Enabling
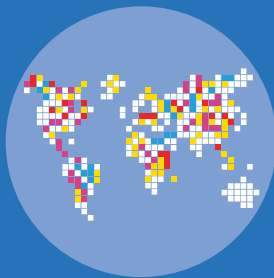# the Data Revolution
An International Open Data Roadmap

CONFERENCE REPORT

3RD INTERNATIONAL
OPEN DATA
CONFERENCE 2015

3E CONFÉRENCE
INTERNATIONALE SUR
LES DONNÉES
OUVERTES 2015

Enabling the Data Revolution
OUTCOMES SNAPSHOT

Launch of a consultation on an International Open Data Charter

Inaugural meeting of the Open Data Research Symposium discussed over 30 new research papers

Hundreds of participants attended the unConference

The Open Parliaments Network was officially launched with a pre-event and panels in the main conference

Data standards and technology groups gathered for in-depth shared learning, with pre-event workshops on Open Contracting, CKAN and Open Corporates

Launch of the much discussed Humanitarian Exchange Language (HXL)

Various action sessions devoted to discussing standardization, and the launch of the Joined Up Data Alliance right after the conference

15 different thematic impact panels presenting case studies from around the world

Enabling the Data Revolution
OUTCOMES SNAPSHOT

A new working paper from the Global Open Data for Agriculture and Nutrition (GODAN) initiative supporting in-depth debate on a problem-centred approach to open data

Panels on Data + Public Finance were supported by the release of a new visualization template for understanding the follow the money debate

Launch of the Open Data Impact Map

Launch of the GovLab Network of Innovators, signing up over 100 conference delegates, and a meeting of the Open Data Leadership Network

The Open Government Partnership launched the OGP Explorer

The Open Data Institute launched a conversation on the ownership of data infrastructures

The conference closed with presentations of draft action roadmap

Launch of the Open Data for Development Fund

Announcement of the fourth International Open Data Conference to be held in Madrid, Spain in October 2016

Structure

Summary

The global open data community is maturing rapidly:

▸ The adoption of the G8 Open Data Charter and discussions about a more inclusive international Open Data Charter show the growing political commitment to unlocking the supply of data.

▸ The UN Independent Expert Advisory Group on a Data Revolution for Sustainable Development[1], and the Addis Ababa Action Agenda[2] have highlighted the key role of open data in the post 2015 agenda.

▸ The growing availability of data is reducing barriers for entrepreneurship and innovation around the world. Innovative citizen-centered solutions are driving a substantial transformation in sectors such as health, education, transport, and many more.

More than 1000 participants from 56 different countries took part in the 3ʳᵈ International Open Data Conference (IODC) in Ottawa from May 28-29, 2015. Hosted by the Government of Canada, the International Development Research Centre, and the World Bank, IODC brought together open data experts to understand the global impact of open data, coordinate action, and share best practices.

Titled "Enabling the Data Revolution", the conference was designed as a platform to discuss a roadmap for the international open data community. In person and online, the participants produced 200+ presentations, 20,000+ tweets, 100+ blog posts, and 33+ hours of videos. This was preceded by many pre-events co-hosted by the Open Data for Development program (OD4D), which included the first Open Data Leaders Summit, Open Data Research Symposium, Open Data Unconference, Connecting Standards Day, and many more.

This report is supported by a full online archive of conference content at www.opendatacon.org.

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1 http://undatarevolution.org

2 http://www.un.org/sustainabledevelopment/blog/2015/07/addis-ababa-action-agenda-ban/

A VISION OF THE FUTURE: BUILDING ON WHAT WORKS

Open data leaders from around the world showcased how open data is changing specific sectors, from health and education, to fiscal governance and urban development. Open data is a cross-cutting issue, offering a unique approach to harness the full power of data in many different sectors. On its own, data is only a foundation for impact. When data availability is combined with skilled civic entrepreneurs and the right supporting environment, open data can enable the kind of innovations that are leading a social, political, and economic revolution.

DEBATING OPEN DATA: UNDERSTANDING THE BIG PICTURE

Openness is vital if we are to harness the opportunities for data innovation that are unlocked when data crosses geographic and sectoral boundaries. Considering the contribution of open data to sustainable development around the world, the conference focused on key themes including: **common principles for open data**; the **use of open data to solve practical problems**; the creation of robust and reliable **open data infrastructures**; and the development of an open data landscape that is inclusive and **accessible to all**.

ACTION PLAN: HARNESSING OPEN DATA FOR SUSTAINABLE DEVELOPMENT

Drawing on conference panels, pre-events, and a series of focused "action" sessions at the conference, five priority areas have been identified, providing an action plan for the international open data community. These five areas are:

- ▸ Deliver shared principles for open data
- ▸ Develop and adopt good practices and open standards for data publication
- ▸ Build capacity to produce and use open data effectively
- ▸ Strengthen open data innovation networks
- ▸ Adopt common measurement and evaluation tools

The full report provides more detail on key steps to take steps forward in each of these areas.

OPEN DATA FOR DEVELOPMENT (OD4D)

The OD4D program prepared this conference report as a contribution to the open data community. OD4D seeks to scale open data solutions that have been proven to work in the developing world. The OD4D network of implementing agencies include the Web Foundation, Open Data Institute, Open Knowledge, and leading regional and local partners committed to the creation of locally-driven and sustainable open data ecosystems in developing countries. The program is hosted at the International Development Research Centre (IDRC), and co-funded by the World Bank, United Kingdom's Department for International Development (DFID), and Canada's Department of Foreign Affairs, Trade, and Development (DFATD). OD4D is one of Government of Canada's commitments set out in *Canada's Action Plan on Open Government 2014-2016*. The results of IODC 2015 outlined in this report will inform OD4D's future priorities.

CONFERENCE HOSTS

Conference in Numbers

Other 32
Media 3
Student 23
Multilateral Agency 38
Independent 49
Academic 68
Private Sector 98
Government 354
NGO 164
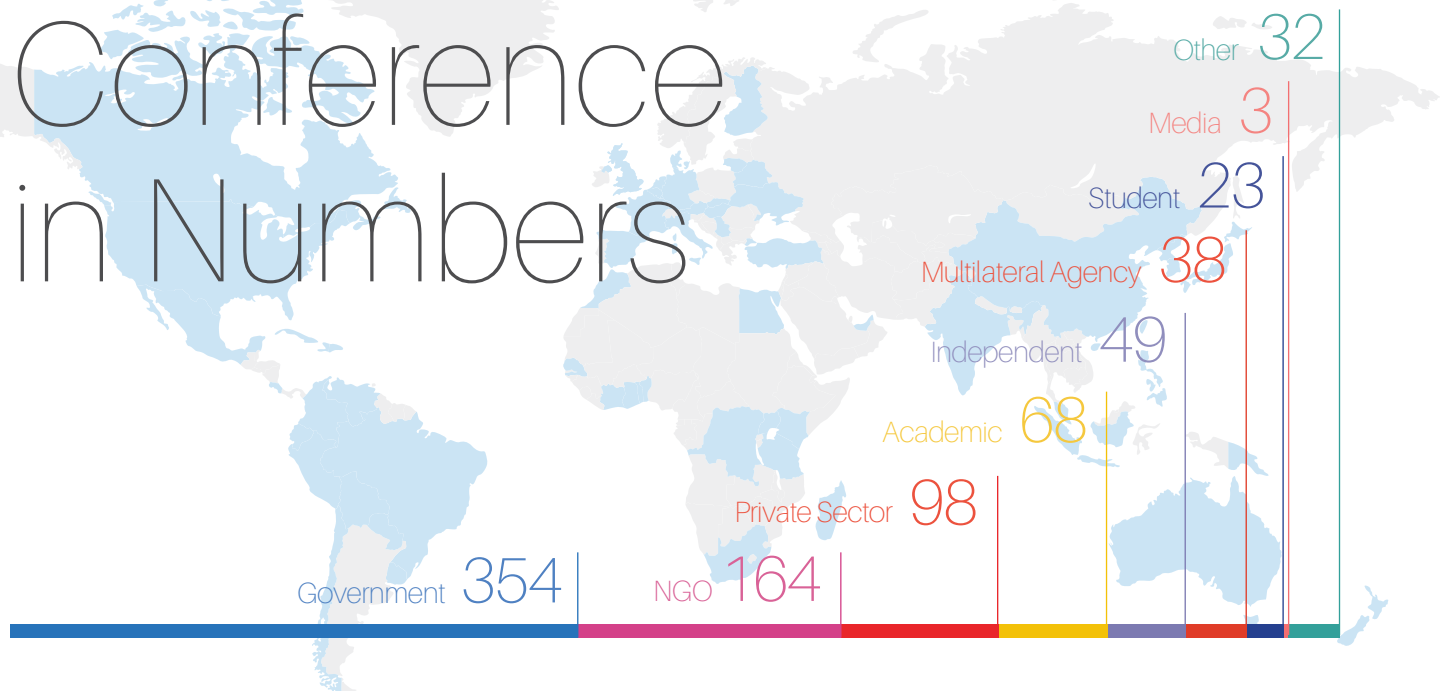
1000+ Atendees

205 Speakers

8+ Million
Reached

19.8K Tweets

29 Fringe Events

34% 66%

DATA + PUBLIC SECTOR
DATA + PUBLIC MONEY
DATA + PARLIAMENTS
DATA + MEDIA
DATA + HEALTH
DATA + FISCAL TRANSPARENCY
DATA + EXTRACTIVES
DATA + ENVIRONMENT
DATA + ELECTIONS
DATA + EDUCATION
DATA + AGRICULTURE

