



# **UN GLOBAL PULSE**

## **ANNUAL REPORT 2013**



## TABLE OF CONTENTS

A Letter From Global Pulse	3
2013: A Year Of Progress	4
Innovating Together	5
“Big Data for Development” Advocacy & Engagement	9
Data Protection and Privacy	12
Publications	13
News & Articles	14
The Pulse Lab Network	16
Partnering for Success	18





## A LETTER FROM GLOBAL PULSE

Global Pulse has been the United Nations' lab for data innovation since its establishment by Secretary-General Ban Ki-moon in 2009, in response to the need for more real-time information and insights for development

Indeed, a global data revolution is already underway – people around the world are producing digital data, in real-time, on an unprecedented scale. Global Pulse continues to play a leading role in helping the UN and its partners adapt the new opportunities offered by “Big Data” to meet the challenges of driving sustainable development in a Post-2015 world.

Over the past year, we focused efforts on advocating for the responsible use of Big Data for development, and on building strategic partnerships for greater access to real-time data sources, cutting-edge data mining tools and data science expertise.

At the country level, we continue to expand our network of Pulse Labs to strengthen national and regional capacity for using Big Data for public good. We are pleased to have launched operations at our first innovation hub in the vibrant East African technology scene, with the opening of Pulse Lab Kampala in late 2013.

This report provides a brief overview of Global Pulse's work in 2013. For more information on Global Pulse please visit [www.unglobalpulse.org](http://www.unglobalpulse.org)



The Pulse Lab New York team in 2013

policymakers and practitioners. The Millennium Development Goals expire next year, and the international community is in the process of defining a global development framework for the next generation. The High Level Panel on the Post-2015 Development Agenda recently called for a *data revolution* to improve public sector accountability, decision-making and to meet the challenges of measuring global efforts to achieve sustainable development.



The Pulse Lab Jakarta team in 2013



## 2013: A YEAR OF PROGRESS

Through public-private partnerships, innovative analysis and the development of open-source methodologies, Global Pulse is strengthening public sector capacity to leverage digital Big Data for development and resilience. This report provides a brief overview of advances made during 2013.

Our network of Pulse Labs is leveraging Big Data to address wide-ranging topics including food security, economic wellbeing, gender discrimination and public health.

In 2013, our portfolio of innovation projects involved more than 25 partner organizations including UNICEF, UN Development Programme (UNDP), World Food Programme (WFP), World Health Organisation (WHO), and the International Labour Organisation (ILO).

In addition, several key private sector collaborations and partnerships were established, ensuring access to real-time data and technology tools for research and analysis of development issues.

Global Pulse's operations were scaled-up in 2013, with the expansion of two country-level offices – Pulse Lab Jakarta and Pulse Lab Kampala – and receipt of new expressions of interest in establishing additional labs and research partnerships in different regions of the world.



The newly redesigned Pulse Lab Jakarta offices

Global Pulse has been at the forefront of efforts to safeguard privacy and protect data, consulting with privacy experts in the public and private sectors and in academia. Global Pulse's *Privacy and Data Protection Principles* were developed and published during the year.

Two major publications were released in 2013: *'Big Data for Development'* and *'Mobile Network Data for Development.'* The former summarizes how new digital data sources and real-time analytics technologies can help policymakers understand human well-being and emerging vulnerabilities in real-time, and the latter how research can be derived from anonymised and aggregated mobile phone data that is relevant to global development and humanitarian sectors.

Taken as a whole, this work has created the enabling environment for Global Pulse to conduct a rigorous roster of applied innovation and research projects in 2014.



