ITUWebinars

ICT price trends 2020

28 June 2021 | 13:00-14:30 (CET)

www.itu.int/ICTprices

Speakers

Daniela Pokorna
Statistical Assistant,
ICT Data and Analytics Division
ITU

Nehal Desai
Statistical Assistant,
ICT Data and Analytics Division
ITU

Nur Sulyna Abdullah
Chief a.i.,
Digital Knowledge Hub Department
ITU

Daniel Vertesy
Economist/Analyst,
ICT Data and Analytics Division
ITU

Thierry Geiger
Senior Economist, Head of
ICT Data and Analytics Division
ITU

ITUWebinars

ICT price trends 2020:

How affordable are ICT services around the world?

28 June 2021 | 13:00-14:30 (CET)

ICT Data and Analytics Division

International Telecommunication Union

Background: the digital divide

Access:

85% of world population is covered by 4G mobile network

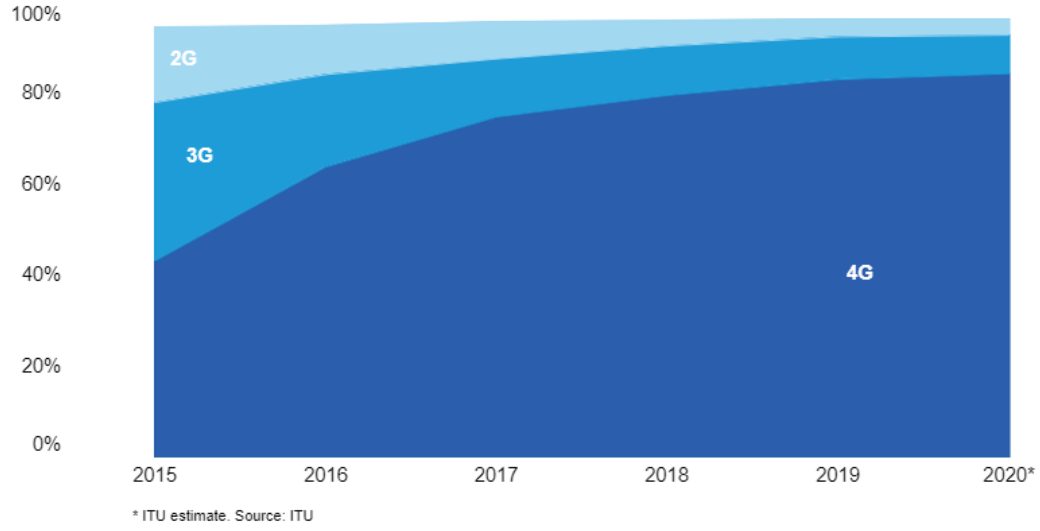
93% covered by 3G network (mobile broadband)

Use:

Yet, 51% of world population uses the Internet (3.7 bln offline)

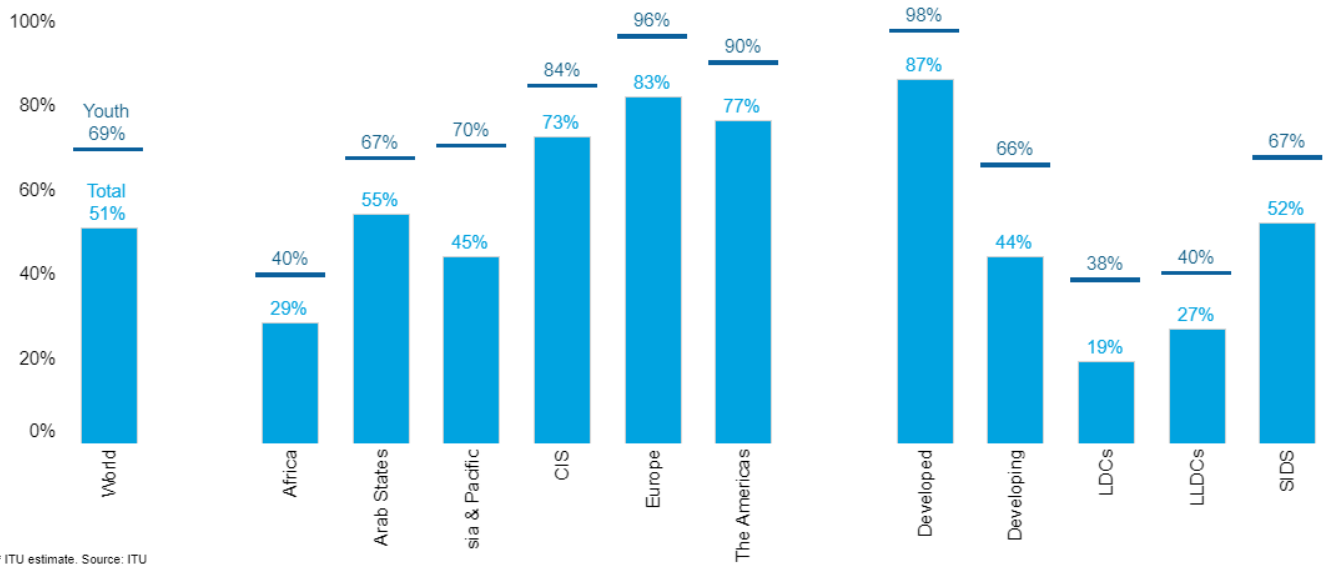
(variation by geography, development, age)

Population coverage by type of mobile network, 2015-2020*



* ITU estimate. Source: ITU

Percentage of individuals using the Internet, 2019*

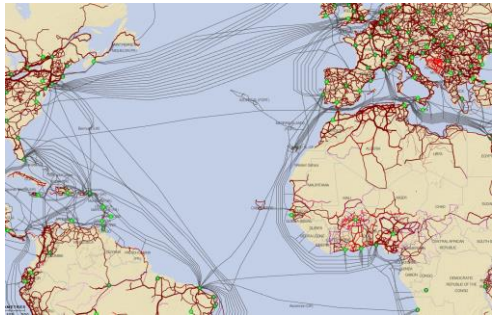


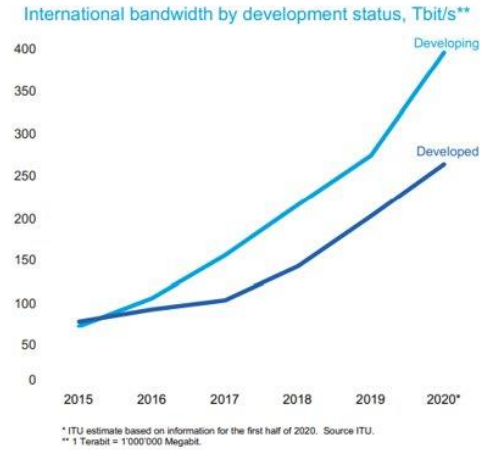
* ITU estimate. Source: ITU
Note: youth means 15-24 year old individuals using the Internet as a percentage of the total population aged 15 to 24 years.

https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx

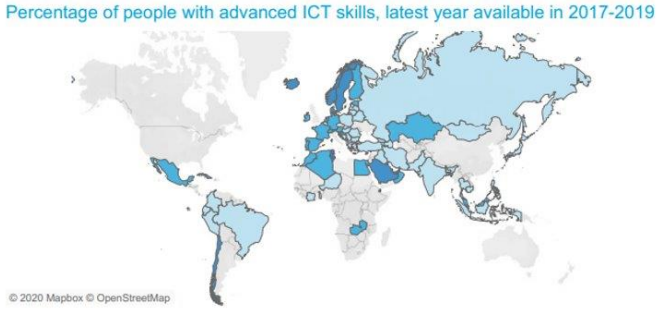
Background: Barriers to Internet access and use

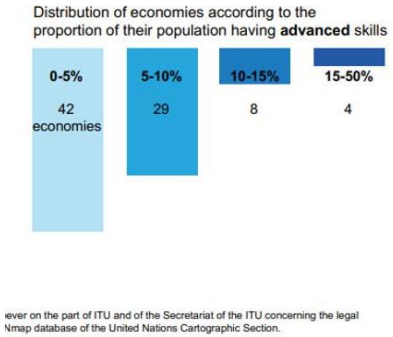
Infrastructure





Skills





ıever on the part of ITU and of the Secretariat of the ITU concerning the legal
Nmap database of the United Nations Cartographic Section.

Affordability

Especially, in times of COVID

Methodology: how to make ICT prices comparable?

- **ICT Price Rules** agreed by the ITU Expert Group on Telecommunication/ICT Indicators (EGTI) in 2017
- comparable unit = a **basket** of ICT services
- **5 baskets** representative for services used in developing and developed countries
- Cheapest solution that meets a detailed set of **definitions,** e.g.:
  - selection of operators and plans, allowances, technologies used, fees/taxes to include, contract modality, excess prices, validity period, non-promotional plans, etc.

