DIGITAL SOCIAL INNOVATION

DSI FUTURES WORKSHOP

(Barcelona edition)

Contents

Workshop: DSI Futures

Friday 22 February 2019
Fab Lab Barcelona, Carrer de Pujades, 102, 08002 Barcelona
09:00-15:00

Thank you for joining us today at the third of our DSI Futures workshops. We're really excited to have you with us.

Background

DSI4EU (digitalsocial.eu) is an EU-funded project which aims to support the scale and growth of digital social innovation, tech for good and civic tech in Europe. Working with six partners across Europe, we have been carrying out a range of activities including working on research, policy, network-building and practical support for innovators.

Until now, most of our work has focused on the here and now: the current opportunities and challenges for DSI, the current policy outlook, the current landscape.

With our Futures work, we want to look forward, building positive and inspiring scenarios for how our communities, charities, companies and public sector might be harnessing open and collaborative technologies in a decade's time to tackle our biggest social challenges. We want to open up a space for big, creative thinking, to come up with an alternative to some of the doomsday scenarios we're more used to reading about. Most importantly, by imagining what a positive future might look like, we'll be more able to shape it.

We'll be focusing on up to five areas today: healthcare, skills and learning, democratic participation, the environment, and migration and integration. We've brought together a diverse range of people from civil society and government, technologists and researchers, too. We hope that this diversity will facilitate new thinking, new connections and new ideas.

This workshop follows on from two workshops held in London (December 2018) and Berlin (January 2019).

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Agenda

Over the course of the day, we'll be working in groups to come up with ideas for what future DSI projects might look like. These will not just be shaped by new technologies, but also by a range of long-term drivers: evolving social challenges, a changing environment, new economic models, social and geopolitical change.

First, we'll be thinking about the future challenges we'll be facing, and in groups narrowing down to define a specific issue. After the break, we'll be taking a step back to think about the possibilities opened up by new technologies, before bringing the strands together to think about how the specific challenges might be addressed using the new opportunities available to us in a decade. Finally, we'll continue shaping our ideas and present them to the whole group to round off the workshop.

09:00	Arrival and breakfast
09:30	Welcome and introduction
09:50	Exercise 1: Identifying a future challenge
10:50	Coffee break
11:05	Exploring future opportunities (1)
11:20	Exercise 2: Coming up with a solution
12:10	Exploring future opportunities (2)
12:20	Coffee break
12:35	Exercise 3: Developing the solution
13:40	Feedback to group and wrap-up
14:15	Lunch
15:00	Close

Exercise 1: Identifying future challenges (60 mins)

Aim of the exercise

- To introduce you to your groups for the day;
- To define a specific challenge which we might face in a decade's time;
- To explore the challenge in detail;
- To pick out the most interesting bits of the challenge to create a "how might we?" statement;
- To do all this so you're set up for exercises 2 and 3.

Instructions

This exercise aims to guide you towards a realistic specific challenge which we might face in a decade's time. It has three parts to help give structure and milestones.

The exercise will begin with an overview of the exercise from the workshop facilitator (**5 mins**). We will then split into groups, where you should introduce yourselves to each other (**5 mins**) before getting into the main exercise.

1a. Exploring and defining a challenge (20 mins)

AIM: To come up with a specific challenge we might face in a decade.

- First of all, take a piece of flipchart paper.
- Choose a note-taker, who should try to capture the conversation on post-its throughout this section and stick these to the top half of the flipchart paper provided.
- As a group, look at the three trends identified by the wikisurvey as the most important for your social area. These should form the basis of your discussion, although you can of course bring in other trends.
- Think about how these trends might develop over the next decade. How will they affect different aspects of the social area you're working on?
- You should brainstorm ideas and discuss your thoughts with each other. Explore areas of particular interest or commonality.
- You need to quite quickly make a decision: by the end of the 20 minutes you should have reached a really specific challenge.
- Examples of what we're looking for:
    - *Cities are growing faster than infrastructure is being built. Public transport cannot cope with the increase in demand, so more people are using cars – leading to gridlock, pollution and economic loss.*
    - *Thanks to the spread of fake news, society has lost trust in the media to such an extent that almost all media outlets have disappeared or severely weakened. Therefore, people rely solely on social media dn word-of-mouth to know what's happening in the world.*
    - *Private companies are solely responsible for running public services and collect and use data in ways which governments cannot understand or control.*
    - *Falling insect populations have led to food shortages which in turn have led to widespread civil unrest on a regular basis.*

1b. Exploring the specific challenge (20 mins)
AIM: To understand the specific challenge in more detail.

