

ITU Asia-Pacific Regional workshop on ICT indicators

Ha Noi, Viet Nam
2-4 October 2019

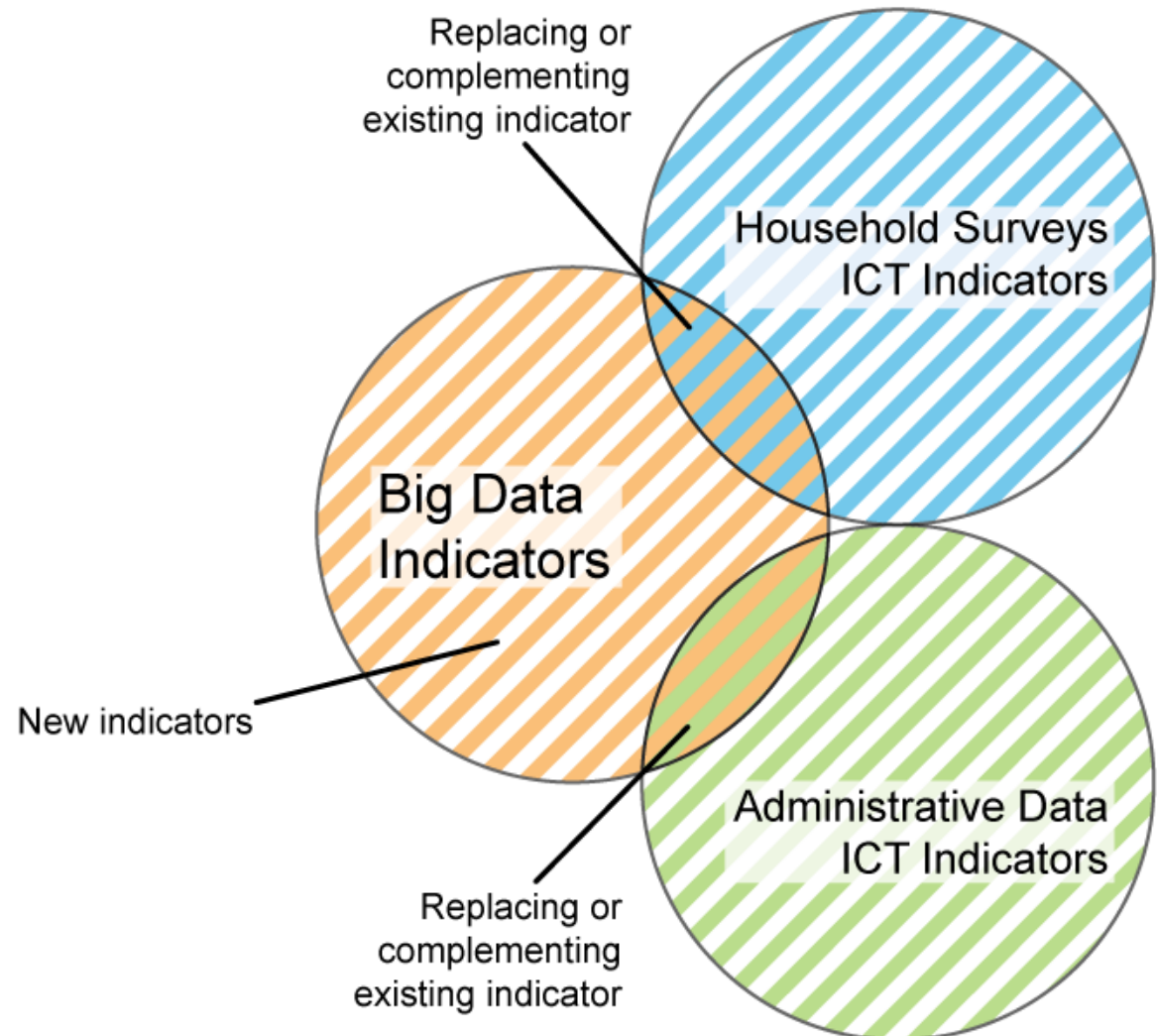
Big Data for Measuring the Information Society

