

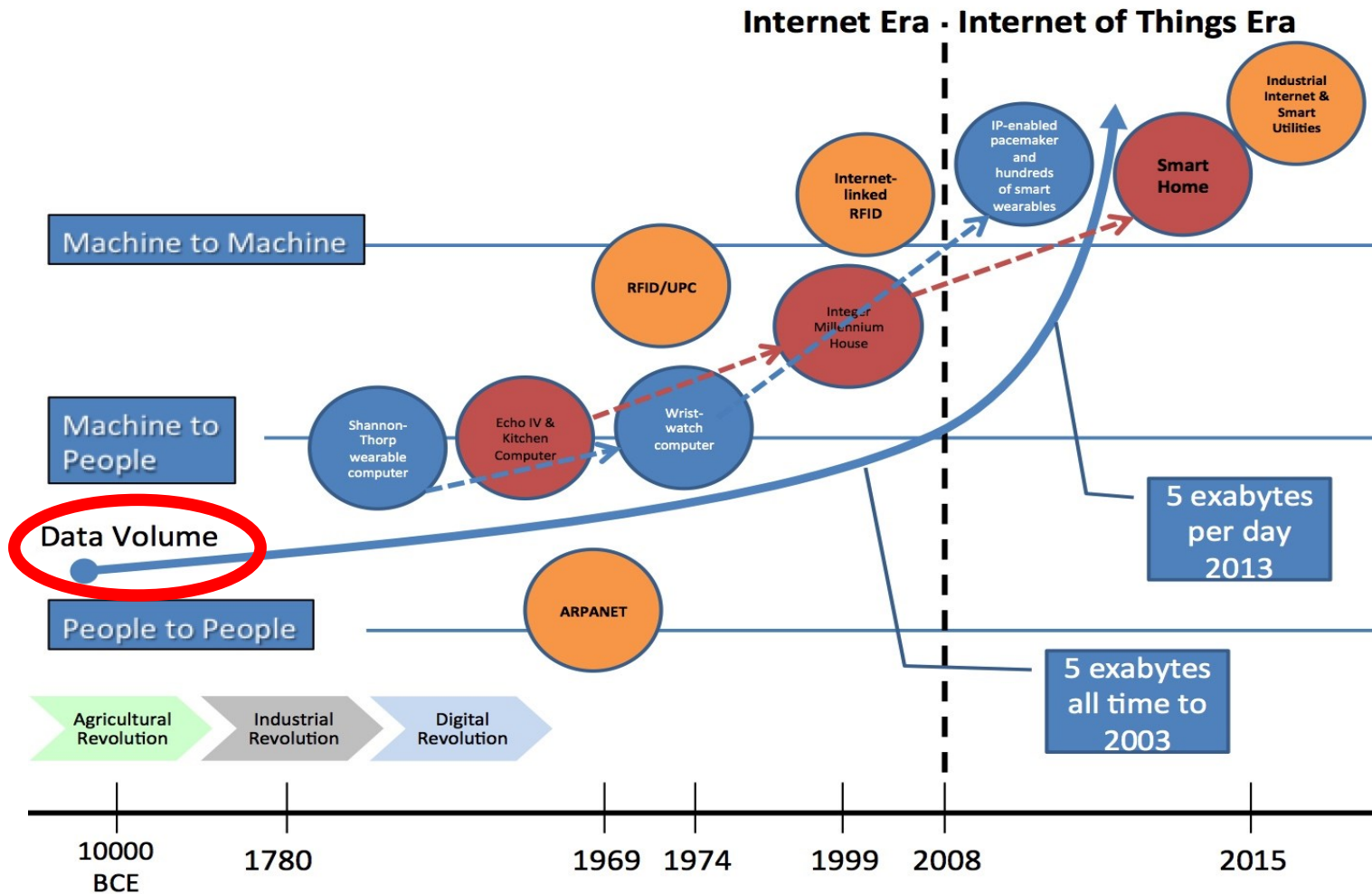


ITU Regional Forum on ICT Measurement Dubai, 13-15 December 2016

Big data for measuring