Big Data for Measuring the Information Society

INTERNATIONAL TELECOMMUNICATION UNION

BIG DATA PROJECT - INNOVATIVE WAYS TO UTILIZE BIG DATA AS A NEW DATA SOURCE FOR ICT INDICATORS

2016-2017

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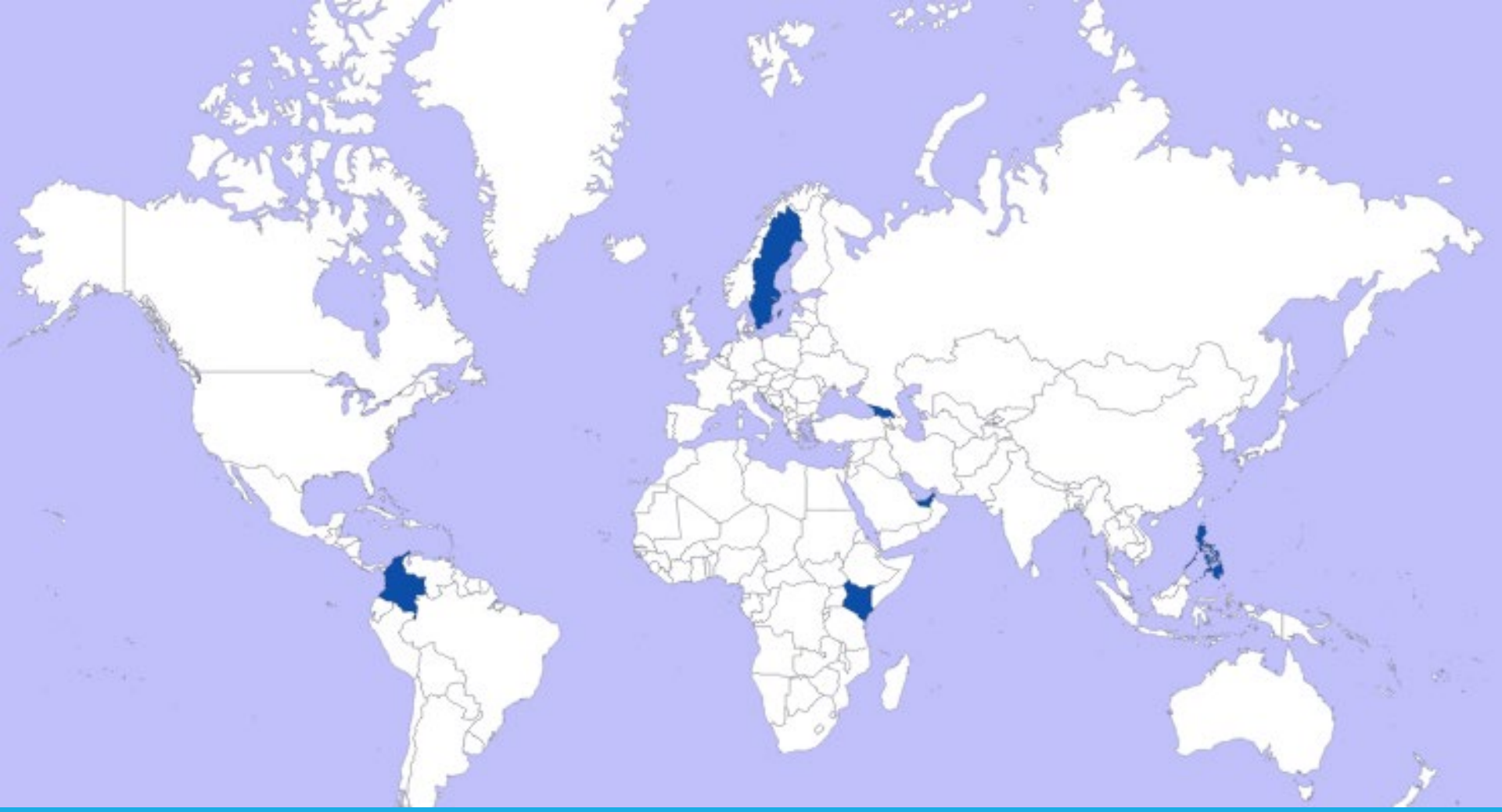