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International Telecommunication Union**



Objectives

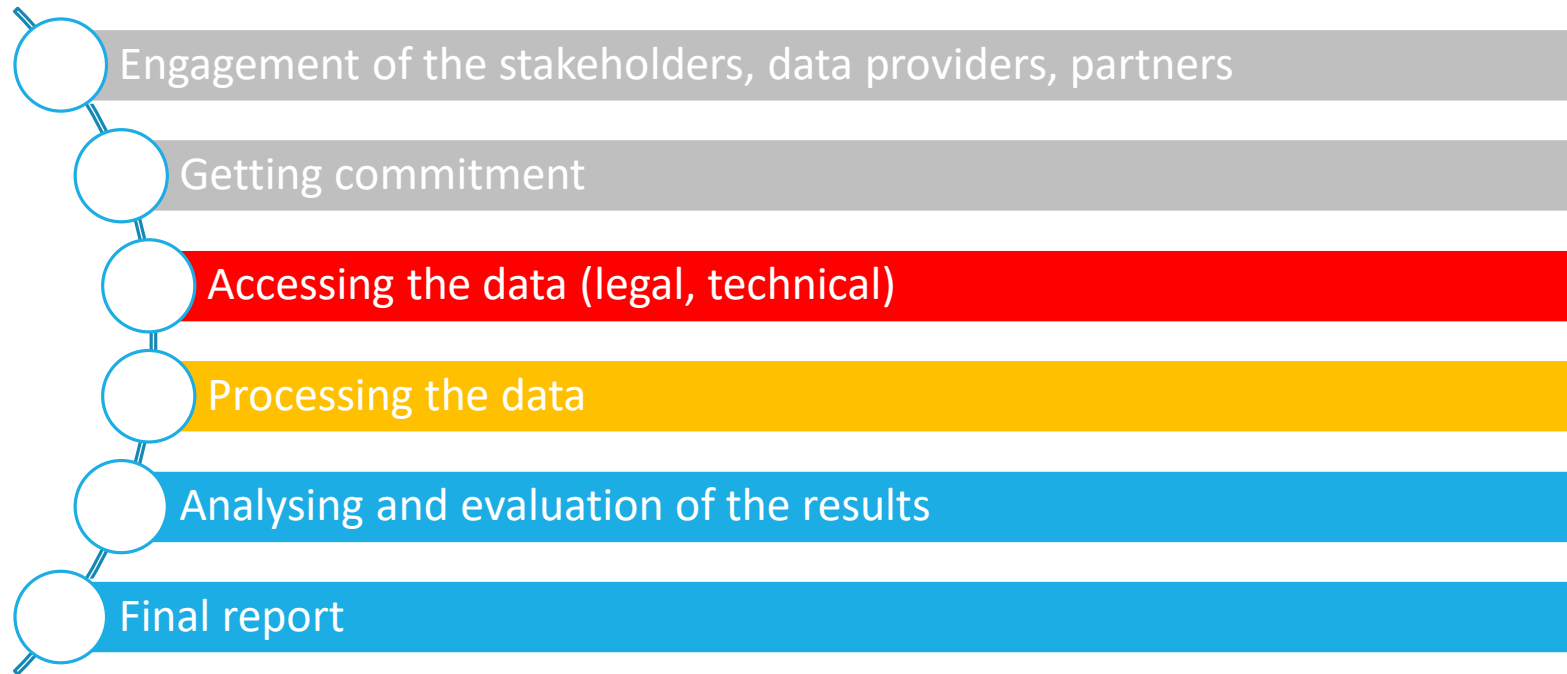
- **Complement existing indicators (granularity, disaggregation)**
- **Produce new indicators**



