



# DIGITAL SOCIAL INNOVATION IDEAS BANK

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**An Inspirational Resource  
for Local Governments**

Barcelona Activa | May 2019







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## INTRODUCTION

Cities face huge and growing challenges, from pollution to housing shortages to inequality. Traditional, tech-first smart city approaches have failed to deliver, often at huge cost to the public purse and to citizens' privacy.

Digital Social Innovation (DSI) presents a radical alternative, focused on using open and collaborative technologies to put people at the heart of modern cities and offering new ways to tackle big challenges. From open hardware kits for monitoring pollution to DIY machines for recycling plastic, from open-source platforms for participatory democracy to whole districts of cities dedicated to digital making, DSI initiatives are emerging from the grassroots and demonstrating vast potential.

Strategic support from city governments can be the key to success for DSI initiatives. This support can take many forms and shapes: enacting and influencing policy, direct funding via grants and prizes, procurement of DSI products to meet internal government

needs or deliver innovative urban services to citizens, implementing support schemes and mechanisms, or empowering citizens through skills and inclusion programmes, to name just a few. This Ideas Bank aims to share some of the most exciting examples from across the world, in all their diversity, and to support city governments to adapt and replicate these ideas for their own contexts.

The Ideas Bank sits as a companion to the DSI Index, which measures how 60 EU cities fare on over 30 variables which can support DSI to grow and scale its impact.

This text was written and edited by Marc Aguilar, Anna Majó, Marc Pérez and Coloma Serra at Barcelona Activa, and Matt Stokes and Codrina Cretu at Nesta.

Visit [digitalsocial.eu/open-data-research-and-resources](https://digitalsocial.eu/open-data-research-and-resources) to find the other texts in this series. Read more about DSI4EU at [digitalsocial.eu/about-the-project](https://digitalsocial.eu/about-the-project).

## PURPOSE AND SCOPE OF THIS DOCUMENT

The DSI Ideas Bank for Local Governments is an attempt to open the eyes to policy influencers, urban stakeholders, public officers and decision makers to the diversity and power of DSI as it is being implemented across the world, and propel their curiosity to know more. In this sense, it does not prescribe any specific combination of ideas, and does not claim to be exhaustive in its coverage of any particular topic.

Throughout the Ideas Bank, existing examples of free and open source digital tech have been prioritised. Whenever a commercially offered product or service has been listed, it is strictly for demonstrative purposes – it is not meant to be an endorsement of one provider over any another, but to give an illustrative example of an interesting use of digital technology for social impact.

There is ample anecdotal evidence that the ideas and initiatives contained in this Ideas Bank have a positive impact, but at the time few robust evaluations or impact assessments have been conducted. Indeed, many are still in their early phases. For this reason, it is beyond the scope of this resource to provide a systematic account of how the ideas in this document compare to similar or related tools, projects and policies.

In some instances, ideas are so novel that evidence of experimental implementation is very scarce, and often no cases can be provided beyond white papers or blueprints for implementation. Nevertheless, the potential impact of such emerging ideas has warranted inclusion of these untested or hypothetical solutions in the Ideas Bank, for the purposes of spreading provocative perspectives and fostering public debate on the challenges to be addressed.

## STRUCTURE OF THIS DOCUMENT

The contents of the Ideas Bank are structured in three conceptual levels or content tiers:

### Tier1

Six **Thematic Areas** or categories of ideas, corresponding to the themes used in the DSI Index: Funding; Cross-sector Collaboration; Diversity and Inclusion; Skills; Infrastructure; and Civil Society.

### Tier2

Between four and six **Policy Ideas** for each Thematic Area. These are abstract descriptions of policies, programmes, actions or concepts that could be implemented to support DSI in any given city.

### Tier3

Between two and five short **Case Studies** for each Policy Idea. These are concrete instances of the idea having been implemented at some location, in the course of an experimental pilot or (when available) as a deployed running service.

Some case studies are at the regional, national or even supranational level, but are nevertheless relevant and adaptable for the local level. Equally, not all are wholly, or even partly, digital and/or social impact-focused, but could feasibly be adapted to support DSI specifically. Most of the case studies have been gathered through desk research of publicly available material.

## TIPS FOR USING THIS GUIDE

- **Context is everything.** Any policy or initiative will need to be adapted for cities' specific contexts - economic, social, geographical, legal, environmental, political, demographic and governmental. Rarely, if ever, will exact replication be possible. Therefore, we encourage readers to think critically about how ideas would need to be changed for their own city.
- **Reach out.** The case studies contained here offer only a snapshot of cities' experiences implementing innovative ideas. If you're considering adapting or adopting an idea from here, we encourage you to get in touch with the city government in question to understand more about their experiences, successes and challenges.
- **Take a holistic approach.** Different themes, and policy ideas within them, exist interdependently. A policy idea may not succeed if other factors are not in place, and all themes need to be supported for DSI to grow and scale its impact.
- **Take a long-term, connected view.** Any policy initiative will have secondary consequences, and they may not always be beneficial. Think carefully and long-term about how any policy initiative might affect different stakeholders in the ecosystem and whether it could have negative consequences for the ecosystem, DSI initiatives or - most importantly - citizens and society.
- **Build partnerships.** City governments have a key role in supporting DSI, but the most successful approaches are those which bring together different stakeholders: different levels of government; businesses; civil society; universities; and citizens.
- **Work across government.** Policy to support DSI should not be pigeon-holed within a "business support", "social innovation" or "technology" department, but rather sit across all departments and functions of government. We encourage senior leadership teams to embed a "culture of DSI" across governments and to break down silos wherever possible.



*“In a democratic city, technology should serve to digitally empower citizens, to protect their privacy from abuses by the public and private powers, to fight against corruption and to advance towards a more equitable and sustainable economy. That has a name: conquering technological, digital sovereignty, for the common good”*<sup>1</sup> (Gerardo Pisarello, Deputy Mayor of Barcelona City Council)

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*“Today, citizens have little say in how their data is gathered or used. Data is accumulated in the hands of few online platforms that profit from its value, helping them to secure control over the digital economy. Immense power has been shifted to just one sector of society as a result. We need a new Social pact on data, together with decentralized, privacy-enhancing and rights preserving digital infrastructures. In this way we can use data to create public value, making sure that the digital society is a right for the many and not a privilege for a few”*<sup>2</sup> (Francesca Bria, Chief Technology and Digital Innovation Officer of Barcelona City Council)

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*“Innovation may be much less important than effective implementation of existing ideas or adoption of ideas from elsewhere”*<sup>3</sup> (Geoff Mulgan, Chief Executive of Nesta)

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# FUNDING

## MATCHED CROWDFUNDING

Matched crowdfunding is the process by which public, institutional or corporate funding is combined with smaller donations raised from the public on online platforms. For example, if the crowd donates €1,000 to a specific project, the match funding institution will also provide €1,000, thus increasing the total project budget to €2,000.<sup>4</sup>

Research by Nesta has shown a wide range of financial and non-financial benefits from matched crowdfunding, including leveraging additional funds, increased success rates, bringing in new supporters, improving skills in participating organisations and boosting volunteering.

More broadly, matched crowdfunding enables a new paradigm of public support for community initiatives – transparently engaging society in the selection of the projects to be funded, but also enticing citizens to ‘put their money where their mouth is’ by requiring them to become co-responsible for funding proposals they deem worthy of public support. In many jurisdictions, donations to not-for-profit crowdfunding campaigns are partially tax-deductible, giving an extra boost to the attractiveness for donors to this funding mechanism.<sup>5</sup>



## Goteo.org's matched crowdfunding programme

### Spain

Goteo Foundation has been working with public institutions since 2014 with a view to opening and improving their processes for funding projects and assigning resources. Matched crowdfunding is the practice that allows Goteo to take co-responsibility, a key part of Goteo's DNA and mission, to its maximum expression.

Goteo's matched crowdfunding programme has collaborated with city councils including

Madrid, Donostia, Barcelona (with Barcelona Activa) and the Hague, and provincial/regional administrations including Gipuzkoa, Euskadi, Andalucía and Catalunya.

**Website:** <http://fundacion.goteo.org/blog/matchfunding-crowdfunding-bajo-el-principio-de-corresponsabilidad?lang=en>



## Nesta's Arts & Heritage Matched Crowdfunding Pilot

United Kingdom

Between 2016 and 2018, Nesta launched two campaigns on UK-based platform Crowdfunder to help fund projects from individual artists in England and heritage organisations in the North West, South West and Scotland. The co-funding institutions were not city governments, but rather publicly-funded bodies, the Arts Council England and Heritage Lottery Fund.

An analysis of the programme found that the £251,500 in match funding provided by Arts Council England and Heritage Lottery Fund as part of the pilot helped leverage an additional £405,941 from the crowd of 4,970 backers.

**Website:** <https://www.nesta.org.uk/project/arts-and-heritage-matched-crowdfunding-pilot/>



## RootProject, blockchain-based crowdsourced fundraising

United States

RootProject uses blockchain to bring the power of markets to non-profit fundraising. Their crowdfunding platform facilitates a new form of campaign design that maximises rewards to supporters and beneficiaries, creating replicable and recurrent paths to funding.

RootProject aims to create a decentralised ecosystem that uses a token to provide full crowdsourced solutions, not just crowdfunding. This would enable non-profit community projects to be created, governed and funded by the crowd.

The model aims to reward both supporters and beneficiaries. While holders of ROOTS

tokens are incentivised to become active ecosystem participants, non-profits enjoy zero fee paths to replicable and recurrent funding. Because RootProject directs a percentage of all funds raised to the purchase of ROOTS tokens on the open market, all campaign contributions go directly to the non-profit organisation.

While the project has thus far not partnered formally with city governments, there would be a clear role for them as potential co-funders and promoters.

**Website:** <https://rootproject.co/>

## RANDOMISED GRANT FUNDING FOR RESEARCH AND INNOVATION

Funding disruptive innovation is hard because breakthrough ideas often seem counterintuitive at first. Decisions on innovation funding tend to be based on existing knowledge. Slow peer-review evaluation systems have long been considered the most rational way of distinguishing promising proposals from dead-end bids. However, an alternative system for choosing which projects to

fund is increasingly under discussion within the academic community: allocating money randomly. In a partially-randomised system, proposals could be divided into three categories - a top category which are all funded, a bottom category which are never funded, and a middle category where funding is allocated by lottery.

Partially randomised funding of innovation projects holds the potential of reducing known biases, such as the “Matthew effect” (where research undertaken in some locations or entities is favoured for funding over others), or discrimination against researchers based on age, gender or ethnicity. It can also help refocus researcher effort - less on writing extensive proposals that may never be funded, and more on actual research and innovation. As a relatively new reality in the landscape of research and innovation activities, Digital Social Innovation can benefit from such an approach to selecting winning proposals, by increasing the likelihood

of funding bold, think-outside-the-box proposals for creating technology for social impact. It may also be particularly useful in a field dominated by small organisations which rarely have the experience, skills or cash to invest in burdensome applications.

Funding from government is rarely as burdensome as academic funding, but the idea is still very relevant and applicable. Even in less “cutting-edge” funding programmes, it has the potential to tackle (conscious or unconscious) bias and discrimination, and to level the playing field for newcomers.<sup>6</sup>



## New Zealand Health Research Council's Explorer Grants

### New Zealand

The HRC first introduced Explorer Grants in 2013 after consistently seeing highly innovative research applications fail to meet their funding threshold because they were deemed too 'risky' or unconventional. HRC needed a scheme that was fundamentally different to anything else they had offered before to enable them to support these high-risk - but potentially transformative - research ideas.

To attract and fund transformative research ideas, HRC devised an application and assessment process that was similarly innovative: short and anonymous.

Applications are assessed by subpanels within the HRC's Explorer Grant Assessing Committee to see if they meet the criteria of being both transformative and viable. Those researchers whose applications meet the criteria - about 20 per cent of applicants on average - are all equally eligible to receive funding. A random number generator prioritises these applications.<sup>7</sup>

**Website:** <http://www.hrc.govt.nz/funding-opportunities/researcher-initiated-proposals/explorer-grants>



## Volkswagen Foundation's Experiment! – Call in search of bold ideas

### Germany

Volkswagen Foundation's programme is aimed at researchers in science, engineering and life sciences who want to test out potentially transformative and risky research ideas. They are given the opportunity to demonstrate preliminary evidence for a concept's potential during an exploratory phase which is limited to 18 months and up to €120,000. Towards the end of a grant the projects' progress will be presented at the Foundation's 'Forum Experiment!'

A short sketch is sufficient as an application. The foundation is taking a completely new path in the review process. First, the best matching approx. 120-140 proposals are

pre-selected internally. An interdisciplinary jury of scientists evaluates only these anonymous ideas (double blind) and rejects qualitatively insufficient proposals. From the pool of proposals which meet the program requirements and the quality criteria the jury selects the most convincing applications (approx. 15-20 grants). Additionally, the same number of projects is drawn in a lottery (15-20 grants). In this way, ideas which are easily overlooked will get a chance, too.

**Website:** <https://www.volkswagenstiftung.de/en/funding/our-funding-portfolio-at-a-glance/experiment>

## PUBLIC GRANT FUNDING FOR COMMUNITY DSI PROJECTS

Public funding for DSI is one of the most popular and promising methods for supporting the field. It may take the form of traditional grant funding calls, or alternatively as challenges, prizes or awards. Challenges are increasingly being used by governments, philanthropic foundations and the private sector as a means to incentivise

innovation, particularly in areas where the market incentive is not strong. The most successful tend to be mission-oriented with clear scopes and criteria, and provide complementary non-financial support such as advice, business and communication support and networking.



## Barcelona City Council’s “We boost what you do” call

Barcelona, Spain

Impulsem el que fas (We Boost What You Do) is an annual open call for funding from Barcelona’s City Council’s Technology and Digital Innovation Office, via Barcelona Activa, which supports any initiative that has a positive impact on the area and enhances employment, entrepreneurship and business, responsible tourism, new businesses in empty commercial spaces in peripheric neighbourhoods, community economies and digital innovation.