Pulse Lab New York team share research results with UN colleagues



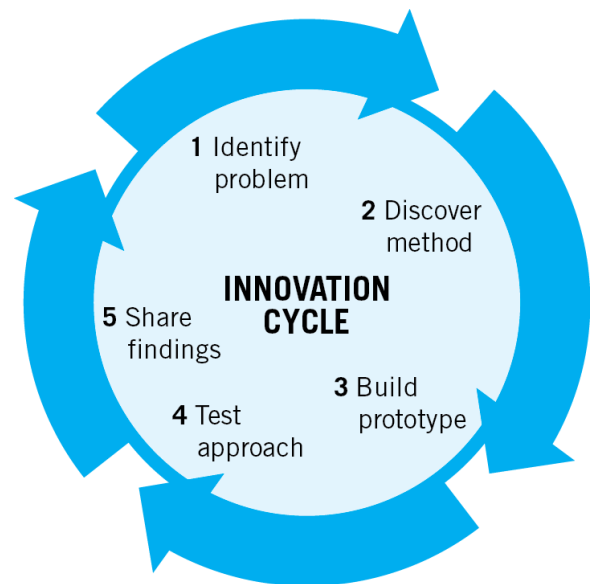
## INNOVATING TOGETHER

In collaboration with UN partners and national public sector institutions, Global Pulse identifies problems that could be addressed through real-time monitoring of digital data. Following this, Global Pulse designs and conducts applied research projects. The projects aim to discover practical uses of Big Data to solve these challenges and prototype technology tools for monitoring development progress and tracking emerging vulnerabilities.

The Pulse Lab teams (which include multi-disciplinary expertise in data science, data engineering, data visualization, research coordination, legal & privacy, partnerships and communications) support UN agencies and development partners in conducting pilot-based evaluations of new tools and approaches within existing programmes and policy initiatives. Global Pulse also forges strategic public-private partnerships to secure access to sources of Big Data, state-of-the-art analytical tools, and expert advisors in the relevant technical fields.

The framework for joint innovation in the Lab moves through a cycle of consultations, project design and partnership engagement (to secure data, tools and expertise), followed by a period of investigation and prototyping. Finally, Pulse Labs and partners evaluate and share their findings, methodologies, successes and failures both internally and publicly with stakeholders.

Joint innovation projects provide unmatched opportunities for private sector, UN agencies, government institutions and academia to gain hands-on experience working together to apply Big Data innovations to solve problems.



In an effort to catalyse the use of Big Data and real-time analytics across the UN, the innovation service offered by Pulse Labs is cross-sectoral, and projects cover a wide variety of areas, such as food prices and security, monitoring regional economic development, examining health issues and supplementing official surveys using digital information.

The following pages feature highlights of several joint innovation projects initiated across Pulse Lab network in 2013:

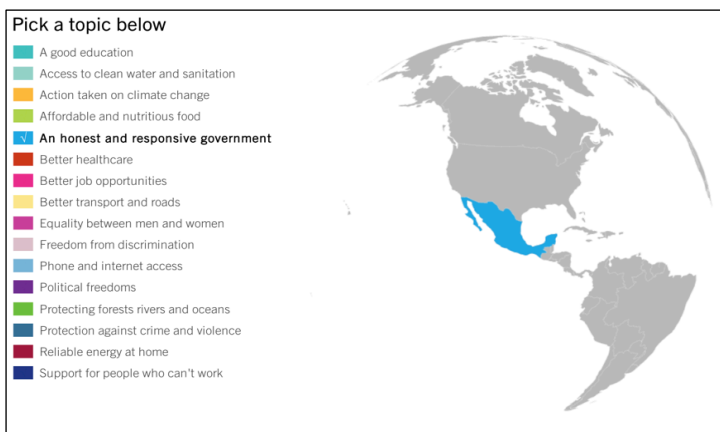


## PULSE LAB NEW YORK INNOVATION PROJECTS 2013

### Quantifying Post-2015 Priorities Across The Globe

The Post-2015 development agenda aims to determine areas against which to focus efforts and accelerate progress but the extensive consultation of determining 'What the World Wants' can be challenging. In 2013 Global Pulse collaborated with the Millennium Campaign in identifying which issues the global public cares about, in order to shape the decision-making process.

Through a partnership with technology company DataSift, Global Pulse filtered 500 million new posts on Twitter every day for tweets relevant to 16 key development topics. The project filters for 25,000 keywords in English, French, Spanish, and Portuguese, yielding around 10 million relevant new tweets each month. This proved a low-cost way to tap into public priorities and supplement traditional survey methods. Global Pulse built an interactive website which is automatically updated with new features to visualize country-level priorities. The project and interactive tool can be viewed online: <http://post2015.unglobalpulse.net/>



Interactive monitor shows volume of global Post-2015 discussion on social media: <http://post2015.unglobalpulse.net/>

### Landscaping Study: Digital Signals & Access to Finance in Kenya

When small businesses are able to access finance it helps them grow, which aids broader economic development. Mobile money has revolutionized Kenya, but conducting field surveys to learn more about this rapidly changing landscape can be costly with research becoming quickly outdated. Global Pulse and USAID collaborated on a project exploring how Big Data could be used to inform programmes related to financial inclusion in Kenya. The project identified new sources of digital data, and methods for analysis, which could be helpful in understanding barriers to credit access for small-scale businesses.