- Take the second piece of flipchart paper and split it into six boxes.
- Choose a new note-taker for this part. They should capture the conversation on post-its in each of the six boxes on the flipchart paper.
- As a group, discuss each of the six areas which are named in the boxes on the A3 canvas. Try to move methodically between the questions, but you may need to go back and forth as the conversation continues.
- In the last 5 minutes, transfer the most important points of discussion onto the canvas.

1c. How might we...? (15 mins)
AIM: To narrow down the challenge further and reframe as an opportunity

- Take the third piece of flipchart paper and choose a new note-taker.
- Thinking about specific aspects of the challenge you have just identified, brainstorm HMW questions. You can do this individually and then discuss, or as a group from the beginning.
- HMW questions should reframe one or several aspects of the challenge as an opportunity. They should not try to encompass the whole challenge. At this stage, they should not mention any technologies.
- Any challenge could have many HMW questions

Challenge (see above)	***Possible HMW questions***
City infrastructure	*How might we speed up the rate of building infrastructure?* *How might we encourage people to drive less?* *How might we help cars get around the city more efficiently?*
Collapsing media .	*How might we revive what is left of the media?* *How might we encourage young people to explore new ways of informing themselves?* *How might we understand better how people are sharing information, particular mis/disinformation?*
Privatisation of public services and data	*How might we gain more insight into private companies' practices?* *How might we protect those who are most at risk of discrimination by private companies?* *How might we raise awareness among older people of how these services now operate?*
Food shortages	*How might we distribute the food we do have more equitably?* *How might we better predict when and where food shortages are likely to happen?* *How might we understand who is most affected and who is involved in the civil unrest?*

- The following questions might also provoke new ideas for HMW questions:
    - Are there any hidden opportunities you can exploit?
    - Are there any "negatives" which can become "positives"?
    - Are there any assumptions you can tackle?
    - Can you challenge the status quo?
- After this discussion, pick **one** HMW question which will form the basis for your DSI project in exercises 2 and 3.

Exercise 2: Coming up with a solution (50 mins)

Aim of the exercise

- To come up with a concept for how your HMW question might be answered
- To understand how technology might help make that response quicker, more efficient or more effective.

Instructions

Now that you have got a specific challenge and a HMW question, this exercise will help you get you thinking about how that challenge - or even just specific aspects of it - might be tackled in the future, and how technology might augment the solution.

- As before, the exercise will begin with a 5 minute intro from the workshop facilitator.
- This exercise is based on an adapted "Crazy 8s" methodology.
    - Each take one piece of A4 paper. Fold it into four.
    - Your table facilitator will set an alarm for eight minutes.
    - In these eight minutes, you should put an idea for how you might answer the HMW question in each of the four boxes. You can include the technology aspect here, but you don't have to. You can draw your idea or write a couple of sentences. Anything and everything is a good idea!
    - After this, get back into groups and spend 15 minutes discussing your ideas as a group. What are the most exciting ideas? Have some of you come up with similar ideas? Where does technology hold the most promise for making ideas more feasible or impactful (we've provided some cards with examples of technologies you might want to consider)?
    - Write as much of your conversation down on post-its as you can and stick to flipchart paper.
    - Your discussion should be aimed towards coming up with one idea to explore in the final session. It just needs to be a preliminary concept. By the end of the session, you should be able to outline this concept at the top of your canvas.

Problem-first, not technology-first!

It's in this exercise that the role of technology really comes through. But you should focus on the best answer to the HMW question first, and only then explore how technology can help.

