

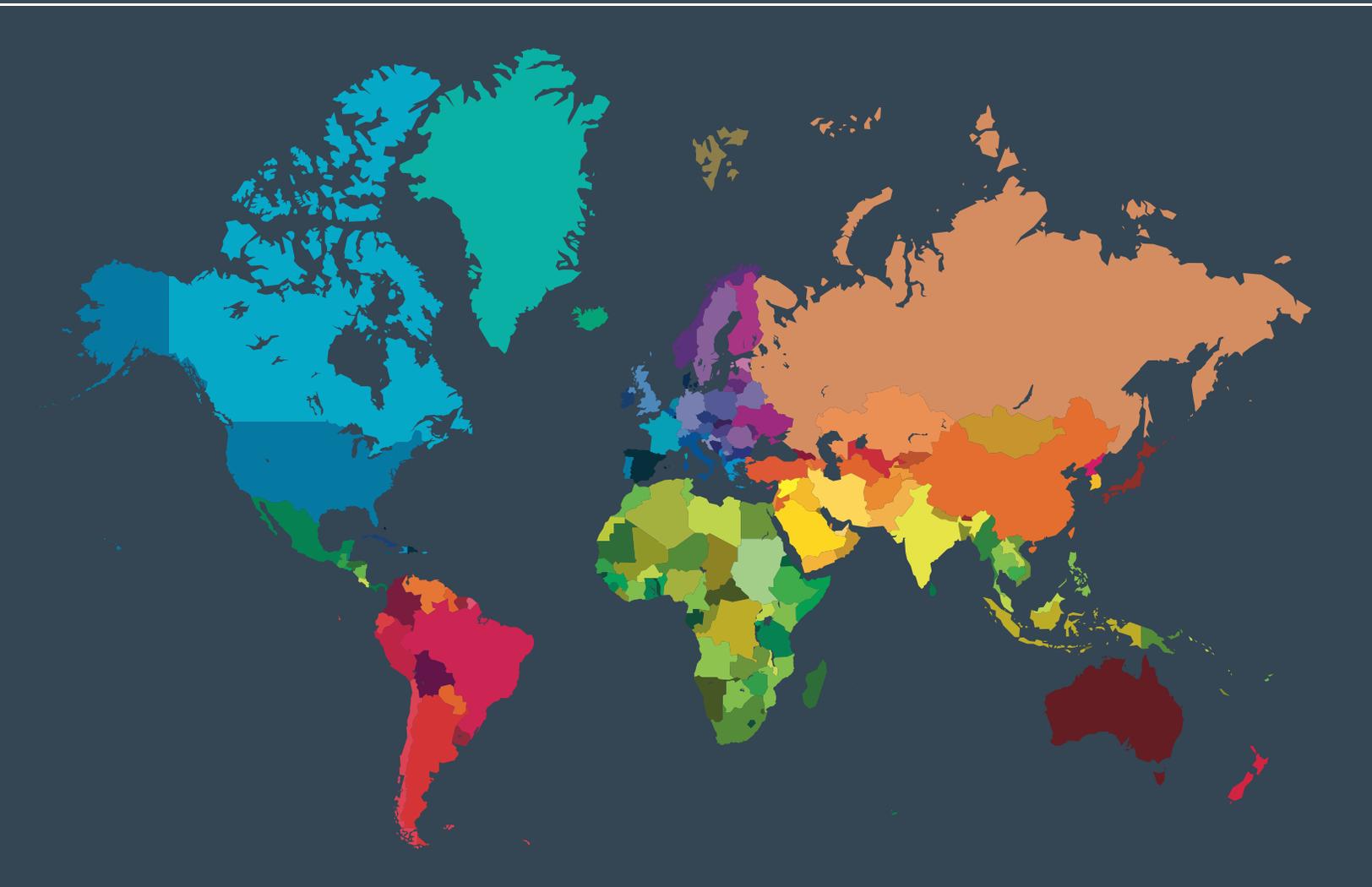


THE CENTER FOR
OPEN DATA ENTERPRISE



Open Data Impact Map

May 2016 Report



The [Center for Open Data Enterprise](#) and the [Open Data for Development Network](#) are pleased to publish this first Report of findings from the Open Data Impact Map.

Acknowledgements

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The Map is a collaborative and evolving effort of the open data community. We are grateful to colleagues and Regional Supporters who have provided ongoing feedback, local open data use examples, and results from their own studies, in support of our goal to make the Map an ongoing public resource. Regional Supporters include Buenos Aires Ciudad, Capgemini, Caribbean Open Institute, Center for Technology in Government, Codeando Mexico, Data 61, Data Uruguay, Datos El Salvador, Ennovent, Expert-Grup, GeoCensos, Insight Centre for Data Analytics, New Zealand Open Government Data Programme, National Information Technologies (NITEC), Open City Foundation, Open Data.Ch, Open Institute, Open Knowledge Australia, Open Knowledge Brasil, Open Knowledge China, Open North, Taiwan Open Data Alliance, Technologie Stiftung Berlin, and the United Nations Development Programme (UNDP).

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Executive Summary

Around the world organizations are using open government data - free, publicly available data that anyone can access and use, without restrictions. In 2015, the [Center for Open Data Enterprise](#) and [Open Data for Development \(OD4D\) Network](#) created the Open Data Impact Map (<http://OpenDataEnterprise.org/Map>) to identify, compare, and analyze the wide range of open data use cases.

This report presents findings from 1534 open data use cases across 87 countries.

Key findings

1. Large organizations (200+ FTEs) typically use open data to optimize their operations.
2. New open data products and services are developed mostly by data/information technology and geospatial companies.
3. Open data is increasingly a resource for greater public participation and advocacy efforts.
4. Across all regions, the sectors using open data the most include: (1) governance, (2) data/information technology, and (3) research and consulting.
5. Higher income countries typically have greater private sector use of open data.
6. Government operations, geospatial, demographic and social, and weather data are the most common data types used across sectors.
7. Five sectors account for over half of the organizations using open data founded in the last decade: agriculture, data/information technology, governance, healthcare, and housing and real estate.
8. Developer groups, mostly in lower income countries, work in governance, data/information technology, and media and communications sectors.

The demand for government data provides a compelling rationale for growing open data programs and helping prioritize the most important datasets based on a user perspective. This report can help inform investments in open government data and inspire novel uses of this public resource across organizations, sectors and regions.