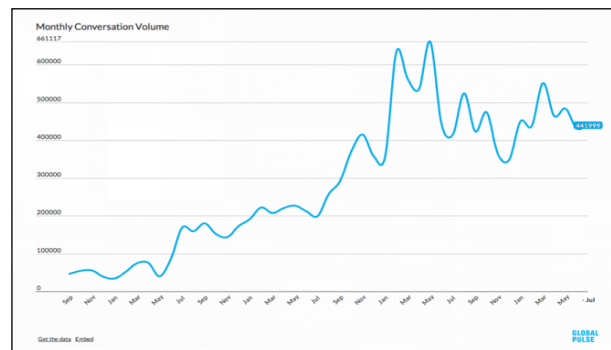
The findings point to an emergence of a Kenya-specific Twitter culture. In particular, Twitter is being used to seek, access and share information about loans, especially mobile loans. Despite this, at the time of research social media data has not yet reached saturation point, its potential will increase as more Kenyans use hand-held mobile phones to access finance and information about financial services. The report is available at <http://unglobalpulse.org/Kenyan-access-finance>



## Using Big Data to Evaluate Impact of Advocacy Efforts

A key component of the work of the UN includes advocacy to raise awareness of development and humanitarian issues to change policy, behavior, and improve livelihoods. The availability of more real-time information about the breadth and reach of advocacy efforts can help enhance and tailor communication efforts for greater impact.

In 2013, Global Pulse collaborated with several UN agencies on projects using big data analysis techniques to measure their advocacy efforts, with a view to developing a reusable “Digital Monitoring & Evaluation” methodology and toolkit. For example, the UN Secretary-General’s Every Woman Every Child initiative worked with Global Pulse to determine whether there has been any change in general public awareness of issues related to children’s and mothers’ health. The trend analysis showed that—within the period of investigation—there was an increase in English language tweets related to women and children’s health of 1,000% -a remarkable rise- as well as spikes in conversations during and after major advocacy events. Preliminary findings are available online at: <http://unglobalpulse.org/EWEC-social-data-analysis>



A monitor trained to identify conversation about infant & maternal health shows an increase in awareness.

## Detecting Early Warning Signals through Large-Scale News Media Analysis

In order to understand how Big Data analysis could complement existing approaches to conflict analysis and early warning, Global Pulse and UNDP's Bureau for Crisis Prevention and Recovery (BCPR) used an open-source dataset of more than 200 million conflict-related print and broadcast news items published since 1979. Global Pulse and BCPR supervised data science students from Columbia University in conducting research assignments exploring how the dataset could have helped provide early warning signals of changes in the status quo that indicated emerging conflict. For example, in analysing the big data set of archival news in the build-up and aftermath of the Tunisian revolution, and measuring the magnitude and tone of news articles, researchers saw a strong correlation with key 'trigger events'. They also identified a monumental increase in the number of global news articles pertaining to Tunisia overall. Findings indicated that even where emerging conflicts are widely anticipated, this type of data can be used to provide useful analysis, on a daily or weekly basis, regarding levels of tension and conflict-related trends in a particular place.



## PULSE LAB JAKARTA INNOVATION PROJECTS 2013

The Pulse Lab Jakarta research agenda was established in consultation with the Government of Indonesia and the UN Country Team based on national development priorities. 2013 projects included:

### **Informing Social Protection Policy around Food Security**

Sudden increases in the price of staple foodstuffs like rice can push whole families below the poverty line and cause regional economic instability; these changes can happen rapidly but food price statistics are generally published only monthly or even less frequently. This project, in collaboration with the Indonesian Ministry of Development Planning, UNICEF and WFP in Indonesia seeks to use social media analysis to provide real-time information from the population that could enable faster responses to food price increases in the form of social protection policies. Global Pulse analysed tweet volumes relevant to food and fuel between March 2011 and April 2013 and found a significant correlation, suggesting that even potential (rather than realised) fuel price rises affect people's perceptions of food security. Researchers also found a relationship between retrospective official food inflation statistics and the number of tweets referencing food price increases. A project methodology and findings paper is available online at: <http://www.unglobalpulse.org/social-media-social-protection-indonesia>

