing tools to help monitor the development of your product's derivatives and contributions by other individuals, companies or communities?

Attitudes

1. Maker:
a person who is interested in developing prototypes of projects by accessing online resources and collaborative spaces

2. Professional technician:
a person who has the technical knowledge of a specific domain (i.e. software developer)

3. DIY amateur:
a person who develops projects for the fulfilment of a personal need

4. Consumer:
a person who has low technical knowledge and buys a solution to fulfil a personal need

5. Entrepreneurs:
a person who focuses on the strategic and marketing aspects of a project to develop a business

Motivations

1. Customize:
to customize the style of a product in terms of forms and functionalities

2. Repair:
to repair or fix hardware or software parts

3. Improve:
to optimize parts in order to make them more stable or usable

4. Build upon:
to implement new projects based on existing ones by eventually changing their main purpose

5. Expand:
to implement new functionalities and parts for an existing project

6. Produce:
to manufacture a project on a self-production, small or industrial scale

7. Distribute:
to define the channels for distributing a project at a local or global scale

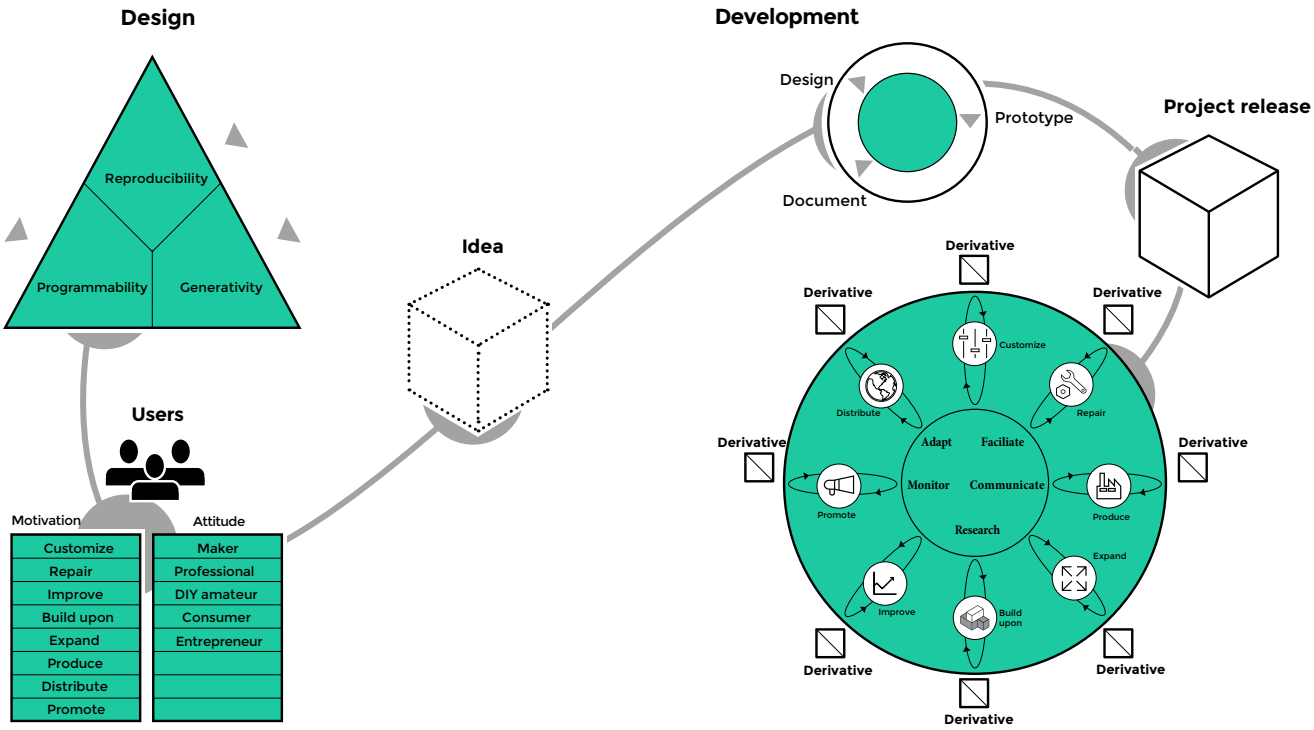
8. Promote:
to communicate a project for media exposure or sales

4. Ideate and sketch

What is the key requirement of your project: programmability? Reproducibility? Generativity?
What are the main functionalities and objectives?
How do the people interact with it?
What technologies are used?