Introduction

Businesses, nonprofits, governments and citizens are using open data to launch new ventures, analyze trends, make data-driven decisions, and solve complex problems in all sectors of the economy. Open data is free, publicly available data that anyone can access and use, without restrictions. The most widely used open data comes from government and government-supported institutions, through social media, companies, and NGOs can all be sources of open data as well.

Like any public resource, open data needs to be developed, managed, and provided in a way that meets the needs of the people and organizations that use it. Several global initiatives such as the [Open Data Index](#) and [Open Data Barometer](#) have gone a long way in assessing the supply and quality of open data around the world. To date, however, there has been no equivalent effort to assess the use of open data from the perspective of the people and organizations that use open data. Based on the growing need for this demand-side perspective, the Center for Open Data Enterprise and the Open Data for Development (OD4D) Network launched the [Open Data Impact Map](#) in May 2015.

The Open Data Impact Map is the first public database of open data use cases around the world. It is designed to demonstrate the value of open government data in a range of applications and provide a basis for further analysis of the impact of open data globally. The Map makes it possible for the first time to compare international use cases based on the types of data they use, the industry they operate in, and other factors. We launched the Map in beta in May 2015 at the International Open Data Conference in Ottawa to demonstrate that open data is a powerful public resource for established businesses, nonprofits, and entrepreneurs.

The Map includes over 1500 examples of open data use that have been added throughout 2015–2016. This report provides an analysis of these open data use cases from around the globe.

The report findings are organized in three sections:



Types of Data Use

Major patterns and trends in worldwide open data usage that apply across regions and income levels.



Regional Trends

How open data is used differently in seven geographical regions, and how countries' income level relates to open data use.



Sectoral Trends

The sectors where open data is having the greatest impact, and the types of uses being developed in each.

The Report is intended to be relevant to government data providers, international development organizations, open data organizations, and those seeking to better understand uses of open government data in regions and sectors.

Methodology

The Open Data Impact Map includes organizations that are companies, non-profits, or developer groups; and use open government data for advocacy, to develop products and services, improve operations, inform strategy and/or conduct research.

We define open data as publicly available data that is produced or commissioned by governments and that can be accessed and reused by anyone, free of charge. The Map does not include government or individual uses of open data, or uses of social media, sensor, crowdsourced or proprietary data.

Data Collection Process

The Center collects information from multiple sources, then reviews, harmonizes and curates the data before it is displayed on the Map. We collect open data use cases in three ways:

Online survey



A web-based [survey](#) allows organizations using open data to provide information directly for the Map. The survey is available in seven languages: English, French, Italian, Korean, Portuguese, Russian and Spanish.

Regional supporters



The Map's global network of Regional Supporters contribute examples and provide ongoing insights based on their work and local expertise. Since the launch of the project, the Center has reached out to a number of organizations working on open data internationally to support the initiative. To date, over 20 regional supporters from six continents have joined the initiative.

Research



The Center's research team identifies and curates examples from publicly available sources, interviews, and publications. We have adapted the findings of several surveys of open data use studies and added additional data to them as needed to match our data schema. The team also draws on a number of existing studies and aggregations of open data uses, including: The World Bank's Pipeline research project '[Open data driven companies in emerging markets](#)'; The Sunlight Foundation's '[Social Impact of Open Data](#)' project; studies published as part of the [Open Data Research Network](#); The GovLab at New York University's [Open Data 500 studies](#); and Open Data Institute's study, '[Open data means business: UK innovation across sectors and regions](#)'. Several researchers are now publishing in-depth, highly selective case studies of organizations that demonstrate specific aspects of open data use. Such case studies are also included in the Map. Use cases are added to the database and reviewed continuously.

Limitations

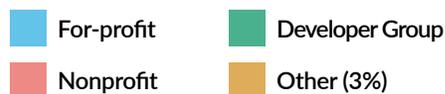
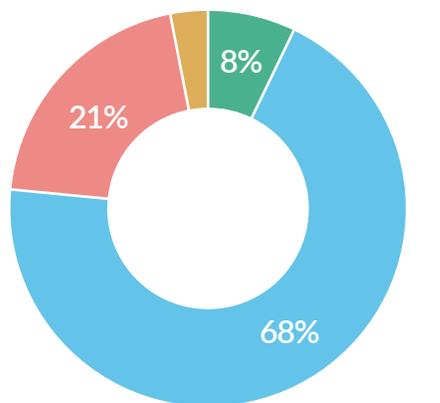
The Open Data Impact Map is not a comprehensive database of open data use cases. It is part of an ongoing effort to identify and better understand open data use cases worldwide. It is not in itself an attempt to rate, assess, or quantify the economic or social value of open data, nor does it provide a random or representative sample of use cases. Additionally, data collection relies heavily on the availability of publicly available sources; the statistics should not be read as representative of the global distribution of open data sources and applications.

About the Impact Map Data

The Open Data Impact Map presents information on a continually growing number of organizations using open data. This report presents findings using the sample collected as of March 1, 2016. This report presents findings using a sample of 1534 use cases collected for the Map as of March 1, 2016.

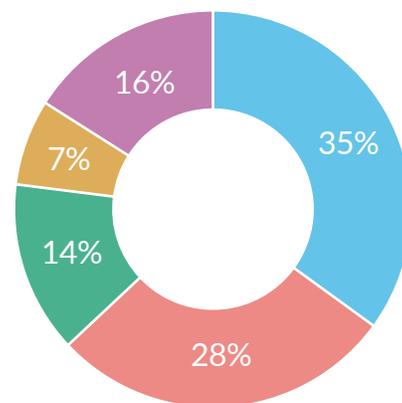
Type of organization

68 percent of the organizations in our sample are for-profit, while 21 percent are nonprofits and 8 percent are developer groups.



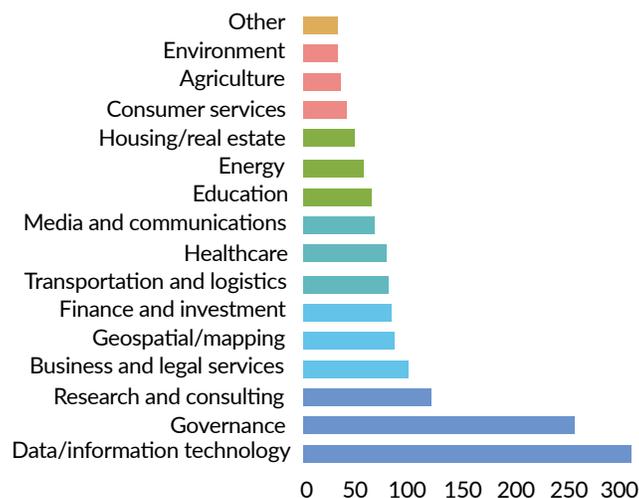
Organization size

Organizations that use open data tend to be relatively small. A third of the organizations in the sample have 10 or fewer full-time employees, while over half have 50 or less.