ICT price baskets		Minimum monthly allowance		
		Voice (min)	SMS (#)	Data
1	Data-only mobile broadband basket	-	-	1.5 GB
2	Fixed broadband basket	-	-	5 GB
3	Mobile cellular low-usage basket	70	20	-
4	Data and voice low-consumption basket	70	20	500 MB
5	Data and voice high-consumption basket	140	70	1.5 GB

Comparability: measuring prices

- Prices can be expressed in 3 different units :
  - **USD:** world currency - easy to understand, timely, but exchange rates may be artificially distorted
  - **PPP$:** adjusts for differences in purchasing power [1-yr lag]
  - **As a % of monthly GNI per capita:** can an average local economic agent afford it? [lag]

ICT price baskets		Minimum monthly allowance: Voice (min)	Minimum monthly allowance: SMS (#)	Minimum monthly allowance: Data	Price comparison: USD	Price comparison: $PPP	Price comparison: % of GNI per capita
1	Data-only mobile broadband basket	-	-	1.5 GB			
2	Fixed broadband basket	-	-	5 GB			
3	Mobile cellular low-usage basket	70	20	-			
4	Data and voice low-consumption basket	70	20	500 MB			
5	Data and voice high-consumption basket	140	70	1.5 GB			

Affordability
UN Broadband Commission target: broadband prices in developing countries should not cost more than 2% of monthly GNI per capita (by 2025)

BROADBAND COMMISSION FOR SUSTAINABLE DEVELOPMENT

Data collection

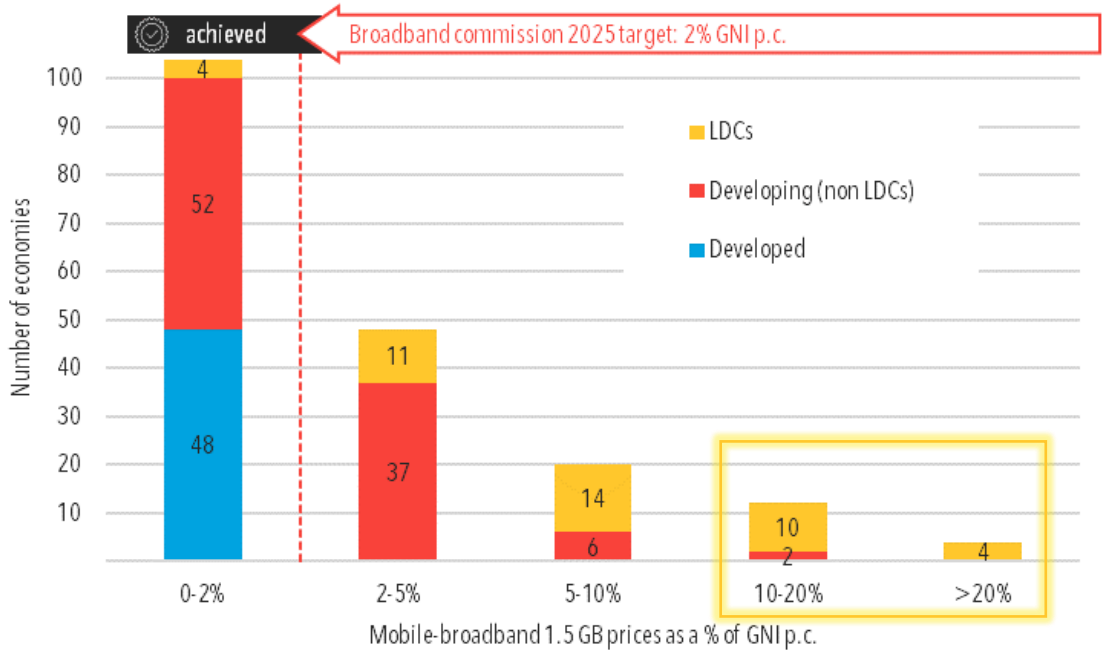
- Detailed metadata and indicator set is collected for 200+ economies for the 5 baskets:

1. ICT price data collection
   a) ICT Price Baskets Questionnaires submitted by country focal points (regulators/ministries) [Q2 2020]
   b) Data complemented by ITU and A4AI experts' desk research (operators' website or contacts, etc.) [simultaneously with #1]
2. Data validation by ITU staff (consultation with local experts and focal points)
3. Collection of exchange rates and GNI data from IMF, World Bank, UN
4. Calculation of basket prices and key indicators (based on metadata on validity period, allowance, on-/off-net duration, etc.)
5. Analysis of data and production of report

Do you know...?

What is the share of economies around the world where the data-only mobile broadband basket (1.5 GB) costs less than 2% of the average monthly income per capita?

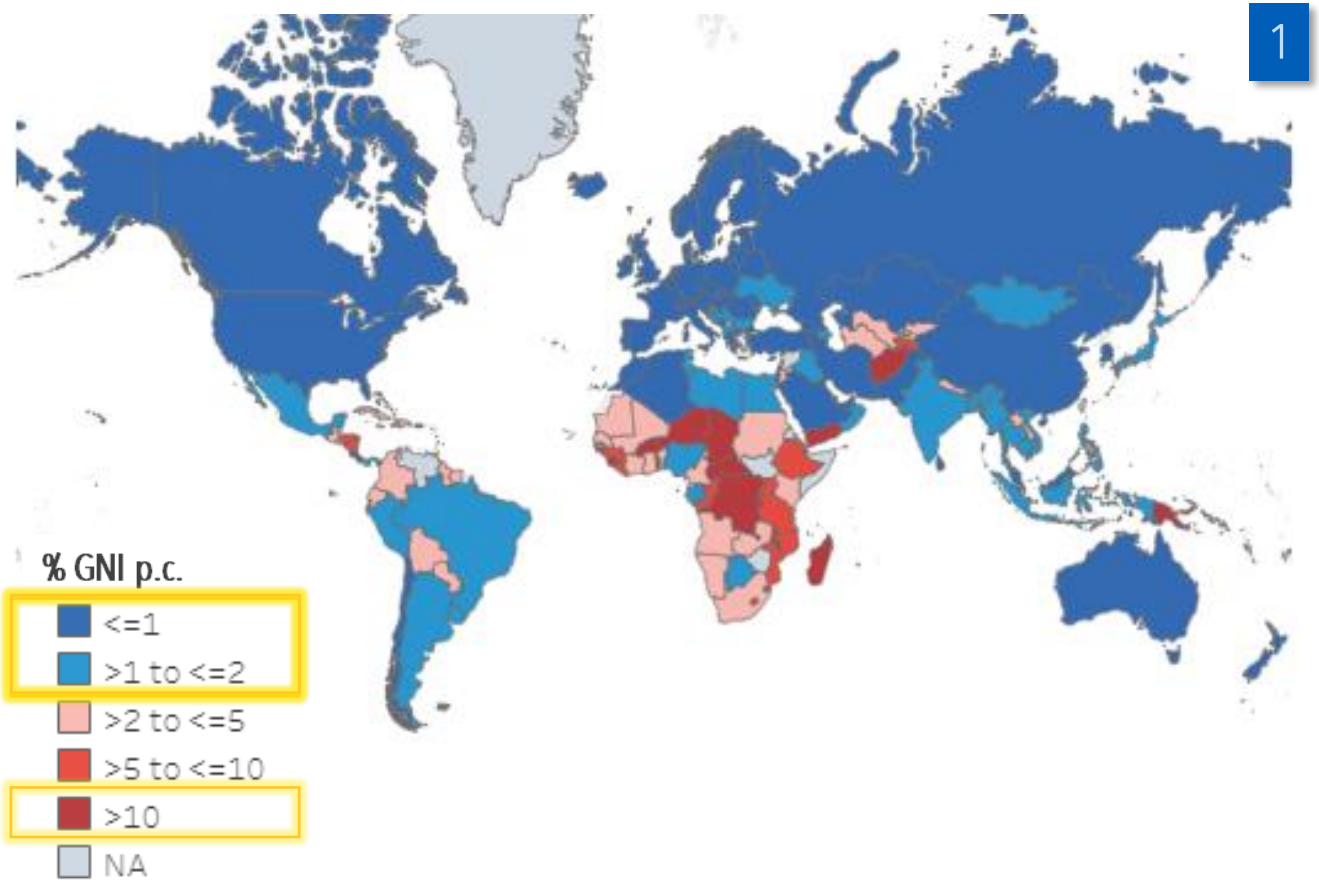
Progress towards the 2% affordability target of the UN Broadband Commission – Mobile broadband



