



TAKING ACTION TO IMPROVE LIVES

2018 PARTNERSHIP FORUM

“Partnering for resilient and inclusive societies: contributions of the private sector”

4 April 2018

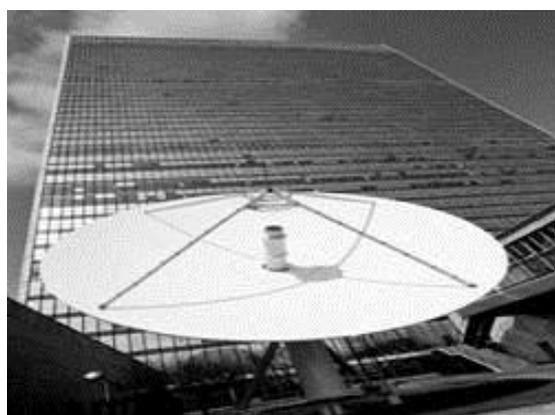
Session 2: Building Momentum for the SDGs: Role of Big Data for Public Good

ISSUES NOTE

Overview

Science and innovation are reshaping our world today. The so-called “fourth industrial revolution” is accelerating the technological advancement in the areas from the Internet of things, to automation and robotics, to artificial intelligence, to nanotechnology, to biotechnology. With the digitization of information and communications technologies (ICTs) and the rise of virtual communities across the world, big data is emerging as an important potential tool and opportunity for evidence-based policy making, especially to reach those most in need.

Big data are generated via social media, cellular phones, satellite images, sensors, online transactions, crowdsourcing and trails of internet searches. They can reveal important insights and patterns of human experiences with significant implications for sustainable development processes.



Big data’s potential for building resilient and inclusive societies

Big data can detect and reach those farthest left behind – who are outside the range of limited budgets and conventional statistical methods.

Many developing country governments have insufficient statistical capacities, yet the spread of mobile phones, the reach of satellite data and increased digital footprints provide the opportunities to capture the strategic data on marginalized groups that is hard to get through administrative records or household surveys. For instance, while in many places women and girls tend to be left out of the public sphere and thus harder to reach through official channels, they often do leave digital footprints because they use mobile phone and other technologies.¹

Big data provides real-time analytics, enabling “smarter” implementation of the SDGs without time gaps.

The 2011 Millennium Development Goals Report² showed a time gap of 2 to 3 years in the collection of household-level data, which made it difficult to track development progress in a timely fashion. Big data can provide better and more frequent insights, which can be used to monitor and adjust the implementation strategies for the SDGs more effectively. For instance, satellite images are used by UN Environment for measuring fresh water extent (SDG 6) and a combination of satellite images, population statistics and geospatial information is used by the statistical office of Colombia to measure the proportion of the rural population who live within 2 km of an all-season road (SDG

¹ Data 2x, “Big Data and the Well-Being of Women and Girls Applications on the Social Scientific Frontier” (April 2017). For more gender data resources, please see: <http://www.data2x.org/>

² Available at: [www.un.org/millenniumgoals/pdf/\(2011_E\)%20MDG%20Report%202011_Book%20LR.pdf](http://www.un.org/millenniumgoals/pdf/(2011_E)%20MDG%20Report%202011_Book%20LR.pdf)



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9). These measurements are carefully developed to meet the necessary quality standards, in terms of representativeness, validity, accuracy and consistency.

"No one should be invisible. This is the world we want – a world that counts."

- A World that Counts, UN Secretary-General's Independent Expert Advisory Group on a Data Revolution for Sustainable Development, 2014 Report

What role can the community of official statistics play in big data?

The UN Statistical Commission established the Global Working Group on Big Data for Official Statistics³ in 2014. Over the last four years, the Working Group identified many initiatives aimed at making new (big) data sources, corresponding services and innovative applications accessible and harnessing their use in research and capacity building for statistical production processes. The Group has active Task Teams on the use of satellite imagery data, mobile phone data, social media data and scanner data. This global collaboration will gradually develop catalogues and libraries for data, metadata, methods, partners and common research and development platform.

What role can the private sector play in big data?

The private sector can play a bigger role in utilizing its "big data infrastructure" for public good. Most of the big data is produced by the private sector and generally not accessible by the

public. This private sector big data is treated as intellectual property because it provides the means to enhance corporate revenues.^{4, 5} There is a great potential for the public and private sectors to collaborate for more informed public policy-making.⁶

What are some of key opportunities and challenges in public-private partnerships on big data for public good?