Conference Participants

49%
472
Canada

15%
145
United States

9%
81
Latin America and Caribbean

13%
125
Europe

6%
53
Africa

6%
53
Asia

1%
6
Oceania

Not Specified **20**

Oceania **6**

Africa **53**

Asia **53**

Latin America and Caribbean **81**

Europe **125**

United States **145**

Canada **472**

Enabling the Data Revolution

3RD INTERNATIONAL OPEN DATA CONFERENCE 2015
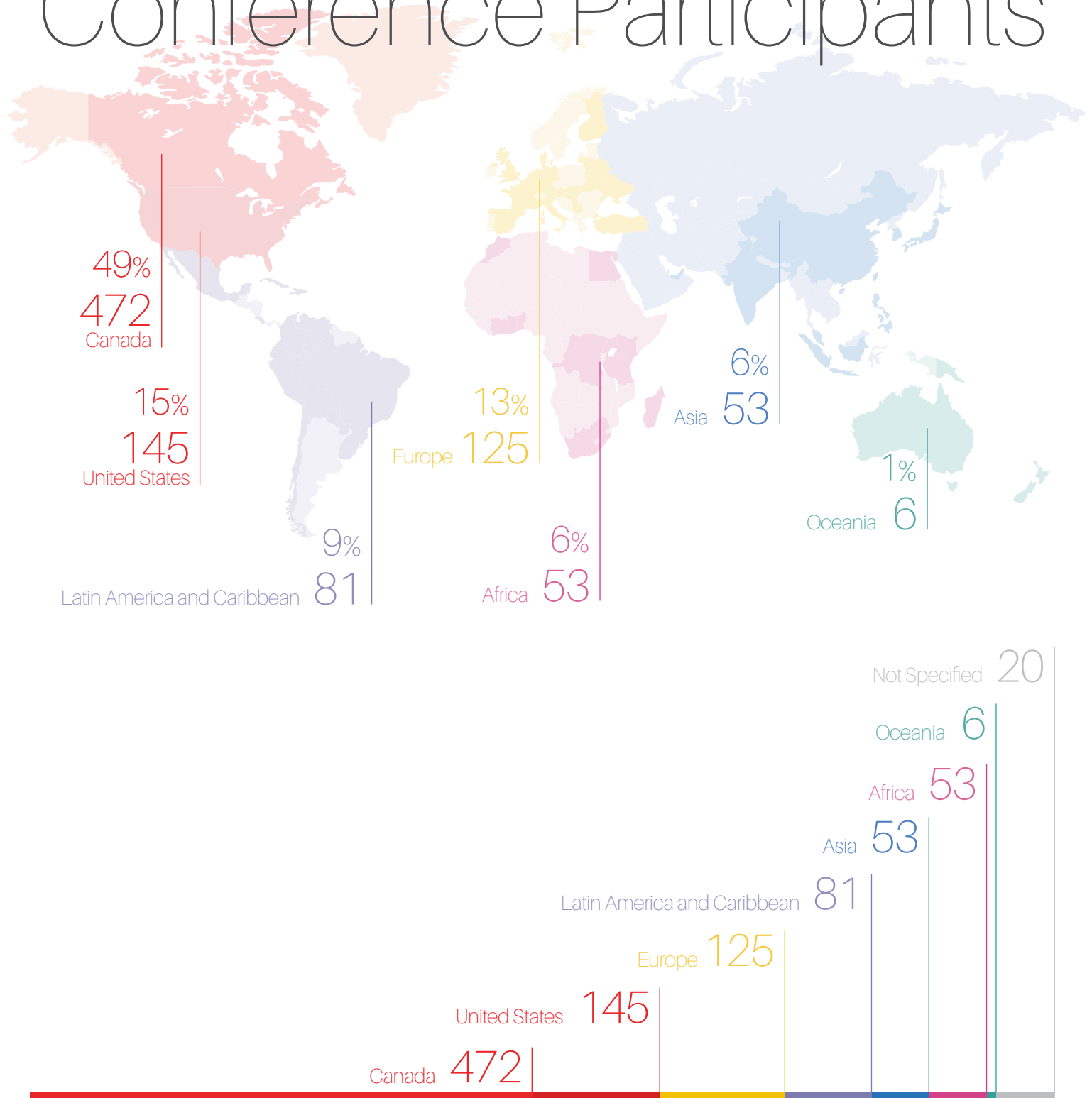
INTRODUCTION
Enabling the Data Revolution

New technologies are leading to an exponential increase in the volume and types of data available, creating unprecedented possibilities for informing and transforming society and protecting the environment. Governments, companies, researchers and citizen groups are in a ferment of experimentation, innovation and adaptation to the new world of data, a world in which data are bigger, faster and more detailed than ever before.

A World that Counts UN Data Revolution Report, 2014[3]

Data is powerful. From national statistics that measure progress towards development goals, to in-depth data on public spending, decision-makers are using data every day to determine policy and to direct the allocation of public resources. Data can be used to detect corruption and to generate and test new ideas to address persistent challenges; many of the most competitive businesses gain their edge by collecting and analyzing vast quantities of data.

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3   See: *http://www.undatarevolution.org/report/*

It is because of the power that comes from data that the case for open data is so vital. Open data is data that is made available for anyone to access, use, and share. Instead of increasing information asymmetry—where a few organizations and institutions keep public data locked up—with open data the groundwork is laid for all citizens to get involved in shaping policy. With open data, organizations and individuals can spend time on collaborative problem solving, rather than negotiating access to datasets. With open data, innovation, insights, and new business models are made possible, generating impacts that can scale. Further, with open data, when data is treated as a part of a shared commons—co-created and co-maintained—duplicated data collection activity can be eliminated, and the full return on investment from managing datasets can be unlocked.

In May 2015, IODC brought together participants from 56 countries, each working on open data in their own cultural, legal, and social contexts. Making effective use of data in all these different settings around the world requires a variety of approaches to build the capacity of users and intermediaries, recognizing differences in widespread access to the technology, literacy, power, and capital that are commonly needed to create social, political, and economic change with open data. As the data revolution unfolds, and work to place openness at the centre of these transformation takes place, ongoing learning and global collaboration is much needed.

This report draws upon the many discussions that took place in Ottawa at IODC, providing a summary of key topics and debates, and providing a shared vision of the road ahead for the IODC community. It is divided into three main sections:

Building on Impact: drawing on over 70 impact presentations to share short stories of how individuals and organizations are making a difference with data across the world—showing the promise and the reality of open data, as well as identifying key lessons for future projects.

Debating the Open Data Agenda: exploring critical themes from plenary sessions and highlighting topics that future actions on open data must take into account

A Global Action Plan: consolidating discussions from IODC into an action plan, providing a foundation for ongoing collaboration across the open data community.

About this Report

Much of the text in this report is based on a synthesis of notes and blog posts together by a team of rapporteurs at IODC, tasked with capturing the conference from their own perspectives. Session video recordings, slides, tweets, and structured discussions, facilitated by a team of action anchors have also all informed the final text. It is designed not as a single statement on open data, but rather as a curated

record of discussions and debates, providing a snapshot of key issues and setting out a path forward based on the visions, ideas, and agreements explored at IODC.

The print version of this report includes minimal references. However, you will find a full online copy of the text hosted at ReadFold.com, where each section of the text includes extensive hyperlinks and embedded media content, linking to video recordings, tweets, blog post, slides, and other related content.

This report is a starting point for many more conversations about the role and impact of open data around the world, and the action that must be taken to support the global movement for openness. At www.opendatacon.org you will find space to add your comments and feedback on this report, taking forward the conversations it captures.

DEFINITIONS: DIFFERENT KINDS OF DATA

The data revolution draws upon many kinds of data. Not all data can be made into open data, but through existing principles for official statistics we have templates for balancing the demand for disaggregation of data with respect for privacy. Open data approaches can help to put "transparency and openness", "usability", and "independence" principles of official statistics into practice.

Closed Data is data that should not be shared. Private data about individuals falls into this category. Many valuable datasets are derived from personal data. Whilst it may be possible for aggregated and derived data to be shared, care must be taken to ensure that individual rights to privacy and control over their own data are not undermined, and that personal data is managed according to international best practices.

Shared Data is data that is made available to specific users, or for particular kinds of reuse. For example, a telecom firm may give government or researchers access to pseudonymized phone records to allow them to understand social trends, or government may share aggregated health records with pharmaceutical firms to support medical research.

Open Data is data that is provided for unrestricted reuse. This is usually achieved through making it machine-readable, publishing it online, and providing a clear statement that gives anyone permission to reuse it. Anyone can use open data for anything, subject to other relevant laws and regulations relating to responsible data use.

The idea of "open by default" means that restrictions on the reuse of data should be clearly justified. Unless good reasons are given for data to be closed, or under restricted sharing arrangements, it should be accessible to all.

Building on Impact

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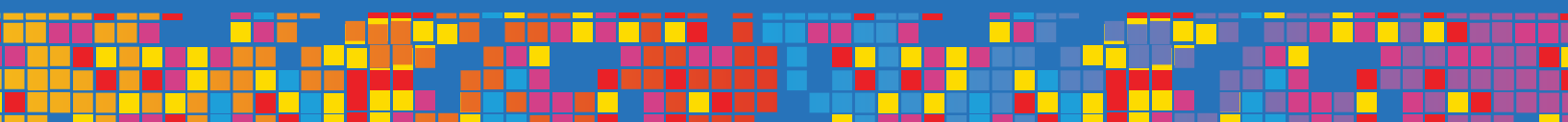
Building on Impact

The open data movement is still young, but it has deep roots, drawing together communities from many backgrounds, including digital innovation, access to information, open source development, and civic technology. Open data offers an approach to problem solving that is relevant across many different data communities, from education and agriculture, to economic development and geo-data. IODC included 14 impact sessions, each sharing stories of work to open up, use, and create change with open data in particular domains. This section is based on highlights from those sessions, and focuses on how open data can drive transformational changes across many different sectors.