This isn't about sticking blockchain, AI or VR onto an existing way of doing things; it's about thinking what models and mechanisms might allow us to tackle the future challenge, and only then starting to think about how emerging technologies, or new applications of existing technologies, might boost them.

Go bold!

Think creatively and don't be afraid to put something radical forward. There is no right or wrong answer, and we'd rather you go unrealistic and then pare your idea back than remain within the confines of the here and now.

Exercise 3: Developing the solution (65 mins)

Aim of the exercise

- To refine, design and explore in more depth the concept you came up with in exercise 2, and to go from “concept” to “project”.

Instructions

You’ve now defined a challenge, a HMW question, and a concept for answering the HMW question. You’ve also thought about how technology will allow that idea to be implemented more quickly, effectively or efficiently.

We’ll begin by sharing as a whole group what we’ve discussed in the first two sessions, before the workshop facilitator gives an overview of the session. We’ll then move back into smaller groups.

- Take a piece of flipchart paper and split it into six, and assign a note-taker.
- Like in exercise 1, discuss each of the six areas which are named in the boxes on the A3 canvas. Try to move methodically between the questions, but you may need to go back and forth as the conversation continues. Spend around 25 minutes on this - you may want to change note-taker halfway through.
- Spend the last 10 minutes transferring the most relevant and important points from your flipchart onto the canvas. Think of a name and tagline for your project and fill this in on the canvas.

Presenting your project

In the last 15 minutes of the session, we want you to choose how you present your work over the course of the day to your fellow participants.

Try to put yourselves in the shoes of someone 10 years from now. What is the story of your project? What challenge is it addressing? Who is it helping and how? Why does it excite you? How did the project develop? Who does the project work with?

It’s your choice as a group how to present your idea. You might want to act out how the project works. You might want to write a press release. You might want to draw an advert. You might want to talk us through your discussions and how you’ve reached your idea.

Whatever you decide, try to make it engaging and clear to the rest of the group, bearing in mind they haven’t heard any of your conversations over the day.

Exercise One:

Identifying a future challenge

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EXPLORING AND DEFINING A CHALLENGE

Our topic area is:

Which three trends will impact this area the most?

What is the specific challenge you envisage for the future?

EXPLORING THE SPECIFIC CHALLENGE

Who does this challenge affect? How does it affect them?

Who is responsible for dealing with this challenge?

What is the political, social and economic context for this challenge?

What does the public think about the challenge?

What other social and environmental issues have an impact on this challenge?

What other social and environmental issues are impacted by this challenge?

HMW

How might we...

Exercises Two and Three:

Coming up with a solution
Developing the solution

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Describe your project in a couple of sentences.

Who are your stakeholders and what are their roles?

How do you engage them and what is your offer to them?

What is your business or sustainability model?

What risks and challenges will your project face?

Can you foresee any unintended consequences? Can you mitigate them?

What would success look like?

Give your project a name and a strapline!

Political

Rising political instability

Internal violence, corruption, political deadlock, weak rule of law, terrorism, civil conflict, and state collapse drive a rise in political instability globally.

Sources: WEF, Ministry of Defence

Political

Transfer of power, roles and responsibilities from governmental actors to non-governmental actors

The landscape of governance changes, shifting power, roles and responsibilities from state to non-state actors and individuals. The private sector, civil society and other non-state actors form new, multi-layered governing systems.

Source: WEF

Political

Increasing geopolitical threats and tensions

The risk of state, non-state and low-level economic, military, cyber and societal conflicts rises, fuelled by political, technological, economic and environmental trends.

Source: Arup

Political

Increasing citizen disengagement and disillusionment with democracy and democratic institutions

Citizens lose faith in traditional democratic processes and democratic institutions due to a lack of political accountability and transparency, corruption and unpopular economic and social policies.

Political

Rising populism, nationalism and support for fringe movements

Rise in populism, nationalism and extremism driven by increased suspicion and distrust toward elites, mainstream politics, and established institutions, rejection of the economic effects of globalisation and frustration with the responses of political and economic elites to the public's concerns.

