

official data

Official data can include longitudinal survey data, such as census data, electoral registers or other population data. Official data provide a long-term picture of a country over time, and are usually collected by public institutions or national statistical agencies as a public good.



STAGE:
GATHER DATA,
INFORMATION, IDEAS



CASE STUDY: AFRICAPOLIS

Africapolis aims to be the most comprehensive and standardised geospatial database on cities and urbanisation dynamics in Africa. It blends data from across the continent in an effort to provide standardised, comparable insights into Africa's fast-changing urban populations.

The single most important element is official population records, including census data of official cartographic resources such as administrative boundaries. In some cases official data can date back 30 or more years, which is significant given the pace of demographic and urban trends. Africapolis brings these datasets together into a single, comparable resource, as well as additional sources such as satellite data to confirm the precise location of settlements. By integrating thousands of smaller agglomerations (covering inhabitants of a total of 180 million people) Africapolis also highlights the role of smaller towns and cities in urban networks, the emergence of new urban areas and the increasing fluidity between urban and rural environments.



satellite data

Satellite data is aerial imagery collected by satellites, usually available from companies for a fee. It can provide detailed insights into land-use over time, or act as a proxy for other measures.



STAGE:
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CASE STUDY: REGEN NETWORK

Regen Network collects ecological and agricultural data via remote sensing (images collected by satellites, drones, and planes), and on-the-ground observation via Internet of Things (IoT) sensors. The collected data is verified by farmers and then run through a trained machine learning model which tries to determine ecosystem health. So far, Regen Network have developed an algorithm that is capable of detecting till events in Romania and Ukraine with a 99 per cent accuracy through public satellite data.



open data

Open data is the raw data that is gathered by people or organisations, published in an electronic format that machines can read; it is then shared online and allowed to be re-used by others instead of keeping it private.

CASE STUDY: OPENCORPORATES

OpenCorporates increases transparency in the corporate world through making information about companies more accessible, so that citizens and journalists can better monitor and regulate them. OpenCorporates crowdsources data from citizens, who contribute to populating and updating the platform, identifying errors, or importing web scraped data. The contributions from people all over the world and their local knowledge have made OpenCorporates the largest open database of company data in the world, with over 100 million companies in a large number of jurisdictions. The fact that the data is open has also improved data quality, allowing anomalies, errors and issues to be discovered faster.



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ethnographic data

Ethnographic data encompasses qualitative information (stories, personal accounts or transcripts) collected by interviews, participant observation, note-taking, online text or recording. It provides rich and highly detailed accounts of people's lives.



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GATHER DATA,
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CASE STUDY: ON OUR RADAR

On Our Radar trained citizen journalists to provide detailed accounts of the Ebola crisis from communities all around Sierra Leone (e.g. from urban slums, polio camps, and remote rural villages). The reporters shared their reports with On Our Radar via recorded telephone interviews, WhatsApp audio and photo functions, and SMS. People in the poorest regions of Sierra Leone are more likely to have a mobile phone than access to basic amenities and electricity, so even those in the most remote regions could report.

On Our Radar reports captured the atmosphere of day-to-day life in vulnerable communities in Sierra Leone, often delivering breaking news that international media did not otherwise have access to, and from communities that Western journalists failed to reach. Its reports were featured on the BBC World Service, Guardian and Sky News among others.



call detail records

Call detail records (CDRs) can be obtained as anonymous data from telecoms companies, providing fine-grained information into mobility or population trends.



STAGE:
GATHER DATA,
INFORMATION, IDEAS



CASE STUDY: NCELL NEPAL

In April 2015, an earthquake struck Nepal impacting millions across the country. NCELL, Nepal's largest mobile phone operator, agreed to share anonymised mobile phone data with the non-profit Swedish organisation Flowminder. Population movement estimates were calculated by combining de-identified data on people's movements with available population data, and by comparing SIM card movements before and after the earthquake to normal pre-earthquake movements. By gaining real-time insights into population flows, UN agencies and government were able to better target aid to affected communities, saving hundreds of lives.



crowdsourcing

Crowdsourcing is an umbrella term for a variety of approaches that source data, information, opinions or ideas from large crowds of people, often by issuing open calls for contribution. It can help bring new ideas to light that hadn't previously been considered, or to gather expertise from people who have specialised knowledge or understanding of an issue.