6 Pilot Countries

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

15 Indicators + Additional

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

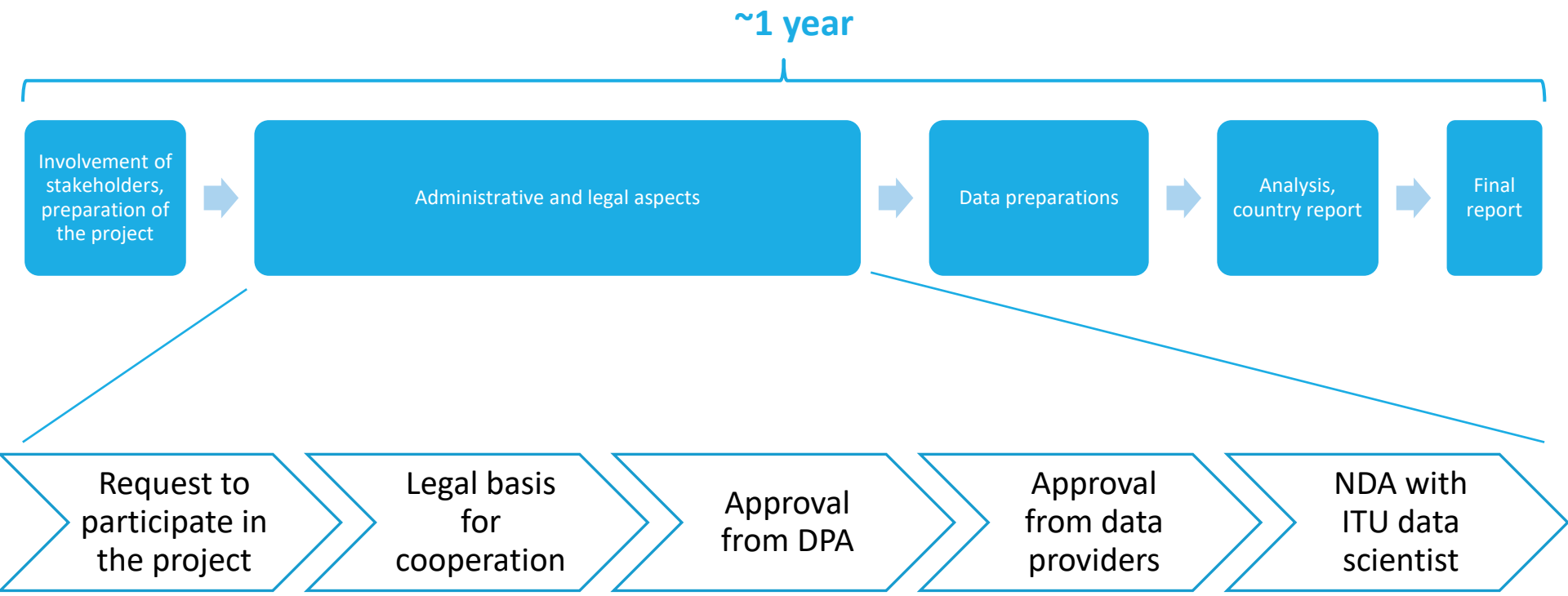
BD13: Inbound Roaming Subscriptions per Foreign Tourist

BD14: Fixed Broadband Subscriptions, by Technology

BD15: Fixed Broadband Subscriptions, by Speed

BD16+: Proposed New Indicators from Pilot Countries

Project Timeline in Pilot Countries



Major Challenges

Administrative and legal procedures for accessing the data

- Participation of all data providers (MNOs, ISPs)
  - Initially planned exploratory project (data mining) -> create specific methodology with defined indicators
  - Availability of the data scientists' resources by ITU