### **Providing Real-Time Insights on Indonesians' Post-2015 Priorities**

Indonesia has a vast population of 250 million people so determining national Post-2015 priorities there is a challenge. However, the rapid increase in Internet penetration and social media use makes Indonesia a good candidate for Big Data analysis of the millions of tweets sent in the country every day. Complementing Indonesian national consultations around the Post-2015 agenda, Pulse Lab Jakarta analyzed social media related to Disaster Risk Reduction, HIV and AIDS, and the protection of forests. The research also analyzed conversations around education, as the United Nations MY World survey showed that 75% of the participating Indonesians wished for "A Good Education". Education was by far the most consistently talked about of the four topics analysed, with 90% of the 55 million tweets referring to the topic. Mainly due to the floods of January 2013, Disaster Risk Reduction ranked second. The project findings were included in the Post-2015 Country Consultation Report 'The World Indonesia Wants.'

### **Understanding Parent Perceptions on Immunisation in Real-Time**

Low vaccine uptake can threaten entire health programmes and cost lives, so when some parents hesitate to vaccinate their children, policymakers need to understand why. Pulse Lab Jakarta is collaborating with WHO, UNICEF, Bappenas and the Indonesian Ministry of Health to analyze perceptions regarding immunization as expressed on social media platforms. Preliminary analysis shows that a number of elements are frequently discussed on social media in Indonesia. These include new vaccines, debates about whether immunization is halal (permissible) under Islamic law, or haram (against) the tenets of Islam, discussion when there is news of outbreaks and finally discussion of side effects of immunization. The next phase of the project will include an evaluation of the impact of previously launched advocacy campaigns, and developing guidelines for how social media monitoring can be used to inform the design and responsiveness of future advocacy campaigns in order to improve the uptake of vaccinations and prevent disease.





## ‘BIG DATA FOR DEVELOPMENT’ ENGAGEMENT & ADVOCACY

Global Pulse’s advocacy work seeks to raise awareness of the potential of big data for public good, both internally across the United Nations system, and externally in the public and private sectors. Global Pulse builds bridges with the research community to exchange knowledge, advocates for the need for grassroots innovation in the development sector and encourages global private sector “Data Philanthropy”.



A workshop hosted by Pulse Lab Jakarta and the Indonesian Ministry of Development Planning with representatives from the Indonesian government, research and technology sectors.

### DATA SCIENCE AT THE UN

As a beacon for data innovation in the UN, Global Pulse hosted or contributed to 11 data science introductory events for UN partners in 2013, and established a mechanism through which UN Agencies can propose project ideas for using new digital data. A description is available at <http://unglobalpulse.org/call-for-proposals>.

The importance of data innovation to the UN System was underlined by the UN Secretary General’s High Level Panel call for a ‘Data Revolution’.

Meanwhile, Global Pulse’s recent publication—*Big Data for Development: A Primer*—presented a guide to the concepts behind using big data for social good for international development and humanitarian practitioners.

This publication proved popular among the development community, and Global Pulse followed up with a second awareness-raising publication to explain the potential applications of anonymised and aggregated mobile data ‘Mobile Network Data for Development Primer’.

Examples include analyzing the spread of malaria using anonymised and aggregated mobile phone data, or using the average geographical spread of anonymised and aggregated calls made within a region as a proxy indicator of economic development.



## SUPPORTING THE POST-2015 AGENDA

In the process to replace the Millennium Development Goals (MDGs) with a new Post-2015 development agenda, gathering information regarding what areas matter to global citizens is no easy task. Global Pulse supported the UN's Millennium Campaign by using big data to quantify conversation on these topics, on social media. As part of the public engagement component of this project, [an exhibition was held at UNICEF headquarters in New York.](#)

In addition, Global Pulse contributed to public discussions on the Post-2015 agenda at events including: *"Post-2015 Global Development Framework: Going from Goals (the What) to Solutions (the How)"* at the Annual Meetings of the World Bank Group and the International Monetary Fund (IMF), and at a plenary panel on the Post-2015 agenda at the World Telecommunication/ICT Indicator Symposium hosted by International Telecommunications Union (ITU).

