Big Data as a New Data Source for Official Statistics -

ITU pilot project Big Data for Measuring the Information Society

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INTERNATIONAL TELECOMMUNICATION UNION

International Telecommunication Union

ITU is the United Nations specialized agency for information and communication technologies – ICTs

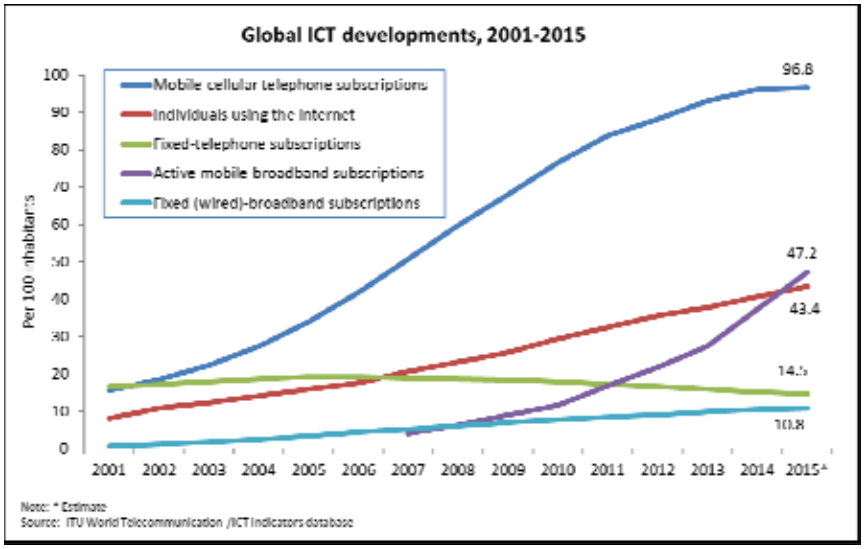
ITU is the key official source for global ICT statistics

Current ICT Indicators

ITU currently collects ICT indicators covering fixed-telephone networks, mobile-cellular telephone subscriptions, quality of service, internet (including fixed- and mobile-broadband subscription data), traffic, staff, prices, revenue, investment and statistics on ICT access and use by households and individual

Data is collected from two main sources:

- National household surveys – collected usually by National Statistical Institutes (NSI)
- National telecommunication indicators – collected usually by national ICT ministries, telecommunication regulators or NSIs