Sectors

Organizations use open data across all sectors of the economy. The top three sectors are (1) data/information technology, (2) governance, and (3) research and consulting.



Types of Data Use

Key findings



Large organizations (200+ FTEs) typically use open data to optimize their operations.

More than 60 percent of large organizations in the sample use open data for optimization: making them more efficient and effective. In contrast, only a third of small-to-medium enterprises use open data for optimization. This may be because startups, which use open data in more foundational ways, are likely to be SMEs at this point.

New open data products and services are developed mostly by data/information technology and geospatial companies.

Over a third of the organizations using open data for the development of new products and services are in the data/information technology and geospatial/mapping sectors. Many of these act as intermediaries, providing a service to help users gain easier access to government data. Other organizations work in the fields of advanced data analytics and visualization, data infrastructure, API, mobile and web service development.

Open data is increasingly used for greater public participation and advocacy efforts.

Nonprofits and developer groups around the world are building digital tools to inform and engage citizens using open data. Of the organizations using open data for advocacy, over a quarter were founded in the last three years alone. Open government data is a core resource for advocacy initiatives across sectors, ranging from promoting environmental causes to increasing transparency around school funding.

Four Types of Data Use

Based on the examples from the Impact Map, we have seen organizations use open data in four main ways:

1. Organizational Optimization



Open data is being used by organizations across all sectors to help them become more efficient and effective by streamlining processes or logistics; improving their competitive advantage through market intelligence; analyzing the potential in new markets; or improving decision-making in any number of areas. More specifically:

- **Efficiency gains** from utilizing open data benefit companies of all kinds, especially as its use informs resource allocation. For instance, a number of companies use open weather, energy and environmental data to save energy in their operations and in commercial buildings. Supermarkets and retailers use weather and demographic data to predict sales of different items, manage their inventory, and keep their supply chains functioning - creating major gains for the fresh foods industry and others.
- Organizations are using demographic and social data such as census studies as **market intelligence**, combining this and other open data with proprietary information to get deeper insights into their current and potential customers, and tailor their appeals to different kinds of consumers. Open data is also used as a resource to inform the core operations of an organization: For instance, a number of organizations rely on trade data to determine pricing of goods and services. Others use business register and other data to evaluate competition before a launch and identify potential suppliers and partner companies.

2. Development of New Products and Services



Organizations are using open data as a basis for entirely new products and services. In general, new data-driven businesses follow one of two broad models.

- They may provide **data as a resource** for other businesses by improving data quality or creating new data platforms and formats. Many organizations focus on making open government data itself more accessible, usable, and easy to analyze. These companies have a positive cascade effect, providing improved data for use by a wide range of other data-driven companies that use it to build their business.
- Alternatively, they provide **data as information and analytics** through products and services designed for direct use by businesses or consumers.

3. Advocacy



Open data plays a critical role in improving governance by **exposing corruption, inefficient allocation of resources and services**, and as a basis for **better policy-making processes**. Organizations including think tanks, companies, newspapers, advocacy groups, and others are using open government data on issues ranging from contracting and budgets to education and energy to advocate for better policies and governance.

4. Research



Across disciplines and topic areas, government data is a significant source of information for researchers. Data is used by a wide range of organizations to conduct research ranging from **policy analysis** to **industry research**. Publications - academic or grey literature - rely on government-reported data and statistics for evidence and analysis. Open data is also used to both inform and substantiate reporting - a source for **business, investigative, and data journalism**, amongst others.

Regional Trends

Using the World Bank's regional and income level [categorizations](#), this section reports geographic and income-related trends in open data use.

Key findings



Across all regions, open data is most frequently used in these three sectors: (1) governance, (2) data/information technology, and (3) research and consulting.

A commonality across all regions, and across income categories, is the focus on applying open government data in these three sectors. Organizations include for-profit and nonprofit organizations, as well as developer groups. In the governance sector, uses focus on government accountability and transparency, providing services to government agencies, or improving governance and policy on specific issues. Data/information technology organizations work make open government data more useful and applicable for other businesses. In a similar way, organizations that offer research and consulting services help other organizations and companies succeed and create economic and social value.

Higher income countries typically have greater private sector use of open data.

75 percent of the use cases in high income countries are for-profit, compared to less than 5 percent of examples found in low income countries. Conversely, in lower income countries 75 percent of the examples found were predominantly nonprofits, compared to 17 percent in higher income countries. This division may reflect the fact that higher-income countries have more developed data ecosystems and infrastructure, a higher quantity and quality open data, and private sector investment.

East Asia & Pacific

The Map includes use cases from 10 countries: Australia, Cambodia, China, Indonesia, Japan, New Zealand, Papua New Guinea, the Philippines, South Korea, and Taiwan. Countries in this region are using open data in almost all sectors of the economy, with energy and environment and geospatial/mapping applications among the top five. The majority, 75 percent, are small-to-medium enterprises of 200 people or less.

In low and lower middle income countries in this region (Philippines, Indonesia, Papua New Guinea, Cambodia) open data is used primarily by nonprofits for more transparent and inclusive governance. This includes organizations like [Open Development Cambodia](#), [Publish What You Pay in Indonesia](#), and the [Affiliated Network for Social Accountability-EAP Foundation](#).

In higher income countries, where information infrastructures are more developed, organizations use open data in business and legal/research and consulting endeavors and in the data/information technology sectors. Overall, many organizations in East Asia and the Pacific are following a commercial model: Two-thirds are for-profit companies. The majority of these are located in higher income countries (Australia, Japan, Korea, and Taiwan.)

In upper middle income countries in the region (China, Malaysia), the examples are primarily of developer groups using open data for issue-based advocacy. In China, open data is used mostly at the city level for awareness and advocacy on environmental and safety issues, as well as for transport apps. For instance, [Shanghai QingYue](#) provides pollution and hazard maps, as well as access to public air quality data.



Europe & Central Asia

The Map includes use cases from 34 countries in this region: Albania, Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Kazakhstan, Kosovo, Macedonia, Moldova, Montenegro, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Ukraine, and the United Kingdom.