Data + Agriculture = Combatting Hunger

By 2050 global food production will need to double to combat hunger, malnutrition, and to meet the needs of a growing population. In many areas of the world, agriculture is already a data-driven business, with precision farming making extensive use of GPS, weather, and satellite data, alongside soil information and crop production statistics. Nutrition datasets play an important role in both government policy making and individual consumer decisions.

At the central government level in Mexico, smarter data analysis, enabled through collaboration with university partners, is being used to better target weather-related farm insurance payments. Drawing on open data, the government can not only improve policy, but can also communicate the policy through interactive maps and visualizations. For the US Department of Agriculture, open data offers an important opportunity to escape a model where data is taken from the farm level up to the federal level, without delivering

accessible information back to disadvantaged farmers. Keeping data closer to people who are in touch with both problems, and their potential solutions, is an important part of an open data approach.

Openness is also empowering smallholder farmers in Jamaica. SlashRoots have been working to use open data to improve information flows in the resource-constrained Caribbean agriculture sector. With 200,000 farmers, and just 140 extension officers to serve them, SlashRoots is building on top of open infrastructures and open data, designing accessible digital services that can scale, and engaging outside experts in open innovation processes to create more effective agricultural extension services.

A report from the Global Open Data for Agriculture and Nutrition (GODAN), launched at IODC, made the case for ensuring that the growing range of data available in agriculture is provided as open data, and setting out the need to build on existing practice with a problem-centred approach to using data to create impact.

EXPLORE MORE
http://opendatacon.org/webcast/recording-data-agriculture/
http://www.godan.info/

Data + Education = Supporting Systemic Change

Open data can improve access to education, hold education providers accountable, and drive management improvements.

The Open Schools Kenya project, funded by the Gates Foundation Grand Challenge, brought together government data on schools with citizen-sourced data from the Map Kibera team, working with community members to record information about formal and informal schools and to present it on OpenStreetMap, informing citizens about the educational opportunities in their local area.

In Colombia, Analítica Académica, a private enterprise, has worked with data from universities to provide the higher education sector with information needed to improve management and the overall education system.

In Nigeria, the civil society led Open Development Initiative has created a crowd-sourcing platform to monitor the allocation and impact of funding to local schools, combining open data and citizen feedback.
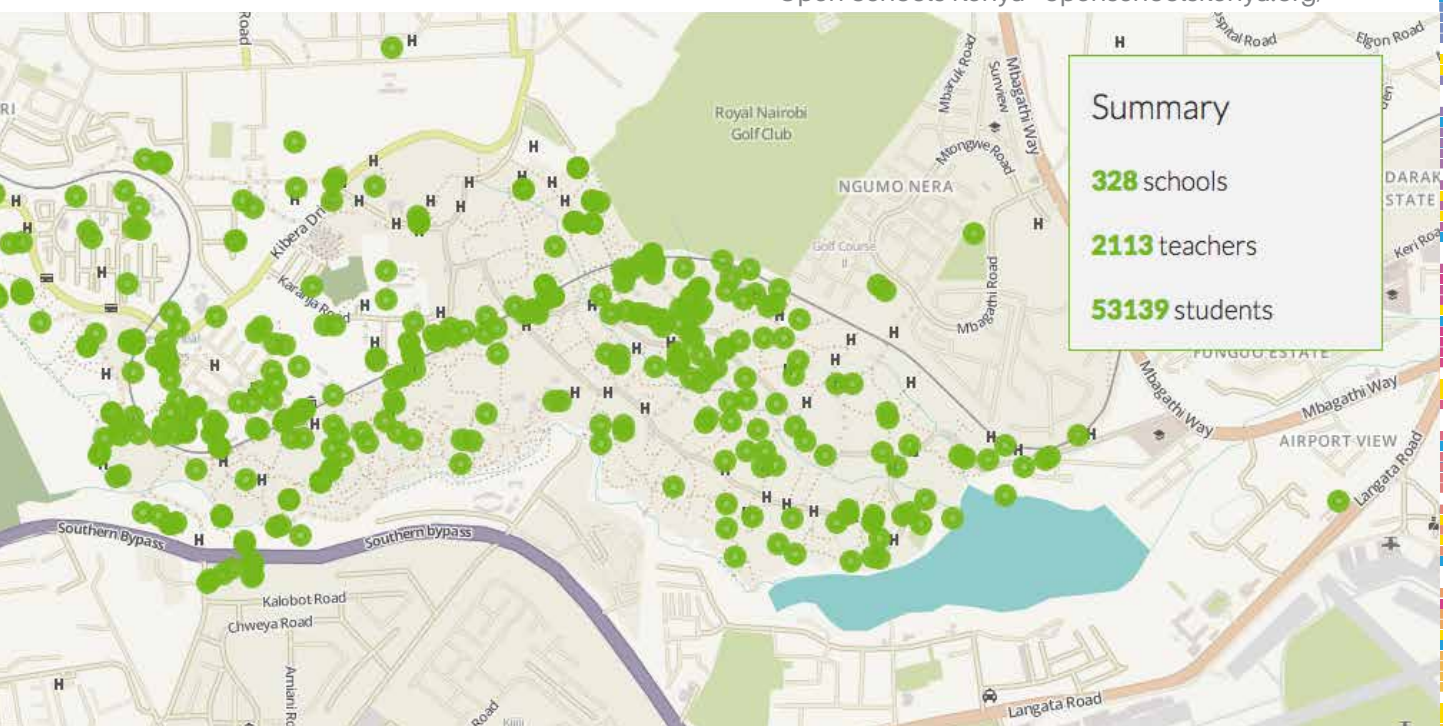
The Open Syllabus project is creating an open research dataset by scraping thousands of university syllabi, offering a whole new way to look at the development of curriculum.

In each case, data was an enabler; but it was only with active intermediaries—whether public, private, or non-profit—that the impacts of open data could be realized.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-education/

Open Schools Kenya - openschoolskenya.org/

Summary

328 schools

2113 teachers

53139 students

Data + Elections = Enabling Engagement

Effective democracy demands informed citizens. Yet, far too often citizens cannot obtain timely data on the candidates standing for elections, where their funding is coming from, or how their existing elected representatives have been performing. Even when data is collected in digital forms, it is frequently hosted on inaccessible official websites that struggle to cope with spikes in traffic at election time, or that languish unmaintained until election year. Open election data activists across the world, from Argentina to Indonesia, have been working to change this, encouraging a data-first approach to elections information.

Crowdsourced open candidate databases, like that generated by Democracy Club for the May 2015 UK Election now appear as part of search results on Google, putting improved information in front of potentially millions of voters. In Indonesia, the API Pemilu project has put together an API of candidate information, powering over 40 apps available on desktop and mobile, and reaching over 7 million unique users. The same data is available for reuse by academics, start-ups, traditional media, and new media platforms. Building on this data, innovative voter choice platforms have attracted millions of users, using game-based approaches to engage citizens in thinking about who to vote for.

For the API Pemilu project, the collaboration potential of open data was not just about reaching civic hackers and developers. They have also worked with the National Election Commission, helping them to take an open data first approach, and working with elected representatives, establishing two-way communication with constituents. Many other cases show how open data can open the door to new forms of collaboration, helping connect governments with cutting-edge digital skills.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-elections/

Data + Environment = Mobilizing Knowledge

Addressing climate change and environmental sustainability is a knowledge-intensive enterprise. With billions of data points from scientific research and millions of journal articles published in many different languages over recent decades, organizing all that information, and getting it to the right people at the right time requires both active intermediaries and shared knowledge infrastructures. The Climate Knowledge Brokers (CKB) group is building on the Renewable Energy and Energy Efficiency Partnership's (REEEP) multilingual climate thesaurus to tag and enrich content from different document repositories, using a shared Linked Open Data taxonomy. This helps to break down the silos that keep information apart, building a stronger open data ecosystem.

Creating strong ecosystems for open data requires strong leadership and new approaches to allow multi-stakeholder governance of data resources. In the Caribbean, work on creating a sustainable marine environment is engaging with actors throughout the data value-chain—from fishermen to regional policy makers—in order to build capacity to produce and work with machine-readable data.

In Canada, with the rise of "Smart" electricity meters (heading for 80% penetration in North America by the end of the decade), work is taking place to ensure the resulting data ecosystem balances privacy and openness. This provides consumers with access to their own data and the ability to selectively share that with third-parties, or, with the data suitably anonymized, to share it as open data for anyone to reuse.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-environment/

Data + Extractives = Opening the Books

Transparency is central to challenging the "resource curse", which has left many countries with substantial natural resource wealth among the poorest on the planet. Publish What You Pay (PWYP) groups across the world have been experimenting with data to understand the financial flows related to natural resources, and to find powerful stories that can be used to secure accountability and to catalyze reforms. For example, in Indonesia's Southeast Sulawesi, Civil Society Organizations (CSOs) have been using data taken from Extractives Industry Transparency Initiative (EITI) reports and comparing it with data from local shipping records, estimating levels of lost revenue.

Over the coming year, a flood of new data on extractives revenue flows is anticipated, as new rules on project-level reporting come into force around the world. This creates exciting new challenges ahead to equip the sector to make the most of this data, while also ensuring that these new open data initiatives maintain the strong tradition in the sector of projects driven by community needs and based on the ethos of community ownership.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-extractives/

Data + Fiscal Transparency = Following the Money

On March 2, 2015, Nigerian NGO BudgIT helped to launch Ebola Fund Watch, using open data to follow over $2.3 billion in Ebola intervention funds across Sierra Leone, Guinea, Liberia, and Nigeria, gathering evidence on efficient use of committed funds. The project builds on learning developed through prior BudgIT projects such as Tracka, monitoring capital projects in Nigeria, and Follow Flood Money, which brought together civil society organizations with data experts to analyze how funding in response to the 2012 floods trickled down to communities and cities. The Ebola Fund Watch platform connects data from donors with crowdsourced stories, and also produced an analytic report to influence government institutions and guide policy reforms.