5. Development phase: design, prototype and document

After the release of your product, you can continue designing, prototyping and documenting it according to the feedback of the actors that interact with your project. The result of this process is the development of products-platforms that are open artefacts that people can program, reproduce and develop as a derivative, by accessing the knowledge and the tools you made publicly available.



About: Products as Platforms

This framework aims to define the concepts, the activities and the processes for the design of products that people can modify and develop, thanks to an ecosystem of digital services, shared documentation and open licenses.
The framework reflects on the integration of a human centred design approach into the open source culture, and it proposes a framework for designing innovative open source products. The related series of workshops "How to Make Things Open" have been organized at WeMake Makerspace (Italy) and at the Designing Interactive System Conference in Vancouver.
The framework has been developed as part of a research at Iuav University of Venice, Doctoral School in Design Sciences, and SUPSI Interaction Design Lab.

www.products-platforms.org

Source:

Serena Cangiano, Products as Platforms – Design Framework and Workshop, www.products-platforms.org, CC BY NC SA

Related resources

Platform design toolkit, www.platformdesigntoolkit.com

4.
PEER KNOWLEDGE

PEER KNOWLEDGE

Peer Knowledge is a conceptual survey designed to capture best practices and problem-solving tactics within the field of DSI. The survey features three questions aimed at collecting the successful aspects of digital social innovation projects, the obstacles and also the tactics employed to solve practical problems that slow the path towards sustainability.

The three questions are:

- Something went or is going well in your project. For sure, you are doing it right and positive external factors are also influencing the process... tell everyone what part of your project is working well.
- You are releasing a good piece of software; you are creating job opportunities, demonstrating an alternative business model... you are scaling and you are not aware of that. Your project (or part of your project) could have a better impact if...
- Problem-solving tactics are fundamental in order to scale. A lot of projects face problems in their path towards sustainability. You've likely experienced problems during implementation: how did you solve them?

In this section we publish some short interviews, based on the above questions, to four women that are developing projects in the fields of open hardware, maker movement and tech education. They shared their knowledge with us and you can also share yours by visiting the digital section of the toolkit at: www.dsi4eu.github.io/toolkit/knowledge/.

4.1 AGNESE ADDONE

Agnese Addone teaches maths at the primary school "Lante della Rovere" in Rome. In 2013, together with other seven people, she founded one of the first nodes of the CoderDojo network in Italy, to promote the culture of programming education. In 2014 she co-founded the association of the Italian Digital Champions.

I promote the culture of programming education in Italy via CoderDojo and other community-based initiatives.

The use of internet tools was key for the set-up of our CoderDojo node. At CoderDojo, the coordination was really smooth thanks to the use of digital communication tools, emails and shared folders. We were not used to organize meetings in person and we succeeded to share the intentions and the mission, rather than focusing on managing the organization. Even though we were many people, we focused on the content. Moreover, we believed in the value of the CoderDojo initiative rather than on technical advancements: Scratch, the platform for teaching programming, was not just a tool for us but an educational method. Then we worked on communicating our work and cohesion, all the way up to the Italian parliament. This exposure helped to scale in terms of group cohesion.

A problem for community-based activities like our CoderDojo club was mainly the possibility to have a permanent venue and a legal status. Some CoderDojo clubs found associations, but sometimes it is not clear how to use the brand of a big global distributed initiative. Another problem is that spontaneous groups like ours cannot scale because, on one side, it is difficult to find mentors and, on the other, there is the will to not turn the initiative into a service. We did not want to create confusion between initiatives like CoderDojo and paid services. In order to avoid that, we did not want to introduce assessment tools: the assessment of the learning experience limits the freedom of expression of the kids.

About CoderDojo
CoderDojo is a global movement of volunteers and community-based programming clubs all around the world that help young people learn to code, build a website, create an app or a game, and explore technology in an informal, creative, and social environment.
The Coderdojo network includes about 500 clubs in Europe.

Website:
www.coderdojo.com

“A clear mission and group cohesion help to avoid that a community based initiative becomes a pure service where the assessment logic can limit the freedom of expression of the kids learning tech.”

4.2 ANJA LAZAR

Anja Lazar studied Economics at Faculty of Economics, University of Ljubljana. She is interested in alternative modes of production, circular economy, cooperatives, social economy, social reciprocity and different participatory practices. At IRNAS, 'Institute for development of advanced applied systems Rače', she provides general support to the team of developers and takes care of communication, community building and social impact.