During UN General Assembly week, Global Pulse supported UN Secretary-General Ban Ki-moon in hosting a special *"Millennium Development Goals Success Event"* by organising a high-level innovation panel. The session explored how technology can play a role in shaping Post-2015 goals.

## ENGAGING POLICYMAKERS AND TECHNOLOGY LEADERS

Cultural context and local knowledge is needed to effectively apply big data to development challenges. In Global Pulse's model, field and policy expertise goes hand in hand with innovation.

Constructive collaboration was in evidence in Indonesia in December 2013, when Pulse Lab Jakarta and the Ministry of Development Planning hosted a workshop on big data for development, including a mix of representatives from the Indonesian government and technology sectors. Partners engaged in discussions on issues ranging from big data case studies, infrastructure and data privacy issues. The workshop also provided government counterparts an opportunity to brainstorm ideas to scale proven innovations emerging from Pulse Lab Jakarta.



A panel on the role of technology and innovation in accelerating progress on the Millennium Development Goals, included Jens Stoltenberg, Prime Minister of Norway, Anne Bouverot, Director-General of the GSM Association, Bill Gates, Former CEO of Microsoft and Co-Chair of the Bill & Melinda Gates Foundation, Sheryl Sandberg, COO of Facebook and



## BUILDING BRIDGES WITH THE RESEARCH COMMUNITY

Academia is a key community for big data research, and the Global Pulse team leverages its network to apply research insights and methodologies to the global development context. This year Global Pulse greatly expanded its research network to encompass academic institutions and their academics, students and research scientists. Such relationships foster knowledge exchange, with researchers and students benefitting from access to real-world problem statements and practitioner wisdom, while Global Pulse benefits from specialist knowledge and fresh perspectives.

In 2013, Global Pulse collaborated with academia in a number of ways, including a research competition, in-depth discussion with topic experts, by supervising students on data analytics assignments and in the creation of data visualizations to illustrate research in an accessible manner. Outreach events included a joint Global Pulse and DataKind session titled “Data Science at the United Nations” to raise awareness of big data for development concepts. Global Pulse, UNDP and the World Bank also brought together 150 data scientists, civic “hackers,” civil society groups and development practitioners for a “Big Data Exploration” event in Washington DC.

Global Pulse established an academic fellowship program in 2013 with Pulse Lab New York hosting the first Research Fellow, from Stockholm University.



Researchers display findings from the “Data for Development Challenge” at MIT. April 2013.

## “DATA PHILANTHROPY”: A NEW WAY TO GIVE

In 2013 Global Pulse continued to promote the concept of data philanthropy: the idea that the private sector holders of big data can choose to make this valuable resource available for public good. Global Pulse explained this approach in a Harvard Business Review opinion piece [‘A New Type of Philanthropy: Donating Data’](#) and in a [blog post on the Global Pulse website](#). This advocacy effort has been successful with the concept becoming widely referenced and adopted.

Global Pulse also partnered with Orange Telecom to host a “[Data for Development Challenge](#),” in which Orange opened a dataset of anonymised mobile phone data for more than 80 research teams from around the world to analyze. This research fostered insights that the international development community can be inspired by or learn from.



## DATA PROTECTION & PRIVACY

Addressing the challenges of privacy and data protection is crucial to the success of efforts to use big data for development, to inform policies for social good.

In 2013 Global Pulse published *Privacy & Data Protection Principles* after extensive consultation with international privacy experts from the private and public sector and academia. These principles, along with detailed internal guidelines for their implementation inside the Global Pulse labs, serve to put rigorous data handling safeguards in place.

Global Pulse is contributing to the emerging data privacy movement with a thought leadership role in the public sector.

Throughout 2013, Global Pulse participated in presentations and lead discussions on privacy and data protection at a range of influential summits including the *Skoll World Forum (UK)*, the *Global Philanthropy Forum (USA)*, and the *Next Generation Evaluation Summit (USA)*. Global Pulse was involved in milestone privacy discussions at the *35th International Conference of Data Protection and Privacy Commissioners* in Warsaw, Poland. And the need for data privacy standards was highlighted as a critical issue by Global Pulse in a 'Multi-stakeholder dialogue: Big Data, Social Good & Privacy' session at the 2013 Internet Governance Forum in Bali, Indonesia. Finally Global Pulse joined a special panel discussion on 'The Delicate Balance Between Internet Freedom and Big Data' at the Social Good Summit held during the United Nations General Assembly week in September.