BudgIT are just one example of a growing community of individuals and organizations around the world engaged in activities to "Follow the Money". Rather than isolated "armchair auditors", access to fiscal data is enabling groups to come together in focused exploration of gaps in public finances and spending. For example, through the Public Knowledge Workshop in Israel, citizens investigated the lack of funding for fire services, and from this became engaged in wider ongoing budget analysis. Government officials are even using open budget data from their own administrations to better understand, plan, and scrutinize policy.

Follow the money projects represent an ambitious program to rethink fiscal governance; shifting from a process of periodic accounting when books are balanced (and potentially corruption hidden), to a world of real-time data on financial flows, where public money is visible to the public at all times. Delivering on this vision requires substantial reforms to guarantee the quality of data. In the United States, the DATA Act, a new federal law, moves in this direction by establishing technical standards for the exchange of data on public spending and contracts—working towards a robust new infrastructure for transparency in public finances.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-fiscal-transparency/

http://opendatacon.org/webcast/data-public-money/

Data + Health = Patient Choice

The time horizons involved in creating an impact with health open data can vary widely. For research projects such as CARTaGENE, creating impact relies upon gathering longitudinal data and getting permission from research subjects for the open use of their data in future. Whereas for the creation of context-aware applications that can inform people about current health issues such as flu trends, real-time information is vital; shifting health agency practice from the production of backwards looking reports, to the direct publication of data from operational systems.

In Uruguay, where citizens can change their health provider once a year in February, providing timely data involves an annual campaign. The Uruguay Ministry of Health publishes reports on health provider performance, but prior to the launch of the "A Tu Servicio" platform, which provides interactive rankings of health providers, less than 1,000 people per year were downloading the data. Now the Ministry works with the Latin America Open Data Initiative (ILDA) and Fundación Avina to provide a rich interactive interface on top of open data and open source software, reaching 35,000 users last year, and contributing to an increase in the number of people changing providers while also stimulating public discussion on health providers' performance.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-health/

Data + Open Cities = Smart Citizens

By 2050 70% of the world's population will live in urban centres. Keeping cities moving, promoting resilience, and securing democratic responsiveness in their direction and day-to-day operation increasingly demands data. Open data secures space for citizen-driven development and greater collaboration between officials and outside actors. This can build open cities that adapt to meet the needs of their communities and businesses, rather than imposing top-down structures and solutions.

Over 300 cities around the world are now implementing open data policies, with the number growing every week. Although many local governments are still seeking common approaches to measure the return on investment of open policies one thing is clear: the objectives of open cities and the social and economic impacts that they generate are many and varied across the world.

In the US, online real-estate firm Zillow consulted with a wide variety of stakeholders and businesses to create a data standard for real estate data and then worked with ten cities to convert their open data, enabling a range of commercial intermediaries to help constituents make better housing decisions.

In Bahia Blanca, Argentina, the new mayor decided that an open city would be one of his key platforms. The open city enabled a great deal of innovation, particularly around solving environmental challenges due to petrochemical processing and shipping by using sensors and other technologies.

The Open City project in Edmonton, Canada is drawing together thousands of data points to create predictive models to help guide policy.

In Kathmandu, Nepal, open data has supported coordination in humanitarian response and also increased accountability for humanitarian spending. For example, open data has helped to track how much spending is actually reaching the government.

The World Council on City Data has established a framework for city indicators, gathering 100 comparable data points from participating cities across the globe that can be used for benchmarking.

Whether open data "empowers the already empowered", or can truly redistribute power and promote greater inclusion, it is likely to be shaped most visibly by action at the city level in the coming years. These debates will undoubtedly continue at the 4th International Open Data Conference in Madrid, Spain in 2016, where there is likely to be a particular emphasis on the smart city agenda.

EXPLORE MORE
http://opendatacon.org/webcast/data-open-cities-part-1/
http://opendatacon.org/webcast/recording-data-open-cities-part-2/

Data + Media and Culture = Informed Citizens

Data journalism has the potential to influence governments and instigate change at the local, national, and global level. With the expansive reach of the Internet, media narratives backed and informed by data have the ability to empower citizens through accurate and easily-understandable news media stories. With increased data literacy among journalists, media have the ability to provide citizens with essential information needed to facilitate transparent, democratic processes.

In Kenya, an Internews investigation into allocation of a welfare fund has demonstrated how finding the stories in data, and backing up news reports with data-driven evidence, can instigate policy change. Reporting on a freeze in the distribution of financial support for the elderly and disabled, traced back to a failure to agree on a system for distribution of the money, and subsequent disappearance of many funds, sparked government focus on the issue. Following this media attention, the

program was audited and reforms were implemented to develop a more efficient, reliable, and transparent distribution process of funds.

As well as discovering stories in data, journalists are also using open data to enhance fact-checking. Reflecting a model that has emerged in a number of countries, the Argentinian non-profit Chequeado, has been established as an online fact-checking service and media outlet for journalists in Latin America. It addition to providing accompanying open data sets with all of the stories they publish, they have worked to assist other media outlets in the Latin American region with fact-checking using open datasets.

In conflict-affected areas of Kenya, digital media projects are also building on a fact-based activism model, but this time with an emphasis on rumour-busting. Una Hakika (Swahili for "are you sure?") created the Wikirumours platform, seeking to offer neutral information pertaining to the various tribes in the area obtained through surveys. This offers an alternative to information exchange via rumours, and aims to reduce harm and conflict in the region.

In thinking about impacts from data journalism, it is important to go beyond simple statistics such as the number of readers or re-tweets, to look instead at how stories are stimulating public debate, or helping to overcome indifference and inertia in the policy process by engaging the public, politicians, and donors.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-media-and-culture/

Data + Indigenous People = Indigenous Voices

Open data in the context of indigenous peoples and communities can be understood as a double-edged sword. On the one hand, open data can help indigenous communities, both internally and externally. Internally, it can be used to inform policy, allocate resources, and set a vision for indigenous communities and spaces; externally, it can be used to influence public opinion, change perceptions of indigenous people, and help them work towards obtaining available resources. On the other hand, the concept of opening up data is accompanied by numerous challenges and concerns pertaining to privacy and indigenous information rights. In this light, various questions come forth, such as: What data do we make open? How will it be opened? To whom will it be opened?

The concept of data sovereignty has emerged as a particularly salient one for nations whose sovereignty, and whose representation within data has often been contested. The concept can be described as the ability to practice self-rule when it comes to data and the opening of data. This extends to the capacity of indigenous people to gather data for their own purposes and use. This is particularly important, as indigenous communities are commonly under-represented or excluded from large-scale national surveys. Even when they are included, some of the information obtained may not be useful or applicable to indigenous communities.

Tribal Ventures, a ten-year project in partnership with the Northwest Area Foundation to reduce poverty of the Cheyenne River people—a large indigenous reservation in South Dakota—orchestrated a reservation-wide household survey in 2012-2013. The project employed and educated their own tribal citizens to conduct the surveys and analysis. The information obtained in this survey sought to cater to the specific needs of the Cheyenne River people; the data continues to be used to inform citizens about their community and to inform various teams and organizations on the reserve to help better their work. Being that this project was conducted by and is used for the actual communities which it serves, this model has piqued interest among other indigenous groups seeking to rid their communities of data poverty and gain control of the information about their culture, people, and spaces.

EXPLORE MORE

http://opendatacon.org/webcast/recording-indigenous-data-open-governments/

Data + Public Money = Citizen Leadership

Understanding how public money is spent is a fundamental goal for many open data projects. But the release of data alone does not automatically create the citizen engagement and accountability that open government advocates seek. Beyond making data available, the next step is to get people to engage and take action with it. To work on connecting data and action:

‣ Bond, the UK membership body for organizations working in or supporting international development, launched the Aid Attitude Tracker to get citizens of the UK to pay attention to how development aid is being spent.

‣ La Nación of Argentina crowdsourced the manual entry of MP expenses through scrape-athons to raise awareness of government corruption.

‣ Open Data Lab Jakarta produced infographics that have run in local media to bring fiscal data to citizens, and have run training workshops to equip citizens in Indonesia and the Philippines to monitor project implementation.

Although in each of these cases some information on public money was in the public domain, it was only when intermediaries got involved that it was turned into actionable data, and that space for citizen leadership was opened up.

EXPLORE MORE

http://opendatacon.org/webcast/data-public-money/

Data + Public Sector Accountability = Citizen Empowerment

While governments have long been releasing certain public records, the open data movement has created a demand for more information and more data. Governments have responded slowly and inconsistently. When data is released at all it is often provided in formats that limit reuse, such as scanned PDFs. The push from citizens and civil society for open data has ushered in new practices of data use and analysis, with the potential to disrupt long-established customs of secrecy, and to identify corruption and bad practices that are otherwise hidden in a mountain of inaccessible documents. Open data is being used to pursue accountability across government:

In Jamaica, activists attribute a substantial proportion of the nation's debt to political corruption. The Jamaican Civil Society Coalition have come together to create a governance scorecard to assess transparency drawing on a range of open data sources.

Responding to widespread distrust of Slovakia's judicial system, a few years ago, the Slovakian government moved to publish judicial verdicts online. Responding

to usability problems with the website, Transparency International (TI) in Slovakia created an alternative site titled "Open Courts", presenting all the judicial data in a more user-friendly manner and with improved search features. Using this data, TI has piloted a methodology measuring how good and efficient court verdicts are. They have also been able to map family connections of judiciaries, finding that 1/5 of Slovakian judges have family connections in the courts.

The EU Integrity Watch website scrapes PDF files that are meant to disclose information about all politicians' side activities and uses this to look for officials' conflicts of interest, corporate influence on politicians, and unequal access to political decision-making. Through turning this information into data, EU Integrity Watch has been able to identify a number of cases of concern, although a lack of sanctions limits the extent to which detection ultimately leads to increased accountability.