This diverse region comprises a large number of open data examples, making up more than one-quarter of our total sample. It includes many commercial enterprises (two-thirds of the organizations in this region are for-profit) and an active developer community (nine percent of organizations listed), with the rest being nonprofits and academic institutions. These organizations use open data across all sectors, with the top five including geospatial/mapping and media/communications - a greater focus here than in any other region. Half the organizations in this region are small organizations with ten or fewer employees, and almost all (85 percent) are small-to-medium organizations with 200 employees or less. The greatest number of examples in this region come from the United Kingdom, including many examples developed from the Open Data Institute's [research](#).

In lower middle income countries (Moldova, Georgia, Ukraine, Kosovo), the organizations identified are mostly nonprofits focusing on using open data to promote economic and social development and for advocacy. [Expert Grup](#) in Moldova, for example, uses open data for economic research and policy, and develops infographics on public spending. [Open Society Georgia Foundation](#) works on development challenges and helped develop the country's public information database. And [Open Data Kosovo](#) maps illegal dumping, has a visualization of municipal procurement, and provides applications for monitoring elections and water surface quality.



Latin America & Caribbean

The Map includes uses cases from 18 countries in this region: Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Nicaragua, Panama, Peru, Puerto Rico, Uruguay and Venezuela.

Open data entrepreneurship is evident in Latin America and the Caribbean. Half of the examples in this region are small organizations with 10 or fewer employees and the great majority (88 percent) are small-to-medium enterprises with 200 employees or less. Applications range across 22 sectors. Many focus on using open data in ways that provide social benefits; 40 percent of our examples come from nonprofits and 10 percent from developer groups.

Media/ communications and finance and investment are among the top five sectors for the region, and open data is applied in both areas to meet social goals. Open data is being used as a resource

to help provide credit to loan applicants and small businesses, through organizations like

[Aspiria](#) (a micro-loan company), [Kueski](#) (an online lending platform for short-term loans),

and [IGNIA](#) (a venture capital firm). The region also has a strong use of data journalism.

[Chequeado](#) in Argentina and the newspaper [El Faro](#) in El Salvador use open data to fact-check politicians;

[Gobierno Facil](#) in Mexico develops reports using federal data; and organizations in Argentina, Peru, and Brazil use open data for

investigative and environmental journalism.



Middle East & North Africa

Our sample shows few organizations using open data in the Middle East and North Africa so far - in contrast to sub-Saharan Africa. The Map includes 10 organizations from six countries in this region: Bahrain, Egypt, Israel, Lebanon, Morocco and Tunisia. This may be largely due to a [limited availability](#) open government data.

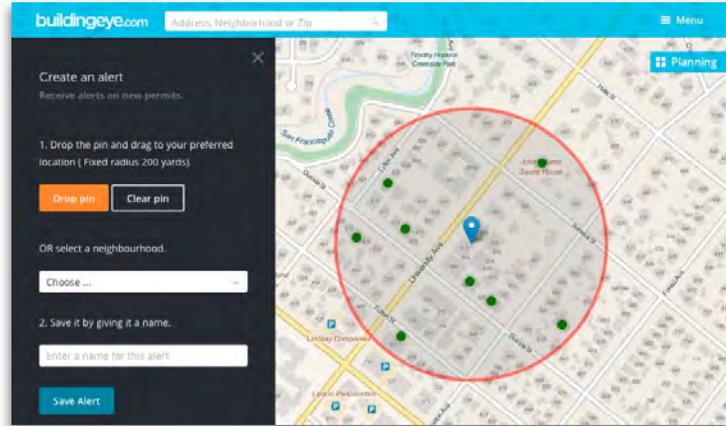
The majority of these organizations work on governance issues, such as [election monitoring](#) in Lebanon, and local development, advocacy and awareness around issues of social justice in Bahrain and Tunisia. In 2014, [OpenMENA](#) was launched to build a more open and collaborative society within the Middle East and North Africa through open data, governance and knowledge.



North America

North America, particularly the United States, has more examples of open data than any other region in the world. In the U.S. and in Canada, open data is used across almost all sectors of the economy and throughout the countries. Many U.S. and Canadian organizations apply provincial, state, and city data as well as national data for commercial and social benefit.

North America has a large number of for-profit use cases as well as nonprofit organizations that use open data. The greatest proportion of large companies that rely on open data for their products and services, such as [Building Eye](#), [Climate Corporation](#), the [Weather Company](#), and [Zillow](#), are located in this region. Open research data is used more in North America than in other regions.



South Asia

The Map includes use cases from four countries in this region: Bangladesh, India, Nepal, and Pakistan. Of these examples, organizations in India account for three quarters of these. South Asian organizations operate in about half the sectors we studied, with agriculture, healthcare, and geospatial/mapping in the top five sectors. Geospatial and satellite data is the most widely used type of data used.

Fully three-quarters of organizations in the region are for-profit businesses, and almost half are in the 11-to-50 employee range. Open data is being put to practical use in South Asia: fewer than 10 percent of organizations use the data for advocacy, while many use it for organizational optimization. For example, [World Health Partners](#) leveraging existing social and economic infrastructure, making use of open and sensor data to establish large scale, cost-effective health service networks that



leverage existing infrastructure. The [Empower Consultancy](#) in India uses open geographical data and satellite data to improve operations in sectors including electric and gas, water/wastewater, urban and local planning, forestry, agriculture, and environmental mapping. [NextDrop](#) uses text messages to bring water more efficiently to more than 30,000 citizens using data from the local government on the water supply.