June 2016 – November 2017

6 Pilot Countries:

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



Stakeholders

ITU

- 1. Staff members of ITU ICT Data and Statistics Division**
- 2. Project coordinator**
- 3. Two data scientists assigned to assist the countries**

PILOT COUNTRY

- 1. Telecommunication Regulator / ICT ministry**
- 2. National Statistics Institute**
- 3. Telecommunication Service Providers (MNOs, ISPs)**
- 4. Data Protection Authority**

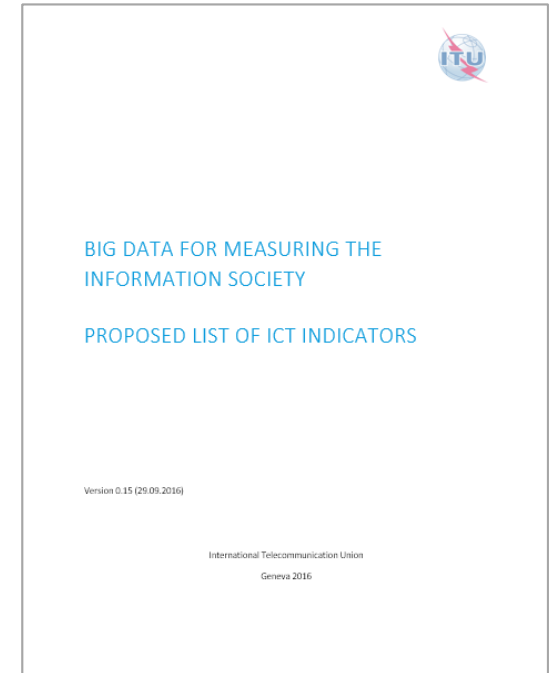
Methodology document

✓ Includes:

- Name of the indicators
- Data source description
- Processing methodology
- Expected results example
- Disaggregation
- The purpose and value of the indicator

➤ **Complemented and amended during the project**

➤ **Published on ITU website**



15 Indicators + Country 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

Processing Models

Option 1:

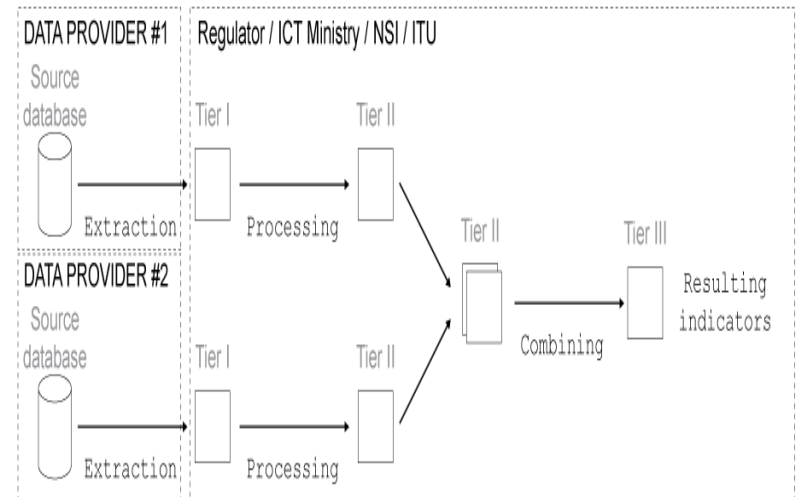
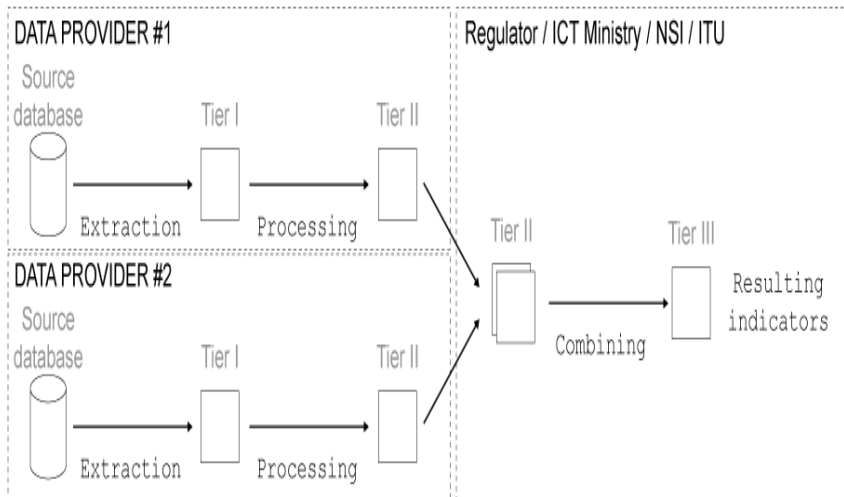
Indicators calculated by data providers, then aggregated to resulting indicators:

- Kenya, Philippines, UAE

Option 2:

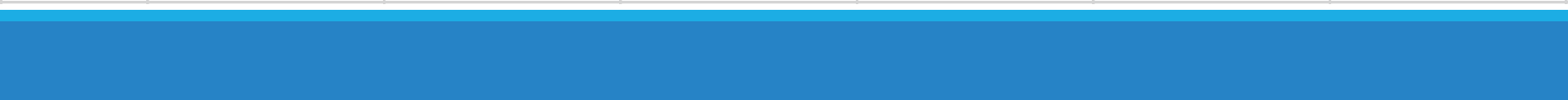
Raw data extracted by data providers, indicators calculated by TRA/ITU:

- Georgia, Colombia, Sweden



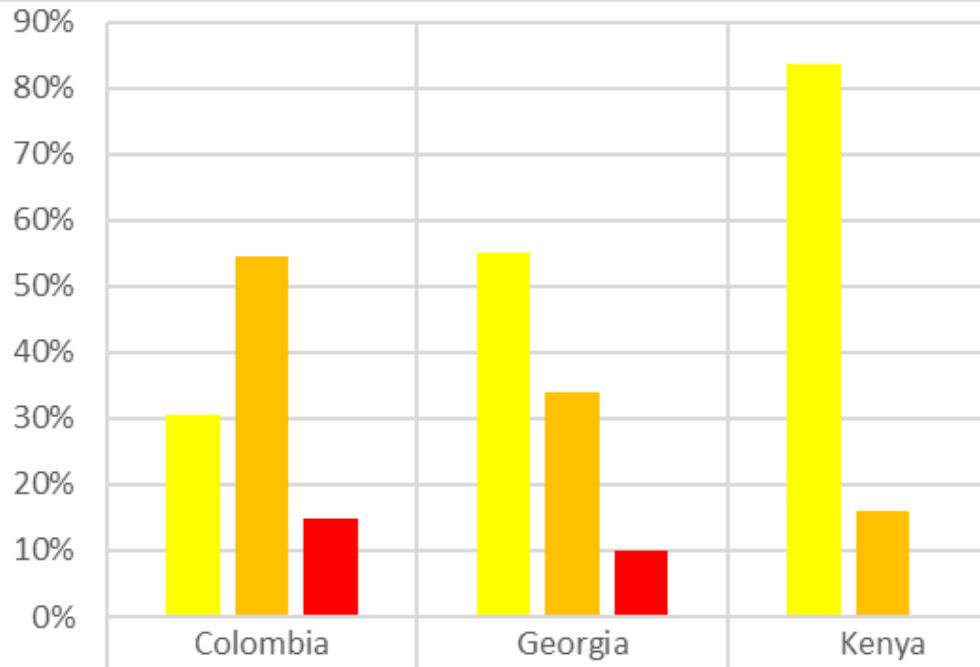
	Colombia	Georgia	Kenya	Philippines	Sweden	UAE
BD01	-	-	+	-	-	-
BD02	-	+	+	-	-	-
BD03	+	+	+	+	-	+
BD04	+	+	-	+	-	+
BD05	+	+	+	+	-	+
BD06	+	+	-	+	-	+
BD07	+	+	+	+	-	-
BD08	-	+	+	+	-	+
BD09	-	+	+	+	-	+
BD10	-	-	-	-	-	-
BD11	+	+	+	+	-	+
BD12	-	+	-	-	-	+
BD13	+	+	+	+	-	-
BD14	-	+	-	-	-	+
BD15	-	+	-	-	-	+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