The first and second editions in 2017 and 2018 funded sixteen DSI projects with a total of more than €500,000, including initiatives on social inclusion using open technology, traceable reuse of hardware, digitalisation of local citizen time banks, and neighbourhood data commons.<sup>8</sup>

**Website:** <https://empreses.barcelonactiva.cat/en/web/es/impulsem-el-que-fas>



## The Mayor of London’s Civic Innovation Challenge

London, United Kingdom

The Mayor of London’s Civic Innovation Challenge offered an opportunity for start-ups to work together with leading corporates and public organisations to tackle some of London’s most pressing problems.

It offered a challenge-based approach to incentivise and identify innovative solutions to climate change, access to housing, dementia and isolation among vulnerable Londoners.

The Challenge received over 100 applicants, and a shortlist of 14 were chosen to further

develop their ideas before eight were awarded funding of £15,000 each to jointly test and refine their ideas with a group of public and private sector partners.

While the sums involved were relatively small for a start-up, the Challenge benefited from high-profile backing from the Mayor of London, Sadiq Khan, and worked with a number of high-profile partners.<sup>9</sup>

**Website:** <https://www.civicinnovation.london/>



## European Investment Bank's Social Innovation Tournament

### Europe

The Social Innovation Tournament recognises and supports the best European social entrepreneurs. It is organised in a different country every year to reward and sponsor European entrepreneurs whose primary purpose is to generate a social, ethical or environmental impact.

All projects compete for the General Category and Special Category 1st and 2nd Prizes of EUR 50,000 and EUR 20,000 respectively. Projects are typically related to combating unemployment, marginalisation of disadvantaged communities and promoting access to education in a wide range of fields, from education and health care to the natural or urban environment,

using new technologies, new systems, and new processes.

The tournament runs in two rounds. A selection committee comprised mainly of EIB Group experts in innovation, the environment, and other relevant disciplines selects 15 finalists. The finalists are invited to a mentoring bootcamp to provide them with the necessary guidance to finalise their proposals. At the final event, all the finalists have to present and defend their project to a jury of social innovation specialists.

**Website:** <https://institute.eib.org/whatwedo/social-2/social-innovation-tournament-2/>



## Amsterdammers, make your city! Challenge

### Amsterdam, The Netherlands

The 'Amsterdammers, Make Your City!' challenge is a learning and development project that targets local initiatives which contribute towards innovation in the city. The challenge provides financial support, and a social innovation learning program, that guides bottom-up initiatives in creating a sustainable ecosystem of Amsterdam innovators in each neighbourhood. The project was implemented in 2017 with the cash prize attached to Amsterdam's award by the European Commission as the European Capital of Innovation (ICapital).

The project calls Amsterdammers to participate in the challenge by sharing their city-making practices. Thirty-seven initiatives were selected to take part in the

final development scheme, which offers a six-month learning programme on the topics of strategy and project organisation, communication and funding. This is coupled with the chance to win funding and participation in the network of the Amsterdam City Council, Amsterdam Economic Board and Amsterdam Smart City. The impact of the project is to create new connections and collaborations between bottom-up initiatives and the knowledge institutions, industry and government, that together can create a new cooperative model for innovation.<sup>10</sup>

**Website:** <https://maakjestad.amsterdam/>



## Open Knowledge Foundation's Prototype Fund

### Germany

The Prototype Fund is a public program run by Open Knowledge Foundation Germany with funding from the federal government. It that focuses on emerging challenges and radically new solutions. Individuals and small teams can apply for funding to test their ideas and develop open source tools and applications in the fields of civic tech, data literacy, data security and more.

Self-employed developers and small teams who live in Germany can apply for funding. Teams have 6 months to implement their

idea from the first concept to a prototype, and their results must be made publicly available under an open source license.

Each project is backed with a maximum of 47,500€, coaching from experienced mentors, and collaboration within an exciting network. From 2016 through 2020, there will be eight funding rounds. Each round, the Fund can support up to 25 innovative open source projects.

**Website:** <https://prototypefund.de/en/>

## SOCIAL AND IMPACT INVESTMENT

Social and impact investment covers a broad range of funding mechanisms which seek both financial return and positive social or environmental impact. It can take many forms, including equity, repayable loans, social impact bonds, community shares and quasi-equity, and can be accessed by charities, social enterprises, community organisations

and cooperatives.

While more established in developing markets and areas like renewable energy, basic services, micro-finance and sustainable agriculture, impact and social investment is growing in both mature markets and organisations developing digital services and products.<sup>11,12,13</sup>



## Nesta Impact Investments

### United Kingdom

Nesta Impact Investments is a £17.6m fund investing in life-changing innovations that help tackle the major challenges faced by older people, children and communities in the UK. The entity's purpose is to invest in high impact social ventures with a mission to solve major social challenges and improve the lives of millions of people, as well as growing sustainable and scalable businesses, and focuses (albeit not exclusively) on organisations using digital technology.

Nesta Impact Investments is managed

by Nesta's fund management arm Nesta Investment Management, with funding from Big Society Capital, Omidyar Network and Nesta itself. The fund launched in November 2012 and aims to make a total of 15-20 investment over its life.

Nesta Impact Investments places importance on evidence and impact assessment, working with all its investees to rigorously evaluate their interventions.

**Website:** <https://nestainvestments.org.uk/>





## European Investment Bank Group's Social Impact Accelerator

### Europe

The Social Impact Accelerator (SIA) is the first pan-European public-private partnership addressing the growing need for availability of equity finance to support social enterprises. SIA is a first step in the EIB Group's (European Investment Bank and European Investment Fund) strategy to pioneer the impact investing space and respond to the wider EU policy aim of establishing a sustainable funding market for social entrepreneurship in Europe. This segment of the business world is becoming increasingly instrumental in promoting

social inclusion, providing alternative sources of employment for marginalised social groups, and contributing to growth.

SIA reached its final closing in July 2015 at the size of EUR 243m, combining resources from the EIB Group and external investors, including Credit Cooperatif, Deutsche Bank as well as the Finnish group SITRA and the Bulgarian Development Bank (BDB).

**Website:** [https://www.eif.org/what\\_we\\_do/equity/sia/index.htm](https://www.eif.org/what_we_do/equity/sia/index.htm)



## UK Government's Life Chances Fund

### United Kingdom

The Life Chances Fund (LCF) is an £80m fund, committed by the United Kingdom's central government to help people in society who face the most significant barriers to leading happy and productive lives. It provides top up contributions to outcomes-based contracts involving social investment, also known as Social Impact Bonds (SIBs). These contracts must be locally commissioned and aim to tackle complex social problems.

A specific mechanism of social impact investing, SIBs are an attempt to bring together public, private and voluntary sectors to tackle entrenched social problems. They are a commissioning tool that can enable organisations to deliver outcomes-based contracts and make funding for services conditional on achieving results.

Social Investors pay for the project at the start, and then receive payments based on the results achieved by the project.

A social impact bond is not a bond per se since repayment and return on investment are contingent upon the achievement of desired social outcomes; if the objectives are not achieved, investors receive neither a return nor repayment of principal. Rather, they are multiparty contracts between governments seeking financial support for innovative programs and policies and funders with money to lend them. These contracts include incentives and safeguards to make it more likely that the parties will fulfil their obligations.<sup>14, 15, 16</sup>

**Website:** <https://www.gov.uk/government/publications/life-chances-fund>

## PUBLIC PROCUREMENT OF DSI

The public sector has an important role supporting DSI to grow and scale, accounting for 14 per cent of EU GDP and with a dominant position in many fields where DSI shows most promise (e.g. healthcare, education, employment support). At the same time, DSI can help public services to become more efficient and to involve citizens as co-creators rather than just users of services.

Some public administrations are getting better at procuring from social economy organisations and civil society, through integrating social concerns into procurement processes (for example, mandating living wages for employees,

considering environmental impact or rewarding inclusion of disadvantaged groups). There are few examples of such approaches being used in the context of DSI, but undoubtedly there is potential.

Governments can also actively choose DSI in procuring services, for example rewarding or even mandating open approaches. Some governments may band together with other public administrations to procure together digital technology, which may bring the cost down for digital services – a particularly attractive option in the case of open-source software.



### UK Social Value Act, social clauses in public procurement of digital services

#### United Kingdom

The Social Value Act was passed by the UK parliament in 2012, and calls for all public sector commissioning in England and Wales to factor in economic, social and environmental well-being in connection with public services contracts; and for connected purposes.

Social value is defined as “the benefit to the community from a commissioning/procurement process over and above the direct purchasing of goods, services and outcomes”. This flexibility is meant to give commissioners and procurement officials the freedom to determine what kind of additional social or environmental value would best serve the needs of the local community as well as creating an opportunity for providers to innovate.

The UK government also ran an Awards programme to recognise and celebrate good practice in commissioning and providing social value. A separate award by the same name is now led by the Social Value Portal.

As of May 2019, the UK government is consulting on a beefed-up approach which will require central government departments to take account of social impact as part of the award criteria, where the social impact is linked to the subject-matter of the contract and proportionate to what is being procured.

**Website:** <http://www.socialvaluehub.org.uk/>



## Italy's Digital Administration Code, mandating procurement of open source software

### Italy

City governments can save money and show a commitment to the principles of DSI by developing and commissioning open-source software. In Italy, from 2018, the Digital Administration Code makes it mandatory for all Municipalities (and other Public Administrations) to make their commissioned and modified software open-source, and to make a comparative evaluation before acquiring new software, to check that a

similar product is not already available, issued by other Public Administrations or available with an open source license. The Developers Italia website has been set up to catalogue such software, accompanied by descriptions and links to source code.<sup>17</sup>

**Website:** <https://teamdigitale.governo.it/en/projects/cad.htm>



## EU Innovation Procurement Handbook, supporting collaborative public procurement

### Global

The term cooperative procurement encompasses various modalities of cooperation between public buyers. Cooperative procurement in general and, in particular, using permanent structures such as central purchasing bodies, has several features that facilitate innovation procurement.

First, they make it easier to engage professional staff that has the expertise to articulate specialised and complex needs, to engage with the market in a structured way and design procedures that will lead to innovation. Second, they bring about economies of scale which are necessary to create first markets for innovative products

and services. And third, they enable innovative solutions to have greater impact as each solution can be deployed by different public buyers.

Cooperative procurement can also take less structured forms, such as public buyers' networks and associations of public buyers that join forces on an ad-hoc basis to implement a specific innovation procurement together, organise exchanges of good practices and mutual learning.

**Website:** <https://ec.europa.eu/transparency/regdoc/rep/3/2018/EN/C-2018-3051-F1-EN-MAIN-PART-1.PDF>



## Provenance.org, blockchain-based platform to trace the ethical sourcing of electronic products

London, United Kingdom

Provenance is a digital platform that empowers brands to take steps toward greater transparency, operated by a London-based social enterprise. With their software, businesses can easily gather and present information and stories about products and their supply chains, including verified data to support them. By connecting this information to things - in store, on pack and online, citizens and public procurement officials can discover the origin, journey and impact of the products they buy.

In 2016, Provenance proved its ability to work with global supply chains via an international pilot tracking tuna from Asilulu, Maluku through the Southeast Asian fishing industry. In the same year, Provenance also began working with the Co-op while iterating a plug and play product with

smaller brands and retailers. In August 2017, Provenance software was used to verify digital fair pay for coconut farmers in Indonesia.

Although not yet attempted, city governments could use the platform to experiment with guaranteeing that their procurement of digital infrastructures and devices is ethically and environmentally sustainable, by certifying that the components are sourced from providers which comply with ethical and labor standards.

**Website:** [www.dropbox.com/sh/eshn8mg3pxbtj2y/AAA\\_9XZti3XE7SfrRb1XN5WGa?dl=0&preview=Provenance+Overview+-+2018.pdf](https://www.dropbox.com/sh/eshn8mg3pxbtj2y/AAA_9XZti3XE7SfrRb1XN5WGa?dl=0&preview=Provenance+Overview+-+2018.pdf)



# COLLABORATION

## NETWORKING AND COMMUNITY-BUILDING OPPORTUNITIES

DSI depends on open innovation ecosystems, with cross-sector collaboration at its heart. Public administrations can facilitate such exchanges by providing venues and events in which the community can engage in networking and peer learning. These can be spaces not just for practitioners and researchers to meet and

exchange ideas, but for them to mix and mingle with public officers, politicians, students and citizens.

These networking opportunities can also help raise awareness of DSI among “unusual suspects”, in turn widening societal participation, integrating DSI into untapped sectors and ultimately boosting impact.



### Maker Faire, open digital fabrication events

#### Global

Maker Faire bills itself as the “Greatest Show on Earth,” a celebration of makers and the maker movement, a showcase of the innovative-in-the-making. Maker Faire is the best evidence of the power and reach of digital fabrication — all around the globe.

The Maker Movement embraces innovation, creativity, and learning to improve communities and create a better future. At the heart of the movement is the understanding that making is uniquely human. As people learn to develop projects, they become innovators, makers of change.

Makers exist to help more people participate so that they can acquire the tools and expertise necessary to make their ideas

become real. The first Maker Faire was held in 2006 in the

San Francisco Bay Area. In 2016, there were nearly 200 editions around the world with four of the events drawing at or above 100,000 people in San Mateo, New York,

Rome and Shenzhen. Many city councils (such as Turin, Rome, Paris or Barcelona) support these festivals by partly subsidising their budgets, often on condition that the event is open for citizens and that the activities taking place have a relevance for the city’s current challenges (i.e. education, mobility, environment).

**Website:** <https://makerfaire.com/>



## The Unusual Suspects Festival, bringing together unlikely connections for social change

### Global

The Unusual Suspects Festival is all about conversations that connect across our differences. More than ever, we need conversations that nurture empathy and understanding. The Festival provides a safe space for unlikely suspects to come together to discuss, reflect, exchange ideas and challenge each other.

The Unusual Suspects Festival started from a conversation between three organisations. The Calouste Gulbenkian Foundation (UK Branch), Collaborate and SIX saw the need to facilitate serendipity between organisations and people, who would otherwise remain unconnected. The three partners came up with the idea of The Unusual Suspects Festival, a unique set

of collaborative events, hosted by different organisations from a variety of sectors, across different venues in a city.

The first Unusual Suspects Festival 2014 took place in London bringing together diverse organisations and people to work on shared challenges through collaboration, and has spread to Glasgow, Northern Ireland and Seoul ever since.

While the project has thus far not partnered formally with city governments, there would be a clear role for them as potential co-funders and promoters.