IRNAS is an open hardware development institute. Our main projects are: Koruza, a wireless optical communication system, GoodEnoughCNC, an open source CNC machine, and Symbiolab, open bio lab.

We are taking full advantage of our team's interdisciplinarity, with people coming from different backgrounds: from engineers to bioscientists. Right now we are entering the business stage: we want to scale and make it sustainable economically.
During the last couple of years, we have built a motivated, interdisciplinary team of developers and scientists to work on the development of useful open hardware projects. Koruza and GoodEnoughCNC went through several development cycles to get to today's stable versions. Both open hardware solutions are already on the market and at the moment we are working towards scaling, to make the projects also economically sustainable.

The process of product and business development is a constant problem solving exercise. There are no written solutions and research is important not only at the initial phase, but must be carried on throughout the whole project. Our main approach to problem solving is rapid prototyping with fast iteration cycles. What we find very useful is our involvement in the development of several different projects: that's how ideas can fly from one project to another and a solution for a specific development problem on one project can be found in the context of another project. Working on several projects in parallel can help you look at problems from different perspectives and open up the space for innovative solutions.

About IRNAS
IRNAS - 'Institute for development of advanced applied systems Rače' is an open hardware institute in Maribor (Slovenja) that applies vast scientific knowledge to everyday reality by creating affordable open source systems.

Website:
www.irnas.eu

“Taking advantage of the interdisciplinarity of a team of people coming from different backgrounds: from engineers to bioscientists.”

4.3 ANNA SERAVALLI

Anna Seravalli is a senior lecturer and design researcher at The School of Arts and Communication - Malmö University. She has a background as product and service designer and holds a PhD in Design and Social Innovation. Her research is carried out at the intersection between participatory design and alternative economics. She has been engaging in different long-term collaborative processes with citizens, civil servants, NGOs to explore potential and limits of production practices related to: do-it-yourself and makers, circular economy, co-production. She is the coordinator of Malmö University DESIS Lab.

ReTuren is an upcycling station in Lindängen, Malmö. ReTuren is a new waste handling service that focuses on promoting new behaviours and practices towards waste minimization. It provides citizens with the opportunity to exchange objects for free, but also access to a workshop where to upcycle and repair things. ReTuren explores possible synergies between waste handling and makers' culture to foster ecological and social sustainability.

ReTuren is based on the close collaboration of different actors: the cultural department, the public waste handling organization (VA SYD), the regional public company processing waste (SY SAV), Malmö's makerspace (STPLN) and Malmö University. In its development these actors have been involving also citizens and organizations from the area.

The collaboration between actors, citizens and organizations from the area. ReTuren has been quickly establishing close relationships with actors and people living in the area, by organizing common activities and by involving citizens and some of the key local actors in the development of ReTuren. The process has been a participative and iterative co-production process where functions, routines and activities have been tried out and evaluated together with local actors. The result has been the creation of a strong sense of commitment among the involved actors as well as th citizens involved.
Such commitment has been important to experiment about possible synergies between waste handling and makers' culture. It played also an important role in facilitating the long-term sustainability of ReTuren.

Co-production, as the tight collaboration between actors belonging to different sectors and citizens in the creation of a service, is complex. There is no straight answer to how to organize collaboration and how to navigate the diversity of interests.
This requires ongoing experimentation with formats, mutual learning but also a long-term commitment from the different parties involved. Fostering co-ownership among actors and citizens has been fundamental to ensure the long-term sustainability of ReTuren, since a deep commitment allowed to overcome different kinds of practical problems but also organizational and strategic questions. It has been important for the involved actors to have opportunities to discuss and reflect together about practical issues and challenges.

Malmö University DESIS Lab
Malmö University DESIS Lab explores, through research and teaching activities, more social and environmental sustainable ways of living and working.
It does so in collaboration with citizens, civil servants, entrepreneurs, and activists in Malmö, Sweden.

Website:
http://mah.se/desislab

“Collaborative explorations of alternative production practices require ongoing experimentation with formats, mutual learning but also a long-term commitment from the different parties involved”

4.4 EVI SWINNEN

Evi Swinnen studied architecture at Henry Van de Velde Instituut, performing arts and media at Univeristy of Ghent and management at Business School Antwerp.
She is interested in arts, group dynamics, organizational models and politics of change. At Timelab she supports the team and looks for new partner opportunities and projects. She has taken the lead role in the development of a new open city lab building for Timelab and facilitates most of the community co-creation sessions.