Stakeholders

ITU

Staff members of ITU ICT Data and Statistics Division

Project coordinator

Two data scientists assigned to assist the countries

PILOT COUNTRY

Telecommunication Regulator / ICT ministry

National Statistics Institute

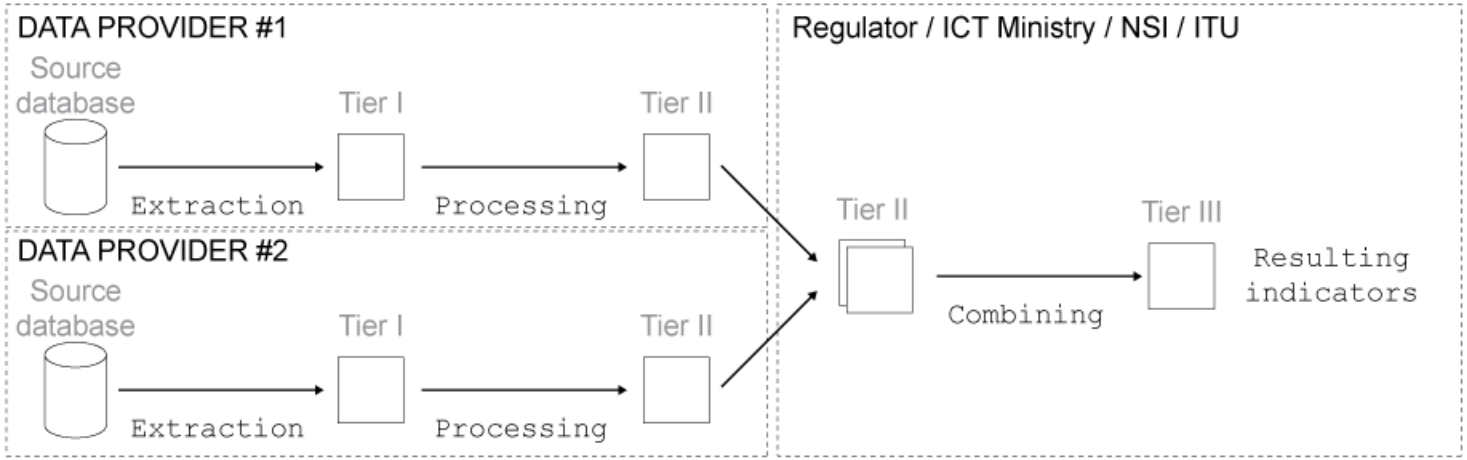
Telecommunication Service Providers (MNOs, ISPs)