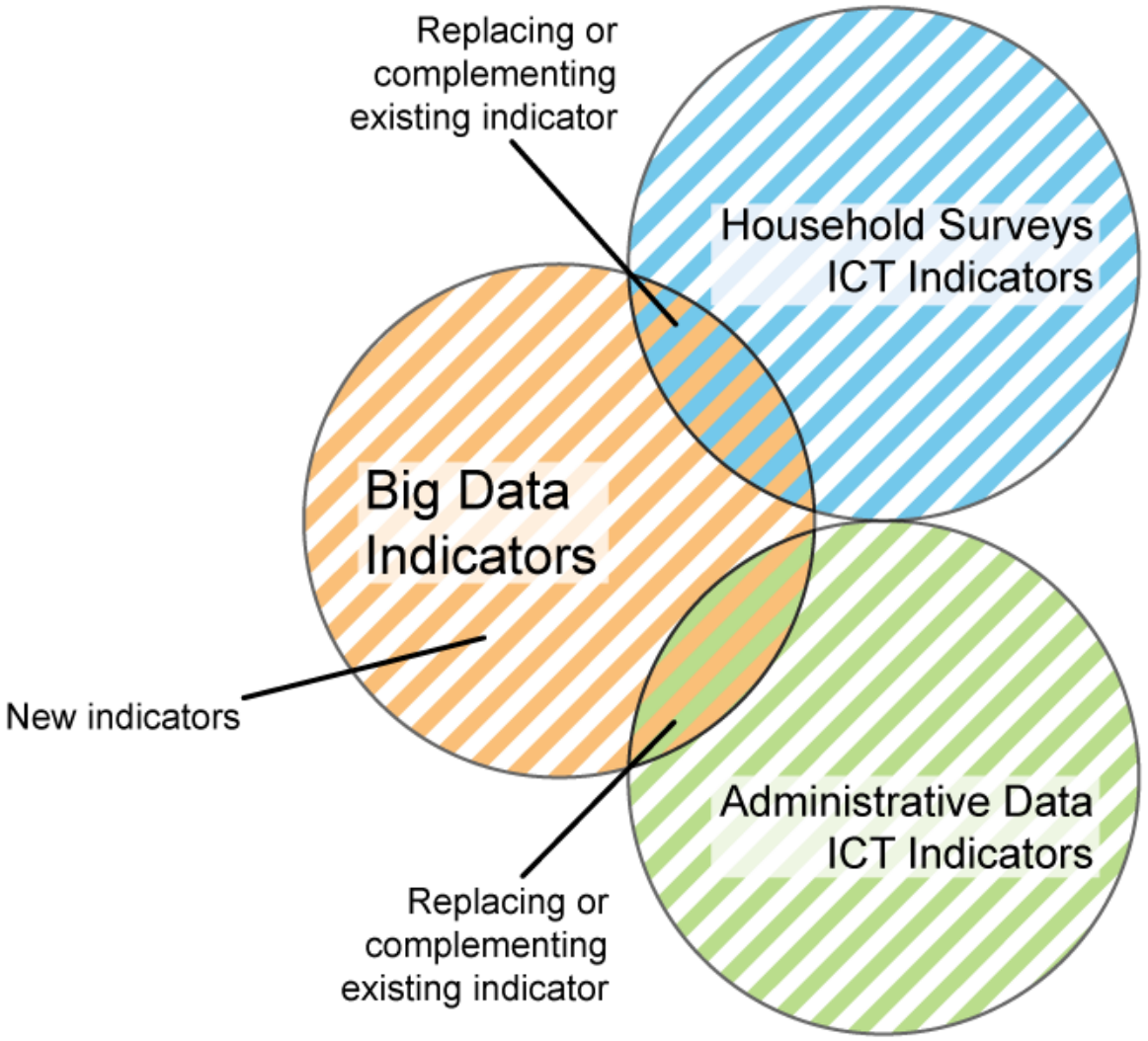


The Objective

Demonstrate how big data can be used for ICT measurement – to produce new and existing ICT indicators to enhance data availability, benchmarks and methodologies to measure the information society

Objectives

- Complement existing indicators (granularity, disaggregation)
- New indicators



Pilot Countries

- Colombia
- Georgia
- Kenya
- Philippines
- Sweden
- United Arab Emirates

- Pilot Project Launched in June 2016
- Two data scientists and project coordinator to assist pilot countries
- Final report December will be available in December 2017 at http://www.itu.int/en/ITU-D/Statistics/Pages/bigdata/default.aspx``

Roles of Different Stakeholders in the Country

National Statistical Institutes
- Provide any necessary existing reference data (geographic administrative units, population statistics, etc.)
- Quality assessment of the methodology used and resulting indicators

Telecommunication regulator / ICT Ministry
- Local coordinator of the project, focal point, administrative, cooperation and regulatory questions

Data protection commission/agency
- Oversight on protection of privacy, approval for the project concerning personal data protection

Telecom operators – data providers
- Provide the source data and resources if necessary for the project

Internet service providers – data providers
- Provide the source data and resources if necessary for the project

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 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

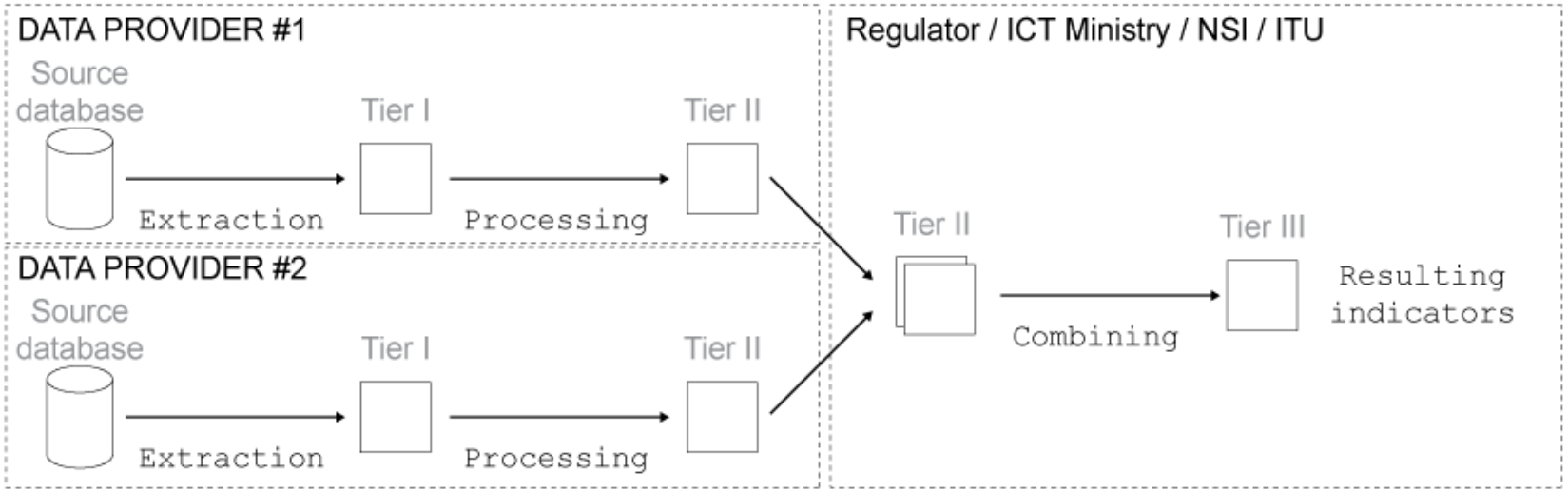
BD16+: Proposed New Indicators from Pilot Countries