the information society

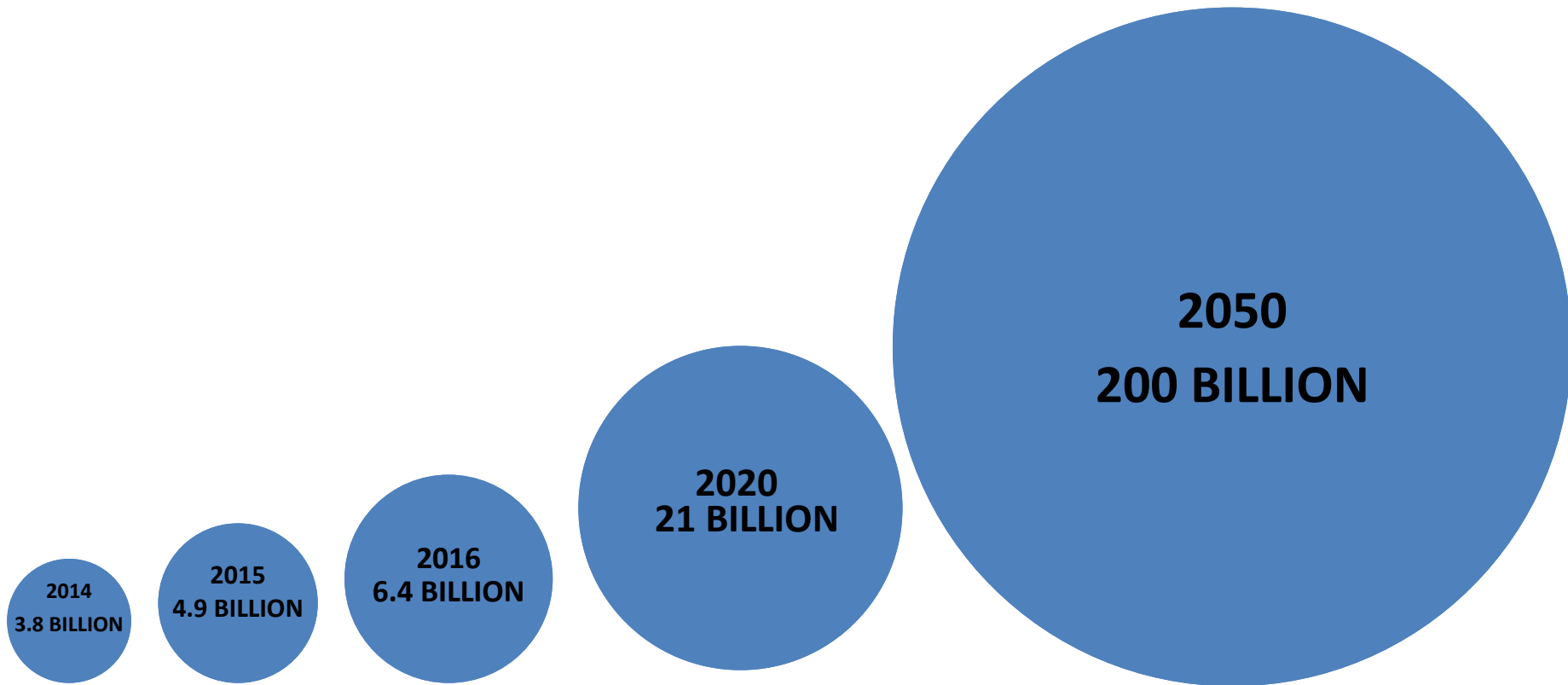
Susan Teltscher
Head a.i., ICT Data and Statistics Division
ITU/BDT