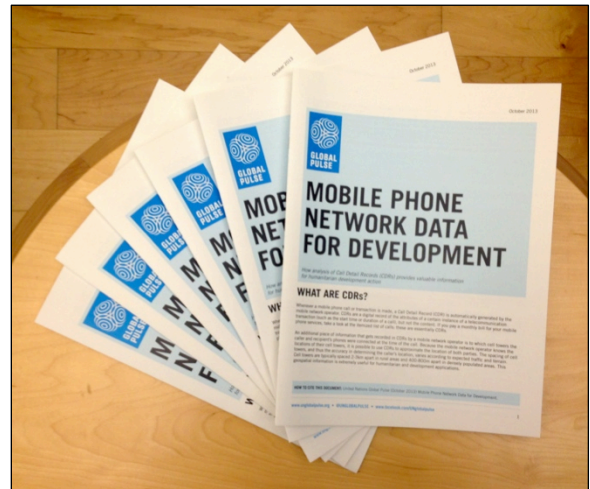
Panel discussion at the World Telecommunications Symposium in Mexico City.



## PUBLICATIONS

### **BIG DATA FOR DEVELOPMENT: A PRIMER (JUNE 2013)**

This publication provides an introduction to the key terms and concepts behind using big data to improve global citizens' health and well-being. It explains the concept of the four V's that characterize big data: *Variety*, *Velocity* and *Volume* leading to greater *Value*. The primer explains that the data we use to garner insights into human well-being has some or all of the following characteristics: the data are digitally generated, passively produced by using digital services, automatically collected, geographically trackable and can be analysed in real-time. This means that some insights can be gained much more quickly and cheaply than has traditionally been possible, which can support more agile policymaking and implementation.



### **MOBILE NETWORK DATA FOR DEVELOPMENT: A PRIMER (NOVEMBER 2013)**

This publication focuses on indicators that can be extracted through analysis of de-identified call detail records (CDRs) such as mobility, social interaction and economic activity. The primer showcases research studies on mobile phone data analysis that have relevant development or humanitarian applications. The publication also summarized current research and standards concerning privacy and the protection of data, an area not yet widely understood in the development sector.

*The publications are available to view or download at: <http://unglobalpulse.org/bigdataprimer> and [http://unglobalpulse.org/Mobile\\_Phone\\_Network\\_Data-for-Dev](http://unglobalpulse.org/Mobile_Phone_Network_Data-for-Dev)*



## PRESS AND ARTICLES

In 2013 Global Pulse received coverage in publications and global media outlets including:



***Embracing The Paradoxes Of Innovation –***  
**STANFORD SOCIAL INNOVATION REVIEW**

The [Global Pulse] initiative required the UN's bureaucratic wheels to turn in a new way, because real political and technical constraints had to be overcome. Not only can it be a technical nightmare to share real-time data that exist in different forms and locations, it can cause political problems. UN agencies work through member states, and if data shared by a UN agency have not gone through the proper national government channels and are somehow misused, it can cause problems for the UN agency.... Proof-of-concept programs like those at Global Pulse can quickly build trust, create knowledge, build collaboration skills, and avoid compromised solutions. One needs the right combination of people to make these programs work. These are usually people who are skilled translators and are willing to engage in battle over substantive issues and still respect one another's goals. (May 2013)



***Analysis: Potential, Pitfalls Of "Big Data" For Humanitarians –***  
**IRIN NEWS**

"Our opportunity today is to responsibly use the data to improve the aid systems to help [vulnerable communities] at every stage: from response and recovery through mitigation and preparedness for future disasters," said Anoush Tatevossian, spokesperson for UN Global Pulse...This type of real-time social media monitoring could strengthen early warning systems, according to Global Pulse. "We can approximate consumer price indexes for basic foodstuffs through keywords and the foods people discuss online," Tatevossian explained. With the labs' research focus on past data, initial findings demonstrate the importance of using free digital information to inform policy decisions. "Decisions are often based on two-to-three-year-old statistics, while this ocean of data is produced for free all around us," said Tatevossian. (May 2013)