Timelab is a city lab that houses a maker lab and a programme of artist in residence events such as workshops, lectures and debates. Every year there are two new creation projects going from community based innovation to real products and services.

After more than seven years of working with local communities and international partners, I believe we have started to achieve a so called co-creation stage.
We have an active community and a lot of partners and tools to enhance collaboration.
This leads to new innovative systems and insights on how to develop meaningful and change making new economies.

The main issue we are dealing with is sustainability of the context we are working from.
In everything we do we look for a sustainable answer that can last over decades, if possible.
The whole context today is not made for this future-oriented perspective.
Not only in consumers behavior, but also in politics and environmental governance.
Therefore it is very difficult to convince policy makers and citizens to act according to a long time perspective.
Creating prototypes and concrete examples provides a safe and empowering environment that shows the positive outcome for change.

Timelab.org
Timelab is a city lab for creating new models of working that presents examples of small and large change by providing time, space, reflection for a society in motion.
Timelab is supported by the Flemish Government and the City of Ghent.

Website:
www.timelab.org

“Creating prototypes and concrete examples provides a safe and empowering environment that shows the positive outcome for change”

5.
GROWING YOUR DSI INITIATIVE: A PRACTICAL GUIDE

GROWING YOUR DSI INITIATIVE: A PRACTICAL GUIDE

As part of the DSI4EU project, Nesta led a research programme exploring barriers to growth and examples of good practice in DSI across Europe. In their research, they found that barriers existed at two levels: the macro (ecosystem) level - such as the funding and skills landscapes, and the take-up of DSI by the public sector and civil society; and the micro (initiative) level - such as practitioners' ability to engage users, understand routes to growth and sustainability, and articulate and measure impact.

Building on their findings about barriers at the initiative level, and drawing from success stories in DSI, Nesta developed a practical guide for digital social innovators. The guide aims to support practitioners at different stages of development, but particularly those with early-stage initiatives, in three areas: understanding and engaging users; understanding, measuring and articulating impact; and planning for growth and sustainability.

The guide is not a strict framework or toolkit. Recognising the breadth of the field of DSI, and the infinite number of forms DSI initiatives could take, it instead provides a series of ques-tions which every DSI practitioner should be able to answer, accompanied by brief examples and pointers to further resources. They are intended to provoke practitioners to question and reflect on their assumptions, ask new questions about their work, and seek out further resources where necessary.

The first part, about understanding and engaging users, explains the need to understand in depth the social challenge they are trying to tackle and the users, funders and beneficiaries of their initiative. It then discusses the importance of user experience, suggests different channels for engagement and strategies for maintaining users, and encourages practitioners to think about who they can partner with to grow their impact.

The second part, about understanding, measuring and articulating impact, begins by making the case for why this is an important subject. It takes practitioners through a set of five questions to help them articulate their impact and understand how it can help them and other stakeholders. It sets out clearly that there is no one correct path for measuring impact, and that all initiatives will take different routes depending on a number of factors. It aims to get practitioners to interrogate their initiatives critically.

The third and final part, about planning for growth and sustainability, supports practitioners to understand whether they are ready to grow their impact. It then discusses the different routes to growth, namely increasing the user base, open-sourcing, affiliation, new products and policy change, before moving onto a discussion about business models. Finally, it explores the importance of partnerships for growth. Recognising that DSI is still a young field at an experimental stage, it does not seek to prescribe answers but to raise questions which practitioners can address as they feel necessary.

The guide is designed so that practitioners can easily access other resources including those produced by some of the most prominent organisations in DSI, social tech and civic tech. It is written in an informal tone and is relatively short to make it as accessible as possible for time-pressed readers on the website www.digitalsocial.eu.

6.
HOW TO BECOME A DSI AMBASSADOR IN 10 STEPS

HOW TO BECOME DSI A DSI AMBASSADOR IN 10 STEPS

Maker faires together with events such as the international fabLab conferences, the Arduino Day events, the DIY faires showcase projects proposing alternative paradigms of technological development. These events take place around the world and celebrate the makers culture, and all enthusiasts about technology and bottom-up innovation. In these events many people showcase projects around societal issues such as energy consumption, alternative ways of distributing or making goods, systems for care-giving based on open source hardware, innovative mobility services and assistive low-cost robotics.

During the Maker Faire Rome – European Edition 2016, we scouted about twenty makers and groups of makers developing tech for good projects and digital social innovation projects. We awarded them a DSI badge and we included their project in our DSI distributed exhibition which is open exhibition format: it a collaboratively curated exhibition that can be set up by everyone in all maker events!