Big data growth

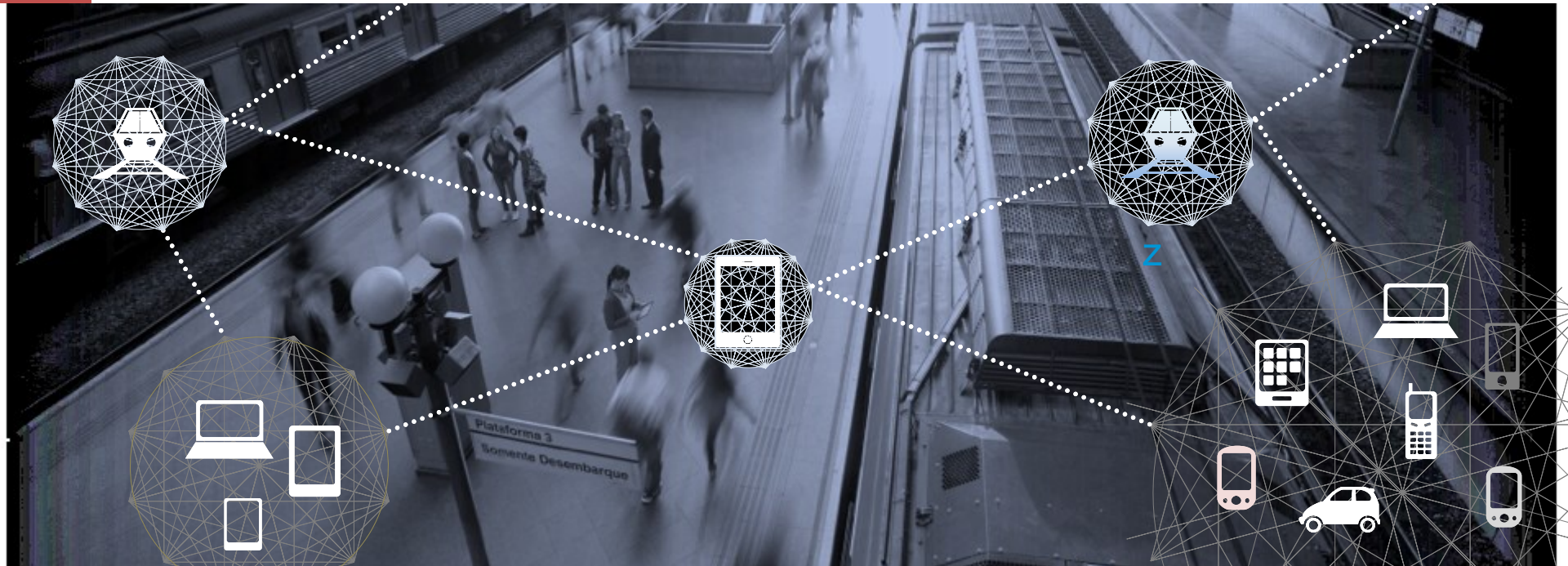


Big data growth

Number of connected devices



Big data growth



1000 Internet Devices in 1984

>24 BILLION in 2020

Big data and the ICT sector

Why important

- ❑ **Amount of data** generated as a result of the spread of ICTs
- ❑ ICT sector is a **major source** of big data
- ❑ **Access** to mobile communication services is **nearly universal**
- ❑ Mobile devices allow **collection of new data** (on all types of information)
- ❑ **Gaps** in official (ICT) statistics and **timeliness** of data – potential of alternative data sources

ICT sector big data sources

Potential partners in official statistics

Telecommunication
service providers

Fixed operators
Mobile operators
Internet service providers (ISPs)
Satellite companies

Internet and mobile
content providers

Over-the-top service providers (OTTs)
Social network providers
Mobile apps market/providers

Others

Software providers
Content distribution network (CDN)
providers
Equipment providers

ITU's engagement

Big data for official statistics

7

- UN agency for telecom/ICT
- Measuring the Information Society Reports – big data and IoT data
- WTIS – panel debates
- Discussion items in EGH and EGTI
- Member of UN Global Working Group (GWG) on Big Data for Official Statistics
- **New: Project on Big Data for Measuring the Information Society**



Measuring
the Information
Society Report
2016



21-23 November 2016
Gaborone, Botswana



□ Objectives and expected results

- Show how big data can be used to produce ICT indicators, including developing and testing methodologies
- Produce official statistics based on big data
- Enhance capacities in countries on the use of big data
- Illustrate possibilities and limitations of the data sources and indicators
- Demonstrate how the indicators can be used for policy and investment decisions

□ Data sources

- Mobile Network Operators (MNOs)
- Internet Service Providers (ISPs)