***Searching Big Data For "Digital Smoke Signals" –***  
**NEW YORK TIMES**

Research by Global Pulse and other groups, for example, has found that analyzing Twitter messages can give an early warning of a spike in unemployment, price rises and disease. Such "digital smoke signals of distress," Mr. Kirkpatrick said, usually come months before official statistics — and in many developing countries today, there are no reliable statistics. Finding the signals requires data, though, and much of the most valuable data is held by private companies, especially mobile phone operators, whose networks carry text messages, digital-cash transactions and location data. So persuading telecommunications operators, and the governments that regulate and sometimes own them, to release some of the data is a top task for the group. To analyze the data, the groups apply tools now most widely used for pinpointing customers with online advertising. (7 Aug 2013)



**'Big Data' For Development: What Is It, And Why You Should Care – DEVEX**

The U.N. High-Level Panel report on the post-2015 agenda has a section entitled "Wanted: A Data Revolution" that has caught the attention of development practitioners...This call to action is music to the ears of those who have been at the forefront of a transformative trend: "Big Data for Development."... This opens up a world of new opportunities for development: from early warning, to real-time trend analysis, to measurement, monitoring and evaluation. (16 July 2013)



**Harvard  
Business  
Review**

## ***A New Type Of Philanthropy: Donating Data –*** **HARVARD BUSINESS REVIEW**

But the public sector cannot fully exploit Big Data without leadership from the private sector. What we need is action that goes beyond corporate social responsibility. We need Big Data to be treated as a public good. *(21 March 2013)*



**FINANCIAL  
TIMES**

## ***Use Of 'Big Data' Creates Demand For IT Expertise –*** FINANCIAL TIMES UK

While developing useful data sets is one thing, institutions also have to be convinced to use them. "If we develop a flawless algorithm for predicting unemployment and use that to build a free open source tool showing likely increases in unemployment but nobody uses it, that wastes everyone's time," says Mr Kirkpatrick. *(12 November 2013)*

**Use Big  
SCIDEVNET**



**SciDevNet**

## ***Data Wisely And It Can Provide Big Insights –***

Global Pulse is organised into a network of Pulse Labs in different regions of the world. There is a headquarters lab in New York, United States, a lab in Jakarta, Indonesia and lab is opening this month in Kampala, Uganda. These collaborative research centres include multidisciplinary teams of data scientists, engineers, analysts and digital communications experts who prototype, test and share big data techniques and tools across the UN system and beyond. The local expertise in Pulse Labs is crucial for gaining an awareness of cultural contexts and specific development challenges. Understanding the ethnographic dimensions of how different cultures and communities use digital services such as mobile phones or social media is key to being able to leverage big data for development purposes. *(6 December 2013)*

**Mashable**

## ***The Delicate Balance Between Internet Freedom And Big Data –*** MASHABLE

...Kirkpatrick thinks the U.N. can be a platform to discuss how to use big data for social good and respect privacy and citizens' rights. For that, the U.N. will need industries, like the mobile and financial services, to figure out ways to share data safely, he said. That will be a necessary step for a world in which big data can have a real impact. "We'd like to get to a world where real-time information on human wellbeing is ambient, it's all around us like weather data is right now," Kirkpatrick said. "A world in which you could see what's happening right now in employment or health, get real time forecasting for a certain period ahead, and get alerts if people start to run out of money or food. We think that's possible but it's going to take a lot of partnerships to get there." *(26 Sept 2013)*

**Forbes**

## ***Big Data And Mobile Tech To Solve Public Problems Globally –*** FORBES

The UN's Global Pulse is using a network of innovation labs to see how data tracking human behavior might improve responses to poverty, disease and humanitarian crises. Sarah Murray who wrote the article, said a trail of online job sites at the UN and other agencies brings up a lot of openings for information officers, data warehouse experts and data analysts. *(12 November 2013)*



## THE PULSE LAB NETWORK

In order to garner insights that are useful for global development, big data analysis needs to be understood in context.

Global Pulse is organized into a network of Pulse Labs in different regions of the world with a headquarters lab in New York, USA, a lab in Jakarta, Indonesia that opened in 2012, and a lab in Kampala, Uganda that opened in December 2013.

These collaborative research labs include multidisciplinary teams of social scientists, data scientists, engineers and analysts who prototype, test and share big data techniques and tools across the UN system and beyond.