Selection of awarded projects at Maker Faire Rome 2016

The complete list is published on www.digitalsocial.eu Map of the DSI distributed exhibition v.0.1. drawn on the map of Maker Faire Rome 2016

How to become a DSI ambassador and set up a DSI distributed exhibition:

1.
Read about the DSI Scale tool in the section 2 of this toolkit;

2.
Create your own DSI Scale for one or more indicator or use the examples available in the toolkit (i.e. level of openness, community engagement, etc.)

3.
Cut out the DSI indicator cards and the DSI Badge from the following pages;

4.
Go to the event and visit the projects' booths;

5.
Talk to makers, ask them questions, try to understand the key values and approach driving their projects;

6.
Understand their potential, qualities and if they embed digital social innovation values. Assess it by using DSI scales as a reference;

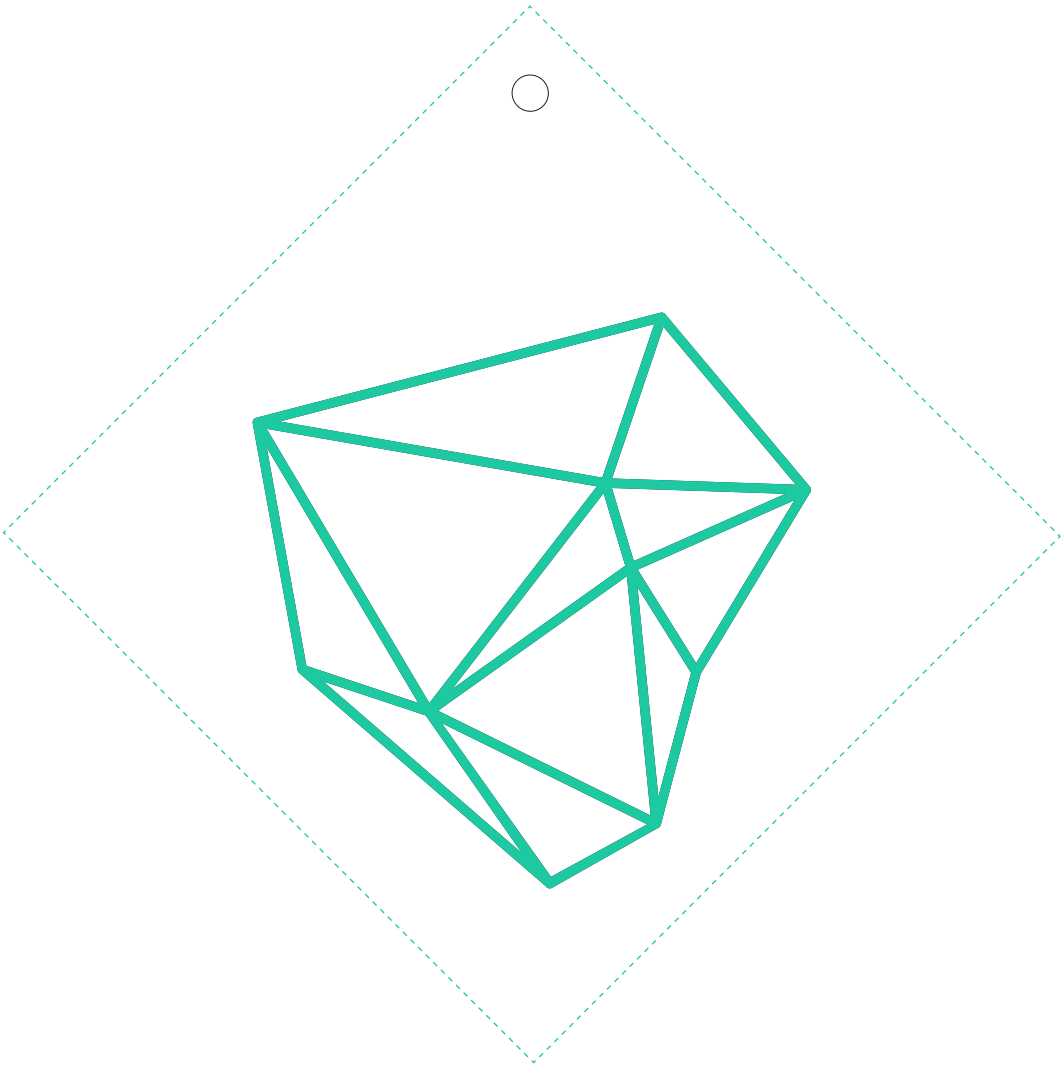
7.
Take the DSI Badge and award it to the maker by explaining what it is and why you are giving this award;