STAGE:
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CASE STUDY: DECIDE MADRID

The City Council of Madrid has used CONSUL, an open software tool, to create a citizen platform - Decide Madrid - to crowdsource citizen proposals and harness more local knowledge in decisions about how to plan and allocate budgets. New ideas from residents have been gathered and implemented on topics ranging from sustainability and air pollution, to ticketing for local transport. Since its creation it has allocated over 100 million Euros in funding for projects suggested by local people. On the platform, people can make proposals, engage in debates, and vote for ideas. It is often used in conjunction with offline engagement.



challenge prize

Challenge prizes or competition platforms are a method of drastically widening the pool of possible solutions to solve a problem. They are useful for getting a variety of responses to questions and of spurring novel suggestions for how to address an issue or specific challenge.



STAGE:
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CASE STUDY: DARPA GRAND CHALLENGE

In the US, the Defense Advanced Research Projects Agency (DARPA) ran a grand challenge with the goal of supporting innovation to accelerate the development of autonomous vehicle technologies with military applications. No vehicles completed the set route for the \$1 million prize in 2004, but a year later another round was held in the desert near the California/Nevada state line. A total of five teams completed the course which was 132 miles over the desert terrain. The Stanford Racing team took home the \$2 million prize, completing the course in 6 hours 53 minutes. DARPA credits this challenge with the creation of 'a mindset and research community that a decade later would render fleets of autonomous cars and other ground vehicles a near certainty for the first quarter of the 21st century'.



gamification (serious games)

Gamification is a broad term that refers to using game-like elements to make engagement in collective intelligence projects more fun. It can be a useful way to motivate audiences in complex topics or research, as well as illustrating trade-offs associated with making certain choices. Games can also be useful for presenting data, ideas and trends.



STAGE:
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CASE STUDY: SEA HERO QUEST

Sea Hero Quest is a mobile game where players' actions help scientists to understand and fight dementia. The game asks users to find their way through a digital maze, in turn providing researchers with valuable data to understand the user's spatial navigation. According to its website, playing Sea Hero Quest for only two minutes generates the same amount of data that it would take 5 hours to collect in similar lab based research. As a result the project has gathered approximately 17,600 years worth of dementia research from players on the app (from around 4.3 million players). Initial results from the data have provided novel insights into spatial navigation abilities across different social groups, ages and countries.



participatory sensing

Participatory sensing is where citizens use lightweight, cheap sensors to collectively monitor the environment around them. It also includes the task of collectively sharing and interpreting streams of citizen-sensed data with other community members, deepening their understanding of the issue, educating participants and empowering them to act.



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GATHER DATA,
INFORMATION, IDEAS



CASE STUDY: IDEAS FOR CHANGE

Noise pollution is a problem which affects many people living in inner city Barcelona. A think tank called Ideas for Change worked with local communities to help them install sensors that measure the harmful effects of noise pollution in their neighbourhood. Participants were provided with cheap, open-hardware sensors, and then guided through the process of setting-up the technology and sharing data with one another.

The council organised public meetings in which locals could talk through their findings and propose potential solutions. Some of the solutions that have been implemented include new flower beds that remove areas where people used to sit and drink into the late hours of the evening, and improved community policing.



petition platform

Petitions are collections of signatures, either online or offline, that aim to raise awareness by mobilising as many people around an issue as possible.



STAGE:
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CASE STUDY: MEXICO CITY CROWDSOURCED CONSTITUTION

To solicit ideas for a new city-wide constitution, Mexico City Government partnered with an online petition platform (Change.org) to gather suggestions from citizens. The owner of any petition gaining 10,000 signatures or more was given the chance to present to a 28-person drafting committee, made up of Mexico City residents. By the end of the process the city had collected 280,000 signatures on 357 petitions, on issues including LGBTI rights, river and lake revitalization and universal internet access; many of which went on to inform the final document.



wikisurveys

Wikisurveys are a type of survey where participants can add statements that others respond to.