104

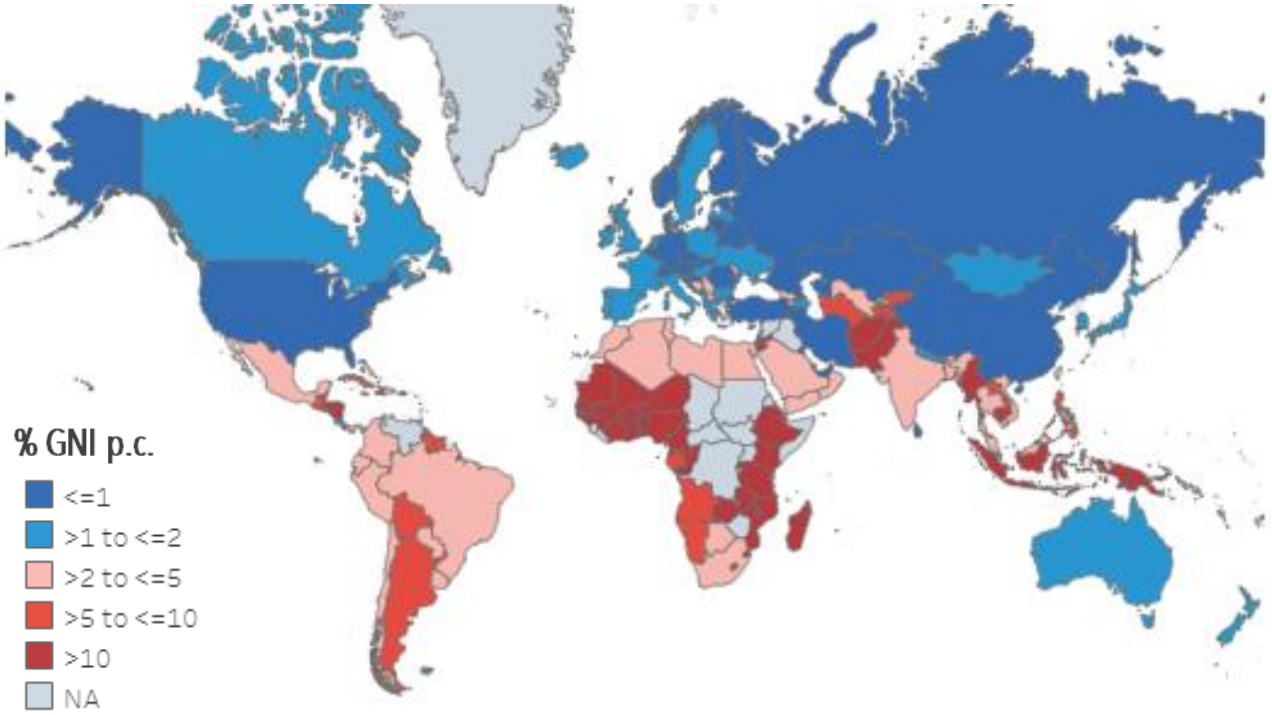
84 economies

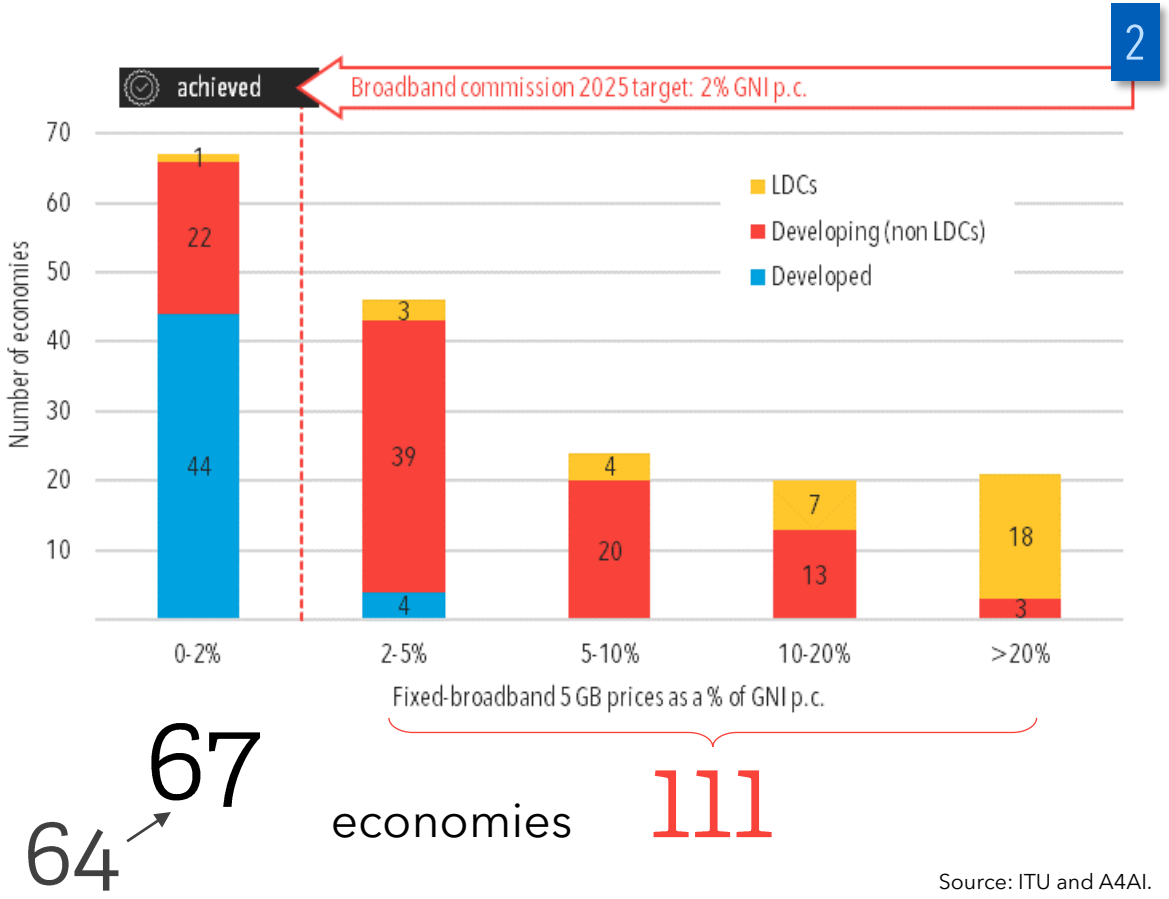
2019: 95



Source: ITU and A4AI.

Progress towards the 2% affordability target of the UN Broadband Commission – Fixed broadband





Source: ITU and A4AI.

Why use medians?

Very skewed distribution of prices within a region:

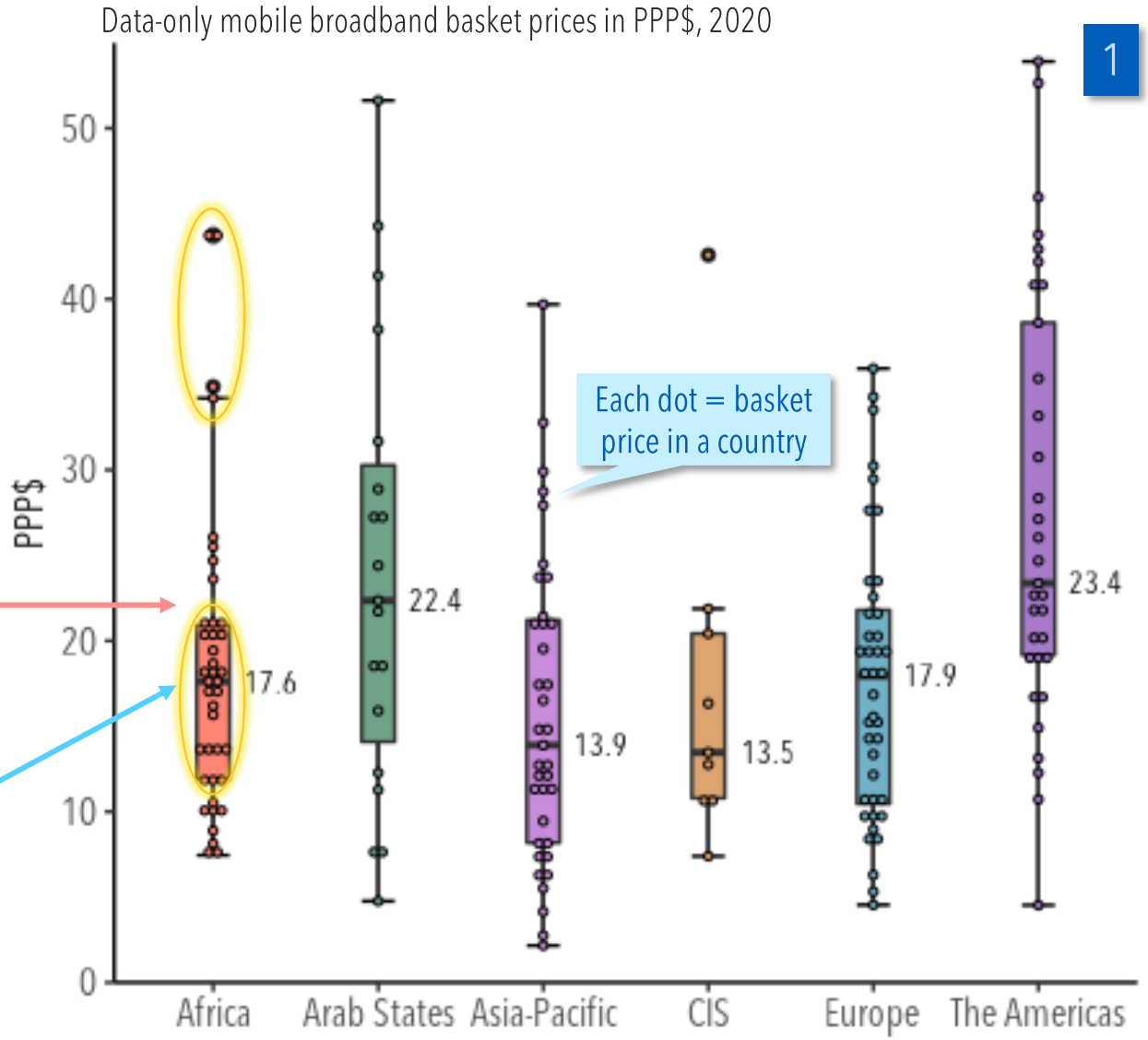
- Most of the prices are within a limited range
- Yet, we see very high (outlier) values in a few economies