8.
Invite him or her to sign up to digitalsocial.eu illustrating the benefits of being part of the DSI community;

9.
Take a picture of the digital social innovator and his/her project;

10.
Post the picture to Twitter. Do not forget to use the tag @DSI4EU. If you do not have a twitter account send it: contact@digitalsocial.eu

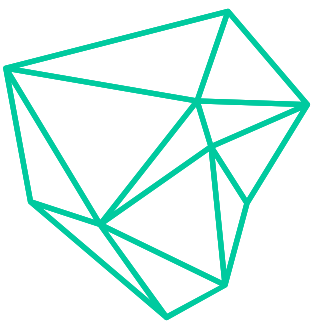

DIGITAL
SOCIAL
INNOVATION
Digital Social Innovator
digitalsocial.eu



How much do you know about your peers in your area?

Background knowledge

The more you know about existing solutions, products and strategies, the easier it will be for you to scale and increase your impact.
Who's out there doing similar things to you? Why are they doing it? Is there a community already discussing the problem?



Assign a meaning to the following ratings

Example
0= No research was done
1= A similar product or prototype exists
2= Many web resources have been collected
3= A conversation exists with online and offline communities
4= There is already a contact with existing organizations or companies

0 _____

1 _____

2 _____

3 _____

4 _____

The DSI Scale is an open source tool, built for and by the community of digital social innovators. It facilitates the assessment of the growth of DSI projects, taking into account values like knowledge sharing, technological openness and societal impact.
www.dsi4eu.github.io/toolkit

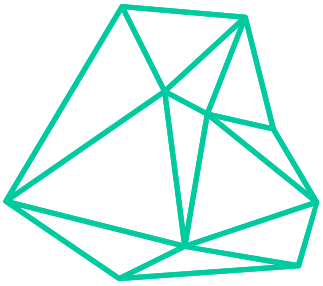
The DSI toolkit is powered by DSI4EU, a project which brings together social entrepreneurs, hackers, communities and academics working on digital social innovation.
www.digitalsocial.eu

DIGITAL SOCIAL INNOVATION

Do you know who your target user is, and who can influence your project?

Target and stakeholders mapping

The more you have a clear and complete understanding of the people, groups and communities that can benefit from your project, the easier it will be to scale and increase your impact.
Scaling will also be easier if you fully understand all the stakeholders in your project – including those who could support or prevent success.



Assign a meaning to the following ratings

Example
0= What is a stakeholder?
1= No mapping of targets and stakeholders has been done
2= The mapping covers only my context
3= The map includes the enablers and the inhibitors
4= The project is defined after the stakeholder mapping

0 _____

1 _____

2 _____

3 _____

4 _____

The DSI Scale is an open source tool, built for and by the community of digital social innovators. It facilitates the assessment of the growth of DSI projects, taking into account values like knowledge sharing, technological openness and societal impact.
www.dsi4eu.github.io/toolkit

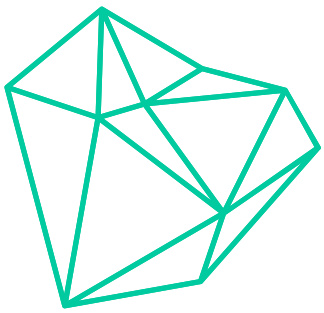
The DSI toolkit is powered by DSI4EU, a project which brings together social entrepreneurs, hackers, communities and academics working on digital social innovation.
www.digitalsocial.eu

DIGITAL SOCIAL INNOVATION

How open are the outputs generated by your project?

Level of Openness

The more you contribute to, and build upon, others' open source projects, the easier you will be able to scale and increase your impact. If you use open licences correctly, share good-quality documentation through open collaborative systems, and learn from other projects, you will have greater success.