For true data-enabled accountability, mechanisms are needed to act in response to concerns that are raised. Data does not replace good legal frameworks and empowered institutions, but it greatly increases the ability of citizens to engage in the scrutiny process, and to increase detection of issues.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-public-sector-accountability/

Data + Parliaments = Supporting Scrutiny

By turning the mountains of transcripts, documents, and records generated in parliaments into data, civil society groups have been able to transform the scrutiny of law-making from something that required a parliamentary pass or being an insider, to something that is increasingly accessible to all citizens.

Projects like SayIt, a reusable software component from the Poplus project co-developed by civic technology groups around the world, are powering websites that enable users to search through and explore transcripts from parliaments and public enquiries. For example, The People's Assembly parliamentary monitoring website from South Africa aggregates together transcripts and questions and answers from parliament, presenting this in an engaging and accessible form. While many implementations of SayIt rely on data scraped from government records, common standards have been developed for parliamentary transcripts, allowing parliaments to publish an authoritative, structured, and machine-readable record of their discussions.

In Papua New Guinea, the Open Parliament Project has worked to make data on all aspects of parliaments operation available. This works by capturing information in a database so that it can power both a website and an interactive SMS-based service for citizens to track what their MPs are doing. The system means citizens no longer need to travel to get the information they want, and has led to increased engagement and improved public perceptions of parliament.

Elsewhere, groups have used crowdsourcing of public documents and direct requests for data to investigate issues such as parliamentary expenses, salaries, and audit reports.

Often open data initiatives have focused on the executive branch of government alone. Yet, various countries have developed parliamentary specific projects, and parliaments are increasingly seeing the benefits of having their own dedicated open data initiatives.

EXPLORE MORE

http://opendatacon.org/webcast/recording-data-parliaments/

SUMMARY

Communities across the world are making use of open data to deliver social, economic, and political impacts.

Open data offers new space and new strategies for action across a variety of sectors.

Companies and activists are often investing time converting inaccessible information into open data in order to be able to innovate—removing this costly and time-consuming step would unlock even more innovation opportunities.

THE ROAD AHEAD

Understanding the Big Picture

3RD INTERNATIONAL OPEN DATA CONFERENCE 2015
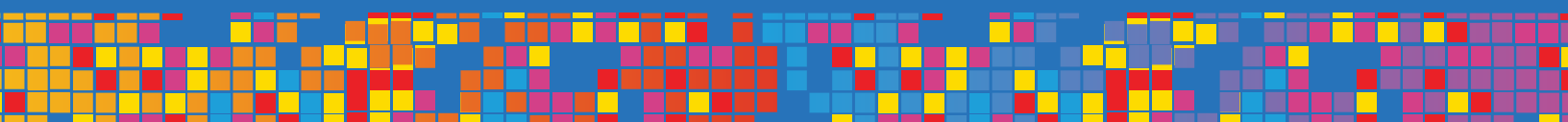
The pre-IODC unConference debated critical questions and practical actions on the global open data agenda

THE ROAD AHEAD

Understanding the Big Picture

A few years ago, debates about open data centred on dataset formats and data portals—not any more. Today, the open data debate covers an increasingly broad spectrum of topics: from comprehensive principles for open data and the measurement of impact, to the development of common standards, and critical issues such as privacy, multilingual data communities, and indigenous knowledge. The focus is no longer just on national executive branch data; the conversation has extended to cover municipal data, justice, and parliamentary data, and even data from the private sector.

Sessions at IODC spanned across this whole agenda. The conference hosted plenary sessions on the issues at the centre of the data revolution and explored the role that open data has to play in delivering substantive change in areas such as open government, sustainable development, and economic prosperity.

Principles for the Revolution

We cannot assume that the data revolution will be open by default.

Martin Tisné, Director of Policy, Omidyar Network

We are still in the initial years of an era that will see dramatic social change resulting from vastly increased data collection and analytic capacity. There are many examples to show that this can be harnessed to support social progress. However, unless the right practices and principles are embedded now, it could also lead to the centralization of power, increasing social exclusion and growing divides. Openness is a vital tool to shape the data revolution.

As the open cities panels at IODC explored, when a principle of "open by default" is baked into the way governments and businesses operate, the emphasis can be shifted from centralized "smart cities", to "open cities" and "smart citizens", where data enables civic participation and distributed innovation. At the national level, making open data part of the infrastructure of government and markets can help to hold increasingly complex systems of governance and trade to account. Projects like Open Corporates are demonstrating the importance of opening up key business registers; delivering the information that is needed for both the effective operation and regulation of markets.

If open data is to be more than a just policy announcement and the release of a few datasets, clear shared principles are needed that set out the path for governments and other stakehold-

ers to follow in transforming how they operate. Building on the G8 Open Data Charter, launched in 2013, and recognizing the need for a broader international charter—which would be relevant across countries at all levels of development—IODC saw the launch of a consultation on a new International Open Data Charter. As Stephen Walker of the Treasury Board Secretariat of the Government of Canada explained:

1. Many jurisdictions across the world have engaged with open data, but common principles and specific commitments are needed to help them move to the next phase.

2. For those that have not started yet, the Charter works as a foundational declaration of commitment, and offers common ground to accelerate the process, providing the means to pursue the political support needed.

3. With a wide range of potential forms of open data initiatives, the Charter will provide common ground to realize the potential of open data.

Following consultation on the final text, supported by regional outreach, the Charter is due to be launched in autumn 2015. It will be accompanied by a resource centre developed through open and inclusive processes, and bringing together expertise and insights from government, civil society, and the private sector. Although directed at governments, the Charter principles also have a role in shaping the agenda for international institutions, civil society and the private sector.

THE INTERNATIONAL OPEN DATA CHARTER (DRAFT)
FIVE PRINCIPLES

⭐ **Open Data by Default**

⭐ **Quality and Quantity**

⭐ **Accessible and Useable by All**

⭐ **Engagement and Empowerment of Citizens**

⭐ **Collaboration for Development and Innovation**

DEBATING PRINCIPLES

Developing international principles for open data involves thinking deeply about critical issues such as digital divides, privacy, and indigenous knowledge.

With countries, cities, and international institutions at very different stages of digital capabilities, principles need to set broad and ambitious goals, which are tailored in their application according to local needs and context. Ania Calderón, Coordinator of National Digital Strategy in the Office of the President of Mexico, highlights that the Charter is a process as well as a document. It should be a reflection of global conversations and a learning mechanism; one that engages communities in the implementation of open data policies to identify the data that is most useful, and to co-create local solutions to deliver on the principles and on local priorities.

When it comes to privacy, there needs to be clear recognition of the rights of citizens to protection from the abuse of their data, and clear understanding of the different kinds of data that governments and private enterprises hold. A principle of "open by default" does not mean that everything should be open, nor that there is a binary choice between open and closed. It does mean the decision not to provide open data should be clearly justified, but there can be legitimate claims for restricted data-sharing, such as in the case of indigenous communities, seeking "data sovereignty" to protect community-held knowledge from external exploitation.

EMBEDDING OPEN DATA PRINCIPLES IN THE SUSTAINABLE DEVELOPMENT GOALS

In September 2015, governments will agree on the Sustainable Development Goals (SDGs), setting a framework for global action over the next 15 years. As part of this, they will agree on actions to harness the data revolution for development, improving the data available to monitor progress towards the goals, and increasing the use of data to drive delivery of the goals. With much of the emphasis on increasing the use of private sector data, and investing in increased capacity for existing statistical data collection, there is a need to identify how principles of openness will work here in practice.

The recent African Data Consensus provides a key contribution to this task, recognizing the importance of openness as a cross-cutting theme for all data producers and users, and setting out a vision for a "partnership of all data communities that upholds the principles of official statistics as well as openness across the data value chain, which creates a vibrant data ecosystem providing timely, user-driven and disaggregated data for public good and inclusive development"[4]. This will involve

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4   Available at *http://www.cgdev.org/sites/default/files/Africa-Data-Consensus.pdf* (emphasis added).

work to embed the culture and skills for open data in many different professional groups: from healthcare to GIS. Often the formal training available to data professionals in these fields is a number of years behind the cutting edge. This highlights a need for professional development that can equip public finance experts, geodata practitioners, and health informatics specialists, amongst others, with the skills and confidence to work with open data tools and approaches.

> *There is no question about it, open data is central to the data revolution … The revolution aims to be open in more than one sense. More than just open data. It is open also about the types of partnerships that can be formed to improve the data landscape; to be inclusive of various data sources beyond the traditional.*

Amparo Ballivan, Lead Economist, World Bank

The Open Seventeen project, launched at IODC, draws attention to the fact that applying open data principles is not about a "read only" approach to data, but involves creating engagement and two-way dialogues around data. ONE, in collaboration with the Citizen Cyberscience Centre, the Crowdcrafting platform and the GovLab have called for ideas on how evidence on the implementation of the SDGs can be crowdsourced, giving citizens the power to create, as well as to analyze open data. Embedding rich principles of openness in the SDGs process will be a key challenge for the nascent Global Partnership on Development Data. IODC debated potential structures for the Partnership, from a civil society campaign, to a standing multi-stakeholder initiative. Whatever form it takes, building complementarity between a Global Partnership, the International Open Data Charter, existing global fora such as the Open Government Partnership, and local open data initiatives, offers a key opportunity to accelerate progress in securing the right kind of data revolution.

Building an Open Data Infrastructure

As the open data agenda matures, many open data communities have shifted their attention from getting access to data, to critically constructing new open data infrastructures. Just like physical infrastructures such as roads, rail, power lines, and telecom networks that powered development over the last 100 years, datasets have become a crucial part of our modern infrastructure. Ambitious programs are underway to establish standards and shared identifiers that will make it possible to "follow the money" in public budgets, and to accelerate the exchange of ideas and tools from one location to another. Although infrastructures often fade into the background, understanding how they are being shaped is crucial to shaping our future.