Broadband speed data



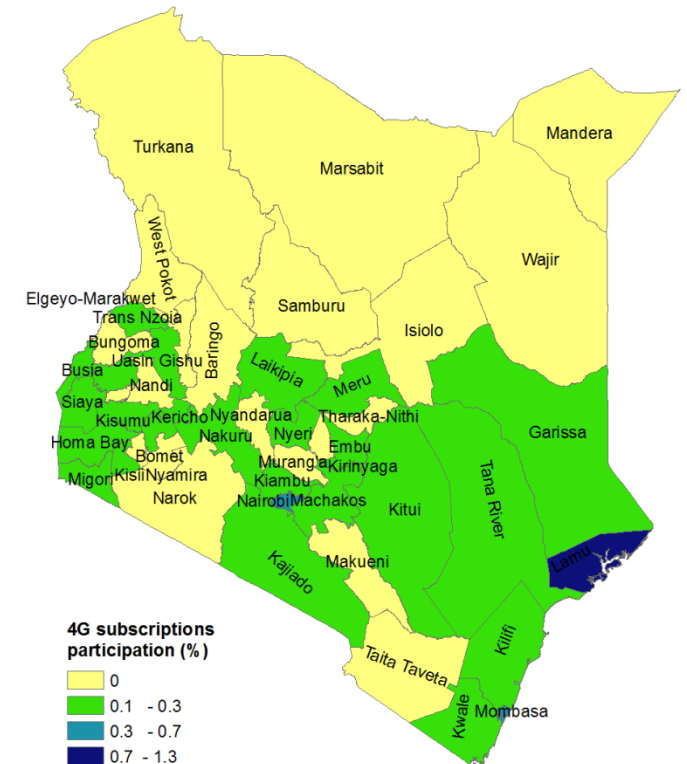
Indicators Example BD05

BD05: Number of Subscriptions with Access to Technology



	Colombia	Georgia	Kenya
2G all country	30.5%	55.0%	83.7%
3G all country	54.5%	34.0%	16.0%
4G all country	15.0%	10.0%	0.3%

Percentage of participation of subscriptions accessing 4G (LAU1 level)



Key challenges

1. Access to data - administrative and legal procedures



2. Participation of all data providers (MNOs, ISPs)

3. Resources

- Human (data scientists)
- Infrastructure

4. Publication of results

Data for (≤2) providers - highly sensitive and confidential, especially on very granular level of breakdowns – consent required from data providers for publishing the results

Lessons Learned

- 1. Prepare all administrative and legal procedures to access the data before the project starts**
 - **Agreed processing model for calculation (by data providers or by TRA/NSO)**
 - **Agreed method for data transfer**
- 2. Standard, clear and unambiguous methodology:**
 - **detailed data source description (input data)**
 - **calculation methodology**
 - **example algorithms for calculation**
- 3. Infrastructure and human resources (data scientist) for data processing should be in place**
- 4. Coordination with all stakeholders (access to data, validation of results, analyses)**

Way forward

- **ITU is currently leading the UN Global Working Group on Big Data Task Team on Mobile phone data**
- **Countries to process their own data using the Manual**
- **ITU can provide assistance**
 - **Technical advice**
 - **Recommend experts/data scientists**
 - **Facilitate coordination between stakeholders**
 - **Include big data in capacity building activities (online tools, manual)**

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<https://www.itu.int/en/ITU-D/Statistics/Pages/bigdata/default.aspx>

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