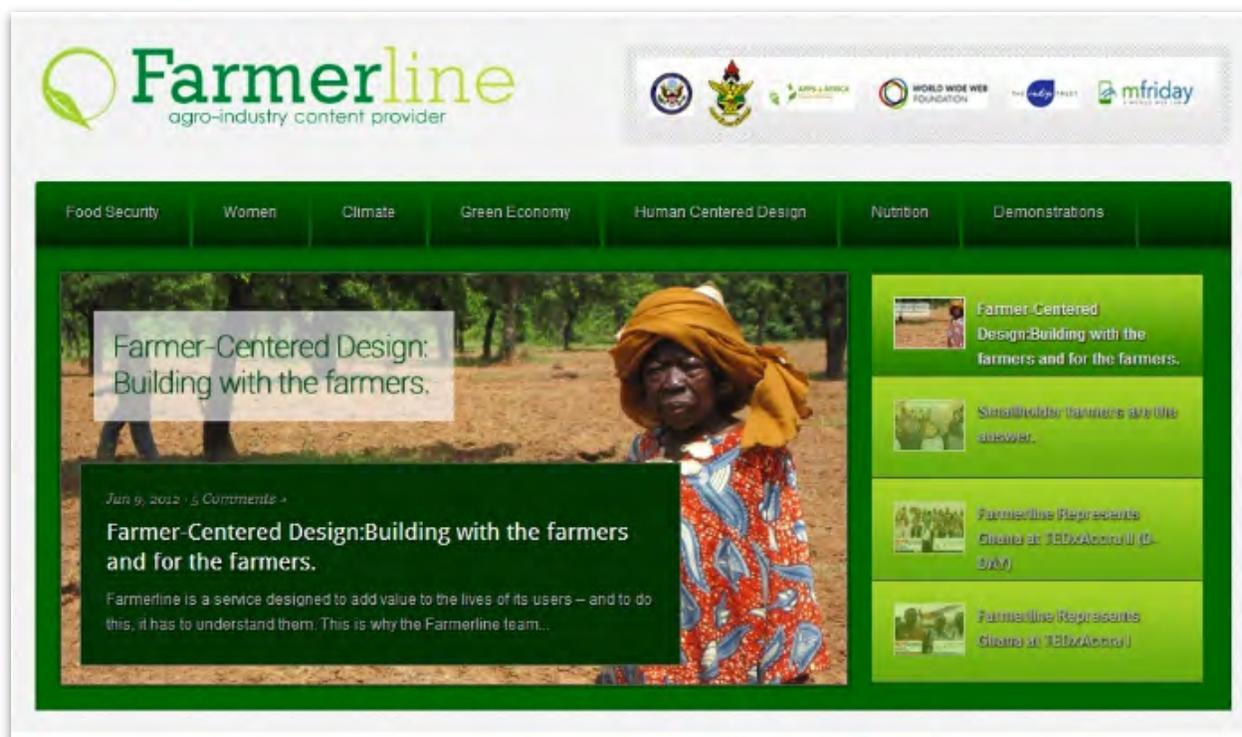
Sub-Saharan Africa

The Map includes organizations located in 13 countries in this region: the Democratic Republic of Congo, Ethiopia, the Gambia, Ghana, Kenya, Madagascar, Malawi, Nigeria, Senegal, South Africa, Tanzania, Uganda and Zambia. A quarter of them are nonprofits and a quarter are developer groups. They use open data to develop mobile and web applications to enhance access to social and government services, and provide businesses with market and environmental information.

Most open data use cases in this region are small-to-medium organizations; less than one percent have more than 200 employees. These organizations are focused on only half the sectors covered in our sample, with the top five sectors including agriculture, education, and healthcare.

Developer groups, newspapers and nonprofits are using open data to provide information on public services and empower local communities. The group [Code for Ghana](#), for example, has built Odekro, a site that monitors parliamentary debate proceedings, [GotToVote!](#) to inform citizens and help with voter registration, and [Where My Money Dey?](#), a site that monitors whether communities have received their dues from mining companies. Open data is supporting good-government initiatives across the continent through the organization [Connected Development](#), and through national organizations like the [Malawi Election Center](#) helped nearly 300,000 citizens verify their voter status before the 2014 elections. It's being used to improve urban planning in Durban, South Africa, to improve budget transparency in Nigeria, and to provide information about schools and water resources in Kenya, among other applications.

In some areas, companies are working with industry partners to develop open data applications for the population's use. [Farmerline](#) in Ghana and [M-Farm](#) in Kenya provide mobile apps that give farmers real-time information on crop prices, weather, and farming best practices to help them grow or sell their crops. In healthcare, Shimba Technologies, also in Kenya, has partnered with Nokia to develop [MedAfrica](#) - a mobile Medical Services Content Platform that delivers medical information and the location of healthcare facilities to phones.



The image shows a screenshot of the Farmerline website. At the top left is the Farmerline logo with the tagline "agro-industry content provider". To the right of the logo is a row of partner logos including the Ghanaian government, APIS Africa, World Wide Web Foundation, The Africa Trust, and mfriday. Below the logos is a green navigation bar with the following categories: Food Security, Women, Climate, Green Economy, Human Centered Design, Nutrition, and Demonstrations. The main content area features a large image of a woman in a yellow headwrap and a patterned dress. Overlaid on the image is a text box that reads "Farmer-Centered Design: Building with the farmers." Below this is a smaller text box with the date "Jun 9, 2012" and "5 Comments". To the right of the main image is a sidebar with three green boxes, each containing a small image and text: "Farmer-Centered Design: Building with the farmers and for the farmers.", "Smallholder farmers are the answer.", and "Farmerline Represents Ghana at TEDxAccra II (B-DAY)".

Sectoral Trends

The Impact Map use cases give insights into the ways that open data is being used across economic sectors. This section summarizes findings and trends for several of the sectors that represent the greatest number of cases.

Key findings



Government operations, geospatial, demographic and social and weather data are the most common data types used across sectors.

In all sectors, organizations are found to be using government operations (e.g. data on budgets, spending, elections, procurement), geospatial (e.g. maps and satellite data), demographic and social (e.g. census) data.

Five sectors account for over half of the organizations using open data founded in the last decade: agriculture, data/information technology, governance, healthcare and housing and real estate.

Patterns of data usage are changing as more government data is opened up and new kinds of insights and applications are developed.

Developer groups, mostly in lower income countries, work in the governance, data/information technology and media and communications sectors.

They are building public service delivery apps, using open data for data and IT training, and watchdog journalism. A fifth of use cases in lower income countries - compared to six percent in higher-income countries - are the work of groups of developers rather than formal nonprofit or for-profit organizations.

Agriculture

Total Number	Type	Size (FTEs)	Founded
31	74% – For profit 19% – Nonprofit 6% – Other	52% – 1-10 33% – 11-200 14% – 200+	11% – 1-3 years 54% – 4-10 years 36% – 10+ years

Organizations use open data to provide solutions to **help inform farmers' decisions on managing their farms and increase their crop yields**. This ranges from providing basic information to farmers to large-scale data-driven analyses (known as precision agriculture). The best-known company in this field may be the U.S.-based [Climate Corporation](#), but many smaller organizations are providing similar services. [Weather Safe Limited](#) in Rwanda provides farmers with timely, targeted mobile alerts on weather changes, pests, and diseases. And [Plantwise](#), which also helps small farmers in developing countries fight pests and plant diseases, supports plant clinics in 33 countries and has been used by more 600,000 farmers.