At IODC, the Open Data Institute (ODI) launched a conversation about the ownership of data infrastructures. The data required to govern our world is increasingly collected and managed by private firms. Datasets that might formerly have been state generated and held are being privatized, or established for the first time from private data sources. Without the right contracts and agreements in place, this data can quickly become inaccessible to politicians and citizens, restricting their ability to scrutinize or reuse it. Similar to physical infrastructure, data infrastructures can be built well—created with a focus on quality, sustainability, and accessibility—or they can be built poorly, with disparate datasets that do not join up, bias towards particular communities, and barriers that exclude particular groups of users.

APPLYING THE STANDARDS WE HAVE

Promoting good practices on open data standards is key to scaling the impact of open data. Open data users frequently face small but time consuming technical hurdles that slow down progress towards open data impact. Balancing the consistency and reusability of data with the great variation in national and regional structures, cultures, and political processes requires carefully designed data standards and common approaches to build the right levels of interoperability.

Research by Open North for the Open Government Partnership Open Data Working Group[5] has shown that many open data initiatives currently struggle to apply standards and good practices to their data and metadata, either unaware of the standards they could use, or overwhelmed by a long list of issues to address without a clear sense of priority. Increased awareness and education about standards is important to address this, as is work to more clearly identify when standardization matters most. At IODC, a facilitated workshop demonstrated the importance of talking about standards, inviting participants to share their needs for data standards, and the standards they knew about. Most left with new ideas to help them in their work; however, the session also identified a number of standard gaps in need of attention.

BUILDING USER-CENTRED STANDARDS

Decision-makers and those that hold them accountable—whether at the local, national, or global level—require access to usable, meaningful information that sheds light on the problems they are seeking to solve. Finding this information often involves joining up data from various independent sources. In the past, this process has involved expensive, painstaking, and time consuming work. To enable everyone to have access to the kinds of responsive and real-time analysis that the data revolution promises, new public data infrastructures are being developed.

The Joined Up Data Alliance, launched at IODC, will be working over the coming years to bring together groups involved in setting data standards in order to "foster user-centred design in creation and dissemination of [open data] standards"[6] and to ensure that different data communities can work together across geographic and sectoral boundaries. This does not mean one top-down standard, but involves finding points of connection and collaboration between different groups, including in the governance and change-control of technical standards and shared codelists.

Creating user centred standards can involve a range of approaches. For example, the Humanitarian Exchange Language (HXL) was iteratively developed, working with

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5   See: *http://opendatacon.org/why-do-we-struggle-to-standardize-and-what-should-we-prioritize/*

6   Joined Up Data Alliance: Statement of Collaboration. See: *http://bit.ly/iodc-jud*

practitioners in the field and progressively cutting the standard down to a small set of core elements that support exchange of critical information. The Open Contracting Data Standard was built around a series of different use cases, offering a much larger set of possible fields, but backed by an implementation model that encourages publishers and users to negotiate over priorities in the short, medium, and long term.

 # HXL

Humanitarian Exchange Language
hxlstandard.org

hxlstandard.org

Places

#region	multi-country region
#country	country name
#adm1	administrative
..#adm5	subdivisions
#adm1+code	admin level 1 p-code
#loc	place (camp, building, etc.)
#geo	geographical info
#geo+lat	latitude
#geo+lon	longitude

People and households

#affected	number affected
#inneed	number in need
#targeted	number targeted
#reached	number reached
#population	population category
#beneficiary	beneficiary category

Responses and other operations

#activity	project or activity name
#org	organisation name
#contact	contact info
#sector	sector or cluster name
#subsector	subsector name
#indicator	indicator name
#capacity	response capacity
#output	activity output
#operations	operation-related info

Crises and incidents

#crisis	crisis/emergency name
#cause	crisis or incident cause
#impact	crisis or incident impact
#severity	crisis or incident severity

Extras

#date	day or period
#status	e.g. active
#description	general text
#meta	general meta data

The Humanitarian Exchange Language Index Card: exploring accessible approaches to data standards

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THE POLITICS OF DATA

Data is not neutral. The fields included in a dataset, the categories used, and the way it is provided, all have consequences. Thinking about data infrastructures can draw attention to what is being counted, and whose interests are being served. Indigenous communities, for example, often live in multiple settlements and in undefined jurisdictions that do not fit into census sampling, which has in the past led to inaccuracies in vital statistics, with major consequences for policy and programs.

Governments are increasingly engaging with projects like OpenStreetMap, the largest citizen-generated open dataset in the world, showing the potential for shared data infrastructures in which bottom-up representations of the world can co-exist and intermingle with "official" data. However, there is much to be done to make sure all citizens have the opportunity to shape the data that describes their world, and to ensure that the data used in public debate is properly subject to scrutiny and discussion.

An Engine of Innovation

The impact stories shared at IODC and in Chapter Two are a testament to what can happen when barriers to collaboration are removed, and different groups can experiment with new ideas to solve problems, deliver services, or build businesses. These are just some of the examples of how open data drives innovation; there are many more cases of process-innovation inside organizations, enabled by lower costs of data acquisition and use. These myriad uses of data to drive both marginal and transformative changes in how governments and businesses operate are behind the figures that attribute multiple billions of dollars in value to opening data. However, as IODC delegates also discussed, innovation is not an automatic consequence of data publication; it requires the right environment and support.

HARNESSING THE POTENTIAL

Estimates have put the annual potential economic value of open data as high as $3-5 trillion, with the benefits shared between data-driven businesses and the end-users of the services provided by those businesses. However, the route to achieving the high levels of benefit on a global scale is not clearly understood. Without a good understanding, policies and interventions cannot be designed to maximize and accelerate the achievement of the benefits. There are already disparities not just between developed countries and developing countries but also within regions. A recent study suggests that some countries in the European Union would gain double the per-capita benefits of others because of structural and skills differences[7]. Likewise, a few countries such as Kenya, Ghana, and Senegal are already outpacing other African countries in bringing data-driven applications to market and delivering benefits to the users of those services. Some in developing countries have also started to question the extent to which the release of their data will benefit other countries at the expense of their own.

Leading governments have moved past the initial approach of leaving open data exploitation to the market alone, and are now investing significant time and resources in working with businesses. This can be seen, for example, in the growing support for organizations like ODI, which provides incubation support to start-up open data businesses, and the "business open data roundtables" hosted by departments of the US Government. These models move beyond one-off hackathons to explore sustained ways of building open data enterprise and innovation. Much more work is needed to understand how such models can scale up and out in different environments around the world.

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7   Big and Open Data in Europe: A Growth Engine or a Missed Opportunity?
    See: *http://www.bigopendata.eu/* (WISE/Demos Europa)

PROBLEM SOLVING WITH DATA

The Open Data Roundtables model brings together government officials—who have both access to data and an understanding of key policy problems—with innovators from outside government. GODAN is exploring ways to connect up stakeholders across different countries and different sectors around shared problems. Innovation and open data fellowship programs around the world are embedding professionals from outside of government inside the state to work on specific projects. These models all seek to reconnect open data with practical problem solving.

Striking the balance of focus between building the infrastructures needed to address shared problems in the future, and using the data we have now to find innovative solutions to existing problems, is a key challenge for the open data movement. The best open data approaches combine the two.

Open Data for All

While some countries and cities possess the technical capability, relevant skills, and social capital to implement open data initiatives quickly and easily, in other parts of the world, capacity is constrained and resources scarce. It is incumbent upon those who are already advanced in the world of open data to support those hoping to take advantage of data's potential benefits. It is also important to avoid a one-size-fits-all approach to capacity building, identifying "best fit" strategies for different countries, contexts, and domains.

Thinking about the open data ecosystem in terms of both supply and demand, there are two largely separate audiences to be addressed by capacity building initiatives. On the supply side are governments who might need support in opening up their own data, incorporating it into their own workflows, and using it internally. On the demand side are groups often referred to as "data intermediaries" and users—including actors from civil society and the media—who need the skills to be able to understand how to use the data in their work, and make those results accessible to the public. Only with support for both sides of this ecosystem will open data live up to its full potential.

OPEN IN ALL LANGUAGES

Data might be online, machine readable, and openly licensed,but if the tools to use it or the data itself are in a language a citizen cannot read, the data is not practically open to them. Adapting open data tools to work in multiple languages and supporting the development of local language tools are important for an inclusive and responsive data revolution. While English is still the predominant language in open data discourses and in datasets, there are growing Spanish and Francophone communities, which were strongly represented at IODC.

With France as the next co-chair of the Open Government Partnership, momentum around the Francophone open data community is growing, and the next IODC conference will take place in Spain, continuing to provide essential opportunities to bridge skills, experience, ideas, and learning across language communities.

BUILDING CAPACITY

Over the last few years organizations have developed a range of approaches to open data capacity building, from School of Data training and World Bank Data Bootcamps, to embedded fellowship programs and online learning resources. However, these are just a drop in the ocean when it comes to meeting the demand for data skills. Building on learning from these programs, and upon a clear map of the capabilities that different stakeholders need in order to publish or use data, work is needed to develop more comprehensive opportunities for capacity building. This calls for work that will explore different pedagogies, and that will embed open data learning in formal education and organizational training, as well as providing informal learning opportunities.

If the data revolution is to be one that truly empowers all citizens, then all citizens need access, either directly or through trusted intermediaries, to the skills to create, critique, use, and act with open data.

Monitoring and Measurement

Common definitions, measurements, and metrics are important to help benchmark the progress of countries in implementing open data initiatives and securing a return on their efforts and investments. Tools such as the Open Data Barometer, which provides a comparative assessment of over 80 countries, have fast become an established reference resource for governments and civil society.