The local expertise of staff in country-level Pulse Labs is crucial for gaining an awareness of cultural contexts and specific development challenges. Understanding how different cultures and communities use digital services such as mobile phones, microloans or social media is also central to being able to leverage big data for development purposes.

Multidisciplinary Pulse Lab teams include a mix of data scientists and analysts, legal experts, communications and partnerships specialists. Pulse Labs design, scope, and co-create projects with UN Agencies and national institutions that provide sectoral expertise, and with private sector or academic partners who provide access to data or analytical and engineering tools.

On the next page is an example of some of the roles that go into conducting a big data innovation project in the lab.

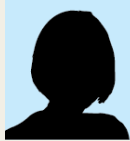


Data scientists in the Pulse Lab collaboration area, Jakarta, Indonesia





## ANATOMY OF A PULSE LAB



### DATA SCIENTIST

Brings expertise in big data sources and methodologies. Looks for insights and patterns that serve as basis for deeper exploration through projects in the Lab.



### DATA ANALYST

Brings expertise in data analytics and visualisation. Delves deeply into the data to address challenges set out by UN and national institution partners.



### RESEARCH COORDINATOR

Works with research team and partners to manage projects and meet deliverables. Multiple projects are ongoing simultaneously at Labs in New York, Jakarta and Kampala



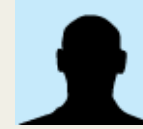
### PARTNERSHIP COORDINATOR

Builds and manages relationships with partner organisations with the problem statements, data, tools and expertise needed for joint innovation projects.



### SOCIAL SCIENTIST

Has expertise in the broader development agenda and knowledge of the UN system. Works with the research team, to provide awareness of local and cultural context of the region in which the lab is situated.



### PRIVACY OFFICER

Has a legal background and works to develop and implement practices that enable the safe handling of data.



### DATA ENGINEER

Devises technical infrastructure & solves technical problems; cleans large data sets into usable form for the analyst and scientist.



### RESEARCH FELLOW

Post-doctoral researchers bring a specific research question and project plan to work on in the Lab. Fosters knowledge exchange in the Pulse Lab.



## PARTNERING FOR SUCCESS

Partnership is central to the success of Global Pulse’s vision that big data is leveraged as a resource for sustainable development. Using Big Data responsibly and effectively requires many ingredients. The Global Pulse network of partners and collaborators includes forward thinking private sector companies willing to engage in “data philanthropy,” by granting access to data and technology tools to the public sector, as well as industry leaders, Universities, research institutes and non-profit networks of researchers and innovators who are ready to bring their skills and expertise to bear for the cause of advancing the use of data science across global development and humanitarian fields.

### WITH THANKS TO OUR PARTNERS AND COLLABORATORS:





# UNITED NATIONS GLOBAL PULSE

UN and development sector partners recognize that the accelerating pace of change requires more agile and adaptive ways of working, and that today's abundant supply of real-time data creates an opportunity to develop the innovative tools and approaches required for driving sustainable development in a post-2015 world.

Global Pulse works with experts from across the UN system and in the wider public sector to identify specific information gaps relevant to their respective sectors and programmes, and together collaborate on research projects that apply new innovations in big data and analytics to address those challenges. Data scientists and engineers in the Pulse Labs work closely with project partners to gain continuous input and benefit from their contextual knowledge and sectoral expertise, in order to develop end-to-end innovations, prototypes and models that are applicable in the real world.

## WITH THANKS TO OUR PROJECT PARTNERS



**USAID**  
FROM THE AMERICAN PEOPLE



**World Health Organization**



**EVERY WOMAN  
EVERY CHILD**



## SUPPORT GLOBAL PULSE

Global Pulse is supported through voluntary contributions from UN Member States, foundations and the private sector. Past and current donors include the Governments of Australia, Denmark, Sweden, United Kingdom and the Rockefeller Foundation. Key staff and facilities have been contributed by UN agencies including the World Food Programme, UN Development Programme and UNICEF.

Expressions of expression of interest are welcome from partners who would like to help expand and accelerate the work of the Global Pulse initiative.

### WITH THANKS TO OUR DONORS



KEMENTERIAN PERENCANAAN PEMBANGUNAN NASIONAL/  
BADAN PERENCANAAN PEMBANGUNAN NASIONAL (BAPPENAS)