Big data indicators

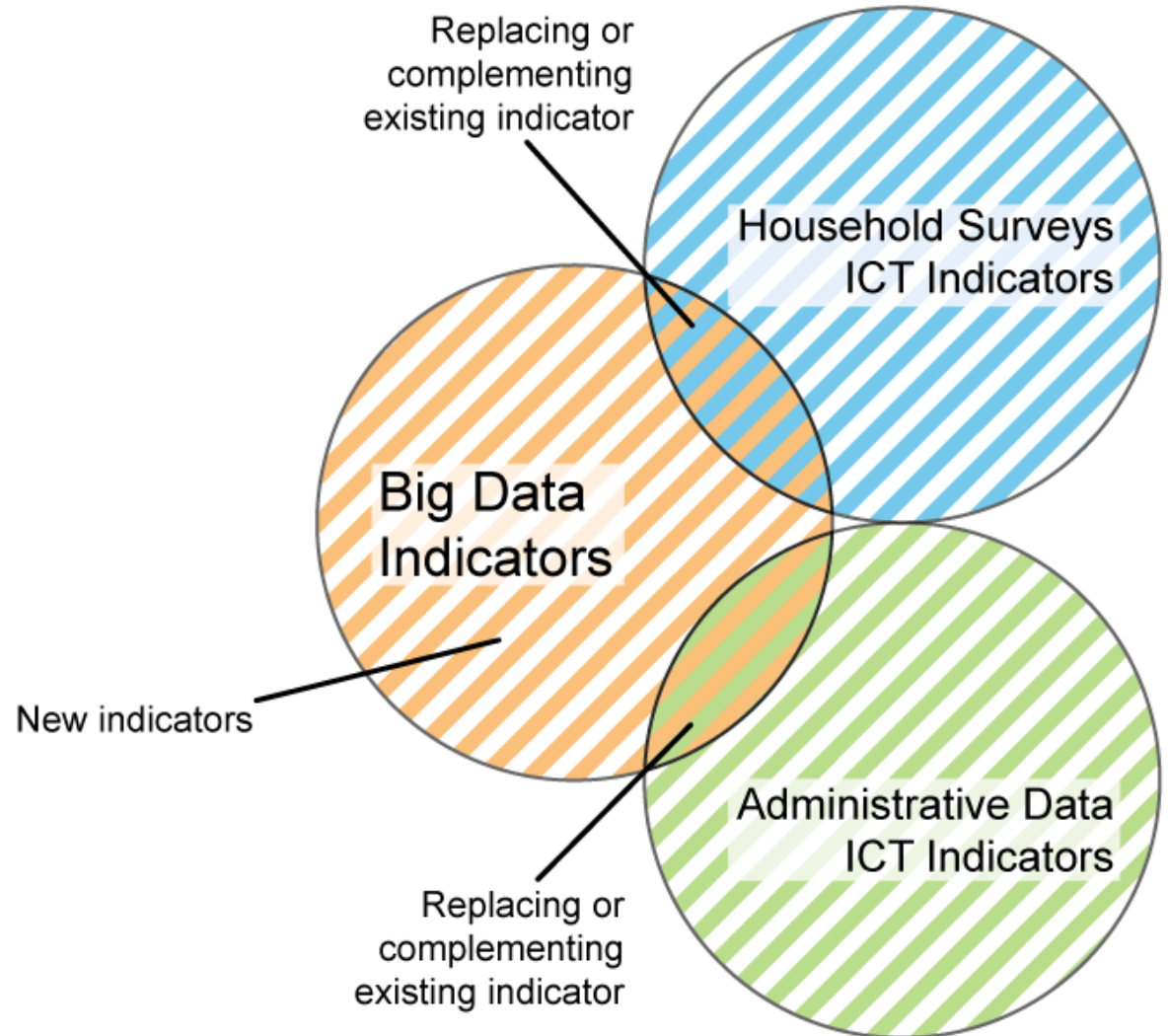
REPLACE

existing indicators

COMPLEMENT

existing indicators
(granularity, disaggregation)