Assign a meaning to the following ratings

Example
0= The project's images are published on the web
1= Source files are published on a webpage
2= Source files and instructions are stored in a public repository and they can be forked
3= The project is a forking of an open source project and it features a shared documentation
4= The project has source files and licence allows for commercial use

0 _____

1 _____

2 _____

3 _____

4 _____

The DSI Scale is an open source tool, built for and by the community of digital social innovators. It facilitates the assessment of the growth of DSI projects, taking into account values like knowledge sharing, technological openness and societal impact.
www.dsi4eu.github.io/toolkit

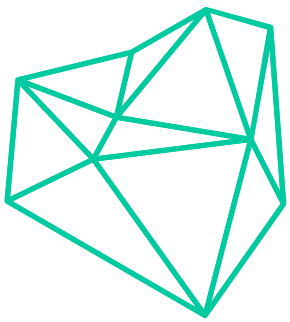
The DSI toolkit is powered by DSI4EU, a project which brings together social entrepreneurs, hackers, communities and academics working on digital social innovation.
www.digitalsocial.eu

DIGITAL SOCIAL INNOVATION

Do you have a strategy to engage other people in contributing actively to your project?

Community engagement

The more you engage people in your project, online or in person, the easier you will be able to scale and increase your impact.
The interaction of groups of people and organisations is essential to developing your project, and you need a plan to engage those people.



Assign a meaning to the following ratings

Example
0= There is no community offline or online
1= There are online discussions groups
2= Online community members participate actively
3= There are offline meet-ups with local groups of people
4= There is reciprocal exchange with the community

0 _____

1 _____

2 _____

3 _____

4 _____

The DSI Scale is an open source tool, built for and by the community of digital social innovators. It facilitates the assessment of the growth of DSI projects, taking into account values like knowledge sharing, technological openness and societal impact.
www.dsi4eu.github.io/toolkit

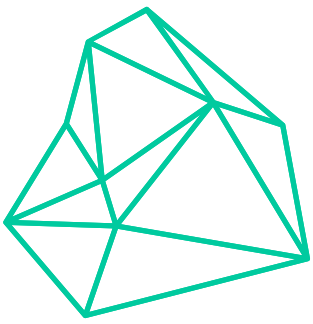
The DSI toolkit is powered by DSI4EU, a project which brings together social entrepreneurs, hackers, communities and academics working on digital social innovation.
www.digitalsocial.eu

DIGITAL SOCIAL INNOVATION

How clear and effective is your communication?

Quality of communication

The more you communicate your work, goals and impact through evidence, stories and pictures, the easier it will be for you to scale and increase your impact. You can reap more benefits if you talk to international audiences and have online tools which lower the barriers for entry, so that anyone can understand and contribute to your project.



Assign a meaning to the following ratings

Example
0= There is no clear dissemination of the project
1= There is a website or a leaflet with basic information on the project and team
2= Website features curated contents
3= Multimedia assets are available on multiple social media channels
4= The website, the multimedia assets and the communication materials are available in more languages

0 _____

1 _____

2 _____

3 _____

4 _____

The DSI Scale is an open source tool, built for and by the community of digital social innovators. It facilitates the assessment of the growth of DSI projects, taking into account values like knowledge sharing, technological openness and societal impact.
www.dsi4eu.github.io/toolkit

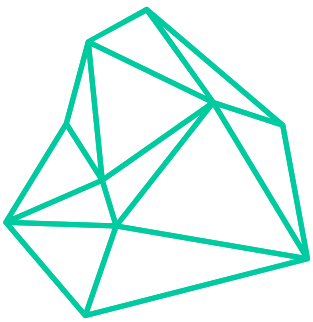
The DSI toolkit is powered by DSI4EU, a project which brings together social entrepreneurs, hackers, communities and academics working on digital social innovation.
www.digitalsocial.eu

DIGITAL SOCIAL INNOVATION

Can you show that your project is a good alternative to other existing ones addressing the same issue?

Quality of solutions

The more you gather feedback and evidence from users and stakeholders, the easier it will be for you to scale and increase your impact. If you test your solution – whether it is technology, a hard product, a service, a platform, or anything else – you can improve your product and show that it is comparable to, or better than, other solutions on the market.



Assign a meaning to the following ratings

Example
0= The solution has not been tested yet
1= The solution solves issues that are not solved by other solutions available on the market
2= The solution has been adopted by just small groups of people
3= People adopts the solution but there are still barriers to its access
4= People is using it and expresses a high level of satisfaction

0 _____

1 _____

2 _____

3 _____

4 _____

The DSI Scale is an open source tool, built for and by the community of digital social innovators. It facilitates the assessment of the growth of DSI projects, taking into account values like knowledge sharing, technological openness and societal impact.
www.dsi4eu.github.io/toolkit

The DSI toolkit is powered by DSI4EU, a project which brings together social entrepreneurs, hackers, communities and academics working on digital social innovation.
www.digitalsocial.eu