**Website:** <https://theunusalsuspectsfestival.com/>



## re:publica, Internet and digital society conference

### Berlin, Germany

re:publica Berlin is Europe's largest internet and digital society conference, with almost 20,000 participants from 80 countries at the 2018 edition. Re:publica is particularly well-known for the range of participants involved, the inclusivity of speakers (50 per cent women), its crowdsourced programme, and its active visitor participation.

The 2019 edition was organised with partners from the private sector, civil society and government. Partners from the latter category included the German Federal Ministries for Environment, for Foreign Affairs, for Food and Agriculture, and for Economic Cooperation and Development;

and the Berlin Senate Departments for Culture and Europe, and for Economics, Energy and Public Enterprises.

re:publica also works with partners and speakers to hold and take part in new, innovative events, including symposia, "Netzfest" focused at a wider audience and families; and the Federal Foreign Office's "Lange Nacht der Ideen," a major event where 15 cultural institutions across Berlin opened their doors for evening events.

**Website:** <https://re-publica.com/en>



## Expats Spouses Initiative, turning international talent into local strength

Eindhoven, The Netherlands

Expats Spouses Initiative helps the partners of expats to make better use of their qualifications and realize their potential as international professionals. The project began in 2014 when two women with a vision decided to do something to address the disconnect between the expat partner population in Eindhoven and the local Dutch community.

Since its launch, the initiative has taken off at full speed. It has rapidly grown into a proactive network of professionals working together to help men and women start their own business

or find a job that matches their unique qualifications. Expats Spouses Initiative aims to realize the potential of the expat spouse in Eindhoven. It invests in the members of its network by organizing events, training sessions, language classes, and community-building projects. Many of these activities are organized with the intention of encouraging more interaction between internationals and locals in Eindhoven.

**Website:** <http://expatspousesinitiative.org/>

## CITY ALLIANCES

City councils and other local and regional supra-municipal entities may also consider joining any of the existing city associations, networks or coordinating bodies which are debating the role of digital technology in making cities better for citizens. In many instances, the usage of digital technology for social impact can be instrumental to improve societal wellbeing.

By participating in such networks, cities can exchange views on how to best solve pressing urban issues, debate the evidence on the available policy options, and share open digital assets (such as open source software, hardware and platforms).



## Cities for Digital Rights Alliance, a global initiative to put citizens' digital rights at the centre of the policy debate

Global

The Cities Coalition for Digital Rights is a joint global initiative of cities banding together to protect, promote and uphold people's digital human rights. The Coalition was launched in November 2018 by the cities of Amsterdam, Barcelona and New York. Digital rights refer to the human rights that individuals and communities are entitled to when accessing and using the internet and digital technologies. The Cities Coalition for Digital Rights is based on the principle that the same human rights that people have offline must also be enjoyed and protected in the digital society, and builds upon

shared principles to create policies, tools and resources to promote and protect resident and visitor rights online. The Coalition aims to create policies, tools and resources to help advance this effort in alignment with the Charter for Human Rights and Principles for the Internet. The Coalition marks the first time that cities have come together to protect digital rights on a global level.<sup>18</sup>

**Website:** <https://citiesfordigitalrights.org/>





## Declaration of Principles and Commitments of the Sharing Cities

### Global

During the Sharing Cities Summit 2018 forty two large scale cities start a collaboration to deal with the threats and opportunities of the platform economy. The Declaration integrates different viewpoints of cities on the platform economy and updates and expands upon a set of principles established in 2017.

The Declaration covers principles on: the differentiation between platform models; labour rights; inclusion and fairness; public protection; environmental sustainability; data sovereignty and citizens' digital rights;

city sovereignty; economic promotion; and general interest.

Thirty-one cities signed the declaration in November 2018, with eleven more pending. It is hoped that the Declaration will help cities develop a new “contract” in which economic activity, users' rights and the right to live in cities become compatible, and exploit the potential positive impact of platform technologies.<sup>19</sup>

**Website:** <http://www.sharingcitiesaction.net/>



## Eurocities Knowledge Society, supporting cities to ensure an inclusive information and knowledge society

### Europe

Eurocities is the network of major European cities, founded in 1986 by the mayors of six large cities: Barcelona, Birmingham, Frankfurt, Lyon, Milan and Rotterdam. Today, Eurocities brings together the local governments of over 140 of Europe's largest cities and over 45 partner cities, that between them govern 130 million citizens across 39 countries.

Through six thematic forums, a wide range of working groups, projects, activities and events, the network offers members a platform for sharing knowledge and exchanging ideas.

One such thematic forums is Eurocities' Knowledge Society Forum, which supports cities to ensure that all citizens can have access to ICTs and participate in the information and knowledge society and helps public administrations to make the most of the rapid development of new technologies. It currently has four working groups: on Data, Digital Citizenship, Standards and Interoperability, and Urban Digital Foresight.

**Website:** [http://www.eurocities.eu/eurocities/working\\_groups&sector=know](http://www.eurocities.eu/eurocities/working_groups&sector=know)





## International Open Data Charter, accessible, comparable and timely data for all

### Global

The Open Data Charter is a collaboration between governments and organisations working to open up data based on a shared set of Principles. With 69 governments adopters and 49 organizations endorsers, their goal is to embed open data as a central ingredient to achieving better solutions to the most pressing policy challenges of our time. Their vision is a world in which governments use openly available, well-managed data to respond effectively and innovatively to their most pressing policy

challenges, and get the best deal for their taxpayers.

The IODC supports reformers in government and their partners to prioritise opening up and using quality data to help address globally relevant problems, and to develop a trustworthy data governance framework to achieve this goal.

**Website:** <https://opendatacharter.net/>

## LOCAL COLLABORATIVE ECONOMY MARKETPLACES

Because of its open and collaborative nature, many DSI projects rely to a greater or lesser extent on volunteers. City councils can set up, fund or support local collaborative platforms to enable sharing of assets, skills and time for social benefit, thus providing a boost

to local teams creating technology for social good. Some such platforms also support experimentation with alternative economic models, such as cashless time-based currencies or circular economy models.



## Origin Protocol, a blockchain-based collaborative marketplace

### Online

Origin is the first peer-to-peer marketplace built entirely on the blockchain. The Origin Protocol provides a simple and powerful open-source JavaScript library for developers to build decentralized marketplaces, allowing buyers and sellers to meet and transact without requiring any trusted intermediaries.

Origin makes it easy to create and manage listings for the fractional usage of assets and services. Buyers and sellers can discover

each other, browse listings, make bookings, leave ratings and reviews, and much more. Harnessing the power of the Ethereum blockchain, listings are managed via a secure and transparent system that acts as a neutral third party. Buyers and sellers share the 20-30% transaction fees that currently go to companies like Uber, Airbnb, Fiverr, and Getaround.

**Website:** <https://www.originprotocol.com/en>



## Community Weaver, online time banking software

United States

Timebanking is a time-based currency. Give one hour of service to another, and receive one time credit. You can use the credits in turn to receive services — or you can donate them to others. An hour of service is always one time credit regardless of the nature of the service performed. The focus of Timebanking is on people's value as human beings. It seeks to connect people through the relationships they create through giving and receiving. It operates in this way as a complement to the prevalent money-dominated paradigm.

Designed to increase our individual and community well-being, Timebanking takes

place through exchanges by members as they give and receive services to each other, or through group and community activities and projects. Members can include individuals, groups and organizations.

Many timebanks use a software program of some sort to allow access and to manage members, transactions, projects and in general allow members to find and communicate with one another and to make arrangements for getting together.<sup>20, 21</sup>

**Website:** <https://timebanks.org/communityweaver3/>



## Live Cities, open source platform connecting challengers and problem owners

Barcelona, Spain

Live Cities is a mobile-first platform that enables open innovation by connecting resources, data and technology around people to nurture ideas and carry out projects in a digital collaboration environment. It provides a tool for different actors of society to share their abilities and

resources to support a community that co-creates. Live Cities promotes active citizenship as it encourages citizens to engage actively in open city innovation activities and projects.<sup>22</sup>

**Website:** <http://livecities.io/>



## eReuse.org, bootstrapping local and autonomous platforms for a collaborative and circular consumption of electronics

Catalonia, Spain

Ereuse.org is a community formed by activists, local groups, researchers, universities, educational centres, businesses, social economy entities, institutions and, in general, all persons and entities that promote the economy of reuse and recycling of electronics. The members have the goal of extending product life through repair, refurbish, and reuse. Its partners are organizations that promote social awareness about the social and environmental impact of electronics, social labor, zero waste, circular economy, fair electronics, the right to repair, the reduction of the digital divide, and social inclusion.

The entities federated to ereuse.org recondition and resell used devices such as mobiles, laptops or desktops. The members also create open, local and autonomous reuse platforms that brings automation, traceability and auditability in all the steps

in the life time of devices with the aim of efficiently implementing the circular economy in electronics. In cities, city councils deliver device surpluses to ereuse.org members with great effect in creating inclusive jobs, starting or accelerating efficiency and scaling up formal, scalable and sustainable reuse platforms with great environmental, social and economic benefit. Members and partners develop and share resources to support the process of reuse, especially to ensure the chain of custody, final recycling and measurement of the impact generated with reuse.

Ereuse.org was launched in 2015, as a project under Pangea.org, a private, independent non-profit organization founded in 1993 to promote the strategic and environmental use of ICT.

**Website:** <https://www.ereuse.org/>

## INNOVATOR-IN-RESIDENCE PROGRAMMES

Innovator-in-residence programmes are capacity-building mechanisms which place an innovator in an environment where such skills are not currently available. In such programmes, a senior professional with a proven track record of carrying out successful innovation processes spends a fixed period of time (weeks or months) 'on loan' at another office's team, often in a public sector administration (i.e. in the education or social services department).

Usually, the innovator-in-residence has the mandate of leading the team through the phases of a pilot innovation process, working on a practical project to search innovative solutions to a current challenge of the government office where she resides. The expectation is that, after the innovator's 'residence' in the office, some of their skills can be transferred to the public staff who have been working together in the project. The public team will have gained valuable innovation experience, making the public sector more dynamic and agile.



## Philadelphia's Innovator-in-residence employee swap programme

Philadelphia, United States

The City's 'Innovator in Residence' program, part of the City's Office of Innovation & Technology, swapped City employees with employees in local businesses about once a week for three hours to help solve problems within each organization.

The pilot program, running for eight weeks in 2015, placed city workers who had attended a

crash course on the principles of innovation, at four institutions across the city (and vice versa): People's Emergency Center, Indy Hall, Philadelphia University, Drexel University.

**Website:** <https://generocity.org/philly/2015/08/18/innovator-in-residence-employee-swap/>



## STIR Startup-in-residence programme, connecting governments with startups to solve government-led civic challenges

United States

Startup in Residence is a program that connects governments with startups to solve government-led civic challenges. 28 local and state organizations across North America are addressing resident and organizational challenges through STIR that cannot be easily solved through a traditional procurement process. Almost 80 challenges across areas such as mobility, civic engagement, IoT, resiliency, process improvement, and more are being tackled by startups from around the world.

Over the course of two months, STIR consultants work with government partners to source challenges from various departments with a) a dedicated project

manager b) department-head support and c) allocated budget. Startups from around the world apply to one or more of the government challenges, and work together with government partners to develop a scope of work with objectives for the 16-week residency. Teams collaborate over 16 weeks on user research, design, build, and testing. The project is expected to go to contract if the objectives of the Scope of Work are met and if there is a positive working relationship between team members.

**Website:** <https://startupinresidence.org/program/>



# DIVERSITY AND INCLUSION

## PARTICIPATORY ECOSYSTEM-MAPPING

In most urban settings, the landscape of DSI entities and projects is a fragmented patchwork of very diverse entities, in terms of size, topics, organisational form and geographical location. Very often, people working on the same topics in the same area do not know each other's progress, leading to inefficiencies and multiplication of effort. To address this problem, public administrations can engage their communities in participatory mapping, launching a collaborative effort in which innovators map their own interests, challenges and best practices. Coupled with good

outreach efforts, this mixture of top-down and bottom-up approaches can ensure even very low-level activity, especially that carried out by under-represented groups, can be surfaced.

The aggregation on this information gives public administrations a rich knowledge on their local innovation ecosystem, potentially leading to more tailored public support policies. The local DSI community benefits as well, gaining a resource which helps them in tracking like-minded local partners and striking mutually beneficial collaborations.



### Civics.cc, open-source civic innovation map

#### Latin America

Civics.cc is the first civic innovation map to be developed on a daily basis by citizens from across Ibero-America. It is a digital, self-mapping tool in geolocated address book format, where anyone can find and add civic innovation initiatives and events.

Civics.cc highlights the spaces, projects and citizens who make cities vibrant environments of new possibilities. The spaces that appear on the map show the existence of a vibrant city that is often

made invisible. Spaces and projects that aim to highlight the power of critical, active citizens who have created new environments of possibility, through self-management and participation. The platform is firmly committed to the opportunity generated by a citizen-built map as a mechanism for openness and encounter; a map which, by mapping, generates social impact.

**Website:** <https://civics.cc/en/#!/iniciativas>



## Digitalsocial.eu, open source platform to explore Europe's growing network of digital social innovators

### Europe

digitalsocial.eu, developed by the EU-funded DSI4EU project, allows users to showcase their work through project and organisation profiles, and tag their organisations as part of networks like research alliances or membership bodies; explore the DSI community in detail through a searchable database and data visualisation; identify funding and support opportunities, as well as DSI-related events, across Europe; and find inspiration and stories of DSI through case studies, blogs and research.

All of the non-personal data on the digitalsocial.eu platform is open and accessible, and the source code behind the platform and data visualisation is freely available open-source on GitHub. As a result of this, it has spread within and beyond Europe: Barcelona has developed a DSI4BCN programme based on DSI4EU, while an Australian version, DSI4AU, was launched in 2016.

**Website:** <https://digitalsocial.eu/>

## COLLABORATIVE POLICYMAKING

Municipal governments wanting to integrate diverse perspectives in the governance of the city can launch programmes aiming at including citizens in proposing, evaluating and improving urban policies. These programmes may have an online component, but key to their success is achieving a strong connection with the communal associations and grassroots activists at the neighbourhood level, thus effectively connecting policymaking with the concerns of residents. Such programmes are often framed in a

context of co-responsibility between public and private urban agents, or on a philosophy of urban commons in which all stakeholders are enticed to contribute to improving the city as a shared resource.