In a related approach, **open research and scientific data is being used to support sustainable farming**. The [International Centre for Tropical Agriculture](#) (CIAT) uses open data to carry out research for the improvement of staple foods, tropical forages for livestock, and other work on agrobiodiversity. The Dutch organization [Alterra](#) uses environmental open data to do research on sustainable green living, while [City Farmers](#) in the UK promotes urban farming by identifying potential spaces and engaging communities.

Other organizations use open data to give farmers information that can **inform how to price their products and when to sell them**. In Indonesia, for example, [Pulse Lab Jakarta](#) tracks and reports real-time commodity prices. Kenya's [M-Farm](#) provides a mobile application that allows farmers to receive accurate, real-time crop-price information from five major markets via daily text message, six days per week. And [Cropin](#) in India offers a platform to help farmers analyze their crop strategy and yield by combining market data with sensor and geospatial data.



Business & Legal Services | Research & Consulting

Total Number	Type	Size (FTEs)	Founded
212	77% – For profit 21% – Nonprofit 1% – Developer Group 3% – Other	25% – 1-10 45% – 11-200 31% – 200+	12% – 1-3 years 30% – 4-10 years 59% – 10+ years

Open data has become a significant resource for all kinds of businesses, supplementing business intelligence, market and economic research, and consulting services. Several organizations provide businesses with different research and intelligence essential to their operations.

Companies like [SumoBrain](#) in the UK provide **legal insights**: intellectual property information for attorneys, corporate researchers, and inventors, while [Legal Science](#) and [Lex Machina](#) in the U.S. collect, code and publish up-to-date statutory and regulatory legal information.

Others provide **business intelligence** to help companies manage risks, perform due diligence (like the UK's [DueDil](#)), manage risks (like [SPARK Marketing](#) in Russia), or learn about government procurement opportunities (like [zNašichDaní](#) in the Slovak Republic). And several organizations provide **market and economic research and consulting services**, identifying trends and doing forecasts to support their clients' decision-making. Jamaica's [Edward Seaga Research Institute](#), for example, uses macro-economic data from 1950 on combined with other data on a variety of sectors, while [Eixos.cat](#) in Spain uses several government data sources for market and economic research.



Data & Information Technology | Geospatial & Mapping

Total Number	Type	Size (FTEs)	Founded
389	85% – For profit 9% – Nonprofit 5% – Developer Group 1% – Other	42% – 1-10 41% – 11-200 18% – 200+	19% – 1-3 years 41% – 4-10 years 40% – 10+ years

The data/information technology sector includes the largest number of organizations using open data. These organizations provide data infrastructure, software applications, products and services, data analytics and visualizations to other organizations and citizens alike. Organizations in the geospatial and mapping sector also work with open data in similar ways.

Several organizations help **provide access to open government data**. Companies like [Apigee](#) and [Socrata](#) in the U.S., and [DataPublic](#) and [Open Data Soft](#) in France, provide platforms, APIs, and technology infrastructure to help government agencies provide their data. Others develop software and mobile applications to help users access data, and often improve the data in the process. These include [Import.io](#) (UK), [Waka Digital](#) (New Zealand), and [Trenzink](#) (Taiwan).

Other organizations provide **data analytics and visualizations** that make it easier not only to access the data but to interpret it. In Taiwan, [Muyueh.com](#) creates data visualizations for a wide range of industries including medicine, transportation, finance, energy, and agriculture. [Young Innovations](#) in Nepal uses automated tools to collect, curate, analyze, and visualize data.

Much data analysis and visualization uses geospatial and mapping data to provide **geospatial intelligence**, and many organizations focus exclusively on this type of data. [Zubed Geospatial](#) in the UK helps organizations identify geographical patterns in their data and provide user-friendly map-based interfaces for their products or services. India's [Spatial Decisions](#), Canada's [Refractions Research](#), and Mexico's [MapData](#) offer consulting, services, and analysis for public and private organizations. This kind of open geographical and satellite data helps strategists both in and outside of government plan land management and urban development. [Urbanica](#) in Russia uses urban data for advanced analysis and city planning. In India, [CompuSense](#) and [Excel Geomatics](#) use open geographical data for urban planning, environmental policymaking, forestry, agriculture, and many other purposes.



Education

Total Number	Type	Size (FTEs)	Founded
61	36% – For profit 56% – Nonprofit 3% – Developer Group 5% – Other	39% – 1-10 45% – 11-200 15% – 200+	13% – 1-3 years 48% – 4-10 years 38% – 10+ years

Open data is being used to make educational opportunities accessible in many ways, including by helping parents and students make more informed educational choices and provide technical training.

Several organizations use open data to **provide students and parents information on cost, quality, and other factors to help them make better education choices.** [GreatSchools](#) in the U.S. presents data on 200,000 public and private schools nationwide, combined with more than one million ratings and reviews by parents, teachers, and students. In Mexico, [Mejora Tu Escuela](#) similarly helps parents learn about local schools, compare them, and choose.

Others are using open data to **evaluate educational outcomes within a country.** Mexico's [ENOVA](#) uses data to do pinpoint analysis of schools based on population density, access to transportation and broadband, and other factors. [Analytical Academica](#) in Colombia uses open education data to develop software for evaluating academic management and offers educational consulting services. In Kenya, [Eduweb](#) uses open data to provide a range of data on public education.

As countries develop **training programs in technology and data literacy**, open data is a free resource for citizens to work with. The U.S.-based company [Tuva Labs](#), which now operates in several countries, offers teachers, students, and parents a platform to analyze, visualize, and interpret real data around issues relevant to communities and their interests. From Kazakhstan to Brazil, open data is being used by developer groups and universities alike to help people develop technical and data skills.



Energy | Environment

Total Number	Type	Size (FTEs)	Founded
84	81% – For profit 13% – Nonprofit 2% – Developer Group 4% – Other	30% – 1-10 48% – 11-200 22% – 200+	13% – 1-3 years 57% – 4-10 years 29% – 10+ years

Open data is being used to **guide decisions on where and how to invest in energy infrastructure**, providing information that can also be critical to the success of renewable energy. From the U.S. [Climate Data Initiative](#) to the UN's [Data for Climate Action](#) program, international experts are turning to open data as part of the providing energy solutions and approaches to mitigate climate change. Across Europe, [3Tier](#) uses data to predict how weather will impact wind, solar, and hydro power projects, and use that insight to plan and locate these projects. In a similar way, [REConnect Energy](#) in India builds innovative tools for wind and solar power forecasting and scheduling. By predicting power output for each source of energy, the company helps utilities anticipate changes to power generation, balance energy supply with demand, and reduce the overall costs of integrating renewable energy sources onto the grid.