Averages are sensitive to outliers

What is the median price?

If we rank prices from the cheapest to most expensive, the median is the middle value.

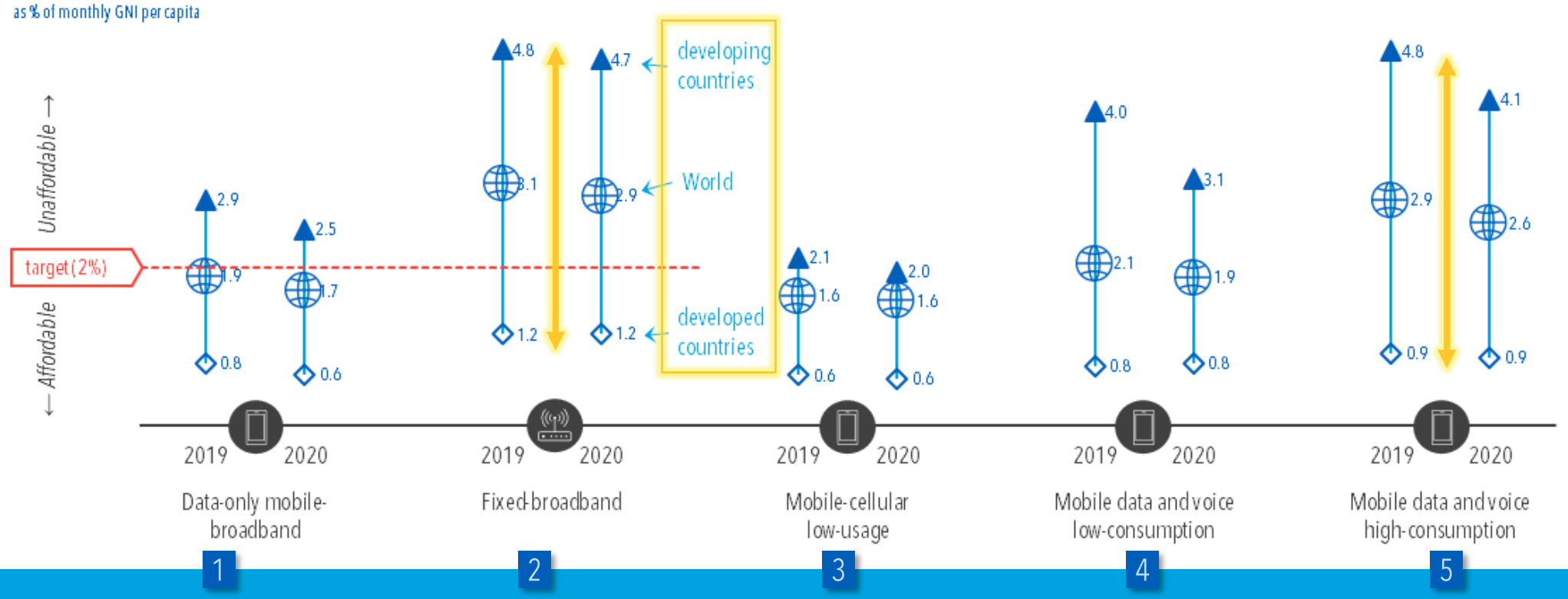
In half of the set of economies prices are higher, in the other half prices are lower than the median.



Source: ITU and A4AI. PPP$ data are from the World Bank

Affordability gaps

- Gap between developed and developing countries
  - widest for fixed broadband 2 and data & voice high-consumption basket 5
- Many of the gaps are slowly shrinking over time

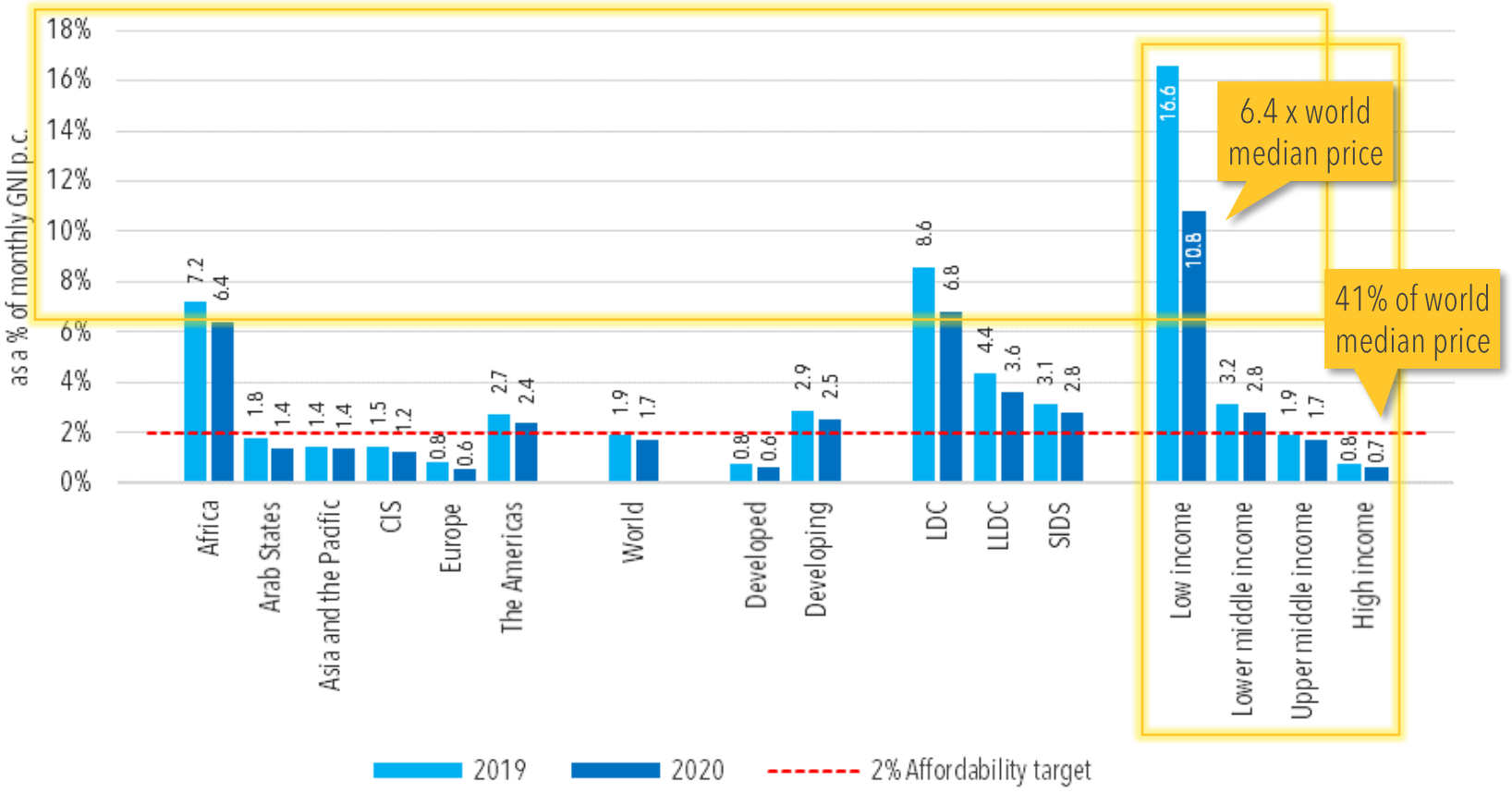


Source: ITU (2008-2019); ITU and A4AI (2020). GNI p.c. data are from the World Bank