	Colombia	Georgia	Kenya	Philippines	Sweden	UAE
BD01	-	-	+	-	-	-
BD02	-	+	+	-	-	-
BD03	+	+	+	+	-	+
BD04	+	+	-	+	-	+
BD05	+	+	+	+	-	+
BD06	+	+	-	+	-	+
BD07	+	+	+	+	-	-
BD08	-	+	+	+	-	+
BD09	-	+	+	+	-	+
BD10	-	-	-	-	-	-
BD11	+	+	+	+	-	+
BD12	-	+	-	-	-	+
BD13	+	+	+	+	-	-
BD14	-	+	-	-	-	+
BD15	-	+	-	-	-	+
BD16	++++	+	-	-	-	+
TOTAL	11	14	9	9	0	11

Data processing model - option 1

Indicators calculated by data providers, then aggregated to resulting indicators:

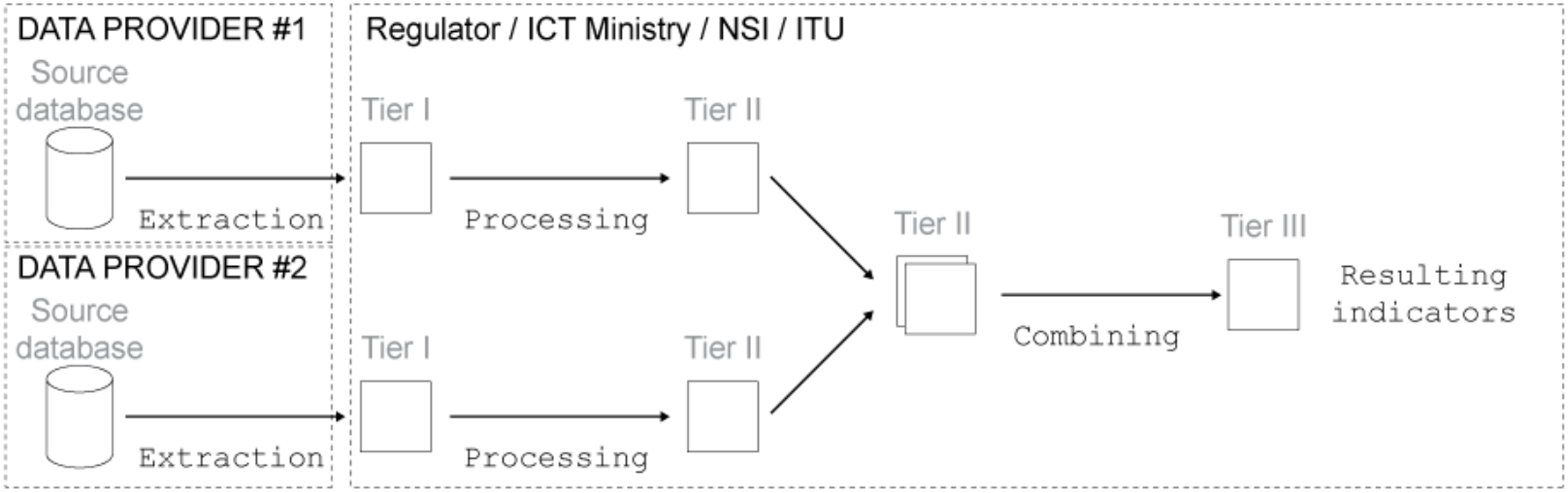
- Kenya
- Philippines
- UAE



Data processing model - option 2

Raw data extracted by data providers, indicators calculated by TRA/NSO/ITU:

- Georgia
- Colombia
- Sweden



Description of Tiers:

Tier I – initial, raw, not aggregated data extracted by the data providers from their databases and registries, that is the basis for calculation and which might include private and confidential business information.