Collaborative policymaking programmes can help local up and coming DSI projects to become more rooted in their contexts, by providing a mechanism by which these digital social technologies can connect with the concerns of the citizens and residents of the city.



## Bologna Regulation on public collaboration, rethinking the city as an urban commons

**Bologna, Italy**

The Bologna Regulation on public collaboration for urban commons is part of the “The City as a Commons” project that started in 2011 in Bologna. The Bologna Regulation is a 30-page regulatory framework outlining how local authorities, citizens and the community at large (SMEs, non-profits, knowledge institutions) can manage public and private spaces and assets together.

The concept of the Co-City situates the city as an infrastructure enabling cooperation, sharing, and participatory decision to-peer

production, supported by open data and guided by principles of distributive justice. A Co-City is based on urban collaborative, polycentric governance of a variety of urban physical, environmental, cultural, knowledge, and digital resources, which are managed or co-owned through contractual or institutionalized public-community or public-private-community partnerships (the so-called commons).<sup>23, 24</sup>

**Website:** <http://co-bologna.it/>



## Lisbon’s BIP/ZIP Program, mobilising citizen energy in the search for urban solutions

**Lisbon, Portugal**

In 2010 the City Council of Lisbon, aware of the urban inequalities in the city, identified seventy-seven Priority Intervention Neighbourhoods and Zones (hereon, BIP/ZIP, original acronym in Portuguese).

The one-year program is a model of participatory government that consists on the development of actions implemented by the civil society itself in the BIPs/ZIPs, with the financial and technical support of the City Council. In these areas there are approximately 150,000 residents, almost one fourth of the city’s population, and they occupy 8% of the territory. Through this program, the City Council is trying to reinforce the socio-territorial cohesion of the municipality by mobilising citizen energy in

the search for solutions that can continue into the future.

The interventions can be related to the improvement of the appearance of the neighbourhood, the creation of services and activities for the community and visitors, the restoration, re-zoning and occupancy of public space, the promotion of the citizenry, the prevention of risk-related behaviour, etc. To date there have been five editions of the program. One of the relevant successes of the program has been the strengthening of a sense of belonging of the residents to these neighbourhoods.<sup>25</sup>

**Website:** <http://bipzip.cm-lisboa.pt/>

## ONLINE CITIZEN PARTICIPATION PLATFORMS

In the last decades, many software solutions have been developed with the aim of involving citizens in democratic participation. These platforms help inform, organize, empower and mobilize citizens and communities, providing online tools to efficiently structure the participation of a very large number of citizens in the day-to-day political processes of city governance. The array of available services and functionalities has grown to be impressive, with dozens

of options ranging from multipurpose online consultations, participatory budgeting or petition making to niche functions such as collaborative redistricting or distributed emergency response.

Such programmes can be effective in promoting and increasing awareness of DSI, as they represent successful examples of using digital technologies for social good.

### **decidim.org, open government and E-participation web software suite**

#### Global

Decidim is more than a digital platform, it is a Free/Open project and infrastructure for participatory democracy led by the Barcelona City Council under the umbrella of the Barcelona Digital Plan. Decidim involves code, documentation, design, training courses, legal frameworks, innovative practices, collaborative interfaces, development, user and facilitation communities, and a common vision. Decidim

helps society self-organize democratically at every scale: it enables citizens, organizations and public institutions (in districts, cities, regions, and beyond) to co-produce strategic planning, run participatory budgeting, construct multitudinous deliberation processes and enact distributed decision-making.

**Website:** <http://decidim.org/>

### **Consul, citizen participation tool for an open, transparent and democratic government**

#### Global

Consul is a comprehensive citizen participation tool for an open, transparent and democratic government. It is used by 90 million citizens in 33 countries, and supported by more than 100 institutions, including the city councils of Madrid, Paris, New York, Lima or Bogotá.

The software is free, customisable and secure, and supports a number of features, such as open debates, citizen proposals, participatory budgeting, online voting and collaborative legislation.

**Website:** <http://consulproject.org/en/>





## Citizen Budget, online budget simulator

United States

Citizen Budget online simulator is a powerful and innovative tool that helps public administrations build better community relations, educate their residents and solicit their feedback on their budget consultations. Unlike a regular survey or a budget visualization software, Citizen Budget is an interactive, not for profit platform that shows the financial impacts of participants' choices in real time, educating them about the trade-offs and constraints faced by their municipality.

The user-friendly and fun budget exercise creates a two-way dialogue between public officers and the community, providing both parties with rich and detailed information. Residents can conveniently access the online budget consultation anytime and at their own pace, making it a clear improvement over public meetings which involve travel, time, childminding and other accessibility constraints.

**Website:** <https://www.citizenbudget.com/>



## District Builder, collaborative redistricting software

United States

District Builder is web-based, open source software for collaborative redistricting.

District Builder was developed by leading redistricting experts at the Public Mapping Project. The software has been designed to provide state or local government agencies, advocacy groups or legislator with affordable,

easy-to-use, customizable redistricting tools that make the redistricting process more open and collaborative across agencies and with the public.

**Website:** <http://www.districtbuilder.org/>



## Ushahidi, helping people raise their voice and those who serve them to listen and respond better

Nairobi, Kenya

Ushahidi, which translates to “testimony” in Swahili, was developed to map reports of violence in Kenya after the post-election violence in 2008. Since then, thousands have used their crowdsourcing tools to raise their voice. Ushahidi is a not for profit social enterprise headquartered in Nairobi that provides software and services to numerous sectors and civil society to help improve the bottom up flow of information. The Ushahidi platform is often used for crisis response, human rights reporting, and election monitoring, with features that enable local observers to submit reports using their mobile

phones or the internet, while simultaneously creating a temporal and geospatial archive of events.

The team believes that if marginalized people are able to easily communicate to those who aim to serve them, then those organizations and governments can more effectively respond to their communities' immediate needs, while simultaneously bringing global attention to their problems through the aggregation of their voices.

**Website:** <https://www.usahidi.com/>

## INCLUSIVE IDENTITY SERVICES FOR RESIDENTS

People can be left out of participation in civic and economic life, and see their access barred to basic services such as healthcare or education, because of their lack of identity documentation which can be trusted and recognised as officially valid by public and private entities. This problem disproportionately affects individuals from the most vulnerable segments of society, such as refugees, migrants, homeless and

members of discriminated minorities such as the Roma people. In recent years, many digital social solutions have been proposed and prototyped to tackle this challenge, often based on blockchain or other distributed ledger technologies.

By procuring and implementing such DSI-enabled inclusive identity systems, city authorities can reintegrate previously excluded people in the fabric of the city.<sup>26</sup>

### **Taqanu, blockchain-based identity services for homeless and indocumented**

**Berlin, Germany**

Taqanu is a globally accessible, secure & self-owned digital identity platform, which provides an access point for financial, government & social services worldwide. Their blockchain based digital identity platform runs alongside a railed attestation network called the Abacus Fabric. The Public Ledger keeps track of all secure identity transactions - to prove identities reliable and ensure trust.

With the mobile application users or others can input identity facts, to be declared,

sourced, audited and proven on the app's attestation network. Users have full control and ownership of their own identity and data. Portability means the user can use their identity profile and selected data, wherever they want, for whatever service they want. Individuals, businesses and government organisations, can now reliably connect and onboard new market participants and clients.

**Website:** <https://www.taqanu.com/>



## uPort, open identity services for the decentralised web

New York, United States

uPort believes everyone has the right to control their own digital identity - how it's shaped, shared and sustained. uPort's open identity system returns ownership of identity to the individual, allowing users to register their own identity on Ethereum, send and request credentials, sign transactions, and securely manage keys & data.

uPort consists of identity and messaging protocols that together form an interoperable identity layer for the

decentralized web. uPort is building a shared identity web of trust. The app can request access to the set of credentials a user has collected from the network. Users can always choose what to share. Modular open-source components, developer tools, and mobile clients help third parties connect with their users.

**Website:** <https://www.uport.me/>



## Iryo, future-proofing interoperability of medical data with blockchain

Ljubljana, Slovenia

Iryo is the world's first participatory healthcare ecosystem built on open standards, zero-knowledge encryption and blockchain access controls.

Iryo creates globally interoperable medical data, allowing patients to take medical histories with them. Zero-knowledge encrypted health data and public blockchain access control allow patients to securely share their medical history. Patients are incentivised to leverage their own medical data to enable cutting-edge research, while

retaining full control over the decision to share personal medical data with researchers and companies.

In 2018, the first deployment of the Iryo System provided a digital health record system for refugee camps in the Middle East, providing the IT infrastructure needed to improve the quality of healthcare for the refugees in their camps.<sup>27</sup>

**Website:** <https://iryio.io/#intro>

## UPHOLD ALGORITHMIC FAIRNESS

Algorithms are increasingly making decisions in place of humans. Algorithms effect the products we buy like insurance, credit cards, and bank loans, and the information we are exposed to like shopping recommendations and news articles. Between bestsellers like Cathy O’Neil’s “Weapons of Math Destruction” and relentless news coverage of tech company data mining, society is beginning to understand that algorithms can bring as much peril as they do promise.

Government is still wrestling with how to regulate private sector algorithms - which are closed, their inner-workings cast as intellectual property. In the public sector, where transparency is expected, the calculus is different. Governments today use algorithms to

dole out subsidies, determine program eligibility, and prioritize the allocation of limited taxpayer-funded resources. While fairness should be at the heart of government algorithms, it’s still unclear how best to referee public algorithms. The fact is that if human decisions are biased, implicit or otherwise, then the algorithms we train from those decisions will also be biased

Given the damaging impacts of basing decision-making processes on biased algorithms, public authorities at all levels of governance have the responsibility to ensure that their use of algorithms is fair and respectful of human rights, either in internal IT systems or via external providers (such as human resource services).<sup>28</sup>



### **New York’s Automated Decision Systems Task Force, public office to investigate algorithmic bias**

**New York, United States**

The New York City Automated Decision Systems Task Force (ADS Task Force) was established in 2018 and is tasked with recommending a process for reviewing the City’s use of automated decision systems (more commonly known as algorithms). Because many City agencies and offices use algorithms to aid their decision-making, and because automated decision systems are becoming more prevalent in all fields, the City is examining ways to ensure these systems align with the goal of making New York City a fairer and more equitable place.

Task Force members include representatives from various government agencies and offices as well as partners from the private sector, non-profit, advocacy, and research communities. The Task Force aims to produce a report in December 2019 recommending procedures for reviewing and assessing City algorithmic tools to ensure equity and opportunity.<sup>29</sup>

**Website:** <https://www1.nyc.gov/site/adstaskforce/index.page>



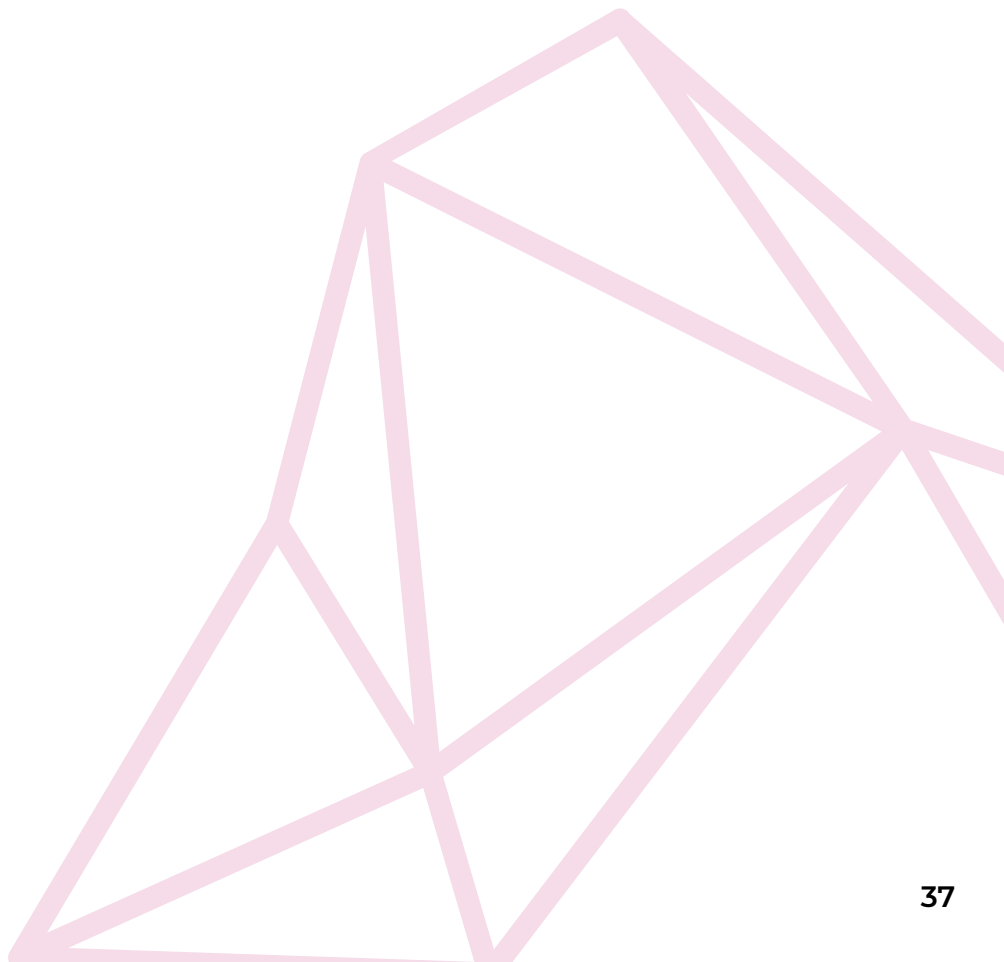
## Flutter, human resources platform with zero recruitment bias

Barcelona, Spain

Flutter is a human resources platform which automates, centralizes and streamlines the candidate testing process. The digital hiring platform that helps companies uncover their best candidates by looking at their skill set, while remove hiring bias. The product is built to reflect the idea that talent has no race,

gender or age, helping employers to make recruitment decisions based on data-driven evidence of what they can do, not on their personal circumstances.