Affordability gaps are driven by level of income

The example of the mobile broadband basket [1] across the world

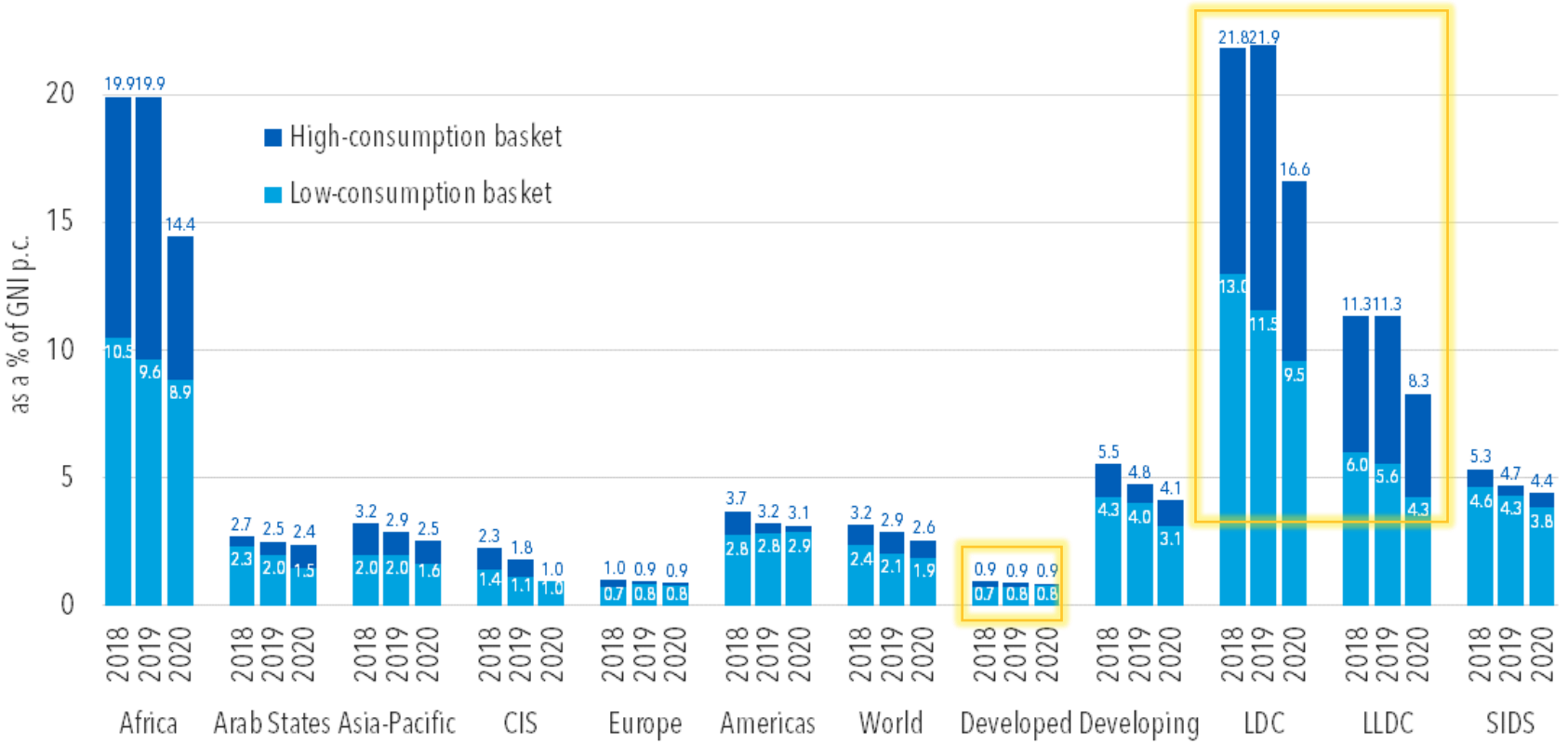
- Notable price gaps between income groups
- Prohibitively high prices in low-income countries, LDCs and in the African region



Source: ITU (2008-2019); ITU and A4AI (2020). GNI p.c. data are from the World Bank

Consumers in LDCs pay a premium for high consumption

The example of the mobile data & voice baskets



Source: ITU (2008-2019); ITU and A4AI (2020). GNI p.c. data are from the World Bank

Low- and high-consumption baskets include:

4 70 min + 20 SMS + 500MB

5 140 min + 70 SMS + 1.5 GB

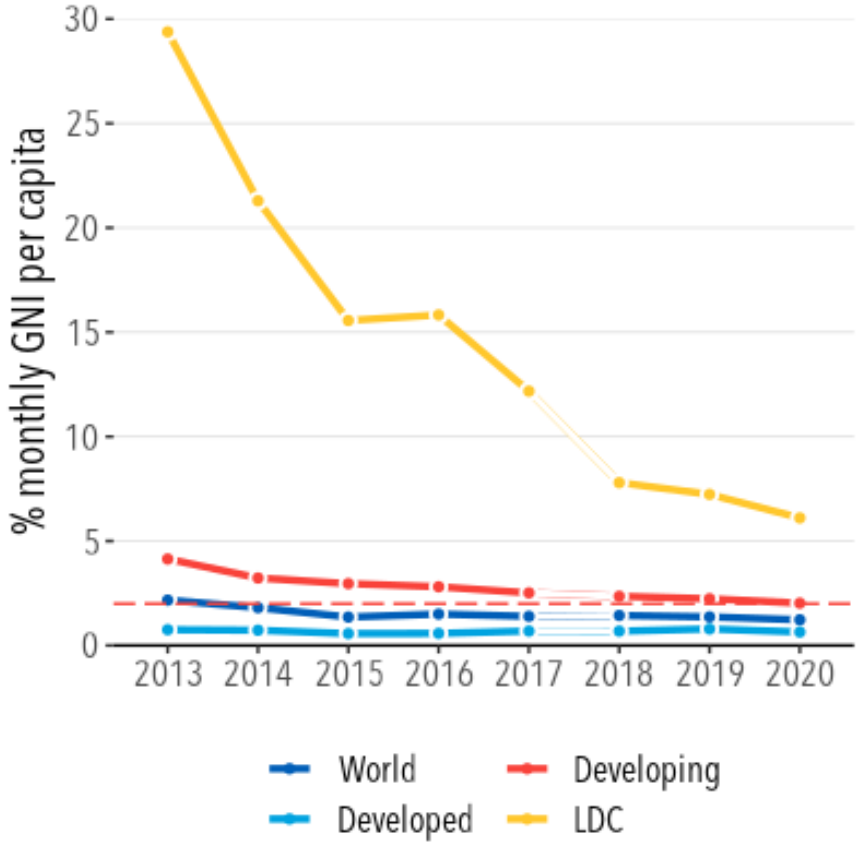
Price difference:

- negligible in high-income markets, but
- substantial in LDCs, LLDCs
- Yet, decreasing over time

What are the long-term price trends?