Effective measurement needs to be robust, yet also needs to be flexible enough to respond to different government structures, priorities, and situations. For example, assessing the supply of data at a national level may work for centralized governments, but may fail to capture the complexity of federal systems. Adaptable tools like the Open Data Census, with it's local, regional, and city editions in which local communities identify key datasets they want to assess, provide one way of dealing with this.

CONNECTING RESEARCH AND ACTION

The Open Data Research Symposium, a fringe event of IODC, featured a number of papers that looked in detail at measurement. Rubinstein, Davies, and Grey[8] reviewed existing comparative measurements of country open data performance, looking at the four different areas in which current studies focus: country context, data supply, data use, and impacts. They found limited work looking systematically at understanding data use, pointing to a gap in current open data analysis. Walker, Frank, and Thompson[9] reported on pilot work to better align measurements of data supply with the criteria that are important to data users, placing an emphasis on accessible documentation of data and discoverability of datasets. Fumega[10] compared

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8   Rubinstein, Davies & Grey. (paper forthcoming). Assessing open data assessments. See: *http://bit.ly/odrs2015*

9   Walker, Frank & Thomson. (2015). User-centrered methods for measuring the value of open data.
    See: *http://bit.ly/odrs-60*

10 Fumega. (2015). Understanding mechanisms to access government information and data around the world.
    See: *http://bit.ly/odrs-1*

and contrasted data acquisition through open data and Right to Information (RTI) approaches, highlighting the need to understand the whole landscape of access to reusable data, and to maintain strong connections between both the research and practitioner communities around RTI and open data.

Researchers are working to develop shared frameworks for capturing quantitative and qualitative information about open data, building on deepening theoretical understandings of key concepts such as "data user", "intermediary", and "ecosystem". By discussing concepts and frameworks in a global forum, researchers can strengthen their ability to know when findings generalize across contexts and when they are locally specific.

In open data communities evidence of impact is, unsurprisingly, in high demand. Open data projects need to consider how they will capture quantitative and qualitative data to feed into ongoing research, deepening understandings of how to act in what remains a comparatively young field.

SUMMARY

Open data is central to the data revolution.

Open data enables more effective monitoring of the SDGs.

Open data enables greater collaboration and innovation in delivering on the SDGs.

Both shared global principles and local action are needed to unlock the full value of investments in data.

Joined-up open data infrastructures are a vital foundation for accountable governance and inclusive development in an increasingly complex world.
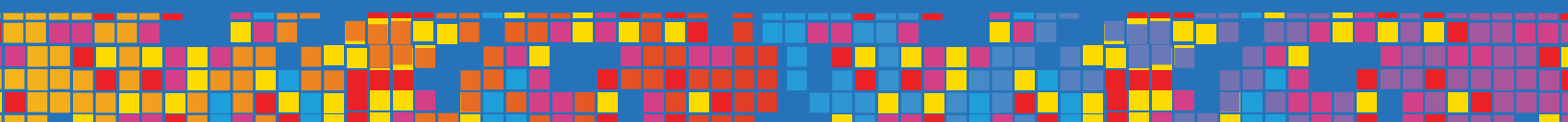
Broad efforts are needed to ensure open data is accessible to all, including attentiveness to issues of language and culture, and strategic capacity building interventions through informal and formal learning.

Shared approaches to monitoring and measurement, rooted in an understanding of citizen need, are important to power learning and strategic action on open data impact.

NEXT STEPS

An Action Plan
for International
Collaboration

3RD INTERNATIONAL OPEN DATA CONFERENCE 2015

NEXT STEPS
An Action Plan for International Collaboration

ACTION

Throughout the preparation for IODC, the pre-events, and the conference itself, there has been a focus on international collaboration. A network of organizations worked to craft problem statements and to facilitate conference discussion of potential collaborative actions. Through online discussion and face-to-face sessions, they identified key steps for the open data community to take in order to deliver an inclusive open data infrastructure and to deepen the existing impact of open data. This session synthesizes and summarizes the action agenda from IODC, setting out areas for shared action over the coming year.

More detailed copies of the actions described here, along with detailed background blog posts and discussions on each action area, can be found on the conference website.

Actions

To unlock the full potential of an open data revolution will require international collaboration. Government, civil society, and the private sector must all play their part to:

CHARTER

DELIVER SHARED PRINCIPLES FOR OPEN DATA

Common, fundamental principles are vital in order to unlock a sustainable supply of high quality open data, and to create the foundations for inclusive and effective open data use. The International Open Data Charter will provide principles for open data policy, relevant to governments at all levels of development and supported by implementation resources and working groups.

STANDARDS

DEVELOP AND ADOPT GOOD PRACTICES AND OPEN STANDARDS FOR DATA PUBLICATION

Standards groups must work together for joined up, interoperable data, and must focus on priority practices rooted in user needs.

Data publishers must work to identify and adopt shared standards and remove the technology and policy barriers that are frequently preventing data reuse.

SKILLS AND LEARNING

BUILD CAPACITY TO PRODUCE AND USE OPEN DATA EFFECTIVELY

Government open data leaders need increased opportunities for networking and peer-learning. Models are needed to support private sector and civil society open data champions in working to unlock the economic and social potential of open data.

Work is needed to identify and embed core competencies for working with open data within existing organizational training, formal education, and informal learning programs.

PROBLEM SOLVING

STRENGTHEN OPEN DATA INNOVATION NETWORKS

Investment, support, and strategic action is needed to scale social and economic open data innovations that work. Organizations should commit to using open data strategies in addressing key sectoral challenges.

Open data innovation networks and thematic collaborations in areas such as health, agriculture, and parliamentary openness will facilitate the spread of ideas, tools, and skills— supporting context-aware and high-impact innovation exchange.

MEASUREMENT

ADOPT COMMON MEASUREMENT AND EVALUATION TOOLS

Researchers should work together to avoid duplication, to increase the rigour of open data assessments, and to build a shared, contextualized, evidence base on what works. Reusable methodological tools that measure the supply, use, and outcomes of open data are vital.

To ensure the data revolution delivers open data, open data assessment methods must also be embedded within domain-specific surveys, including assessments of national statistical data.

All stakeholders should work to monitor and evaluate their open data activities, contributing to research and shared learning on securing the greatest social impact for an open data revolution.

CHARTER
Shared Principles

IODC15 brought together governments, international agencies, private companies and nonprofits, who have collectively made hundreds of commitments to increase the supply and use of open data. These organizations are working in many different countries and contexts, yet are all moving in a common direction. Local action can be stronger and more coordinated when framed within the context of shared principles.

An International Open Data Charter will establish shared, global principles for open data and will act as a framework for shared learning and evaluation of progress towards a world where government data is open by default.

Building on efforts that have already been undertaken in relation to the G8 Open Data Charter, the G20 commitment to open data principles, the UN Secretary General's Independent Expert Advisory Group on the Data Revolution, the Data Revolution Task Force, the Africa Data Consensus, and a number of other multilateral groups and initiatives, the International Open Data Charter is being designed as an inclusive, universally relevant, and accessible set of principles for governments to adopt and work to put into practice, backed by supporting guidance on effective open data implementation.

Delivering on the Charter will involve:

▸ **Consolidation of a stewardship group** with broad representation from different countries, sectors, and backgrounds. The stewardship group will develop a sustainable model for the ongoing renewal and implementation of the Charter, and ongoing assessment of its impact.

▸ **Developing a resource centre** containing definitions, guidelines, recommended core datasets, tools, and resources. The resource centre will include an inventory of standards and a maturity model for assessing open data implementation.

▸ **The launch and progressive adoption of the Charter.** The Charter will be launched in late 2015, and promoted throughout open data related events in the coming year, with a rolling program of work to engage new governments and other stakeholders.

Many of the following actions in this section also contribute to the development of a mechanism for implementation of the Open Data Charter by IODC 2016.

STANDARDS
Good Practices and Open Standards

Too often the potential of open data is hindered by poor application of common standards and good practices for data licensing, file formats, publication patterns, documentation, and data schema. Data publishers should focus on meeting minimum good practices and increasing the quality and interoperability of their data as quickly as possible.

For this, data publishers will need guidance and support to prioritize the application of good practices and standards. Building stronger links between technical standards communities and the producers and users of open government data is vital to ensure that best practices put forward serve the needs of all citizens, businesses, and governments wanting to use data, rather than assuming high levels of technical skill.

Also, the IODC community made a number of commitments to action that will help to deliver on this agenda, including:

▸ **Strengthen and prioritize good practice recommendations**, building on the work of the Open Government Partnership Open Data Working Group, and the World Wide Web Consortium (W3C) Data on the Web Best Practices Working Group. There is a need to continually broaden engagement in the conversation about standards, ensuring that they connect with the needs and capacity of practitioners engaged in everyday production and use of open data.

- **Build connections among open standards.** Launched at IODC, the Joined Up Data Alliance is a coalition of open data standards setters, users, and advocates committing to collaborate on matters of mutual interest in the development and usage of data standards—especially in relation to supranational and cross-domain issues. The Alliance will identify shared challenges, such as common organization identifiers, and will collaborate on common approaches to address them.

- **Fostering awareness and use of common standards**. The Connecting Standards workshop at IODC offered a facilitated space for knowledge exchange between policy makers and open data practitioners, aiding discovery and discussion of existing data standards, and identification of gaps that need to be filled. Future open data events should include space for similar peer-to-peer knowledge exchange. The adoption of shared standards and the creation of connections between them relies first and foremost on building connections between the people who are creating and using data in different settings around the world.

As we start to plan for IODC 2016, the community should continue to work together to build mechanisms to set out general best practices for data publication, as well as suggesting domain-specific standards. The Open Data Charter will create Technical Annexes to validate these recommended practices. Standard-setting groups responsible for domain-specific standards need to work together, enabling users to make connections across datasets that will allow accountability groups to "follow the money", and that will support entrepreneurs to scale up solutions more smoothly.