While renewable energy sources are being developed, open data is **helping utilities and consumers manage existing power sources more efficiently**. The [Korea Energy Management Corporation](#) (KEMCO) in South Korea uses energy open data to estimate energy use patterns and increase efficiency in industrial and buildings sector. [DemandLogic](#) in the UK offers energy-saving and performance improvement initiatives for commercial buildings. And in the U.S., [PlotWatt](#) (US) - monitors home energy use and gives consumers customized recommendations.

Finally, several nonprofit organizations are using open data for **environmental monitoring**. For instance, tech NGO Shanghai Qingyue in China has created [EPMap](#), a website that uses local environmental data to measure pollution and promotes environmental protection. Such approaches go back to the successful implementation of the [Toxics Release Inventory](#) in the U.S. decades ago. [PlumeLabs](#) in France makes air pollution information accessible and easy to understand via apps and reports. Finland's [Paastot](#) provides information on pollution in that country, while Russia's [Green Patrol](#) uses official region ecology information to promote research and green civil society initiatives.



Finance & Investment

Total Number	Type	Size (FTEs)	Founded
81	90% – For profit 9% – Nonprofit 1% – Other	15% – 1-10 46% – 11-200 39% – 200+	9% – 1-3 years 42% – 4-10 years 49% – 10+ years

Organizations are using open data to **increase financial access and inclusion for “high-risk” customers** who otherwise might have no access to capital. [Konfio](#) in Mexico, and [Lenddo](#) in Colombia, use demographic and social, economic, labor and other data sources to evaluate loans for people with no credit history. In the U.S., [DemystData](#) uses census data to help identify new customers for large banks and insurance companies. Similarly, others use business data and others to **evaluate new, small businesses seeking financing**. While some lenders can't afford to do the due diligence needed to lend to these businesses, open data is being used by organizations such as [DueDil](#) help determine more efficiently whether they are good credit risks.

Open data also helps **guide large-scale investments** for social as well as economic benefit. [IGNIA Partners](#) in Mexico uses open data to make investments in areas with high impact on the lives of low-income families. These include healthcare, housing, financial services, and services like water, energy, and communications.



Governance

Total Number	Type	Size (FTEs)	Founded
252	21% – For profit 45% – Nonprofit 31% – Developer Group 2% – Other	48% – 1-10 48% – 11-200 3% – 200+	24% – 1-3 years 49% – 4-10 years 27% – 10+ years

A large number of organizations worldwide use open data to hold governments accountable. Nonprofits and developer groups especially use the data to expose and prevent mismanagement and corruption, particularly in government expenditures and contracting.

Many organizations build platforms and apps that **monitor public budget and spending data**: [BudgIT](#) in Nigeria, [Kosht Urada](#) in Belarus, [Sinergantara](#) in Indonesia, [K-Monitor](#) in Hungary, and others around the world.

An increasing number are **monitoring government contracting and procurement** as well. Slovenia's [Supervisor](#) is one model: Its website includes information on over 50 million government financial transactions and allows visualization of all financial data in a simple and understandable way. Another major contracting website, [Clearspending](#) in Russia, monitors over 12 million contracts and has helped to identify more than four million procurement violations to date. The [Open Contracting Partnership](#) is now developing standards for contracting data worldwide.

Other good-governance organizations use information to **improve voter registration and representation**. The Malawi Election Information Center's [GotToVote!Malawi](#) helped nearly 300,000 citizens verify their voter status ahead of the election. By using the system, another 46,000 Malawians discovered they had either not yet registered or had issues with registration details. The Kenyan version of [GotToVote](#) makes it possible to register to vote by mobile phone – an option that is especially valuable for rural voters, and that appears to have contributed to high voter turnout. Similar apps have been built in Zimbabwe, South Africa, and Ghana.

Open data is also a critical tool for **issue-based advocacy and citizen engagement**. In the Philippines, for example, [CheckMySchool](#) uses information to reveal and deter corruption that can keep schools from getting the funds they're entitled to. CheckMySchool consolidates all the available government data on more than 40 thousand public schools in the Philippines and provides an interactive platform for citizen feedback. Many organizations foster citizen engagement more broadly within and across countries, including [Fundacion Civio](#) in Spain, [Code4Ethiopia](#), the [Directorio Legislativo Foundation](#) in Argentina, and [Openmunicipio](#) in Italy.



Healthcare

Total Number	Type	Size (FTEs)	Founded
75	71% – For profit 21% – Nonprofit 4% – Developer Group 4% – Other	39% – 1-10 39% – 11-200 21% – 200+	17% – 1-3 years 45% – 4-10 years 38% – 10+ years

Open data has fueled major advances in healthcare, ranging from improving access to care to transforming medical research.

Internationally, organizations are using open data to **help consumers find healthcare providers to meet their needs**. The Russian organization [Mobile Alliance for Maternal Health](#) (MAMA), has developed a service which has been used by 1.4 million women in 70 countries, connects pregnant women and new mothers to local health services. [Medicinia](#) in Brazil uses open data to create communication platforms among patients and doctors. In Kenya, [medAfrica](#) uses mobile to distribute information about drugs, doctors, specialists, and hospitals, drawing on open government data and other sources. And in India, [eVaidya](#) uses health census data to help patients in urban and disadvantaged areas, while [Surgerica](#) uses open data on healthcare providers and insurance to provide cost and quality information.

The cost of medicine is a particular problem in many countries, and open data is being applied to **help make medication more accessible and affordable**. [PLM](#) in Mexico uses open health data on pharmaceutical drugs to create a Dictionary of Pharmaceutical Specialities and is the leading health information company in Latin America. On a practical level, [Medii](#) in Mexico uses geospatial data and government data on pharmacy locations and prices to help consumers find the medicines they need when they need them. The [Southern Africa Regional Programme on Access to Medicines and Diagnostics](#) (SARPAM) uses data “to improve efficiency and competition in the market for essential medicines in the Southern African Region and thereby meet the health needs of the poor.”

Finally, researchers use open data to **evaluate health outcomes and lead to more effective and better treatments**. Companies like [Evidera](#) in the U.S. and [Holmusk](#) in Singapore uses open health data to analyze health outcomes and other aspects of healthcare, including health economics, statistics, and epidemiology. In Ireland, [Pharmapod](#) uses data on pharmacies and medicines to inform risk management and understand the causes of drug-related problems. And in India, the [Public Health Foundation](#) uses data from many international sources to develop training, research and policy development in the area of Public Health.