Mobile broadband prices decline over time…

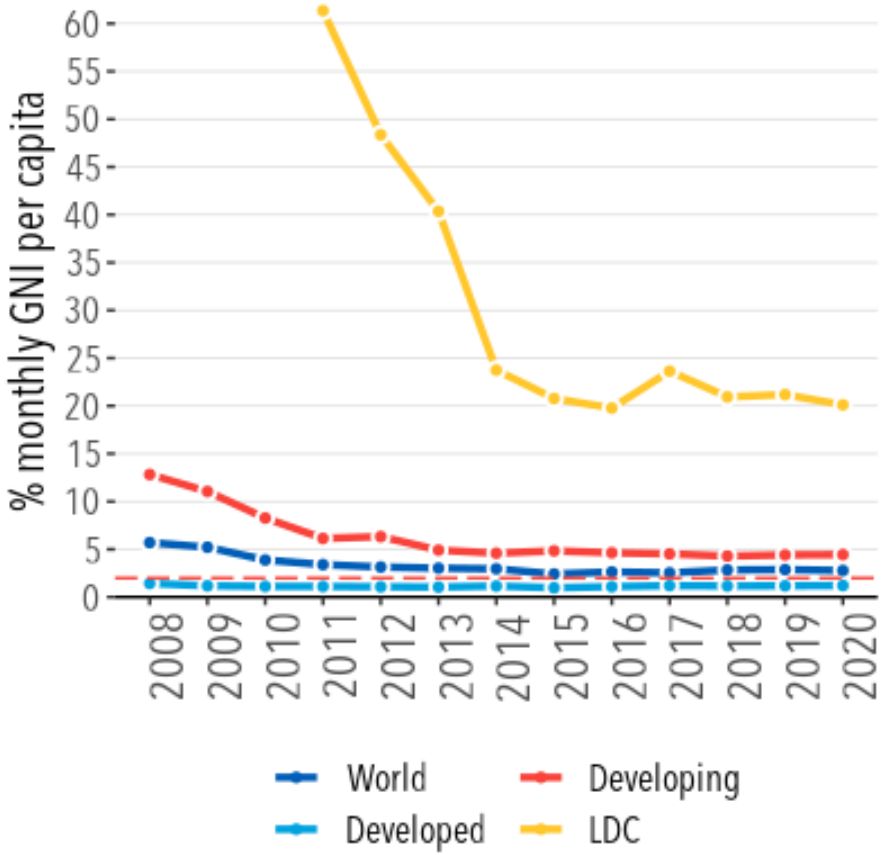
- World: declining trend in USD and GNI pc (flat in PPP$)
- Least Developed countries (LDC): driving price decline and gap reduction



Note: Medians are based on the 142, 127 and 137 countries (respectively) for which data were available for 2013-2020. There is a break in the series between 2017 and 2018 (up to 2017, prices are for 1 GB of data for a USB/dongle, computer-based subscription). USD values are at current prices. The dashed red line indicates the 2 per cent GNI per capita affordability target.
Source: ITU 2013-2019); ITU and A4AI (2020). USD exchange rates are from IMF and UN, PPP$ conversion factors and GNI p.c. data are from the World Bank.

...but the price gap seems frozen for fixed broadband

- World: prices flattened since 2014 in USD and %GNI p.c.; even increased in PPP terms
- Gap between LDCs and the rest of the world not narrowing
- Quality improvements



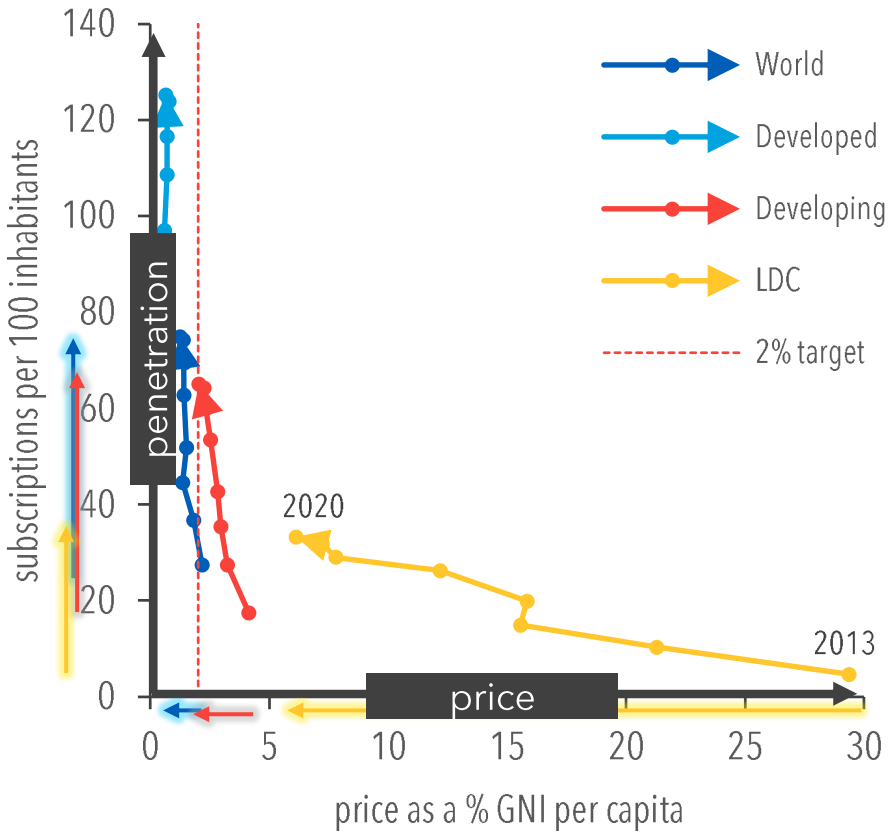
Note: Medians based on the 138, 126 and 136 countries (respectively) for which data were available for all years indicated. Not shown, because they lie outside the chart, are the following values for LDCs for 2008 to 2010: PPP$ 205.6, 180.2 and 125.4; and 180.1, 135.6 and 74.5 per cent of GNI per capita.
Source: ITU (2008-2019); ITU and A4AI (2020). GNI p.c. data are from the World Bank.

Lower prices, higher connectivity?

Mobile broadband: speed of price decline & penetration growth

Lower prices associated with higher penetration rates
But: only above a threshold
(cost of deployment; purchasing power)

- Worldwide, between 2013 and 2020, subscriptions increased by 48 %pts; median prices decreased by 1 %pt.
- 2 different trajectories by level of development:
  - Developing: similar to worldwide trend; prices fell below the 2% target;
  - LDCs: penetration rate up by 29%pts, prices dropped by 23%pts over past 7 yrs;

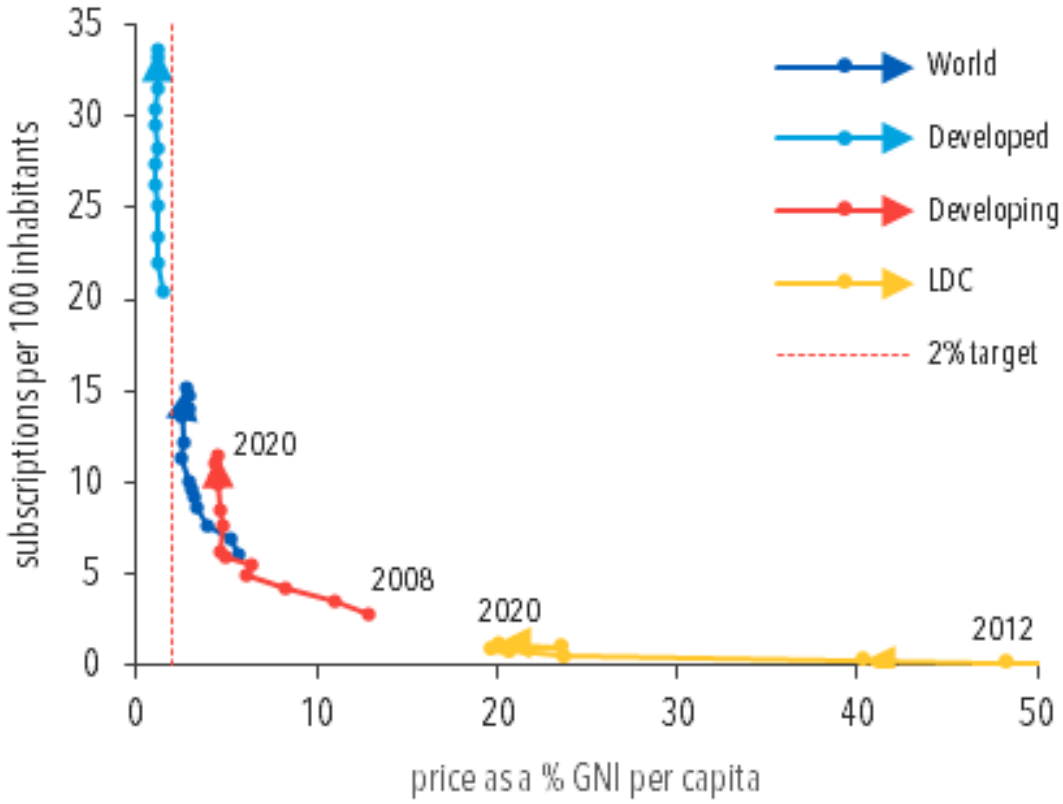


Source: ITU (2008-2019); ITU and A4AI (2020). GNI p.c. data are from the World Bank

Prices and connectivity disconnected?
Fixed broadband: 3 different trajectories

- Between 2008 and 2020, worldwide subscriptions increased by 0.8 %pts a year; median prices decreased by 0.2 %pts a year