Data Protection Authority

Processing Model Option 1

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

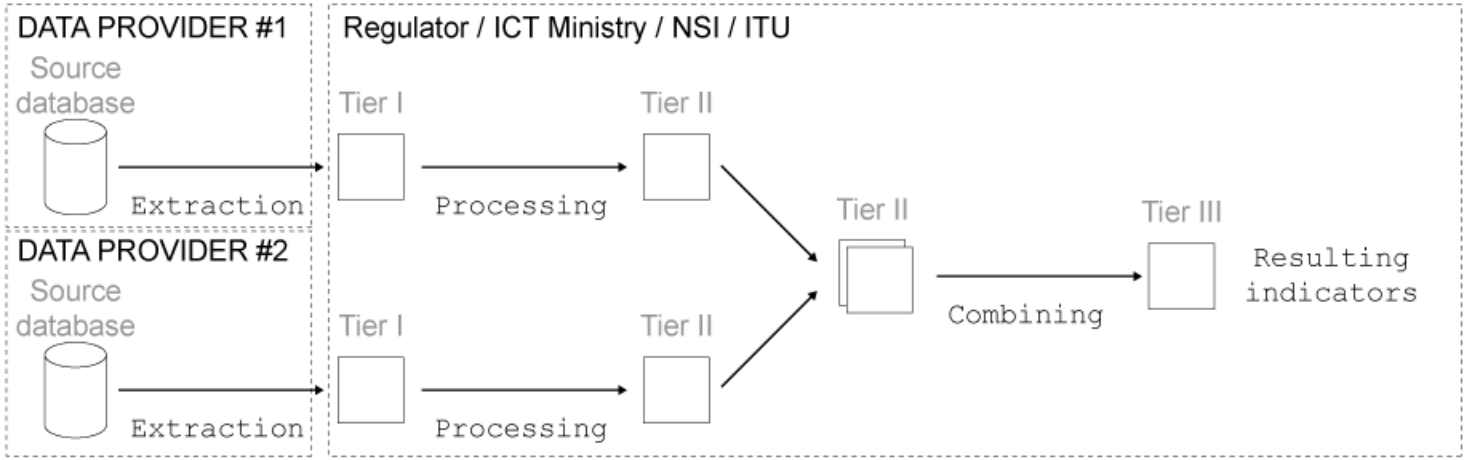
- Kenya
- The Philippines
- UAE



Processing Model Option 2

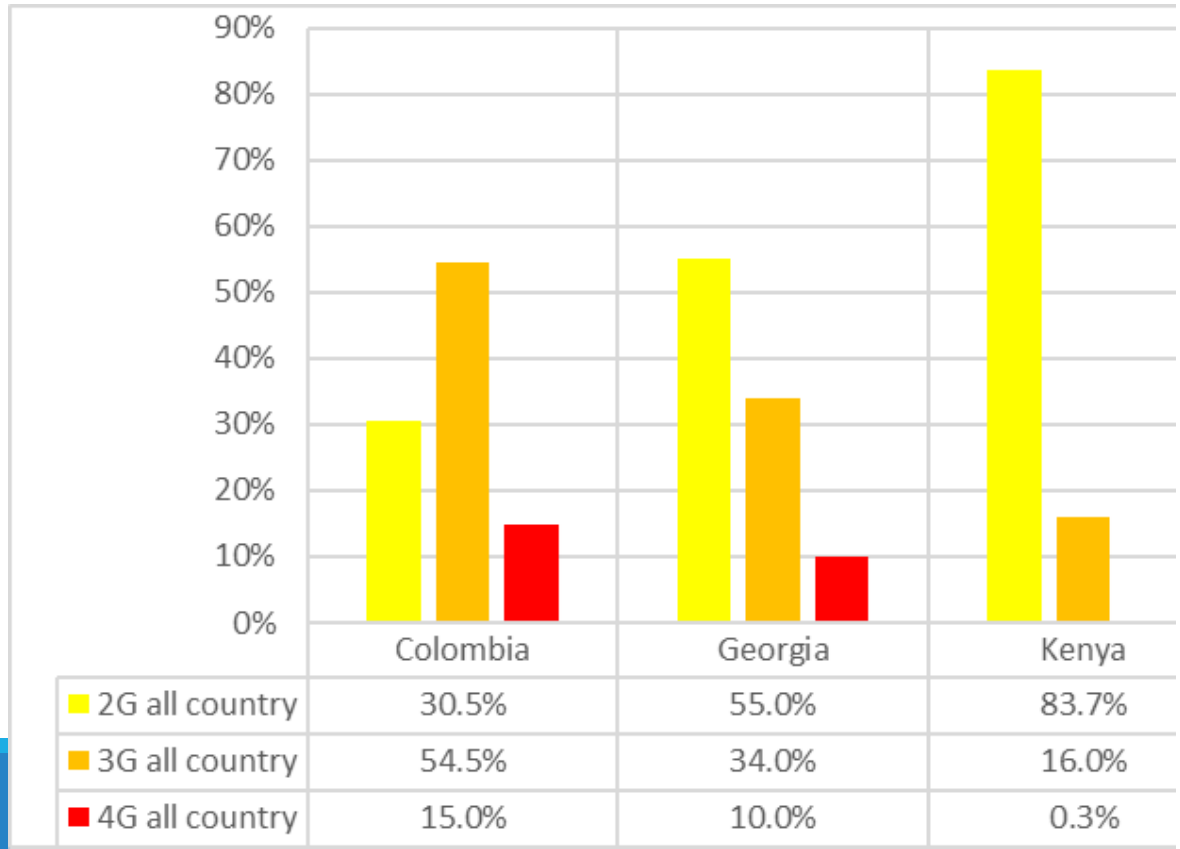
Raw data extracted by data providers, indicators calculated by TRA/ITU:

- Georgia
- Colombia
- Sweden

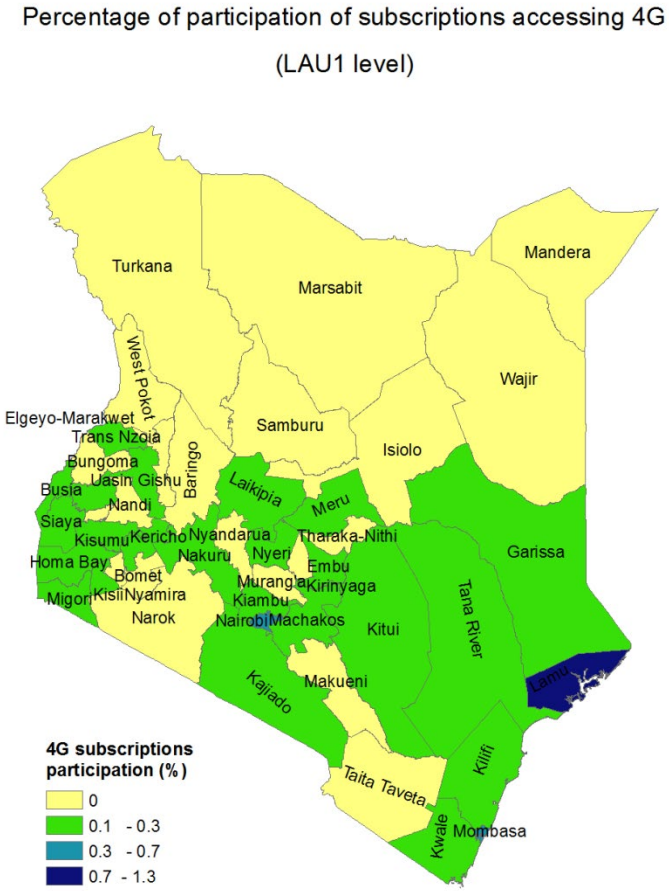


Indicators Example BD05

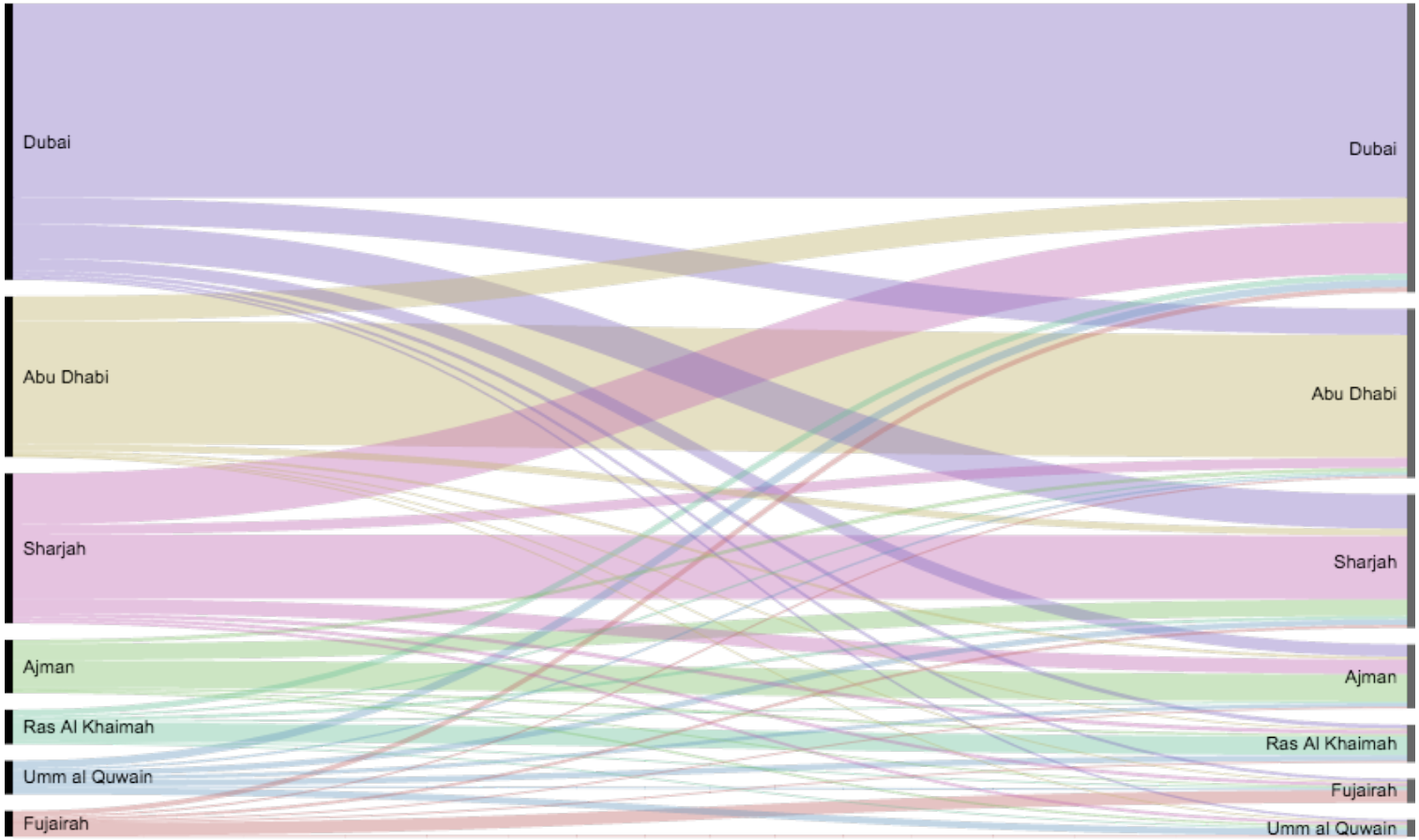
BD05: Number of Subscriptions with Access to Technology



	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%



Additional Indicator (UAE – O/D matrices)



Lessons Learned

Prepare all administrative and legal procedures to access the data before the project starts

Standard, clear and unambiguous methodology:

- detailed data source description (input data)
- calculation methodology
- example algorithms for calculation

Agreed processing model for calculation (by data providers or by TRA/NSO)

Preparation of infrastructure for calculation (processing model 2) and capable human resources (data scientists)

Validation of the raw data and processing

Agreed method for data transfer

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