Tier II – initially aggregated or otherwise processed data with no private and some (or no) confidential business information, but which is still considered sensitive and kept from sharing with third parties.

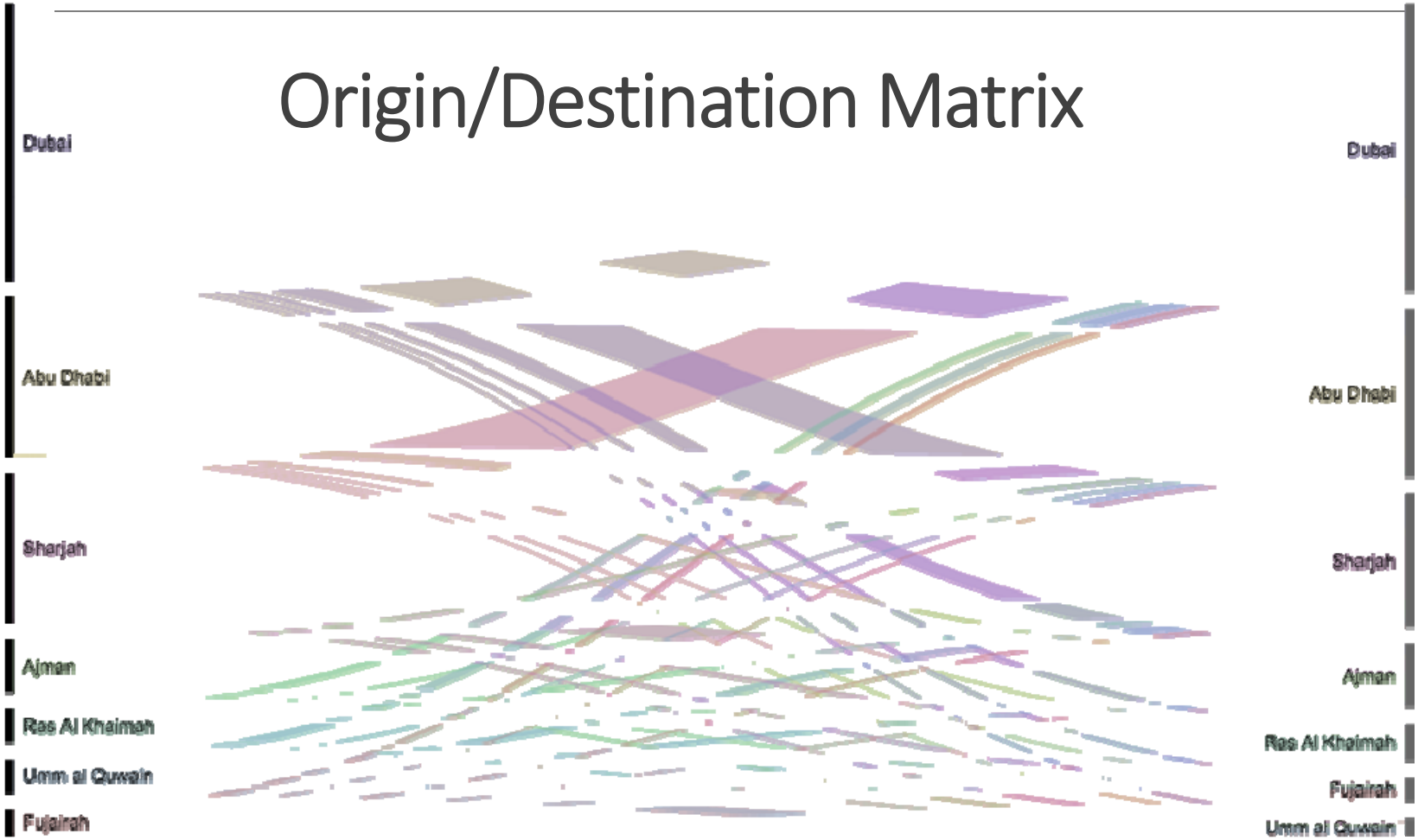
Tier III – aggregated resulting indicators (macrodata) that can be publicly shared and does not include any private or confidential business information.

Project Results

The expected results of the project are:

- Concrete ICT indicators on each pilot country which could replace existing indicators or provide new insight on measuring the ICT
- Methodology and description of the source data and calculation process for the indicators
- Possibilities and limitations of the data source and indicators
- Analytical and methodological elements related to the work carried out during the project

Example: Analysis of human mobility using Big Data



Thank you!