NEW indicators



ITU Project

Big data for Measuring the Information Society

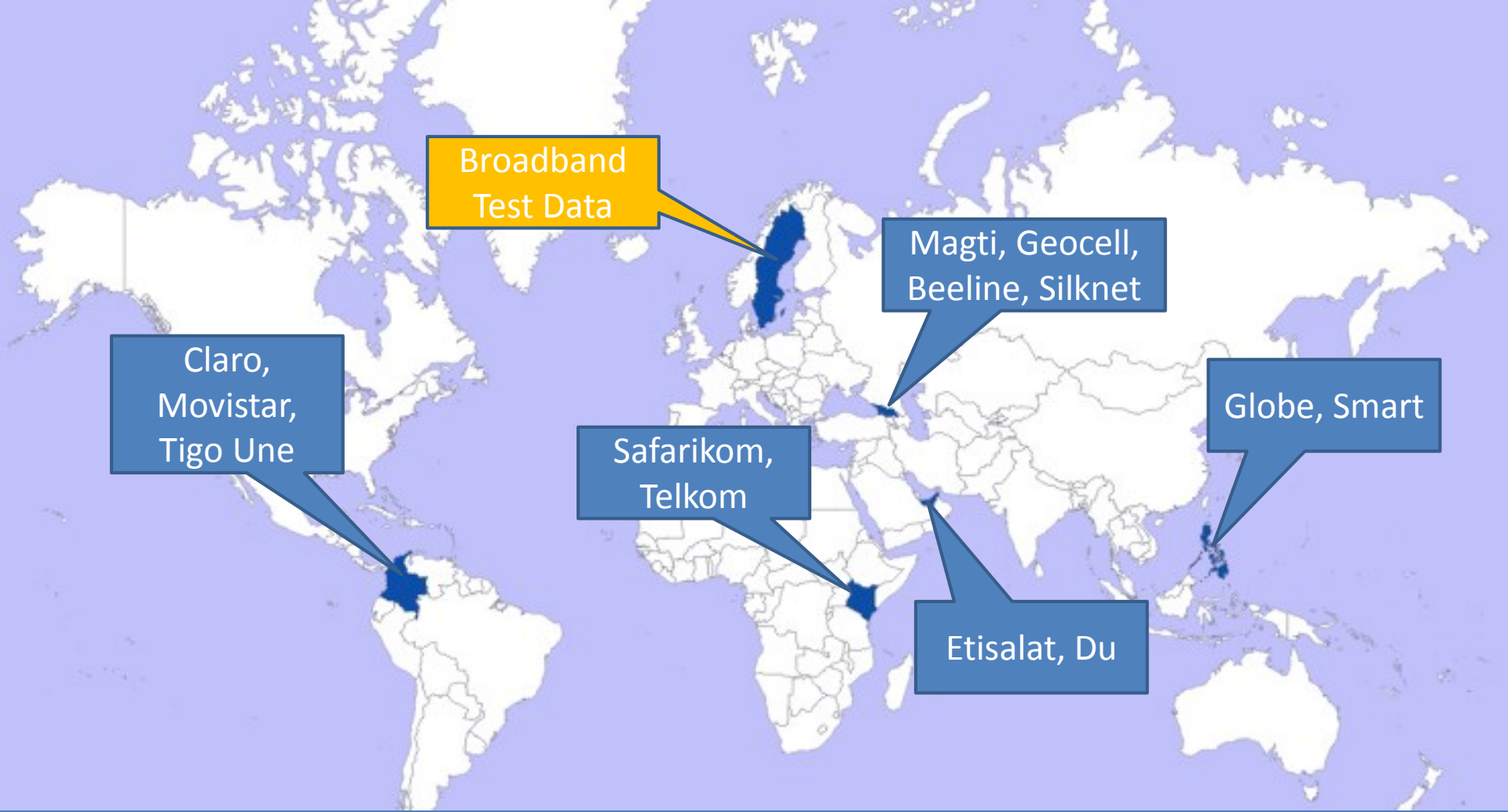
10

□ **Pilot countries**

- ▣ Colombia, Georgia, Kenya, Philippines, Sweden, United Arab Emirates
- ▣ Under discussion: Rep. of Korea

□ **Timeline**

- ▣ July 2016 – March 2017
- ▣ Second phase: scaling-up of the project to more countries based on results achieved from pilot countries
 - Looking for partners



6 Pilot countries

Colombia, Georgia, Kenya, Philippines, Sweden, UAE

ITU Project

Local stakeholders

- Telecommunication regulatory authority/ICT Ministry
- National Statistical Office (NSO)
- Data protection commission/agency
- MNOs and ISPs – data providers:
 - Globe, Smart, Magti, Geocell, Beeline, Silknet, Claro, Movistar, Tigo Une, Safarikom, Telkom, Etisalat, Du

ITU Project

Proposed big data indicators

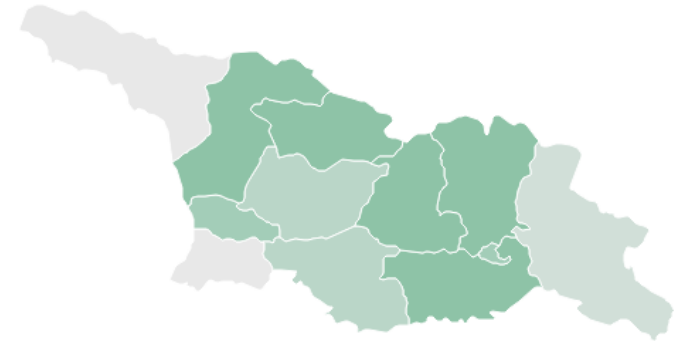
- BD01: Percentage of the Land Area Covered by Mobile-Cellular Network, by Technology
- BD02: Percentage of the Population Covered by a Mobile-Cellular Network, by Technology
- BD03: Usage of Mobile-Cellular Networks for non-IP Related Activities, by Technology
- BD04: Usage of Mobile-Cellular Networks for Internet Access, by Technology
- BD05: Number of Subscriptions with Access to Technology
- BD06: Active Mobile Voice and Broadband Subscriptions, by Contract Type
- BD07: Average Number of Active Mobile Subscriptions per Day, by Contract Type
- BD08: Active Mobile Devices
- BD09: IMEI Conversion Rate
- BD10: Fixed Domestic Broadband Traffic, by Speed, Contract Type
- BD11: Mobile Domestic Broadband Traffic, by Speed, Contract Type, Technology
- BD12: Mobile International Broadband Traffic, by Contract Type
- BD13: Inbound Roaming Subscriptions per Foreign Tourist
- BD14: Fixed Broadband Subscriptions, by Technology
- BD15: Fixed Broadband Subscriptions, by Speed
- BD16+: any proposed indicators from the country stakeholders