**Website:** <https://www.fluttr.in/>





# CIVIL SOCIETY

## ONLINE PLATFORM FOR FREEDOM OF INFORMATION REQUESTS

Digital Social Innovation thrives in contexts with a strong civil society, where activists, movements and citizen associations can put the power of civic tech to work for a better society. One of the most powerful instruments for holding governments accountable for their actions are Freedom of Information requests, which are citizen-initiated petitions to governments (ranging from the local to the supranational levels) to publicly release information on internal

matters, decisions and procedures. However, it is often difficult for citizens unfamiliar with public bureaucracies to navigate the organisational mazes needed to find the public body responsible for replying to a given request. This has prompted tech activists to build open-source, user friendly digital tools to facilitate such requests, which can be easily implemented by any city government willing to increase its transparency.



### Alaveteli, run your own open-source Freedom of Information website

#### Global

Alaveteli is an open-source platform for making public freedom of information requests to public bodies, built by mySociety.org. It was built to help citizens request information, and view and comment on other people's requests. All requests made through Alaveteli, and their responses are published online for everyone to see.

Therefore, Alaveteli acts both as a useful tool for citizens, and as an advocacy tool for right-to-know campaigners. Alaveteli has helped citizens make over 315,000 Freedom of Information requests in 25 jurisdictions.

**Website:** <https://alaveteli.org/>



## AsktheEU.org, online platform for citizens to send access to documents requests directly to EU institutions

### European Union

AsktheEU.org is a website built by civil society organizations to help members of the public get the information they want about the European Union. The service, maintained by Access Info Europe, a human rights organisation based in Madrid, also makes life easier for EU public officials, as they are less likely to have to answer repeated requests about the same subject: once a question has been answered everyone will be able to find the information stored on this website.

Users can file a request with the EU via the website. The user's email is automatically sent to the correct EU body, which has the

obligation to answer within 15 working days (about three weeks). When the EU replies to the user's request, it gets published on this website and the user initiating the request get a notification. The users get to state whether or not they are happy with the answer, to follow up for more information, or to file a confirmatory application (EU jargon meaning an appeal). Everyone else gets to see the correspondence, so that other users don't need to ask the same question again.

**Website:** <https://www.asktheeu.org/>

## DEBUNKING DISINFORMATION OF FAKE NEWS AND DEEP FAKES

Fake news is a type of yellow journalism or propaganda that consists of deliberate disinformation or hoaxes spread via traditional print and broadcast news media or online social media. Fake news is written and published usually with the intent to mislead in order to damage an agency, entity, or person, and/or gain financially or politically. Fake news undermines serious media coverage and makes it more difficult for journalists to cover significant news stories.

Deep fakes are videos that have been constructed to make a person appear to say or do something that they never said or did. With artificial intelligence-based methods for generating deep fakes

becoming increasingly sophisticated and accessible, deep fakes are raising a set of challenging policy, technology, and legal issues. Deep fakes can be used to intoxicate the political process in ways that are highly disturbing. Candidates in a political campaign can be targeted by misleading news stories and manipulated videos in which they appear to say things that could harm their chances for election.

Fake news and deep fakes can have a profound negative impact in societies, and increasingly, public authorities (including municipal governments) are becoming aware of the need to take active steps to combat the pernicious

disinformation caused by these phenomena. In recent years, a number of approaches have emerged, based on cutting-edge innovations in artificial intelligence and/or on collaborative efforts

enabled by digital technology, to try to counter the negative effects of fake news and deep fakes.<sup>30, 31</sup>



## Lie Detectors, minicourse for students in 'lie detection'

### Belgium

Lie Detectors is a non-profit that helps teenagers and pre-teens learn how to spot and resist the growing volume of manipulative media crowding their Facebook, Instagram and Snapchat accounts as they start to forge an independent world view.

The project aims to turn schoolchildren in Europe aged 10-15 into powerful lie detectors and critical thinkers in a world increasingly populated by propaganda and distorted facts online, empowering them to understand news media, make informed choices and resist peer pressure as they assemble their worldview.

Professional journalists and media experts teach the 90-minute sessions in the presence of a teacher, offering follow-up

material where desired. Sessions include an overview of fake news, methods of testing for misinformation, and analysis of drivers of the fake-news phenomenon. Interactive sections – designed to suit the relevant age group – help children understand how mainstream media selects news and may insert bias to present a picture of reality that is often incomplete. Material for homework or follow-up sessions – where – allows children to develop deeper a understanding of selective storytelling and perspective. All services offered to classrooms are free of charge and aim to reach a broad and diverse range of schools in Europe.

**Website:** <https://lie-detectors.org>





## DARPA's Media Forensics Programme, neural network algorithms for uncovering deep fakes

United States

DARPA's MediFor program brings together world-class researchers to attempt to level the digital imagery playing field, which currently favours the manipulator, by developing technologies for the automated assessment of the integrity of an image or video and integrating these in an end-to-end media forensics platform.

This manipulation of visual media is enabled by the wide scale availability of sophisticated image and video editing applications as well as automated manipulation algorithms that permit editing in ways that are very difficult to detect either visually or with current image analysis and visual media forensics tools. The forensic tools used today lack

robustness and scalability, and address only some aspects of media authentication; an end-to-end platform to perform a complete and automated forensic analysis does not exist.

If successful, the MediFor platform will automatically detect manipulations, provide detailed information about how these manipulations were performed, and reason about the overall integrity of visual media to facilitate decisions regarding the use of any questionable image or video.

**Website:** <https://www.darpa.mil/program/media-forensics>



## Firstdraft.org, global verification and factchecking network

Global

First Draft is a non-profit organisation dedicated to supporting journalists, academics and technologists working to address challenges relating to trust and truth in the digital age. The organisation hosts a global verification and collaborative investigation network through their CrossCheck International initiative, working in partnership with an expanding

community to conduct innovative and experimental research projects, and continuously develop online and offline training designed to expand and embed best practices in newsrooms and journalism schools around the world.

**Website:** <https://firstdraftnews.org/about/>

## ELECTION MONITORING AND DIGITAL VOTING SYSTEM

In many locations, both within Europe and beyond, the real or perceived rigging of elections and manipulation of voting results remains a concern for citizens and political parties. Digital technology can provide reliable open-

source, low-cost solutions to guarantee the cleanliness and inclusiveness of the electoral process, reassuring societies of the value of their active participation in the political process and strengthening trust in democratic institutions.



### Monitonizare Vot, open source app supporting observers and regular citizens to monitor elections

Romania

Monitorizare Vot is a mobile app which supports authorised observers and regular citizens to monitor elections. Observers can use the app to access real-time snapshots of what is going on at polling stations and to report on any noticeable irregularities.

The app has three key components: a national mobile app (iOS and Android) through which commissioned observers can easily report back throughout the election day; a platform for NGOs that centralises the

reported information in real time; and an online platform that allows voters to report voting irregularities.

Monitorizare Vot is the first app of its kind to be developed and used in Romania and one of the few used in Europe and worldwide. The app won the award for Civic Behaviour and Public Participation at the Romanian Civil Society Gala in June 2017.

**Website:** <https://monitorizarevot.ro/>



### Followmyvote, open source blockchain-based secure and transparent online voting

United States

Follow my Vote provides a cryptographically secure voting process to ensure that each voter is issued the correct ballot without their identity being tied to their vote. With the ability to audit the ballot box and watch elections progress in real time, Follow My Vote's platform offers unparalleled electoral transparency.

Using a webcam and a government-issued ID, voters can remotely and securely log in and vote for their desired candidates. After they've selected their candidates, they can

use their unique Voter ID to quite literally open the ballot box, locate their vote, and check that it is both present and correct. Additionally, voters can then watch the election progress in real time as votes are cast. What's more, Follow My Vote's platform allows for an indecisive voter to return to the system and switch his or her votes at any time before the election deadline closes.

**Website:** <https://followmyvote.com/>



## Electronic Registration Information Center, using AI to increase ballot turnout

### United States

ERIC is a non-profit corporation governed by a board of directors made up of public officers from 25 of USA's member-states. Its sole mission is assisting states to improve the accuracy of America's voter rolls and increase access to voter registration for all eligible citizens.

Each member submits at a minimum its voter registration and motor vehicle licensee data. The data includes names, addresses, date-of-birth, last four digits of the social security number. Private data such as date of birth and the last four digits of the Social Security number are protected using a cryptographic one-way hash and then transmitted to ERIC.

Efficient and effective data matching and cleaner voter rolls results in such efficiencies as less returned mail, fewer provisional ballots on election day, shorter lines at polling places, and higher turnout on election day. Since its founding in 2012, the non-profit centre has identified 26 million people who are eligible but unregistered to vote, as well as 10 million registered voters who have moved, appear on more than one list or have died.<sup>32</sup>

**Website:** <https://ericstates.org/>

## INCREASE GOVERNMENT TRANSPARENCY AND ACCOUNTABILITY

Digital social technology can also be instrumental to the efforts of civic activists and democracy NGOs, who can harness the power of open tools to strengthen their role as government watchdogs. With such instruments, potential abuses by members of government (with or without the

knowledge of elected political representatives) can be reported, prosecuted and curbed, thus resulting in a stronger democracy and more accountable public institutions - both being factors which are conducive to a government friendly towards using technology for social good.



## Piata de Spaga, Funky Citizens' online reviewing tool for bribes

Romania

Piata de Spaga monitors the value of bribes through crowdsourced reports. Instead of pinpointing exact cases (which is hard to document and generally should be reported to law enforcement agencies), the site offers bribe value statistics across different public sectors and geographical locations.

In a half-sarcastic mission, the website states that (paraphrasing), bribes are a market like others, and if you know what is the average price for an item, you can try to negotiate it down - which ideally brings bribes to zero over the long run.<sup>33, 34</sup>

**Website:** <https://www.piatadespaga.ro/>



## The Pardonometer, Fundación Civio's open data platform tracking discretionary pardons granted by government

Madrid, Spain

The Pardonometer is an exhaustive data analysis and investigation on the use of governmental pardons in Spain, a discretionary privilege allowing governments to annul convictions regardless of crime without any needed explanations, since 1996. Through data scraping of the pardon announcements in the Official Gazette, the project classifies and visualizes all the discretionary pardons granted to date, allowing readers to quickly and easily filter pardons by type of offense, compare the annual data and check the use made by different administrations of this prerogative.

The Pardonometer is a pioneering data journalism project and an effective tool of accountability and control of public powers. The project has tracked 227 pardons for people convicted of corruption since 1996, the majority of these being crimes of prevarication (secret abuses in the exercise of a public office) and embezzlement of public funds.

**Website:** <https://civio.es/en/pardonometer/>



## Global Leaks, open-source, free software enabling secure and anonymous whistleblowing initiatives

### Global

Global Leaks is an open-source, free whistleblowing software framework intended to enable secure and anonymous whistleblowing initiatives. It empowers anyone to easily set up and maintain a whistleblowing platform, and can help many different types of users: media organizations, activist groups, corporations and public agencies.

Global Leaks is a project aimed at supporting the practice of whistleblowing by giving people the software tools necessary to start their own initiative. The digital tool is internationalized in 30+ languages and used worldwide by more than 1000 projects, such as Barcelona City Council's "Bústia Ètica" (Ethical Mailbox) or Ecuador's "Ecuador Transparente".

**Website:** <https://www.globaleaks.org/>



## Opentender.eu, search and analyse public tender data from 33 European jurisdictions

### Europe

Opentender is a platform allowing the user to search and analyse tender data from 33 jurisdictions (28 EU member states, Norway, the EU Institutions, Iceland, Switzerland, Georgia), developed in the framework of the EU-funded Digiwhist project.

The platform allows the compilation and evaluation of micro-level data using information from individual public procurement transactions and winning

firms' finance and ownership structures. This data can be linked to information on aggregate asset and income declarations data, in order to detect potential conflicts of interest in the system of public procurement, and more specifically, to identify systemic vulnerabilities in the respective legislations and their implementation.

**Website:** <https://opentender.eu/start>



## Prozorro, transparent e-procurement platform

### Ukraine

ProZorro is a hybrid electronic government e-procurement system created as the result of a partnership between business, government and the civil society in Ukraine. It is an innovative public procurement system delivering government services in a stakeholder-focused, transparent, fair and low-cost way. In two years of operation of ProZorro saved \$1.9 billion of budget funds and become a leader in openness of government data on public procurement.

ProZorro is a hybrid open-source electronic system whose main principle is "Everyone can see everything". All invitations to tender are open and digitised, and after bidding processes close anyone can see the submitted proposals, the commissioner's decisions, the qualifying documents, and so on. Modules have been developed to make the monitoring process as accessible as possible.

**Website:** <https://prozorro.gov.ua/en>



# INFRASTRUCTURE

## PUBLIC NETWORK OF DIGITAL FABRICATION LABS

Digital fabrication labs, also commonly known as fab labs, are small workshops offering an array of flexible computer-controlled tools and the knowledge to operate them, which users can use to create smart devices for themselves and others. An approach which urban authorities can follow to ensure that all citizens have access to the skills and resources needed to be part of the maker movement is setting up, or

facilitating the deployment, of a freely accessible network of digital fabrication labs in their cities.

In contexts where it is unfeasible for municipal governments to launch and fund a fab lab programme by themselves, city governments may look for not-for-profit programmes, and engage them in the framework of a city public-private collaboration.<sup>35</sup>

### **Barcelona Public Fab Lab network, digital fabrication to encourage citizen social innovation**

**Barcelona, Spain**

The Barcelona Public Fab Lab Network (locally called Ateneus de Fabricació) is a public service that showcases the technology and science of digital fabrication to help citizens learn, work and collaborate, in order to turn ideas into reality while transforming their environment and contributing to social development. The service is operated by Barcelona Activa, under the Barcelona Digital Plan led by the City's Technology and Digital Innovation Office.

The Fab Lab programmes are aimed at fostering and promoting making, local

manufacturing and social innovation among the general public, so that they can develop new ideas to improve their own and others' lives and surroundings. Alongside access to machines themselves, members of the public can access educational opportunities and learn new skills. There are currently three Public Fab Labs in operation in the city of Barcelona, with two more to be opened shortly.<sup>36</sup>

**Website:** <http://ajuntament.barcelona.cat/ateneusdefabricacio/>



## Orange Foundation's Solidarity Fab Lab Programme, international digital education programme

### Global

Orange Foundation's Solidarity Fab Lab programme supports 88 digital fabrication projects in 16 countries in Europe, the Middle East and Africa. Solidarity Fab Labs work alongside youth support charities, with training and on-site facilitation provided by FabManagers, volunteers and Orange employees who support the young people.