DIGITAL SOCIAL INNOVATION

IMAGES CREDITS

1.
An open design approach to support the growth of digital social innovation in Europe
Icon "*Glasses – Education icons Collection*", created by Souvik Bhattacharjee from the Noun Project
https://thenounproject.com/term/glasses/790117/

2.
The DSI scale
Icon "*Pencil*", created by Adrian Ciulei from the Noun Project
https://thenounproject.com/term/pencil/788804/

Icon, "*Pencil – Shop online Collection*", created by Chiara Galli from the Noun Project
https://thenounproject.com/term/pencil/709997/

OpenDrop device p. 30 , © GaudiLabs 2016. All content Licensed under a Creative Commons Attribution-ShareAlike 2.5 Switzerland License.

OpenTechSchool community p. 33 , OpenTechSchool, CC BY SA 3.0,
www.opentechschool.org/about.html

Koruza Scientific device p. 36 , ©2017 KORUZA, www.koruza.net/scientific

Toowheels in India p. 39, © PietroPaolini Terraproject

Precious Plastic machines p. 42, ©Precious Plastic by Dave Hakkens,
www.preciousplastic.com/en

Joseph Prusa portrait p. 45, ©Prusa Printers,
www.prusaprinters.org/original-prusa-i3-mk2-3-months-update

3.
Resources & tools
Icon "*Tool* ", Created by By Shmidt Sergey, US from the Noun Project
https://thenounproject.com/search/?q=tools&i=691757

Graph Commons illustrations pp. 51-53 , ©GraphCommons,
www.blog.graphcommons.com/mapping-networks

Unicef design principles icons p. 58, ©Unicef&Frog,
http://www.wearablesforgood.com/wp-content/uploads/2016/08/WearablesForGood-UseCaseHandbook.pdf

Loomio illustration p. 63 , Loomio Cooperative, CC BY SA, www.loomio.org

Re:boot workshop kit materials pp. 65-67, AbrarBurk, CC BY SA, http://rebootberlin.com/

Teacher Maker Camp Lego Challenge p. 69, Waag Society, CC BY NC SA,
www.waag.org/sites/waag/files/public/media/publicaties/teacher-maker-camp-cookbook_0.pdf

Open Business Model Canvas p. , Paul Stacey licensed CC BY-SA. Adapted from Business Model Canvas Poster by Business Model Foundry AG license licensed CC BY-SA

Beehive tutorial on Wevolver screenshot pp. 78-80 , Tristan Smith, CC BY NC SA
www.wevolver.com/tristan.smith/open-source-beehives

Products as Platform framework diagram p. 84, ©Serena Cangiano-Giovanni Profeta,
CC BY NC SA, www.products-platforms.org

4.
Peer Knowledge
Icon "Share – *Entresalidas Collection*", created by Juan Carlos Altamirano from the Noun Project
https://thenounproject.com/term/share/919735/

Agnese Addone portrait p. 88, ©Agnese Addone, CC BY NC SA
CoderDojo at Campidoglio p. 88, ©Alession Nisi,
http://ischool.startupitalia.eu/news/57620-20161023-coderdojo-roma-campidoglio-scratch

Anja Lazar portrait p. 90, ©Koruza, http://irnas.eu/images/team/anja.jpg
Koruza Team group photo p. 91, ©Koruza,
https://onedrive.live.com/?authkey=%21AFtr_eKLRWmP4Bs&cid=EF7272B42226A337&id=EF7272B42226A337%2138155&parId=EF7272B42226A337%2138152&o=OneUp

Anna Seravalli portrait p. 92., Carolin Lind, CC BY SA
Malmö Returen photo p. 93, Carolin Lind, CC BY SA

Evi Swinnen portrait p. 94, ©Tijs Vervecken, kleinerevolutie.org
Timelab photo p. 95, Timelab, timelab.org

5.
Growing your DSI initiative: a practical guide
Icon "*Compass – Sea Life-Tiny Collection*", created by Chameleon Design from the Noun Project
https://thenounproject.com/search/?q=guide&i=887410

6.
How to become a DSI ambassador in 10 steps
Icon "*Badge*", created by Valentina Meldi
Icon "Scissors – *Line Icons Collection*", created by By AfterGrind from the Noun Project

DIGITAL
SOCIAL
INNOVATION

digitalsocial.eu
@DSI4EU
contact@digitalsocial.eu

Funded by
the European Union