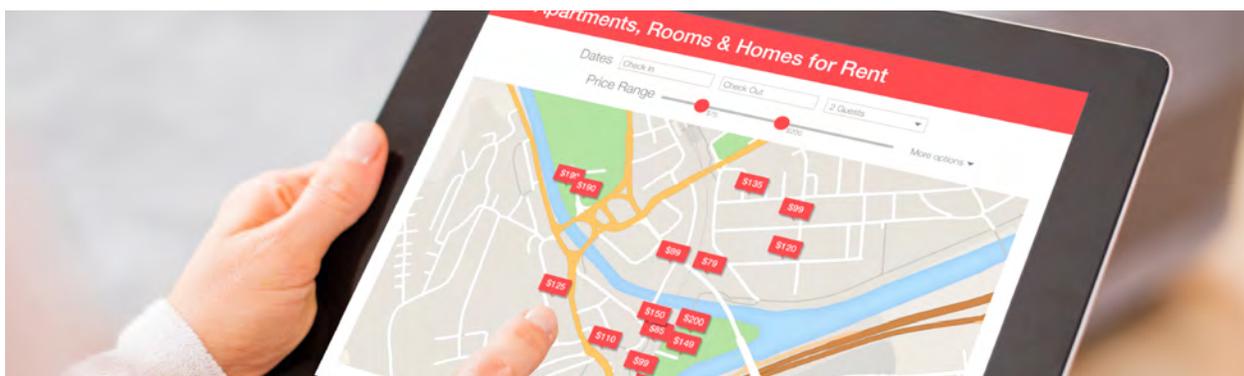
Housing & Real Estate

Total Number	Type	Size (FTEs)	Founded
44	91% – For profit 7% – Nonprofit 2% – Other	38% – 1-10 41% – 11-200 22% – 200+	14% – 1-3 years 45% – 4-10 years 40% – 10+ years

Open data on housing and real estate has two major uses: It can help individuals find homes to rent or buy, and contractors and city planners develop those homes as well.

Some of the world's largest open data companies are real estate websites that **help potential renters or buyers make informed choices in real estate**. In the U.S., [Zillow](#) uses aggregated open data to generate search options for home-buyers, sellers, and real estate agents. Its British counterpart, [Zoopla](#), provides similar services, with descriptions and images of properties, information on property values, and agent contact details. Other companies like [Foundi](#) in Taiwan, the [Sona Group](#) in Germany, and [Resider](#) in Canada provide data-driven real estate services for their countries' markets.

At another level, open data is being used by contractors, buyers, planners, and city advocates to **monitor land use and analyze real estate markets**. [Vasnajetek](#) in the Czech Republic monitors the selling of state assets to serve both citizens and public finances. [Propiedades.com](#) in Mexico uses open data related to geography, education, transportation, and the environment to develop a detailed analysis of the real estate market. [Herron Todd White](#) in Australia is an independent property valuation and advisory group using open data for its research and advisory services, while New Zealand's [beforeUdig](#) enables anyone undertaking excavation works to obtain information on the location of underground pipes and cables.



Media & Communications

Total Number	Type	Size (FTEs)	Founded
64	72% – For profit 20% – Nonprofit 6% – Developer Group 2% – Other	38% – 1-10 15% – 11-200 47% – 200+	13% – 1-3 years 29% – 4-10 years 58% – 10+ years

Open data has become an essential resource for **journalism and fact-checking**. [Poderopedia](#) in Chile and Colombia is a collaborative platform that maps a who's who of business and politics. [Data Journalism China](#) aims to promote open data and media innovation to China's journalists, educators, designers, and programmers by providing both online and offline information platforms and networking opportunities. [El Faro](#) in El Salvador, Central America's first online-only newspaper, has used data on crime - specifically homicide rates - in its investigative pieces on violent crimes in El Salvador. And [Journalism++](#), in Cologne, Berlin, Paris, and Sweden trains journalists on how to work with data. In addition, well-established financial reporting outlets such as Reuters, FT, and Bloomberg have long relied on open financial data.

In addition to journalism, open data is being used for **targeted advertising and campaigning**. The Israeli company [Ubimo](#) combines factors such as geodata, local business data, neighborhood demographics, and live weather data to enable contextual targeting for highly specific advertising campaigns. [Boulevard 4](#) in Argentina, [udnDigital](#) in Taiwan, and many others use open data for marketing intelligence services.



Transportation & Logistics

Total Number	Type	Size (FTEs)	Founded
78	91% – For profit 1% – Nonprofit 8% – Other	27% – 1-10 51% – 11-200 22% – 200+	11% – 1-3 years 42% – 4-10 years 48% – 10+ years

In dozens of cities and countries, developers are creating **applications that help commuters navigate public transit systems**. They give information about when the next bus or train is coming, tailored to different cities and countries. Examples include [Ally](#) (Germany), [YourBus](#) (India), [Omnibus Interior](#) (Uruguay), [Busbud](#) (Canada), and many others.

More recently, open data is used by organizations to **advocate for better roads and transportation systems**. Several organizations enable citizens to give feedback to city government to improve roads and transportation. [SeeClickFix](#) in the U.S., and [FixMyStreet](#) in the UK, enable citizens, community groups, the media and others report transportation-related problems to city governments. In Indonesia, [LewataMana](#) provides information on traffic levels in Jakarta.

Open data is also being used by organisations to **improve transportation safety**, for individuals and for businesses. [Code for Pakistan](#)'s app, Never Ride Alone ([NoKunda](#)), and an app developed by NorthStar in India to track children on school buses, are helping to ensure safer rides. On a different scale, [Keychain Logistics](#) in the U.S. uses truck safety data to help ensure safer shipping.



Conclusion



Over the past few years, many open data policies have been driven by the quantity and the quality of open data supplied by governments. In order to maximize its value, there needs to be a better understanding of current and potential users of this vast resource to help guide open data efforts. The Open Data Impact Map aims to fill that gap by highlighting characteristics of organizations that use open data, trends in how data is applied, as well as the types of data that are most frequently sought out.

By shifting to a more demand-driven approach we can identify, get feedback on, and improve the most valuable government datasets. We hope the Map will help governments maximize the return on their investment in data to realize its social and economic benefits, in partnership with the organizations and people who use it.