Participants' statements are added to a pool, and are then randomly presented back for individual participants to respond to or rank. Over time, participants generate new ideas and build a picture of where consensus or disagreement lies.

CASE STUDY: ALL OUR IDEAS IN NYC

In 2011, New York City Mayor's Office of Long-Term Planning and Sustainability ran a Wikisurvey, where top-voted ideas were integrated into the city's PlaNYC 2030 Sustainability Plan. To do this they worked with a platform called All Our Ideas, which uses 'pairwise comparison' as a method of asking crowds to quickly sort and filter one another's proposals. Over four months around 1,400 respondents provided nearly 32,000 votes and 464 new ideas, many of which the council had previously not considered.



STAGE: B3
GATHER DATA,
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citizens

Members of the public



STAGE:
MOBILISE PEOPLE



experts

Academics or experienced practitioners



STAGE:
MOBILISE PEOPLE



corporate partners

For-profit organisations



STAGE:
MOBILISE PEOPLE



local government officials

Councillors and administrators



STAGE:
MOBILISE PEOPLE



volunteers

Everyday people who want to help



STAGE:
MOBILISE PEOPLE



media and press

Journalists and influencers



STAGE:
MOBILISE PEOPLE



customers

People who might want a product or service



STAGE:
MOBILISE PEOPLE



suppliers

People who provide a product or a service



STAGE:
MOBILISE PEOPLE



young people

Children or teenagers



STAGE:
MOBILISE PEOPLE



brokers

Lawyers, bankers, consultants, intermediaries,
agents, etc



STAGE:
MOBILISE PEOPLE



data collaborative

Data collaboratives are a form of collaboration in which partners from different sectors - including private companies, research institutions, and government agencies - enter into an agreement to exchange data for a specific social cause. The aim of data collaboratives is to unlock new value in private data that would otherwise not be exploited.



STAGE:
CONNECT & INTERPRET



CASE STUDY: UN GLOBAL PULSE

In recent years the Mexican state of Tabasco has experienced record-breaking rainfall, yet timely data about how floods are affecting the population in real-time is currently missing. In response, UN Global Pulse brought together a range of novel datasets to generate real-time insights about human behaviour during flooding events. Data sharing and analysis was made possible via a public-private partnership between Telefonica Research and data scientists from the Technical University of Madrid, under guidance from experts at Global Pulse and the World Food Programme. By combining citizen mobile phone data, remote sensing data (satellite images), rainfall data, and census data from citizens, the project was able to use patterns of mobile phone activity to highlight the impacts of flooding on infrastructure and the local population, whilst also helping to identify where to target and improve public communications for disaster response.



project wikis

A project wiki is a collaborative web page which anyone can access, change or edit. Project wikis are structured to enable multiple people to collaborate, share knowledge and improve on one another's work all in one place.



STAGE:
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CASE STUDY: PUBLIC LAB

Public Lab is an open community for citizen scientists, whose aim is to empower communities facing environmental justice issues to own the data and advocate for the change they want to see. Public Lab use project wikis to collect information, documentation and instructions on citizen science projects. These range from guides on how to build your own spectrometer to introductions to near-infrared photography. Due to their open nature, the community is able to iterate and improve on project wikis over time or as new information becomes available. Some of the most active pages have been edited and updated by the community over 700 times.



community of practice

A community of practice is a group who share a concern and learn by interacting with one another regularly. In pursuing their practice area, participants help each other, and build up a repertoire of shared resources (experiences, tools and solutions) while working together.



STAGE:
CONNECT & INTERPRET



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CASE STUDY: STATES OF CHANGE

States of Change is a global community of practice whose aim is to build the culture and capability of governments to deal with the problems they face, and strengthen shared knowledge about public innovation.

States of Change runs learning workshops and collaborative R&D projects with governments around the world to explore and test what works. Since its creation States of Change has worked directly with over 150 public servants, including from national and regional governments in the UK, Australia, Canada and Latin America. An evaluation of the programme highlighted how its focus on in-practice learning helped participants gain greater confidence in applying and spreading innovation.



participatory monitoring

Participatory monitoring is the regular collection of measurements undertaken by local residents or members of a community. The aim is to provide high-quality information and raise awareness about local issues.