ITU Project

Difference with current reporting system

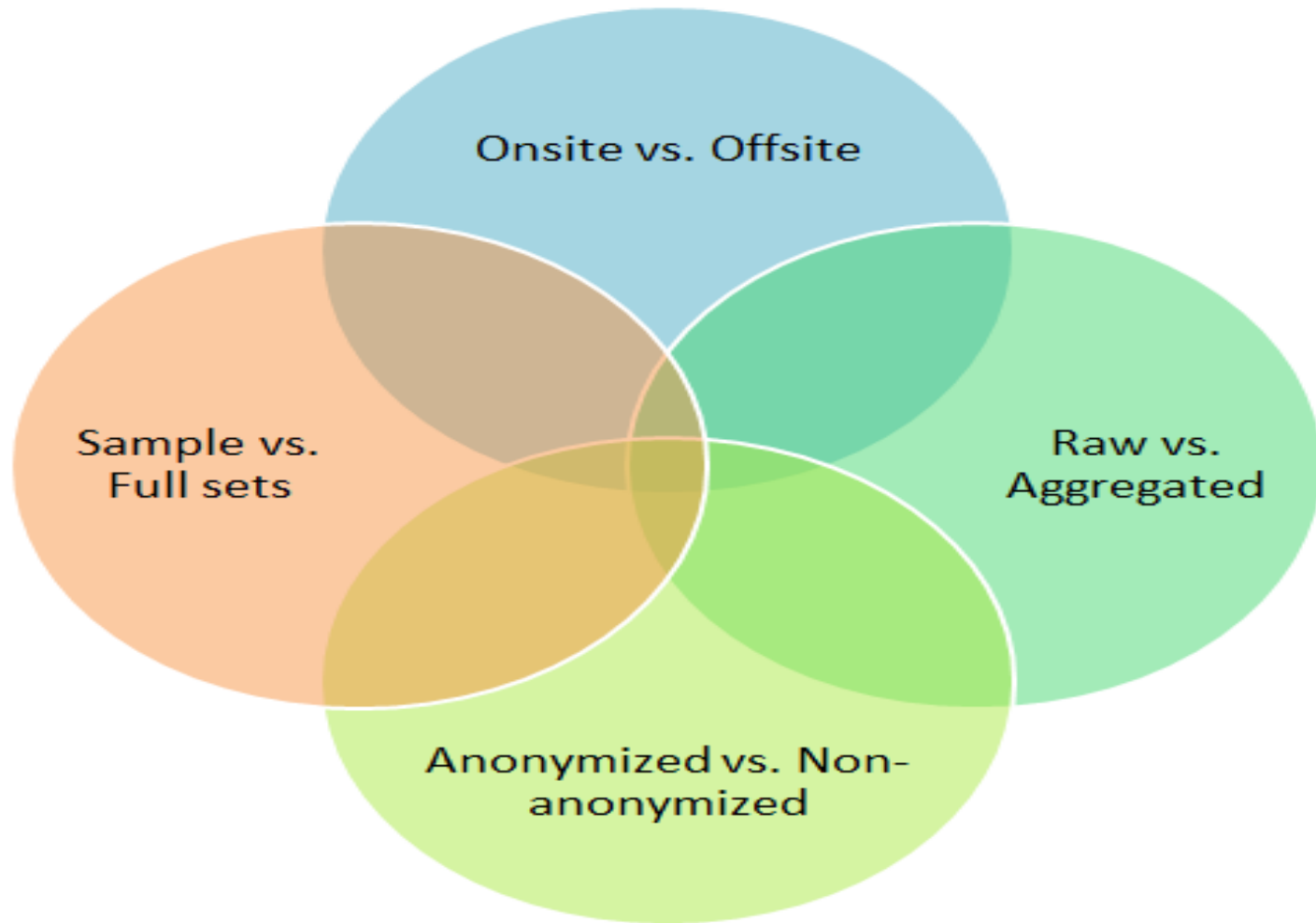
▣ Breakdown

- Geographical: Local Administrative Units 1-2-3
 - Urban/Rural breakdown
 - Contract type: private/commercial; pre-paid/post-paid; voice/data
 - Socio-demographics: gender, age, language
 - Mobile technology generation: 2G, 3G, 4G
 - Fixed technology: cable, DSL, fibre, etc.
 - Fixed advertised speed
 - Device based on IMEI/TAC
 - Event type (call, message, incoming, outgoing, IP)
 - Data volume
- ▣ Data providers don't simply report summarised indicators, but need to calculate and aggregate data using big data tools