Source: DNI

Political

Increasing political polarisation within societies

Inability to reach agreement on key issues within countries because of diverging or extreme values, political or religious views, and resulting loss of social cohesion.

Source: WEF

Political

Failure to tackle legal and illegal corruption, fraud and intransparency

Government and corporate corruption, fraud and intransparency lead to decreasing trust, poor use of public funds and public dissatisfaction.

Political

Failure to tackle digital information challenges such as “fake news”, disinformation and misinformation

Tackling the spread of disinformation and misinformation becomes increasingly difficult despite concerted efforts by governments and tech giants to clamp down on fake news, for example due to the spread of “deep fakes”.

Economic

Increasing unemployment, underemployment and precarious working patterns

Long-term unemployment, underemployment, self-employment and precarious forms of work rise, due to an increasing skills gap, automation and slow economic growth.

Sources: Ministry of Defence, WE, IPPR, Houses of Parliament, Arup

Economic

Increasing pressures on public services due to demand increase and funding decrease

Demographic changes and government spending and budget cuts stretch the capacity of public service delivery, leading to basic needs being unmet and growing inequality.

Economic

Political, economic and technological dominance moves from the Western world to China, India and the Global South

Significant economic, political and technological power shifts away from Europe and the US to other rapidly emerging economies such as China, India and the Global South.

Source: *Ministry of Defence*

Economic

Growing levels of monopolisation and concentration in all sectors of the economy and particularly the digital world

The levels of control, concentration and monopoly in all sectors of the economy continue to increase, particularly in the digital world, leading to inequality of access to services and threatening the open and free nature of the internet.

Sources: Arup, EC

Economic

Mainstreaming of new economic, technological & ownership models

Alternatives to conventional economic, technological and ownership models gain momentum, driven by increasing dissatisfaction with extractive capitalism. Movements like food and housing cooperatives, urban farming, community ownership, the sharing economy or the UBI are promoting people-centered, sustainable and collaborative alternatives to traditional economic models.

Economic

Growing dominance of access over ownership for consumer goods, mobility, housing and other needs

The sharing economy continues to expand as more consumers demand access over ownership. As ownership loses its value, consumers prefer the more cost-effective, convenient and sustainable option of accessing, borrowing, sharing or renting consumer goods, services housing, transport and more.

Environmental

Increasing risks of food and water shortages

Increasing consumption and environmental change leads to widespread water shortages in the developed and developing world. Soil erosion, desertification and salinisation along with unequal global distribution lead to unaffordable and unreliable access to sufficient and healthy food. These shortages lead to poor human health, damage the economy and cause social tension and conflict.

Sources: WEF, EC

Environmental

Developments in renewable energy technology and methods

The energy sector sees dramatic improvements in smart electric grids, microgeneration, advanced batteries and energy storage, hydrogen energy, CCS, nuclear fission and renewable tech. Renewables rise to meet a significant proportion of our energy needs and electricity generation capacity.

Source: IPPR, Ministry of Defence

Environmental

More regular and more severe natural disasters

Climate change leads to more regular and severe extreme weather events and natural disasters, poorer yields, droughts and water shortages, wildfires and poor air quality. The damage from climate change reduces global economic growth, increases inequality and triggers or exacerbates other negative social trends.

Sources: Ministry of Defence, WEF

Social

Rising inequality

Technological, economic and social changes will increase inequalities, with income gaps widening, increasing concentration of wealth, middle and low income households struggling to make ends meet and sharp intergenerational differences in income and housing. Inequality is exacerbated by the growing digital divide.

Sources: IPPR, EC, Arup

Social

Increasing migration flows resulting from geopolitical and environmental factors

Large-scale migration is induced by conflict, climate change, demographic growth and the promise of a better life in a relatively wealthy Europe. Internal migration between member states continues as inequality across the European Union persists.

Sources: Ministry of Defence, DNI

Social

Growing population living with long-term health conditions and chronic conditions

Increasing rates of chronic diseases and other long-term health conditions lead to rising costs of long-term treatment and threaten recent societal gains in life expectancy and quality.