The programme is designed to offer everyone the possibility of reinventing themselves thanks to newer technologies, organising digital education programmes for

young people ages 12 to 25 who are at odds with traditional teaching methods, with an approach based on doing and sharing. The Solidarity Fab Labs allow them to focus on projects by learning to use 3D printers, digital millers, laser cutters, and more.

**Website:** <https://www.fondationorange.com/The-Solidarity-FabLab-programme-an-international-digital-education-programme>

## COMMUNITY-LED OPEN DIGITAL NETWORKS

In many locations, communities of grassroots activists, digital technologists and neighbourhood organisers are banding together to deploy alternative digital networks based on peer-to-peer networking technologies and inspired by a DIY philosophy. Such networks are self-governed common assets which can be used by citizens, small businesses and

startups to meet their different needs. Governments can promote digital social innovation by backing already existing networks, providing in-kind support and partly subsidising their operations, or facilitating the uptake of successful practices from other environments to their own city.



## The Things Network, low-cost network enabling IoT open innovation

Global

The Things Network is a project dedicated to building a network for the Internet of Things. While WiFi is used in most Internet of Things devices, The Things Network uses a protocol called LoRaWAN which allows devices to talk to the internet without cellular or WiFi connectivity. This means users and developers don't need to worry about protected wireless hotspots, cellular data plans, or spotty WiFi connectivity.

The Things Network provides a set of open tools and a global, open network which enables citizens and entrepreneurs to build IoT application at low cost, with maximum security and ready to scale.

Through robust end-to-end encryption, a secure and collaborative Internet of Things network is built that spans across many countries around the globe. The open network now operates thousands of gateways, providing coverage to millions of people, and allowing developers to build all kinds of value driving applications, from irrigation-monitoring solutions to mobility improvement.<sup>37</sup>

**Website:** <https://www.thethingsnetwork.org/>



## Guifi.net, peer-to-peer commons telecommunications network

Spain

guifi.net is a bottom-up, citizen-driven technological, social and economic project with the objective of creating a free, open and neutral telecommunications network based on a commons model. The development of this common-pool infrastructure eases the access to quality, fair-priced telecommunications in general and broadband Internet connections in particular, for everybody. Moreover, it generates a model for collaborative economic activity based on proximity and sustainability.

guifi.net started in 2004 as a telecommunications technological project in the Osona county (Catalonia, Spain) to solve the broadband Internet access difficulties in rural areas, given the lack of traditional operators to provide services there. By means of radio links built with commodity WiFi routers, the neighbours deployed their own network to interconnect different locations (the so-called nodes) such as houses, offices, farms, public buildings, etc. to be able to access telecommunications and the Internet wherever they needed: at home, at work, in the library, etc.

Considering the access to telecommunications

and to the Internet as a Human Right, guifi.net has the objective of making possible that all the citizens can exercise it and in the most favourable conditions, by means of affordable connectivity at a fair price, without discrimination, whether in urban or in rural areas, making emphasis in easing the participation of those disadvantaged collectives, with less resources or less opportunities to access information technologies, telecommunications and the Internet.

The guifi.net project puts in practice, in the telecommunications sector, a disruptive economic model based on the commons model and the collaborative economy, by means of the deployment of a common-pool network infrastructure and a fair and sustainable economic exploitation.

As of December 2016, guifi.net accounts for more than 32.500 operating nodes, with more than 50,000 people serviced through the commons-based network.

**Website:** <https://guifi.net/en>





## Smart Citizen Kit, enabling ordinary citizens to gather information on their environment

Global

The Smart Citizen Kit uses open source technologies such as Arduino to enable ordinary citizens to gather information on their environment and make it available to the public on the Smart Citizen platform. Local communities can launch a crowd sensing initiative in their neighbourhoods, using Smart Citizen Kits to create local maps

of noise and air quality, raise awareness and find solutions for issues that matter to them. The project also provides the tools and knowledge to foster citizen engagement through participatory data collection, analysis and action.

**Website:** <https://smartcitizen.me/>



## MAZI Zones, DIY toolkit for building local, community wireless networks

European Union

The MAZI project has worked on an alternative technology, dubbed Do-It-Yourself networking, a combination of wireless technology, low-cost hardware, and free/libre/open source software (FLOSS) applications, for building local networks, known as community wireless networks.

By making this technology better understood, easily deployed, and configured based on a rich set of customisation options and interdisciplinary knowledge, compiled as a toolkit, MAZI enables citizens to build their own local networks for facilitating hybrid, virtual and physical, interactions,

in ways that are respectful to their rights to privacy, freedom of expression and self-determination.

MAZI takes the perspective of existing grassroots initiatives, whose goals are social and political in nature, and explores ways that DIY networking technologies can help pursue them.

The MAZI project started in January 2016 and ran until December 2018, funded under the H2020 CAPS initiative.

**Website:** <http://www.mazizone.eu/>

## CITY DATA ANALYTICS OFFICER

An Office of Data Analytics is a model for multiple organisations to join up, analyse and act upon data sourced from multiple public sector bodies to improve services and make better decisions.

ODAs always adopt a shared vision and objectives, sometimes have shared capabilities and resource, often have a range of collaborative working practises, and definitely have a commitment to data analytics. Ultimately, an ODA creates multi-organisational, actionable insight from otherwise siloed information.

An ODA fulfils two essential functions. First, conducting data initiatives:

conducting practical data sharing and data analytics projects. And second, templatising: creating reusable codes of ethics, data standards, legal documents, process guides and open source tools to make future data sharing and analytics projects quicker and easier to deploy.

An ODA is a multi-agency approach, run by and for the public sector. ODAs can be most useful when they bring together datasets from a range of different sources, focus on producing actionable insights from information.<sup>38</sup>



### Barcelona's Municipal Data Office

Barcelona, Spain

The Municipal Data Office (MDO) is a directorate made up of various other directorates and departments that, until recently, have had missions concerning City Council data. The MDO is responsible for the management, quality, governance and exploitation of data relating to Barcelona City Council and all its associated bodies (public and private) that provide services to the general public, setting up a unified point of data governance and management.

The multi-disciplinary office ensures good management and respect for the general

public's digital rights, as well as uses public data to provide information that helps to resolve the challenges facing the city. It also has a role in as providing services for the various municipal units, internal training of City Council personnel, and improving the efficiency and transparency of public policies.

**Website:** <https://ajuntament.barcelona.cat/digital/en/digital-transformation/city-data-commons/municipal-data-office>



## London's City Data Analytics Programme

London, United Kingdom

The City Data Analytics Programme is a virtual hub co-ordinated by the Greater London Authority's (GLA) City Intelligence Team in City Hall. It develops and supports data collaborations across public services in London and forms part of the Smart London Together initiative.

Key objectives of the Programme are to test the policy or service impact of data science, show that data sharing is possible and has tangible benefits, develop data sharing protocols that will be useful in the long term, identify barriers to collaborative working and develop solutions, contributing to the

development of a culture of data-sharing within London. As part of its objectives, the City Data Analytics Programme also supports the analytical capacity and technical development of borough data officers through a 'City Data Academy', ensuring that the data science talent within London's public services teams is used to maximum effect, and that capacity and knowledge from the wider data ecosystem is applied in a way that delivers benefits to all.

**Website:** <https://data.london.gov.uk/city-data-analytics-programme/>



## New York's Mayor's Office of Data Analytics

New York, United States

The Mayor's Office of Data Analytics (MODA) is New York City's civic intelligence centre, allowing the City to aggregate and analyse data from across City agencies, to more effectively address crime, public safety, and quality of life issues. The office uses analytics tools to prioritize risk more strategically, deliver services more efficiently, enforce laws more effectively and increase transparency.

The office's core functions include collaboration with City agencies to

implement data-driven solutions to City service delivery issues; building a citywide data platform to facilitate data sharing; oversight of Citywide Data Projects; and implementation of the City's Open Data Law.

**Website:** <https://www1.nyc.gov/site/analytics/index.page>

## OPEN SOURCE SOFTWARE FOR CITY COUNCIL DIGITAL SERVICES

Open source software can offer many benefits over proprietary solutions, with the elimination of licensing fees, ease of customisation and full control over generated data as commonly cited positive elements. Public policies prioritising open source software can provide a powerful incentive for DSI by demonstrating support for the local open-source community and developers, and paving the way for wider procurement of DSI services by the city government.

However, cities willing to go open source should consider problems with vendor lock-in and the costs of transitioning from proprietary to open source software,

as well as the availability of suitable alternatives to digital products currently used (certified accounting software being a key consideration).

Given the difficulties in going fully open source, a common approach is a phased or partial transition, maintaining a minimum of proprietary software and/or operating systems in a number of IT infrastructures, and selectively installing existing tested and proven open source software. Some cities go further and procure their own innovative open source solutions and platforms, becoming key players in the global open source development community.

### Barcelona City Council's Digital Ethical Standards, an open policy toolkit for cities to develop ethical digital policies

Barcelona, Spain

The Barcelona City Council Open Digitisation Plan defines a process of profound, progressive change in the way the city will develop and offer its services to its citizens, based on an open policy toolkit known as the Ethical Digital Standards. Led by the City's Technology and Digital Innovation Office, it aims for radical improvement in digital public services, including in particular the use of free software, open standards, data sovereignty, developing digital services in an agile manner, and ensuring privacy, ethics and security by design.

This is a decisive change that puts people first in the design of government services and reinforces their digital rights. The City strives for technological sovereignty for full control of its ICT services and infrastructures, and the ethical use of data to be more open and transparent, while delving data sovereignty to citizens. Agile development methodologies will make the City's digital services more effective and by transforming

public contracting, the City will promote innovation in local industry, strengthening small and medium-sized technology companies.

Through the open data and data commons strategies, and the use of free software tools, Barcelona aims to guarantee improvements in transparency and interoperability based on open data formats and a set of interoperable and reusable applications and services, while adopting privacy-enhancing and rights-preserving technologies that protects' citizens' information-self-determination. This will lay the foundations for a people-centric digital future, so that cities can access a policy toolkit that will enable them to develop technologies and platforms based on citizens' rights to bring long term societal innovation.

**Website:** <https://www.barcelona.cat/digitalstandards/>



## Linux, family of free and open source software operating systems

Global

Linux is a free open source operating system (OS) based on UNIX that was created in 1991 by Linus Torvalds. Users can modify and create variations of the source code, known as distributions, for computers and other devices. The most common use is as a server, but Linux is also used in desktop computers, smartphones, e-book readers and gaming consoles, etc.

A distribution of Linux includes the kernel (the central OS component and the bridge between a software application and its data), system utilities, programs and tools for downloading, installing and uninstalling OS updates.

Distributed worldwide under a General Public License (GNU), there are literally hundreds of Linux distributions or “distros” around the world (such as Debian, Fedora or Ubuntu). Many desktop Linux distributions have intuitive graphical user interfaces (GUI), which allow greater ease of use than their predecessors. Objects and data are easily manipulated and have resizable icons, windows, buttons, folders and other features similar to Windows.<sup>39</sup>

**Website:** <https://www.linux.org/>



## Framasoft, degooglize your Internet with 32 open source services

Lyon, France

Framasoft is a network of popular education, which is principally dedicated to free software. It is collaboratively organized around three main issues: promotion, dissemination and development of free software, enhancement of open source culture, and an online platform of open services.

Framasoft offers a collection of over 30 free services online, which are alternative solutions to proprietary applications. Services cover everything from maps to surveys and from image editing to collaborative document editing.

These alternatives are examples of the diversity of available open-source solutions

which can be used for personal or collective purpose. In this perspective, Framasoft is committed to foster their dissemination by publishing tutorials explaining how to install these applications on users' own servers.

Equal access to these applications is a strong commitment: by offering them for free, Framasoft wishes to promote their use to the largest extent, and to give a proof of concept that a decentralized and egalitarian Internet is possible.

**Website:** <https://framsoft.org/en/>

## MECHANISMS FOR ETHICAL OPEN DATA ECOSYSTEMS

Ensuring that data of the city government as well as of the city's residents is being handled in an ethical manner, and that potential uses of such data are controlled democratically, is of increasing concern for city councils and other public authorities. The notion of data sovereignty is gaining traction in the last years, with city councils around Europe championing the cause of citizen data rights.

This requirement for protection of citizen-generated data, though, is also being balanced with the potential benefits of making this data available for open data innovation. As a result, this dual bind is leading to widespread experimentation with new mechanisms, protocols and technologies to make such ethical and democratic management of citizen's data possible, as well of the reuse of such data to spur urban innovation.



### Civic Data Trusts, legal structures to provide independent stewardship of data

Toronto, Canada

A data trust is a legal structure that provides independent stewardship of data. A data trust takes the concept of a legal trust and applies it to data: it is a legal structure that provides independent stewardship of some data for the benefit of a group of organisations or people.

In a data trust, the trustors may include individuals and organisations that hold data. The trustors grant some of the rights they have to control the data to a set of trustees, who then make decisions about the data – such as who has access to it and for what purposes. The beneficiaries of the data trust include those who are provided with access to the data (such as researchers and developers) and the people who benefit

from what they create from the data. The trustees take on a legally binding duty to make decisions about the data in the best interests of the beneficiaries.

As of 2019, civic data trusts are being discussed for implementation in the Quayside Development in Toronto, Canada, which has attracted heavy public scrutiny and debate and debate since been proposed in October 2018 by Google's Sidewalk Labs. Data trusts led by governments, potentially at the city level, also have potential in areas like crime and justice, healthcare and research, as discussed by Nesta.<sup>40, 41</sup>

**Website:** <https://theodi.org/article/defining-a-data-trust/>



## Contracts for Data Collaboration, open legal repositories for strengthening trust, transparency, and accountability

### Global

Data Collaboratives are a new form of contractual collaboration, beyond the public-private partnership model, in which participants from different sectors (in particular companies) exchange their data to create public value.

The goal of the Contracts for Data Collaboration (C4DC) initiative is to address the inefficiencies of developing contractual agreements for public-private data collaboration.