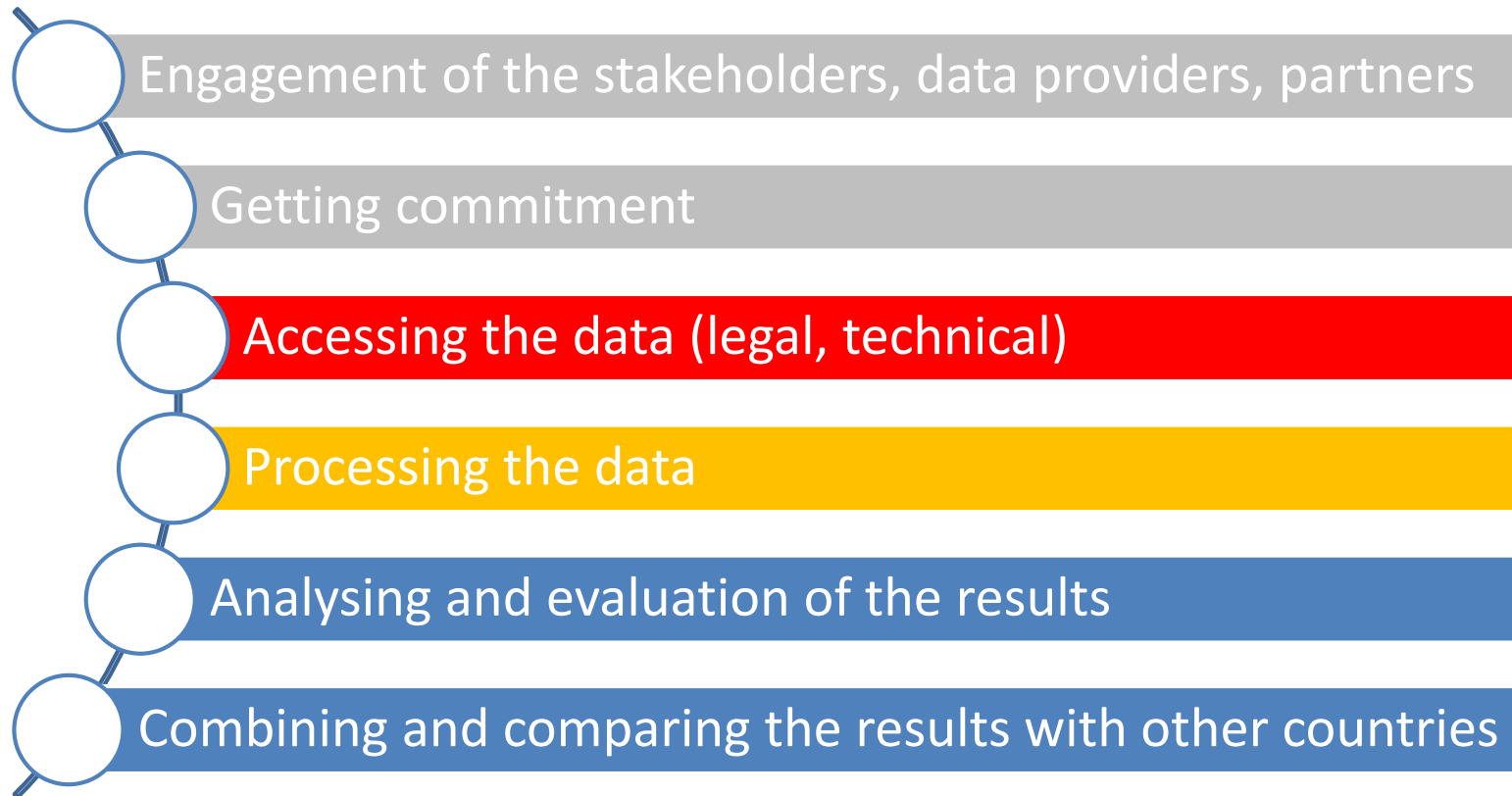


- Access to the data
 - ▣ Legal clearance (regulations)
 - ▣ Administrative aspects
 - ▣ Data protection (DPA)
 - ▣ What source data are collected and available?
- Processing and analysis of large data sets
 - ▣ Location of the processing
 - ▣ Methodology for processing, quality of the data and indicators
- Which indicators can be calculated?
 - ▣ Are the resulting indicators valuable and usable for policy and investment decisions?
 - ▣ Are the data comparable nationally, internationally, over time?