STAGE:
CONNECT & INTERPRET



CASE STUDY: SEEDS FOR NEEDS

As the climate changes and becomes more difficult to manage, farmers around the world need to be able to adapt, including access to a wide range of crop seeds.

Through the Seeds for Needs initiative, farmers test and evaluate different varieties of seeds in their own farm's conditions, using an online platform. Scientists then link farmers' feedback with agro-climatic and soil data, and feed information back to farmers about which varieties are best adapted to local climates. As a result of participatory monitoring trials, in 2017 the Ethiopian government approved two new wheat varieties for distribution as officially approved seeds.

The project now involves around 45,000 farmers around the world.



what works centres

What Works Centres aim to ensure that public spending and practice is informed by the best available evidence. Centres operate in their own distinct way, but all aim to generate evidence and translate it into relevant and actionable guidance.



STAGE:
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D1

CASE STUDY: THE EDUCATION ENDOWMENT FOUNDATION (EEF)

The EEF is an independent charity dedicated to breaking the link between family income and educational achievement, by gathering research evidence and making it actionable to teachers and practitioners across the UK. EEF's Teaching Learning

Toolkit is an accessible and interactive web tool that summarizes research evidence for teachers and schools on how to improve the attainment of disadvantaged people, according to cost, evidence and impact. More than half of secondary school leaders in the UK now say they use this resource.



peer-to-peer exchange

Peer-to-peer exchange refers to the process of sharing information horizontally to build and maintain a community, to collect data, connect people or send alerts about an event or emergency. Platforms for this vary, ranging from messaging platforms to online forums. Some rely on the internet but others do not (e.g. SMS or mesh networks).



STAGE:
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CASE STUDY: WEFARM

Wefarm is a free peer-to-peer service that enables small-scale farmers in Kenya, Uganda, and Tanzania to share information via SMS, without the internet and without having to leave their farm. Wefarm's network allows small-scale farmers to ask each other questions on anything related to agriculture and then receive crowdsourced bespoke content and ideas from other farmers around the world within minutes. The questions can be asked in any language and messaging is free of charge.

Knowledge shared on Wefarm can help farmers produce higher quality products, increase yields, gain insight into pricing, tackle the effects of climate change, diversify agricultural interests, and source the best seeds, fertilisers, and loans.



natural language processing (nlp)

Natural language processing (NLP) allows computers to understand, interpret and extract key information from human language. NLP techniques can be used to carry out automated analyses of different media to better understand which issues matter to people and what they are saying about key issues.



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D5

CASE STUDY: UGANDA RADIO CONTENT ANALYSIS

In Uganda, calling into a talk show on radio to share thoughts, opinions and reports is a common practice, especially in rural areas. Pulse Lab Kampala and the UNDOCO developed a technology prototype that allows analysis of public discourse on radio, understanding trends or issues that matter to communities in real-time. The Radio Content Analysis Tool transforms discussions taking place on radio into big data text, which is then mined for topics of interest.

For instance, filters to detect conversations regarding refugees were created and a translation team annotated all mentions of refugees, including issues of acceptance, health or increasing social tensions. The study demonstrated that speech-to-text processing, combined with NLP, can provide insights on early warning mechanisms, can help to monitor the implementation of projects and programmes, and can support programme evaluation.

deliberation

Deliberation is a method of weighing up different options through dialogue. It can typically be used for engaging people in making trade-offs, and in establishing greater understanding of one another's views to establish consensus. Sometimes stratified sampling can be used to select a representative sample of participants (so-called 'mini-publics').