SKILLS AND LEARNING

Build Capacity

Building sustainable open data infrastructures and enabling the effective use of open data requires both clear leadership and access to a broad range of skills and expertise. Organizations from all sectors need to make strategic investments in staff and community capacity across the whole open data value-chain, including skills for:

▸ setting open data policy

▸ supplying open data;

▸ using open data; and

▸ understanding, analyzing, and mobilizing data to create change.

The IODC community identified the need for concerted efforts to deliver greater open data capacity through:

▸ **Expanded opportunities for leadership development and networking.** Opportunities for leaders to meet together and exchange knowledge should be extended. This will include activities ranging from ad-hoc match-making through the GovLab Network of Innovators, to facilitated knowledge exchange opportunities such as the ODI Open Data Leaders Network (ODLN) and the Organization of American States (OAS) Open Government Fellowships and workshops.

- **An open data competency map.** Organizations need a comprehensive map of the different clusters of skills, knowledge, and abilities that are required to successfully implement open data initiatives. This map should be developed based on an understanding of the different levels of development and needs in different countries and sectors around the world.

- **Cataloging and evaluating capacity building resources.** There are many open data capacity building interventions and programs available around the world, but there are also many gaps and few interventions that have been rigorously evaluated. There is a need for strategies that could help organizations identify, select, and evaluate capacity building options for open data implementation and use.

- **Increased formal and information education provision on data literacy.** Schools, colleges, and universities need to develop and provide high-quality formal courses supported by open educational resources, which utilize a range of learning styles to focus on both data science skills and upon open data issues. Accredited courses will help build institutional recognition of open data skills. Existing training of data management, GIS, and other related issues needs to be updated to reflect the emergence of open data.

Building on the success of School of Data Summer Camp and the Open Data Leaders Summit in 2015, the IODC 2016 should also bring together some of the most innovative experiences on capacity building, helping to meet the grand challenge of ensuring open data is accessible to all.

PROBLEM SOLVING
Strengthen Open Data Innovation Networks

Different communities are working to understand the role of data in relation to a wide range of issues—from health and agriculture, to environmental sustainability and good governance. Open data is not just another community, it is a method that can be applied to practical problem solving across these different domains.

Scaling up the social and economic impacts of open data will require the right investments, methods, and business models to address key problems. Open data innovation networks and thematic collaborations in areas such as health, agriculture, and parliamentary openness will facilitate the spread of ideas, tools, and skills— supporting context-aware and high-impact innovation exchange.

IODC 2015 hosted a number of sector-specific networks, each committed to scaling innovation and impact. These included:

▸ **Agriculture and Nutrition.** GODAN brings together over 120 member organizations from different sectors and settings around the world to work on practical problem solving with open data, including using open data as a platform for economic development for entrepreneurs and small-holder farmers.

▸ **Parliamentary Openness.** The Open Parliaments Network is working to improve emerging international standards in the areas of parliamentary ethics, campaign finance, and lobbying. By creating standards based around engagement with users, tools and approaches for scrutinizing data can be more easily exchanged between practitioners from different countries.

▸ **Health:** *Dengue Fever.* Recent work in Paraguay has demonstrated the potential of open data in the surveillance of Dengue outbreaks in Latin America. In partnership with governments, civil society, and relevant stakeholders, ILDA is developing alliances to foster the creation and use of this data to improve outbreak monitoring and planning in the region.

To scale up social and economic innovation further, the IODC community identified the need for:

▸ **Ongoing mapping of existing open data impacts and innovations.** Projects such as the Open Data Impact Map support the systematic identification of existing cases of data use and impact, and enabling research into the local factors that unlock the promise of open data. Ongoing work is needed to identify, evaluate, and share stories of open data use in addressing key problems. IODC 2016 will further build on the impact session from IODC 20515 to contribute to this agenda.

▸ **New investments mechanisms to catalyze private sector innovation with open data**, particularly in developing countries. Effective networks for private sector innovation should encourage dialogue between governments and the private sector about priority datasets. Private sector organizations should also be pushed to consider the benefits of opening up their own data. Models to build upon include the Open Data Exchange in Canada and the Open Data Alliance in Taiwan. The Private Sector Working Group of the International Open Data Charter will also focus on ensuring greater support for entrepreneurs and enterprise use of open data, including building capacity in developing economies.

▸ **Support for new sectoral initiatives.** Further investment and brokering is needed to catalyze innovation with open data, particularly in developing countries. During the forthcoming year, government, private sector, NGOs, and international development organizations should continue to make greater explicit commitments to explore open data strategies when addressing key sectoral challenges.

IODC 2016 should provide space for further sectoral networks to meet, share learning, and work together in the effective and high-impact use of open data.

MEASUREMENT
Common Measurement and Evaluation Tools

The ability to compare and evaluate the outcomes of open data initiatives is vital to understand and improve the impact of open data in supporting the effectiveness of government spending, economic development, and the fight against corruption, among other areas. Governments, developers, researchers, and civil society are continuously seeking both quantitative and qualitative evidence that can be used to inform analysis, benchmark performance, and improve practice.

Building on the existing Common Assessment Methods for Open Data framework, researchers should come together to map existing studies, their methodologies, targets, and audiences, identifying areas for deeper collaboration and shared methods and metrics to focus on. This will provide reusable methods and tools that can strengthen the rigour and comprehensiveness of the open data evidence base, which can be used in monitoring progress against Open Data Charter principles.

All actors involved in open data initiatives should work to monitor and evaluate their open data activities using these shared frameworks, contributing to research and shared learning.

Collaborative commitments in this area include:

▸ **Refine common assessment methods for open data.** Partners will work together to update, extend, and further develop the current Common Assessment Methods for Open Data framework—including a library of definition, taxonomies, metrics, and guidance materials on how to apply and contextualize them. Anyone planning an open data assessment project is invited to draw upon the Common Assessment Method Framework, and to get involved in shaping its future.

▸ **Network researchers.** Building on the Open Data Research Network, and Common Assessment Methods mailing list, an ongoing space for dialogue among researchers working on open data measurement and evaluation will be established, and opportunities identified to gather researchers together for in-person dialogue.

▸ **Develop domain specific assessments: starting with national statistics.** National Statistical Offices (NSOs) play a central role in capturing data to support the monitoring of SDGs. They provide a key official source of national data; therefore, they have a special obligation to adopt and implement open data policies. Building on the Open Data Watch pilot project to measure the availability of data from NSOs, it is important to monitor how much data is made available. Other sectoral assessments of data quality and availability should include components on open data, drawing on shared definitions and metrics.

Measurement should remain high on the agenda for IODC 2016, including through sessions within the Open Data Research Symposium.

Taking Action

This report sets out a number of core areas for action and describes various specific activities in which members of the IODC community are engaged. To move this agenda forward many more individuals and organizations will need to be involved in action.

At the closing of IODC, delegates were invited to tweet their own actions using the #iodc15 and #myaction hashtags. You can see examples of the actions that were shared here.

Consider how you might develop your own local or organizational action plan, or how you might get involved in collaborative initiatives that can support delivery of this agenda.

You can share information about your own activities that deliver on this agenda at *www.opendatacon.org*.

As we move towards the next International Open Data Conference in 2016 we will be taking stock of progress against the actions discussed in this report. We hope that many of you will add your voices and your efforts as we look toward IODC 2016 and beyond. Through strong dedication and collaboration, we can ensure that the impacts of open data are felt from the smallest local communities to the largest global institutions.

Some of the #myaction #iodc15 tweets...

James Saaka @NITAUgandaED

#IODC15 #MyAction ensure open data quick wins are a reality

4:20 PM - 29 May 2015

Liberate the Data @OpenDataBC

@opennorth's #IODC15 #myaction involves helping on on angles of best practices - striving for possible over perfect.

4:31 PM - 29 May 2015

Laura Bacon @laurambacon

My action(s): Commission/oversee case studies on #opendata impact; read wealth of reports & articles published recently #IODC15 #myaction

4:21 PM - 29 May 2015

sumandro @ajantriks

#IODC15: #myAction is to bring diverse accountability & information+citizenship rights groups into #openData convos at local+national levels

4:28 PM - 29 May 2015

Tanja Lahti @TanjaLahti

#iodc15 #myaction I'll enhance the use of #opendata also inside the city organization

4:27 PM - 29 May 2015

Open North @opennorth

Helping scale out + up + deeper the global #opendata community! #IODC15 #MyAction

4:22 PM - 29 May 2015

Andrew Stott @DirDigEng

#myaction from #IODC15 is to work with @Morchickit to improve & extend this year's #OpenData Index #IODC15

4:19 PM - 29 May 2015

Mélanie Brunet @MelanieBrunet

Assign sector codes and policy markers to @IDRC_CRDI projects as part of its commitment to #IATI #IODC15 #myaction

4:21 PM - 29 May 2015

Ignasi Alcalde @ignasialcalde

#IODC15 #action to create a blog post summarizing best ideas in #opendata and #education #myaction

4:22 PM - 29 May 2015

Radu Puchiu @RaduPuchiu

#IODC15 #myaction bring the journalists on board to bring more value to #OpenData and increase participation

4:19 PM - 29 May 2015

data.go.id @datagoid

Embedding open data into our e-government architecture & making it the new business as usual in the government! #IODC15 #ourAction @myAction

4:18 PM - 29 May 2015

Yohanna Loucheur @YohannaLoucheur

#myaction #IODC15: contribuer à créer réseau Francophonie pour partager idées, ressources, expériences.

4:18 PM - 29 May 2015

ANNEXE
International Open Data Charter

You can find the full and final text of the International Open Data Charter at *www.opendatacharter.net*

Acknowledgements

3RD INTERNATIONAL
OPEN DATA
CONFERENCE 2015

Enabling the data revolution

3E CONFÉRENCE
INTERNATIONALE SUR
LES DONNÉES
OUVERTES 2015

Faciliter la révolution des données