The intent is to inform and guide those seeking to establish a data collaborative by

developing and making available a shared repository of contractual clauses (taken from existing data sharing agreements) that covers a host of issues, including: the provenance, quality and purpose of data; security and privacy concerns; roles and responsibilities of participants; access provisions; and use limitations; governance mechanisms; and other contextual mechanisms.<sup>42</sup>

**Website:** <http://datacollaboratives.org/>



## DECODE Project, giving people ownership of their personal data

### European Union

DECODE is a response to people's concerns about the loss of control over their personal information on the internet. The ability to access, control and use personal data has become a means by which internet companies can drive profits. The project, therefore, explores how to build a data-centric digital economy where data that is generated and gathered by citizens, the Internet of Things (IoT), and sensor networks is available for broader communal use, with appropriate privacy protections.

DECODE aims to create a simple and flexible system of rules - which third parties can use to build applications - allowing

people to decide how their data is used, by whom and for what purpose. The project is conducting four pilots to test this technology in Amsterdam and Barcelona. These trials will demonstrate the wider social value that comes with individuals being given control of their personal data and the means to share it differently.

DECODE is a three-year EU-funded CAPS project, running between January 2017 and December 2019.

**Website:** <https://decodeproject.eu/>



## Barcelona City Council's Data sovereignty clauses, forcing private providers of urban services to publish citizen generated data

Barcelona, Spain

In September 2016, Barcelona City Council embarked on an important digital transformation process announcing that public services must be provided through digital channels from the outset, following new guidelines oriented towards citizens and the use of open standards and open software and in accordance with an ethical data strategy that puts privacy, transparency and digital rights at the forefront. The decision taken by the city government was based on the Barcelona Digital City Plan, a government measure of open digitisation, free software and agile development of public administration services.

One of the key provisions of this Digital City Plan was to introduce data sovereignty clauses in all new public procurement contracts regarding any public services generating citizen data, such as water or energy consumption. This has the effect of forcing private providers of urban services to publish citizen generated data as a data commons, allowing local entrepreneurs and communities to reuse such data to tackle urban challenges.

**Website:** [https://ajuntament.barcelona.cat/digital/sites/default/files/LE\\_MesuradeGovern\\_EN\\_9en.pdf](https://ajuntament.barcelona.cat/digital/sites/default/files/LE_MesuradeGovern_EN_9en.pdf)

## LOCAL OPEN DATA PORTALS

Decades after the launch of the open data movement, most public administrations are committed to opening their data for transparency and further reuse. However, many gaps remain towards an efficient and user-centric provision of open datasets. There are many ways in which governments

can improve the quality and quantity of the open data they supply, facilitating access and easing the task of activist groups and software developers who can develop open data applications which create social and economic value for the local community.





## CKAN, open-source open data portal platform

Global

CKAN is a powerful data management system that makes data accessible – by providing tools to streamline publishing, sharing, finding and using data. It helps public entities manage and publish collections of data. It is used by national and local governments, research institutions, and other organizations who collect a lot of data.

Once the data is published, users can use its faceted search features to browse and find the data they need, and preview it using maps, graphs and tables – whether they are developers, journalists, researchers, NGOs, citizens, or even government staff. CKAN uses

its internal model to store metadata about the different records, and presents it on a web interface that allows users to browse and search this metadata. It also offers a powerful API that allows third-party applications and services to be built around it.

CKAN is open source software, with an active community of contributors who develop and maintain its core technology. CKAN is modified and extended by an even larger community of developers who contribute to a growing library of CKAN extensions.

**Website:** <https://ckan.org>



## Open Data Inception, join 2600+ open data portals around the world

Global

Open Data Inception is a comprehensive list of over 2600 open data portals developed by OpenDataSoft. OpenDataSoft offers an API to clients that are looking to manage open data. The entity discovered it was difficult to locate clean stable data from existing open data portals when generating a new open

data portal. To fill this gap, they created Open Data Inception, which offers a comprehensive list. The portals are geotagged and represented visually using a map interface provided by OpenStreetMap.<sup>43</sup>

**Website:** <https://opendatainception.io/>



## Open by Default principle, making openness the standard for government data

Global

Open by default represents a real shift in how government operates and how it interacts with citizens. At the moment, citizens often have to ask officials for the specific information they want. Open by default turns this on its head and says that there should be a presumption of publication for all. Governments need to justify data that's

kept closed, for example for security or data protection reasons. To make this work, citizens must also feel confident that open data will not compromise their right to privacy.

**Website:** <https://opendatacharter.net/principles/>



## Once-only Principle, governments asking for citizens' and companies' data only once

### European Union

The “once-only” principle in the context of public sector means that citizens and businesses should supply information only once to a public administration in the EU. Public administration offices take action to share this data across borders, so that no additional burden falls on citizens and businesses.

The once-only principle supports the concept of user centricity. It focuses on the reduction of administrative burden of users by re-organising public sector internal processes

rather than making users to accommodate to public sector's internal processes.

In view of its contribution to the realisation of the Digital Single Market in Europe, the European Commission is currently promoting the implementation of the OOP across borders, with two ongoing EU-funded projects related to the OOP – SCOOP4C and TOOP.<sup>44</sup>

**Website:** <http://toop.eu/once-only>



# SKILLS

## OPEN DATA COURSES FOR CITIZENS

In many local open data ecosystems, there exists a gap between the supply of open data offered by public administrations, and the demand of such data. Unless citizens have the effective capacity to use open data to generate community value, availability of open data may not lead to innovations generating positive societal impact. For this reason, offering citizens specialised

data training and support to use open data can be a great way to unlock the potential of open data.

Additionally, making citizens aware of the opportunities, challenges and dangers of data use can also make them more aware of the risks of mismanaging their personal data – thus leading to a more informed and less easily manipulated citizenry.



### Data 101, Buffalo's citizen open data training crash course

Buffalo, United States

Data 101 is the City of Buffalo's data course, geared toward citizens to help everyone learn about data, the open data movement, data visualization, data analysis, and Open Data Buffalo. The city's vision for Data 101 is to cultivate and support a data-savvy public equipped with analytic and technical data skills that can bolster their efforts to create a higher quality of life for their communities, from helping to strengthen neighbourhood improvement grant applications to having a better understanding of what's happening in the city.

Data 101 is a multi-session course, running over six weeks, designed to introduce data

fundamentals and help residents unlock features of the Open Data Buffalo portal to benefit their communities.

Before convening Data 101, the City asked the public to crowdsource the curriculum, so the course would cover information, lessons, issues and topics that are important to the community. It received feedback from local and national data experts, community activists, block club leaders, engaged residents, elected officials, and government employees alike.

**Website:** <https://data.buffalony.gov/stories/s/3kh4-936y>



## Barcelona's Open Data Challenge, promoting open data in local schools

Barcelona, Spain


The Barcelona Open Data Challenge is a pilot competition run by Barcelona City Council aimed at promoting the use of open data published in the Open Data BCN portal. The competition is a project-based learning initiative aimed at secondary school students aged 15 and 16. Through the analysis of their environment, using the data published on the portal and with assistance from their teacher, students are tasked to design improvement proposals to encourage the City Council to think differently about the city.

Students are encouraged to make analyses, cross-check data and make use of the more than 420 datasets available in the municipal catalogue, that contain information on topics such as housing, population, trees, public transport, bicycle lanes, accidents or incidents reported by citizens. The competition

consists of six phases distributed throughout the school year (from October to May), during which time teachers attend various workshops and receive training in Open Data, data analysis, video editing and design and participate in co-creation workshops. The training is aimed at enabling teachers to transfer the skills and knowledge they acquire onto their students.

In the end, each centre chooses a project they feel can represent them for the final public event. The winning project is chosen by a jury selected from the City Council. The finalists present their proposals publicly and are evaluated by City Council staff.<sup>45</sup>

**Website:** <https://opendata-ajuntament.barcelona.cat/en/repte-barcelona-dades-obertes>



## Calling Bullshit, course for data reasoning in a digital world

Washington, Seattle

Calling Bullshit: Data Reasoning in a Digital World is a tongue-in-cheek web-based course created by Carl Bergstrom and Jevin West, professors at the University of Washington in Seattle, to give students the analytical tools and critical reasoning methods needed to navigate a world "saturated with bullshit".

According to the authors, "Bullshit is language, statistical figures, data graphics, and other forms of presentation intended to persuade by impressing and overwhelming a reader or listener, with a blatant disregard for truth and logical coherence. Calling bullshit is a performative utterance, a speech act in which one publicly repudiates something

objectionable. The scope of targets is broader than bullshit alone. You can call bullshit on bullshit, but you can also call bullshit on lies, treachery, trickery, or injustice."

In this course, authors focus on bullshit as it often appears in the natural and social sciences: in the form of misleading models and data that drive erroneous conclusions. The aim is to teach students how to think critically about the data and models that constitute evidence in the social and natural sciences.

**Website:** <https://callingbullshit.org/>



## Tactical Tech Collective, digital security trainings for citizens and public officers

Berlin, Germany

“Me and My Shadow” is a project that helps citizens explore and minimise their ‘digital shadows’: the information traces left behind when using the internet and mobile phones. The project helps citizens control their data traces, see how they’re being tracked, and find out more about the data industry. It won a Deutsche Welle Bobs Award for “most creative” online activism in 2013. Created in

2012 by the Tactical Tech Collective, a Berlin-based non-profit organisation working at the intersection of technology, human rights and civil liberties, the project continues to be actively developed.<sup>46</sup>

**Website:** <https://tacticaltech.org/projects/me-and-my-shadow-key-project/>

## GOVERNMENT INNOVATION LAB

Government innovation labs are specialised units with the mission to promote and lead the creation of innovations for governments. They are usually highly interdisciplinary teams of service designers, business analysts, ethnographers and engineers, and embody an endogenous public innovation capacity which supports all departments of government in becoming

more innovative. Government innovation labs may take different organisational forms, being often embedded in public-private-people partnerships, and can fulfil a number of roles for the public sector—for instance, they can advise on better public policy, pilot innovations in public procurement or public service delivery, or carry out capacity building actions for public servants.



## Paris' La 27e Region, laboratory of public transformation

Paris, France

La 27e Région came into being as the result of a spontaneous initiative on the part of an elected regional official, a dissident consultant and a philosopher of the digital world, all eager to re-examine how public policies are designed and implemented, particularly at regional government level. Their initiative resulted in an alliance with the Association of French Regions (ARF) in 2008, which subsequently grew to encompass other levels of public authorities, including at national level.

Since its inception, the goal of La 27e Région is to play the role of “public transformation lab”. To this end, it mobilizes the capabilities of multi-disciplinary teams composed of designers, idea generators, and social scientists from many fields (ethnography, sociology, participant observation) and

engages in ground-level actions (do-it-yourself projects, adult education actions, etc.). Both these approaches prioritize the concrete experience of users, civil servants and citizens to serve as the starting point for re-examining public policy.

The work of La 27e Région is two-fold. It conducts action-research programs, such as Territoires en résidence and la Transfo to prototype new methods for designing and implementing public policies by engaging in experiments in the field. La 27e Région is also a resource centre set up to build and pool knowledge and know-how, and to encourage peer-to-peer interchanges in the public sector.

**Website:** <http://www.la27eregion.fr/en/>



## Barcelona's iLab, accelerating sustainable and social urban innovation

Barcelona, Spain

The i.lab is Barcelona's urban laboratory to accelerate sustainable and social urban innovation. i.lab has a physical space at Ca l'Alier, the headquarters of urban innovation, but it is much more than that. It is a methodology for transforming the way social and urban services are delivered, openly and collaboratively, with city residents' needs at the centre.

iLab's methodology is structured around urban challenges, a way to meet one of the city's complex needs that requires innovative solutions. A challenge begins with an open question launched by the City Council for discovering new approaches to resolving social and urban problems. Calls for applications are open to individuals and organisations from the private, public, social and academic sectors. Calls are international

in their scope. Eligibility criteria may differ in each call and are specified in the terms and conditions of each challenge competition.

Experts assess the solutions put forward, employing a methodical deliberation process to finally choose the winners. The winning solutions are publicly presented, making the project and its participants more visible to others. i.lab oversees the roll-out of pilot innovation projects with different areas at the City Council and municipal bodies. Successfully developed projects can be built into innovative public procurement processes and rolled out on the market.

**Website:** <https://ajuntament.barcelona.cat/digital/en/digital-innovation/i-lab/about-the-ilab>



## Milan's City of the Future Living Lab, multidisciplinary living lab for city service co-creation

Milan, Italy

The San Raffaele Scientific Institute (HSR) in Milan set up the City of the Future Living Lab to nurture innovation and deploy new e-services through co-creation and open innovation. The design process of services adopted within City of the Future Living Lab is based on three main drivers: Function (satisfying basic needs), Emotion (psychophysical and emotional wellbeing) and Relation (promoting social interaction). In this way, the services created through the collaboration of a large multidisciplinary team, empower users to bring

about positive changes that will improve the way they feed themselves, interact with one another, learn, move about and stay active.

The Lab brings together different disciplines and has access to an environment with over 20,000 daily people over a science park which is almost a compact urban district itself, with a hospital, commercial space, offices, research facilities, housing and a hotel.

**Website:** <http://www.cityofthefuturelab.org/>



## CivTech Scotland, streamlining public innovation with challenge-based procurement

Scotland, United Kingdom

CivTech is the Scottish Government's challenge programme for innovation. The programme pioneers a smarter, faster approach to public procurement to harness entrepreneurial tech innovation and citizen engagement, improving public service delivery, creating economic development opportunities and fostering an entrepreneurial mindset within government.

The team developed the CivTech Innovation Flow in 2016, a six-stage, nine-month process covering challenge definition to delivery of a minimum viable product with ongoing pre-commercialisation support. This model encourages the rapid development of innovative, cost-effective solutions.

CivTech has taken place in 2016, 2017 and 2018, working with Scottish government departments, public bodies, local authorities and the third sector. The team has run 26 challenge-based procurements on behalf of 20 organisations, ranging from improving floor warning capabilities for communities to improving access to NHS data, and from using data to improve social housing standards to enable young people to talk about mental health.