Source: WEF

Social

Increasing urbanisation

The number of people living in urban areas is increasing, putting increasing pressure on public services and infrastructure in cities. As the proportion of populations in cities also grows, rural communities become poorer, more isolated and underpopulated, leading to greater inequality.

Sources: Arup, DNI

Social

Developments in healthcare models, medicine and treatment

Healthcare models, medicine and treatment across Europe improve, as does public health, life expectancy and mortality rates.

Sources: Ministry of Defence, EC

Social

Rising worldwide education and literacy levels and digital connectivity

Access to education increases worldwide, meaning more people have access to high quality education, literacy rates increase and education inequality decreases.

Sources: Arup, EC

Social

Demographic change

The European population ages, driven by declining fertility and birth rates and decrease of middle and old-age mortality. Globally, a growing share of population is reaching middle-class income levels in emerging economies, and the world's youth population rises rapidly. Worldwide population increases by one billion by 2030.

Sources: WEF, PWC

Social

Increasing risks of antimicrobial resistance and pandemics

Increased risk of bacteria, viruses and parasites that cause uncontrolled spread of infectious diseases and outbreaks (for instance as a result of resistance to antibiotics, antivirals and other treatments).

Source: EC, WEF

Technological

Growing mental health challenges fuelled by technology use

Growing usage of technology and purposely addictive design lead to widespread poor mental health and wellbeing, including higher rates of depression and anxiety.

Technological

Increasing cybersecurity risks for countries, institutions, organisations and individuals

Cyber dependency increases vulnerability to outage of critical information infrastructure (e.g. internet, satellites, etc.) and networks that can cause widespread disruption. Alongside more sophisticated attacks, the number and severity of large-scale cyberattacks and malware causing economic damage, geopolitical tensions and widespread loss of trust in the internet increases. Organisations and individuals become increasingly vulnerable to data breaches, phishing, viruses, and online scams.

Sources: WEF, ARUP

Technological

Increasing risks and concerns about data security, personal data and privacy

The Internet of Things and the digitisation of more areas of life generates unprecedented volumes of data, raising increasing risks and concerns about data security, wrongful exploitation, personal data and data privacy. Wrongful exploitation of private or official data takes place on an unprecedented scale.

Source: WEF, IPPR

Technological

Increasing bias and discrimination resulting from widespread use of algorithmic decision-making

Artificial intelligence and algorithmic decision-making continue to infiltrate every aspect of society, leading to concerns around bias, discrimination, unfair treatment, lack of privacy and accountability.

Source: IPPR

Big data

Big data is a term used to refer to data sets that are too large or complex for traditional data-processing application software to adequately deal with. Current usage of the term "big data" tends to refer to the use of predictive analytics, user behaviour analytics, or certain other advanced data analytics methods that extract value from data, and seldom to a particular size of data set.

Internet of things

The Internet of things (IoT) is the network of devices, vehicles, and home appliances that contain electronics, software, actuators, and connectivity which allows these things to connect, interact and exchange data. IoT also encompasses wearables, small computing devices which include sensors such as accelerometers, thermometer and heart rate monitors.

Location-based services

Location-based technologies process, analyse and manipulate, manage and present spatial or geographic data to deliver value to their user.

Digital fabrication

Digital fabrication is a design and production process that combines 3D modelling or computing-aided design (CAD) with additive and subtractive manufacturing such as 3D-printing, laser cutting and milling.

Artificial intelligence and machine learning

Artificial intelligence is intelligence shown by computers which perform cognitive tasks usually associated with human minds, including reasoning, knowledge representation, planning, learning, natural language processing, perception and the ability to move and manipulate objects.

Online platforms

Online platforms cover a wide range of activities including online marketplaces, social media and creative content outlets, application distribution platforms, price comparison websites, platforms for the collaborative economy as well as online general search engines. They share key characteristics including the use of information and communication technologies to facilitate interactions (including commercial transactions) between users, collection and use of data about these interactions, and network effects which make the use of the platforms with most users most valuable to other users.