Public-private partnerships need to address privacy concerns. Most big data are collected 'passively' from: the digital footprints people leave behind; sensor-enabled objects used; or objects inferred via algorithms. The data is then used for different purposes, which often deviates from the intent of the individuals who shared their data originally.⁷ Combining multiple datasets may lead to the re-identification of individuals. The protection of confidentiality has always been a priority for the community of official statistics. The Global Working Group on Big Data³ has also created a task team for privacy preserving techniques, which consists of eminent experts of the statistical, academic and private sector communities.

Public-private partnerships raise the concerns of diminished competitiveness, but can possibly increase the company's profile of social responsibility. Sharing of big data by businesses puts their market competitiveness at risk, as competitors can also access it. This is where the public sector can play a strategic role in "de-risking" the potential disadvantages of data-sharing by the private sector through possible policy measures.⁹ Effective public-private partnerships in big data could potentially improve the image of participating companies as

³ For more information, please see: <https://unstats.un.org/bigdata/>

⁴ National Academies of Sciences, Engineering, and Medicine et al., B. A. Harris-Kojetin and R. M. Groves (ed.), "Combining Data Sources While Protecting Privacy." *Innovations in Federal Statistics*, (Washington DC, 2012) available at: <https://www.ncbi.nlm.nih.gov/books/NBK425876/>

⁵ UK Parliament, "Science and Technology Committee 2016 Report, Chapter 4, The big data dilemma" (2016)

⁶ J. Jütting, "Citizens, the Private Sector and SDG implementation: Scale success and scrap the rest", *Huffington Post*, (February 2016). Available at: https://www.huffingtonpost.com/johannes-jatting/citizens-private-sector-a_b_9132446.html

⁷ UN, "Big data for Sustainable Development", available on: <http://www.un.org/en/sections/issues-depth/big-data-sustainable-development/index.html>



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being more socially responsible and make positive impact on sales and profits.

Big data does not necessarily represent everyone and can be also biased against the most marginalized. Major gaps are already opening up between the ‘data haves’ and ‘have nots’. Whereas some sources of big data (such as satellite images or remote sensing) may reach every square meter on this earth, billions of people still remain invisible in the new world of data and information due to language barriers, poverty, lack of education, limited technology infrastructure, remoteness or other factors caused by various prejudices and discriminations.⁶ It is most likely the poorest and the most marginalized populations who will still not own a mobile phone nor have access to digital technologies. These non-technological groups, therefore, would leave no digital footprints and thus would be excluded from big data. This bias can significantly affect the representation of those sub-populations in the datasets.⁸

What are some ways for public and private sectors to better collaborate in big data for public good?

Some governments are considering tax incentives and other necessary measures to eliminate disincentives. Proposals include tax reduction for companies’ donation of big data for public good. Another possible solution is to mandate all private companies to share their big data with the government to remove any discriminatory disadvantage of sharing data, as has already been implemented in Canada and New Zealand.⁹

The community of official statistics aims to partner with the global technology companies and global data providers to leverage benefits for private and public sectors at the global level.

Way forward

Big data can improve the official statistics and indicators to enable timely monitoring, reporting, informed policy-making and smarter implementation of the SDGs. The use of big data also poses various challenges as outlined in this brief. Effective public-private partnerships could help fill the data gaps and help less advanced statistical systems with smaller budgets to be more inclusive of marginalized groups. The right to privacy should be taken into account as a fundamental human right across all areas of emerging technologies.

Normative guidelines on data privacy and ethics⁹ need to be continuously updated, based on ongoing evidence-accumulation and policy dialogues. The age of big data could enormously advance the quality of our lives, only if we capably and ethically manage the complicated data infrastructure and stakeholders and ensure that relevant human rights are duly protected.

Focus Questions for Afternoon Session

- *What are the opportunities and risks the big data can present in the achievement of the SDGs, especially for inclusion and participation?*
- *How can public (official statistical community, in particular) and private sector entities be incentivized to share big data and related technologies for public good?*
- *How can the private sector use the big data and analysis for better targeting services for vulnerable groups and promoting more resilient and inclusive societies? What are some best practices and lessons learned?*

⁸ UNESCAP, “Big data and the 2030 Agenda for Sustainable Development”, (February 2015).

⁹ They include guidelines at national (e.g. The Statistics Acts); regional (e.g. The General Data Protection Regulation in Europe); and global (e.g. The Guidance of the United Nations Development Group) levels.