Levels of data access can vary considerably



ITU Project Status



ITU Project Status

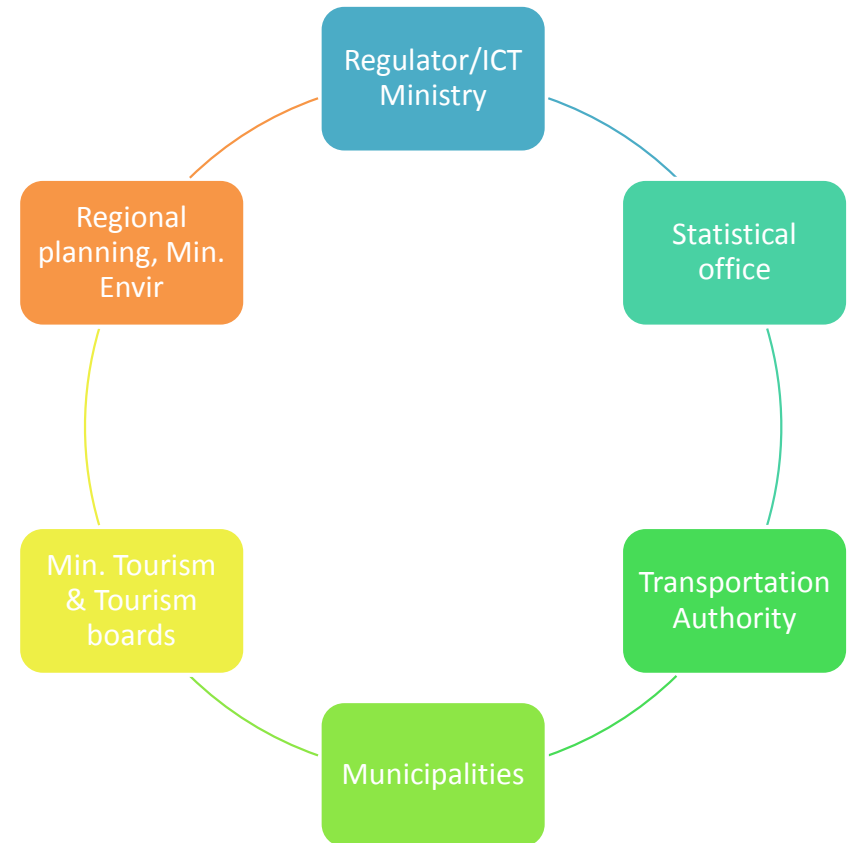
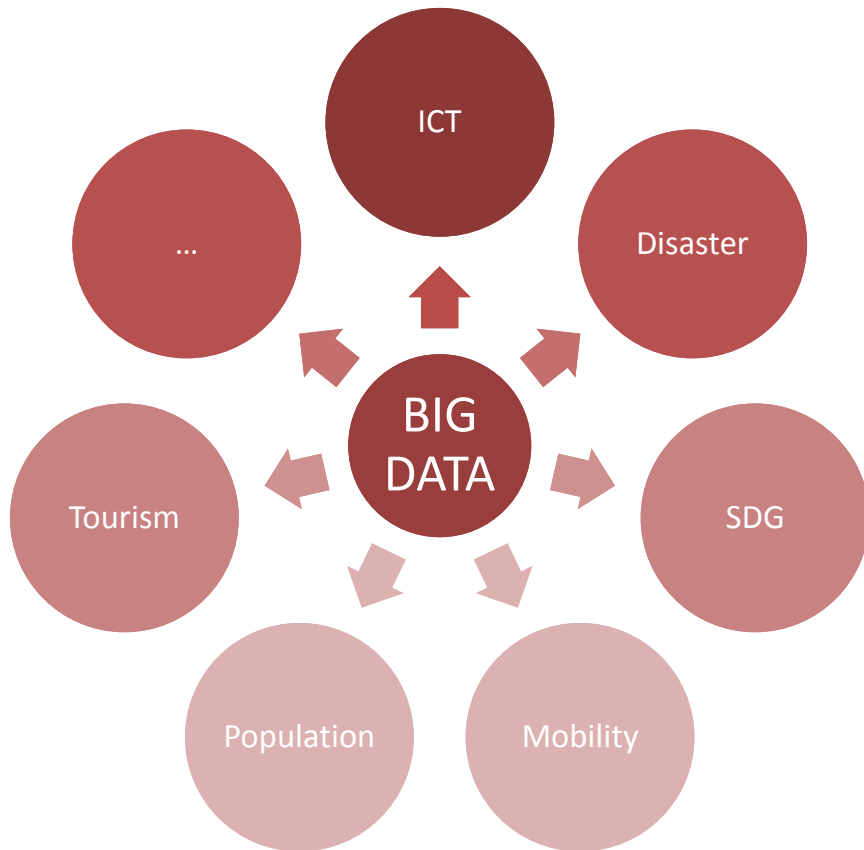


Country	Status overview	Location of the processing	Expected data scientist's visit	Country report ready
Sweden	Contract issues and privacy obfuscation has been resolved	ITU	December	January
Philippines	Waiting for legal go from data providers	Data providers	January	February
Georgia	Data request from data providers, preparations from data providers to send data, GNCC to process data	GNCC	February	March
Colombia	Providers committed, but lack of resources and time now, 2017 Q2 expected	Mixed	March-April	April
Kenya	Ready, need to resolve some aspects of data processing and administrative questions	Data providers	January	February
UAE	Official request made from TRA, data providers preparing for processing of the data	Data providers	January	February

ITU Project



Big data sources could be used by different stakeholders and policy makers



Thank you



For more information and data:
www.itu.int/en/ITU-D/statistics