Blockchain and distributed ledgers

A blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way. A distributed ledger is a consensus of replicated, shared, and synchronised digital data geographically spread across multiple sites, countries, or institutions. There is no central administrator or centralised data storage. A peer-to-peer network is required as well as consensus algorithms to ensure replication across nodes is undertaken.

Robotics

Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing. These technologies are used to develop machines that can substitute for humans and replicate human actions. Robots can be used in many situations and for lots of purposes.

Virtual reality

Virtual reality (VR) is an interactive computer-generated experience taking place within a simulated environment. It incorporates mainly auditory and visual feedback, but may also allow other types of sensory feedback like haptic. This immersive environment can be similar to the real world or it can be fantastical.

Augmented reality

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real-world are "augmented" by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory. The overlaid sensory information can be constructive (i.e. additive to the natural environment) or destructive (i.e. masking of the natural environment) and is seamlessly interwoven with the physical world such that it is perceived as an immersive aspect of the real environment

Collective intelligence

Collective intelligence refers to the combination of human and machine intelligence, combining the intelligence of groups at scale with data, AI and other machine techniques.

Knowledge/data commons

The term "knowledge commons" refers to information, data, and content that is collectively owned and managed by a community of users, particularly over the Internet. What distinguishes a knowledge commons from a commons of shared physical resources is that digital resources are non-subtractible; that is, multiple users can access the same digital resources with no effect on their quantity or quality.

Data trusts

A data trust is a legal structure that provides independent third-party stewardship of data. A data trust takes the concept of a legal trust and applies it to data. A data trust must have a clear purpose, a legal structure, (some) rights and duties over stewarded data, a defined decision making process, a description of how benefits are shared and sustainable funding.

Voice technology

Voice or speaker recognition is the ability of a machine or program to receive and interpret dictation or to understand and carry out spoken commands.

Drones

An unmanned aerial vehicle (UAV), commonly known as a drone, is an aircraft without a human pilot aboard. Originally used for missions too “dull, dirty or dangerous” for humans, they are beginning to be applied to tackle social and urban challenges.

Digital identity systems

Digital identity at its simplest is the information a computer uses to represent an external agent (e.g. a human). This allows for assessment and authentication of a user interacting with a business system on the web, without the involvement of human operators. The term has also come to denote aspects of civil and personal identity that have resulted from the widespread use of identity information to represent people in computer systems. Even more broadly,, many discussions now refer to "digital identity" as the entire collection of information generated by a person’s online activity, making digital identity a version, or facet, of a person's social identity.

Biometric data

Biometric data is a general term used to refer to any computer data that is created during a biometric process. This includes samples, models, fingerprints, similarity scores and all verification or identification data excluding the individual's name and demographics. Biometric data is used in contexts including facial, iris and fingerprint recognition and verification.

Social networks and social media

A social network is an online platform which people use to build social interactions or social relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections.
Social media are interactive computer-mediated technologies that facilitate the creation and sharing of information, ideas, career interests and other forms of expression via virtual communities and networks.

Crowdsourcing

Crowdsourcing is a sourcing model in which individuals or organisations obtain goods, services, ideas, finance, knowledge etc from a large, relatively open and often rapidly-evolving group of internet users. It divides work between participants to achieve a cumulative result.

Open data

Open data is data which is freely available to everyone to access, use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control.

Mobile and web apps

Mobile and web apps are computer software designed to perform a group of coordinated functions, tasks, or activities to provide a service for the user on either a mobile or desktop device.

Open hardware

Open hardware refers to the design specifications of a physical object which are licensed in such a way that said object can be studied, modified, created, and distributed by anyone. Open hardware has accessible source code and easily-obtainable components. Open hardware eliminates common roadblocks to the design and manufacture of physical goods and gives people the opportunity to construct, remix, and share their knowledge of hardware design and function.

Peer-to-peer networks

Peer-to-peer networks are those which enable direct or intermediated peer-to-peer interactions, including but by no means limited to sharing, lending, renting and exchanging goods, services, knowledge and finance.

Online education

Online education is electronically supported learning that relies on the Internet for teacher/student interaction and the distribution of class materials.