CivTech empowers challenge sponsors to take

a less risk-averse attitude towards procurement and to benefit from exposure to cutting edge thinking and innovation. Phased contract sizes (£3k (Exploration), £20k (Accelerator), <£220k (post-accelerator) with break clauses in the process ensure that any delivery failure is captured early and, if necessary, terminated.

After applying, shortlisted teams work with the Challenge Sponsor for three weeks to refine the solution, during which the sponsor can also assess cultural fit for the candidates. One company is selected for the accelerator and takes part in a four-month accelerator programme with 40 workshops. At the end of this, the sponsor can decide whether to continue the contract. In the latest iteration of the programme, CivTech 3.0, the team has developed an Intrapreneurship Leaders Programme for public servants and boosted citizen engagement at all stages of the process, including involving young people in defining the challenge, developing the solution and commissioning.<sup>47</sup>

**Website:** <https://civtech.atlassian.net/wiki>



## INCUBATORS FOR DIGITAL SOCIAL PROJECTS

Local teams looking to develop and scale DSI initiatives often lack support and advice. A number of incubators and accelerators have been developed to fill this gap, both by governments and other entities (foundations, corporates,

civil society, SMEs). These spaces strive to provide backing to their local digital social innovators, funding places and communities where such innovators can find a nurturing environment to strengthen and grow their enterprise.

### University of Mannheim's Digital Social Innovation Lab, developing business models for digital social innovation

Mannheim, Germany

The Digital Social Innovation Lab (#DSI Lab) focuses on opportunities of digitization for the common good. The DSI Lab Incubator is a Program of the Chair of Corporate Social Responsibility at the University of Mannheim and Social Entrepreneurship BW with the support of SAP. The program is the first project-oriented teaching format in the EU, which enables students to found their own social Start-Ups with a focus on digital innovation. Embedded in the academic curriculum of the Faculty of Business Administration of the University of Mannheim, the program enables students to gain extensive knowledge in the field of social innovation and entrepreneurship

with the help of practitioners and experienced social entrepreneurs.

The incubator is designed to provide an inspiring environment, empowering student to tap on digital technologies to shape projects that drive social impact while creating sustainable revenues. The lab is a hands-on and strongly practice-oriented course, in which students learn how to create and scale a business models for digital social innovation. With the input from industry experts and experienced practitioners, the students will get insights and valuable support along the development of their projects.

**Website:** <https://dsilab.de/>

### InnoBA, Barcelona Social & Economic Innovation Centre

Barcelona, Spain

innoBA is the facility of Barcelona Activa that offers activities, specialised services and incubation and experimentation spaces based around the Social and Solidarity Economy (SSE) and Socio-Economic Innovation. A facility that is aimed both at people and organisations who want to make a first contact with the Social and Solidarity Economy, as well as those who have already started up a project.

innoBA aims to be a pioneering centre of research and best practices in this field, both at a local and an international level. For this

reason it offers basic training in the Social and Solidarity Economy, as well as being a space for developing projects. It is also the centre where various activities take place within the framework of Socio-Economic Innovation.

innoBA is located in the municipal facility of Can Jaumandreu, in the neighbourhood of Provençals del Poblenou (Sant Martí), where it shares the space with the University of Barcelona.

**Website:** <http://w28.bcn.cat/innoba/en/>





## Kiev's 1991 Civic Tech Center, inspiring civic tech startups and community

Kiev, Ukraine

1991 Civic Tech Center is located in the heart of Ukrainian capital to inspire civic tech startups and community with location, space, connections, acceleration programs, events and each other. Civic tech projects are built on the synergy between civic society leaders, government, IT talents and business. The centre aims to tackle pressing governmental challenges, from inefficient public services to bad roads and muddy procurement schemes.

The centre was opened on 8th December 2017 by SocialBoost, the Ukrainian tech NGO

focused on impact projects in the field of open data, civic participation and e-governance, following a \$480,000 grant from Luminate, the philanthropic investment organisation established by eBay founder Pierre Omidyar. The 360 sq. meters community space currently hosts over 50 dedicated civic tech teams and inspires the collaboration between NGOs, IT, businesses and government.

**Website:** <https://www.1991.center/>



## New York Civic Hall, collaboration centre for civic innovators

New York, United States

Civic Hall is a not-for-profit community space where social entrepreneurs, change-makers, government employees, hackers, academics, journalists, and artists can share knowledge, build tools, and solve problems together.

The centre supports a community of action-oriented, cross-sector professionals located in the heart of Manhattan, aiming to better the world through civic tech.

Founded in February 2015, the community has grown to more than 850 members, with

activities focused on signing up individual and organizational members, catalysing connections between them, convening timely and diverse gatherings, nurturing early stage civic start-ups, and serving as a hub for community leaders and policymakers seeking to engage civic activists.

**Website:** <https://civichall.org/>

## DIGITAL EDUCATION FOR CHILDREN AND YOUNG ADULTS

Educational curriculums are in transition everywhere, trying to adapt to the new digital realities of a knowledge society. To tackle the challenge, many innovative programmes are experimenting with ways of embedding digital skills and

competences in the formal education system and in informal educational settings, crafting attractive, fun-packed programmes for children and young adults and nudging vocations in potential future technologists.

### Codeclub, global network of free coding clubs for 9-13 year olds

Global

Code Club is a programme run by the Raspberry Pi Foundation, a registered UK charity. part of a growing worldwide movement that is working to put the power of computing and digital making into the hands of people all over the world.

The educational projects in Code Clubs are free and open to all. They are easy-to-follow, step-by-step guides that young people use to make their own games, animations, and websites with coding languages such as Scratch, HTML/CSS, and Python. The projects

introduce coding concepts one by one and let young people progressively build their knowledge. Adults running the clubs don't need to be experienced coders, and many volunteers in our community enjoy learning alongside their club members.

There are currently over 12000 clubs in over 160 countries, supporting over 180000 young people learning to code each week.

**Website:** <https://codeclub.org/en/>

### Primary Engineer Programme, challenging children to think like scientists and engineers

United Kingdom

Asking “if you were an engineer, what would you do?”, Primary Engineer develops children’s practical maths and science abilities through creative problem-solving activities and engagement with engineering role models. The programme now reaches 60,000 pupils in over 1,000 schools annuals.

Primary Engineer operates a “STEM by stealth” approach - meaning that STEM concepts are applied practically, often in creative and design activities, and in ways that build not only STEM knowledge but literacy, vocabulary, and understanding of

broader issues such as climate change.

The programme has three main activities: the Leaders Award, which engages children directly, challenging them to identify a problem and use engineering principles to address it; professional development courses and resources for teachers; and engagement between children and current engineers through school visits, Skype interviews and Leaders Award events.<sup>48</sup>

**Website:** <https://www.primaryengineer.com/>



## Girls Who Code, supporting girls with the computing skills to pursue 21st century opportunities

United States

Girls Who Code is a non-profit organization which aims to support and increase the number of women in computer science. The organization is working to close the gender employment difference in technology and change the image of what a programmer looks like. The organisation currently offers a 7-week Summer Immersion Program, a 2-week specialized Campus Program, after school Clubs, and a 13-book series.

The aim is to inspire, educate, and equip young women with the computing skills to pursue 21st century opportunities. As of 2019, more than 185,000 girls had been served by the organisation, with more than half coming from historically underrepresented groups.

**Website:** <https://girlswhocode.com/>



## Académia da Código, open bootcamps for inclusive coding literacy

Lisbon, Portugal

Code For All / Academia de Código was founded to reduce skills and income gaps by teaching coding literacy. Starting in Lisbon, it has held a series of 14-week bootcamps that have turned talented people who were out of work or in low-skilled jobs into software developers. More than 50 companies have recruited participants in the bootcamps. Code For All has also developed classroom software that helps teachers with no previous coding

experience to teach kids computer science. Code For All bootcamps are inclusive and open to any Portuguese resident, regardless of gender, nationality and age. The majority of students do not have prior knowledge of computer science or coding.

**Website:** <https://www.academiadecodigo.org/>

## DIGITAL CONTINUING EDUCATION FOR CITIZENS AND JOB SEEKERS

The disruption of old industrial economic models has created a growing paradox in modern societies: the expanding digital economy is permanently in need for skilled professionals in an ever-growing array of new job categories – while at the same time, previously secure jobs are increasingly at risk, if not already obsolete, in other sectors of the economy. Cities can support people who have lost, or are at risk of losing, jobs through capacity building and job retraining programmes, equipping citizens with the skills they need to apply for emerging positions in high demand, potentially in the social sector and working on DSI projects.

Today, 11% of the labour force has no digital skills at all and 37% of people in the labour force – farmers, bank employees, and factory workers alike – lack sufficient digital skills, despite the increasing need for such skills in all jobs. At the same time, shortages of ICT professionals in the EU could reach 500,000 unfilled

vacancies by 2020 if no decisive action is taken. Technology may destroy some jobs and create others, but its greatest effect is transforming jobs and content. On average, just 9% of jobs are at high risk of automation, but at least 70% of the tasks in all jobs could be automated. The big danger is that part of the working population, notably those with low skills, do not benefit from this change, and even worse, are permanently cut off from the labour market and become excluded.

Besides publicly funded programmes, a number of corporate programmes with the same stated goals have been launched in the last years. However, when considering such arrangements, city councils should beware of strings attached – corporate programmes may only offer skills linked to a particular proprietary software or platform, although the skills gained by participants are often transferable to other digital tools.<sup>49</sup>

### Barcelona Cibernàrium, free and public digital tech courses for citizens, professionals and companies

Barcelona, Spain

Cibernàrium is the training and technological dissemination program of Barcelona Activa, the economic promotion agency of the Barcelona City Council. It offers training for professionals and companies, as well as Internet initiation activities for all citizens. The Cibernàrium formula is a wide range of activities of short duration, very practical and on a very specific topic, usually a solution, a concept or a technological tool that helps participants to develop their technological skills and, therefore, their professional training.

Cibernàrium publishes informative materials in different formats: video courses, activity dossiers and multimedia contents. Its programming includes more than 180 different activities, characterized by short duration, practical and innovative content, flexible schedule, and different skill levels to suit all user profiles.

**Website:** <https://cibernarium.barcelonactiva.cat/en/cibernarium?sessionId=5983B4CB49F250635539DE221E1DDB93>



## Fit4internet, improving digital competencies among the general public and employees

Austria

fit4internet is an independent initiative geared at the growth of digital competencies in Austria, with the goal to enable the competent use of digital technologies and the broad participation of society in digitization. fit4internet is organized as a non-profit organization and acts in close cooperation with companies, institutions and organizations as a

platform for increasing digital skills in Austria. Austrians are supported in their efforts to keep pace with the rapid digital transformation and to improve their knowledge and know-how for their personal and professional development through various qualification measures.<sup>50</sup>

**Website:** <https://www.fit4internet.at>



## Luxembourg's Digital Inclusion Project, making job seekers and refugees more employable through free ICT training

Austria

Luxembourg's Digital Inclusion project was set up in 2016, with three objectives: to make IT available to everybody; to promote social inclusion by providing training and access to digital technology; and to contribute to the betterment of the environment by promoting the circular economy.

The project has two main activities. The first is to collect, repair and refurbish used computer and distribute them to asylum seekers, refugees and residents with low incomes. The second is Digi4All, a scheme

that aims to make Luxembourg residents, particularly job seekers and refugees, more employable through free ICT training.

Between 2016 and February 2019, the programme distributed 1,500 re-used computers. In 2018 alone, almost 700 participants received 2,400 hours of training. Around 10 tonnes of electronic material was put to re-use rather than disposed of.<sup>51</sup>

**Website:** <http://digital-inclusion.lu/>



## Poland's Lighthouse Keepers, grassroots universal digital education programme for 50-plus citizens

### Poland


In 2010, close to 13 million Poles lacked elementary digital skills. In response, the innovative “Digital Poland of Equal Opportunities programme” (PCRS), established Europe’s largest grass-roots initiative of universal digital education for people aged 50+.

The project was delivered thanks to nearly 3 000 ‘lighthouse keepers’, local digital champions who introduced over-50s from their own communities to the digital world. Each ‘lighthouse keeper’ received certified training and created a local action plan for

their own initiative, working with NGOs and local authorities.

Activities were carried out using public Internet access points, such as libraries, fire stations, or Internet cafes, rather than through a formal course. In addition to the ‘lighthouse keepers’, the programme mobilised 13 ‘Ambassadors’ who proved essential to get the required political support for such a wide initiative at country level.

**Website:** <https://latarnicy.pl/>



## Hack Your Future, teaching software development to refugees

### Europe

Hack Your Future trains refugees to become full-stack software developers. Their coding school teaches a 6-month web development program to refugees with or without a background in coding. The curriculum is created and taught by a volunteer network of over forty professional developers. They teach the students how to work on projects in a modern tech team, and how to be problem-solvers with digital technology. At Hack Your Future, students learn to think like developers.

Hack Your Future started out in the Netherlands in 2016, and is now active in four European countries. Training refugees in computer programming significantly boosts their chances of fulfilling, long-term employment, and it fills a growing skill gap on many job markets. The Hack Your Future approach has worked in securing that 96% of graduates have gone on to find jobs in the tech industry.

**Website:** <https://www.hackyourfuture.net/>





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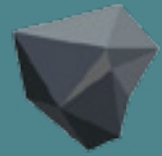


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# DIGITAL SOCIAL INNOVATION



DSI4EU aims to support the growth and scale of digital social innovation (DSI), tech for good and civic tech in Europe through a programme of policy, research and practical support.

Strategic support from city governments can be the key to success for DSI initiatives. This support can take many forms and shapes: enacting and influencing policy, direct funding via grants and prizes, procurement of DSI products to meet internal government needs or deliver innovative urban services to citizens, implementing support schemes and mechanisms, or empowering citizens through skills and inclusion programmes, to name just a few. This Ideas Bank for Local Governments aims to share some of the most exciting examples from across the world, in all their diversity, and to support city governments to adapt and replicate these ideas for their own contexts.

This text was written and edited by Marc Aguilar, Anna Majó, Marc Pérez and Coloma Serra at Barcelona Activa, and Matt Stokes and Codrina Cretu at Nesta. Visit [digitalsocial.eu/open-data-research-and-resources](https://digitalsocial.eu/open-data-research-and-resources) to find the other texts in this series. Read more about DSI4EU at [digitalsocial.eu/about-the-project](https://digitalsocial.eu/about-the-project)