STAGE:
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D5

CASE STUDY: ESTONIAN PEOPLE'S ASSEMBLY

In 2012 the ruling Reform Party in Estonia was beset by a scandal related to anonymous donations, which sparked a national engagement exercise. The five-stage process began with crowdsourcing of over 2,000 proposals on an online platform, on topics from reducing barriers to creation of political parties, to improving party conduct. The process then culminated in a face-to-face deliberation between randomly selected citizens. Over several days, the group was tasked with sorting through the online proposals, and making practical recommendations to the Parliament. Fifteen proposals were submitted, leading to three new items of legislation and another four proposals being partially adopted.

data visualisation

Data visualisation encompasses a range of techniques for representing information, from complex graphs to mind-maps and tools for illustrating complex concepts or ideas. They can be static or dynamic, and they may also be connected to databases, or updated manually. Data visualisation can help to bring complex or messy data to life in new ways, aiding collective awareness and understanding of the issues that matter.



STAGE:
CONNECT & INTERPRET



D5

CASE STUDY: POL.IS

Pol.is is an example of an interactive survey tool that uses a statistical technique - known as principal component analysis - to visualise participants' opinions in real-time. Opinions are clustered, and users can click on different clusters to see how many people agreed or disagreed on certain statements. The tool was used as part of a consultation run by the Taiwanese government on how to regulate ridesharing companies. The visualisation helped people to understand the key dividing points among the 700 or so participants. Not only did this help lawmakers and participants gain greater understanding of the key areas of contention, it also helped participants arrive at a series of key consensus statements that were later used as the basis for new regulations.

dashboard

Dashboards make data more useful by providing quick and customizable visualisations of different data streams or variables, usually represented interactively on a screen.



STAGE:
CREATE CHANGE



CASE STUDY: PREMISE

In Brazil, locals are paid to upload photos of supermarket items to a platform called Premise. The platform processes about 42,000 images per day, each of which is vetted for accuracy and authenticity, before being aggregated and analysed. The data then becomes accessible via a dashboard, which can be customized to display contributor activity with maps, graphs or photo walls. As a result, commercial clients are given access to data on their markets often weeks before official government figures are released. NGOs may also use the data to see where resources need to be reassigned, and to understand or pre-empt food shortages.



storytelling

A story takes facts, figures or information and turns into something that can be relayed in a more accessible way, in turn helping to make data or research more understandable and usable.



STAGE:
CREATE CHANGE



CASE STUDY: THE QUIPU PROJECT

In the 1990s, a family planning programme launched by the president of Peru led to the sterilization of over 270,000 women and 22,000 men. They were almost exclusively indigenous people living in rural areas, and thousands claimed it happened without their informed consent. Many of the people affected only spoke their native Quechua, and struggled to access institutions of the Spanish-speaking Peruvian State.

The Quipu project collected over 150 testimonies of sterilised people, presented as an interactive online documentary where users click on a visualisation of testimonies displayed as knotted strings (used by the Incas and Andean civilizations for record keeping). The project aims to create a collective memory archive of what happened, and to help build awareness in the victims' fight for recognition and reparation.



manual

A manual is a comprehensive and step-by-step guide to a particular topic. It may include instructions, tutorials or guides to help facilitate learning, the aim of which is to lower barriers to entry for beginners or practitioners wishing to participate.



STAGE:
CREATE CHANGE



E1

CASE STUDY: INSTRUCTABLES

Instructables.com is website specialising in user-created and do-it-yourself projects, from baking to 3D printing. By providing video aids, documentation and commenting functionality, the website aims to facilitate collaboration and shared learning among creatives, makers and artists. The website also holds contests each month to provide Instructables according to a unique theme. As of 2015, it was reported that the website has 30 million monthly users, resulting in more than 170,000 community authored projects across 6 categories.



open API

Application Programming Interfaces (APIs) provide the standards by which data is accessed and transferred between websites. Open APIs encourage collaboration and are built using open standards, allowing them to be freely accessed and used.



STAGE:
CREATE CHANGE



CASE STUDY: OPENAHJO

City Councils make hundreds of decisions every month, and it can be hard for both citizens and civil servants to follow the progress of legislation making its way through government. Open Decisions is Helsinki City Council's attempt to standardise and publish all of its decision making data electronically. Data about meetings, agendas and decisions from all across the council are tagged according to the Popolo open government standard, and then made available via an open API called OpenAhjo. By publishing the data via an open API, a range of developers have been able to create digital applications that notify local residents when decisions are made on topics of interest. It's also been used by city employees to more easily search and track progress made by local politicians.