- 3 different trajectories by level of development:
  - Developing: bend – after 2014, follow developed path, but with higher prices
  - LDCs: median basket price dropped from 180.1 to 20.1 % GNI p.c. (13.3 %pt a year), the penetration rate only increased 0.1 %pt a year on average
  - Excessive prices act as a barrier to connectivity

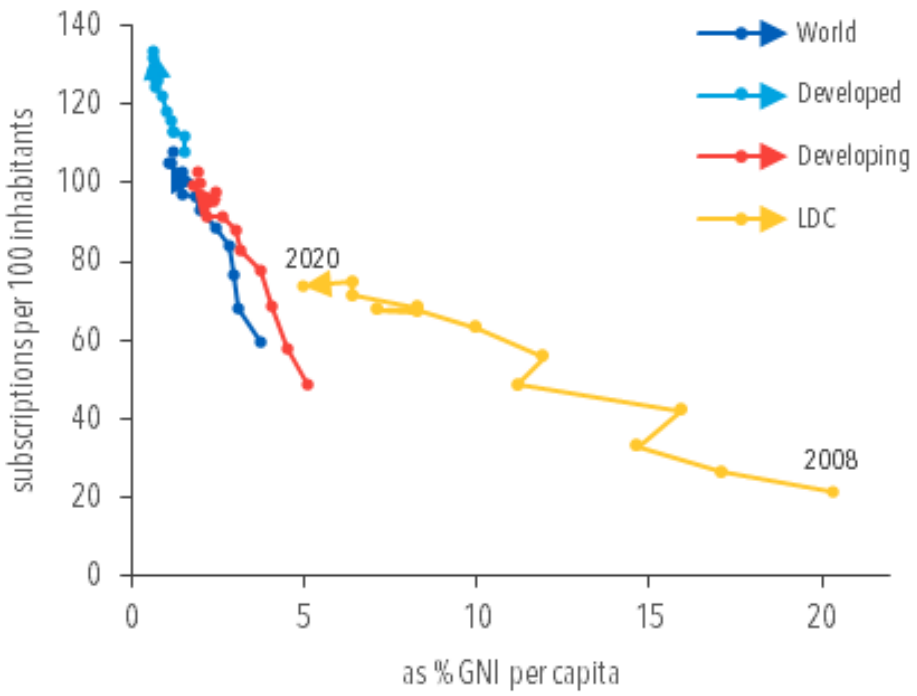


Source: ITU, A4AI; GNI data from World Bank

Lower prices, higher connectivity?
The "linear" history of the mobile cellular low usage basket

Cheapest basket (70 min + 20 SMS (and no data)):

- Developed and developing trajectories well aligned (follow with a lag)
- LDCs: prices and penetration rates of 2020 close to where developing countries were in 2011

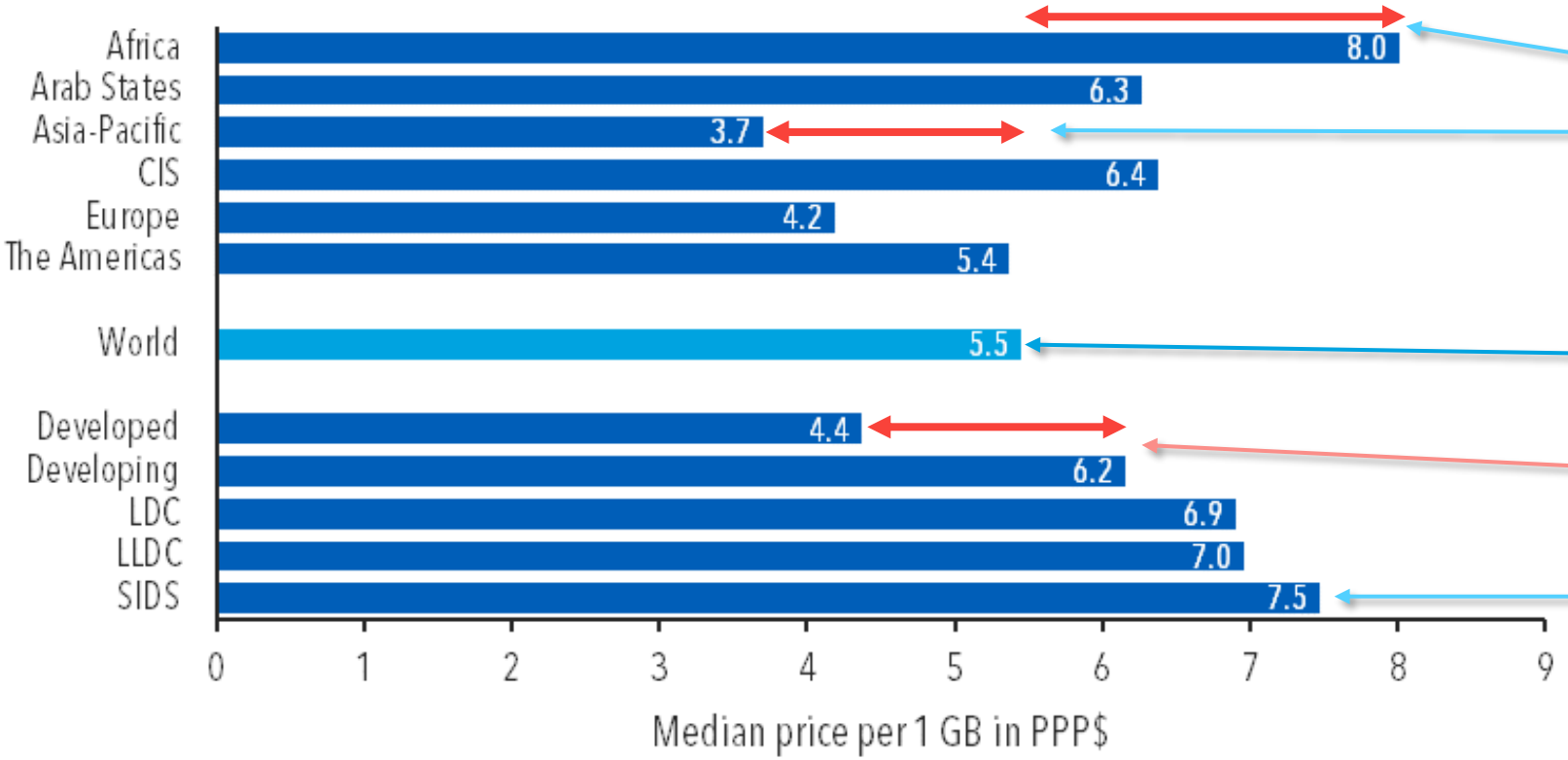


Source: ITU, A4AI; GNI data from World Bank

Worldwide differences in **value for money**

Value for money:
How much does 1 GB of mobile data cost?

Median price of 1 GB of mobile broadband data in PPP$, 2020



Large differences across countries:

1

Africa: 45% more than World

Asia-Pacific: pay 33% less than World

World median: 5.5 PPP$

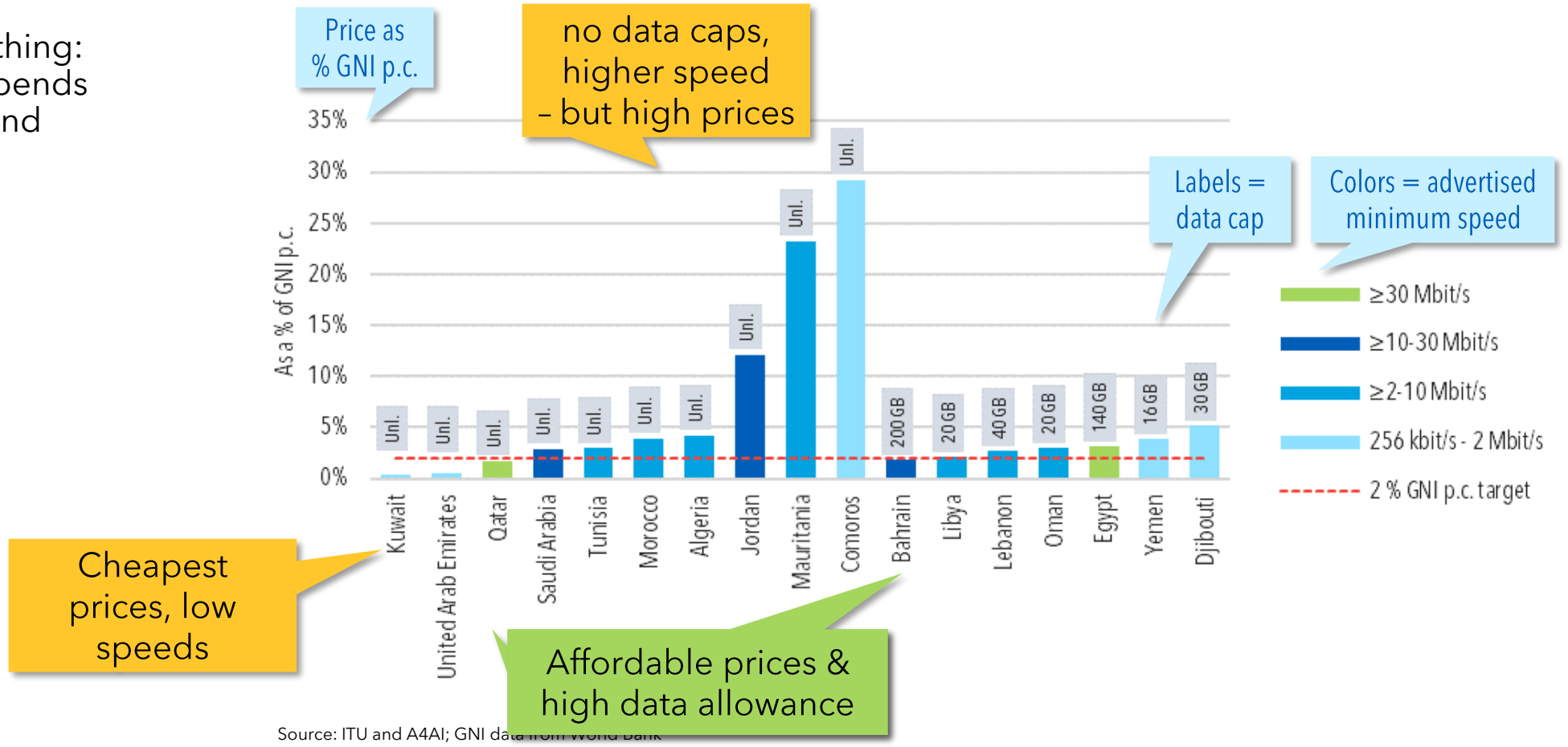
Developing: 40% > than Developed

SIDS: pay 36% more than World

Source: ITU and A4AI; PPP$ data from World Bank

Same basket – different prices and value for money
The example of fixed broadband in Arab States

- Prices are not everything: value for money depends on data allowance and connection speed



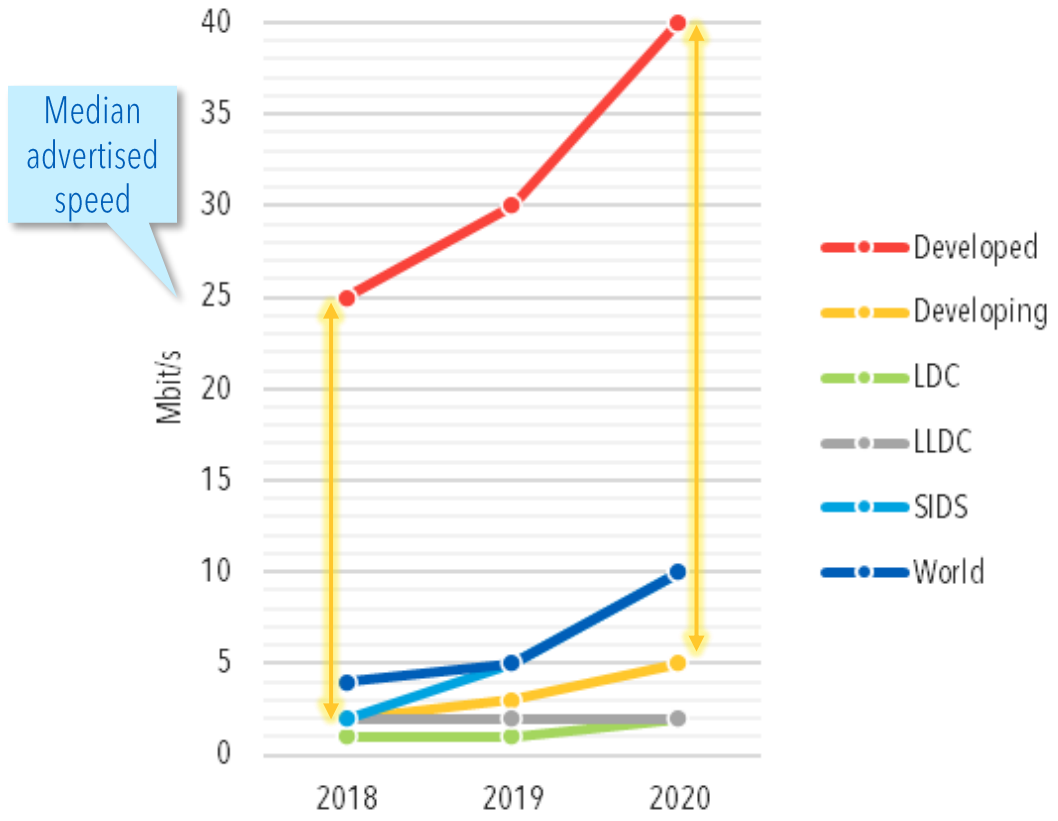
Source: ITU and A4AI; GNI data from World Bank

Uneven speed improvements

Median advertised speed for the most common entry-level fixed broadband connection, by level of development and region

Fixed broadband basket 2

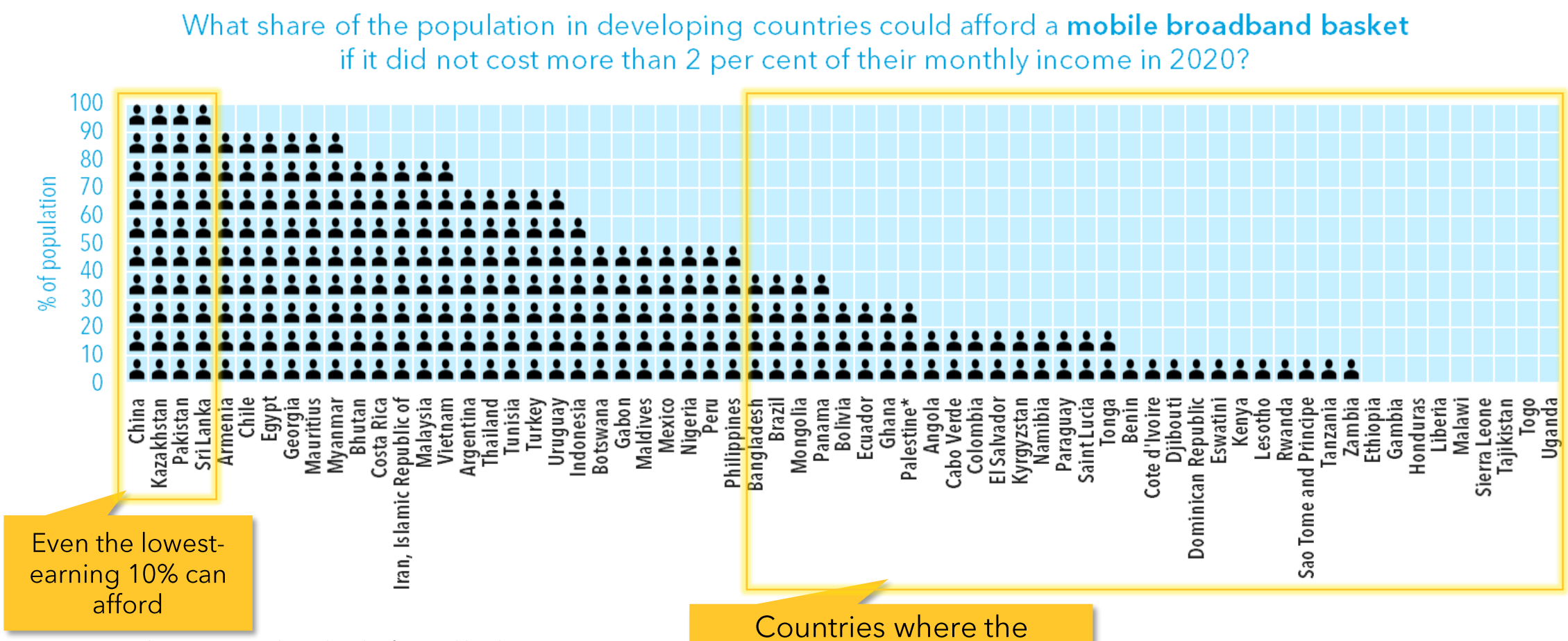
- The gap in value for money between developed and developing countries is increasing



Note: Medians based on available speed data for 2018-2020. Arab States and CIS regions completely overlap, with constant 2 Mbit/s median connection speeds over the observation period. Source: ITU and A4AI

What share of a country's population can afford broadband access?

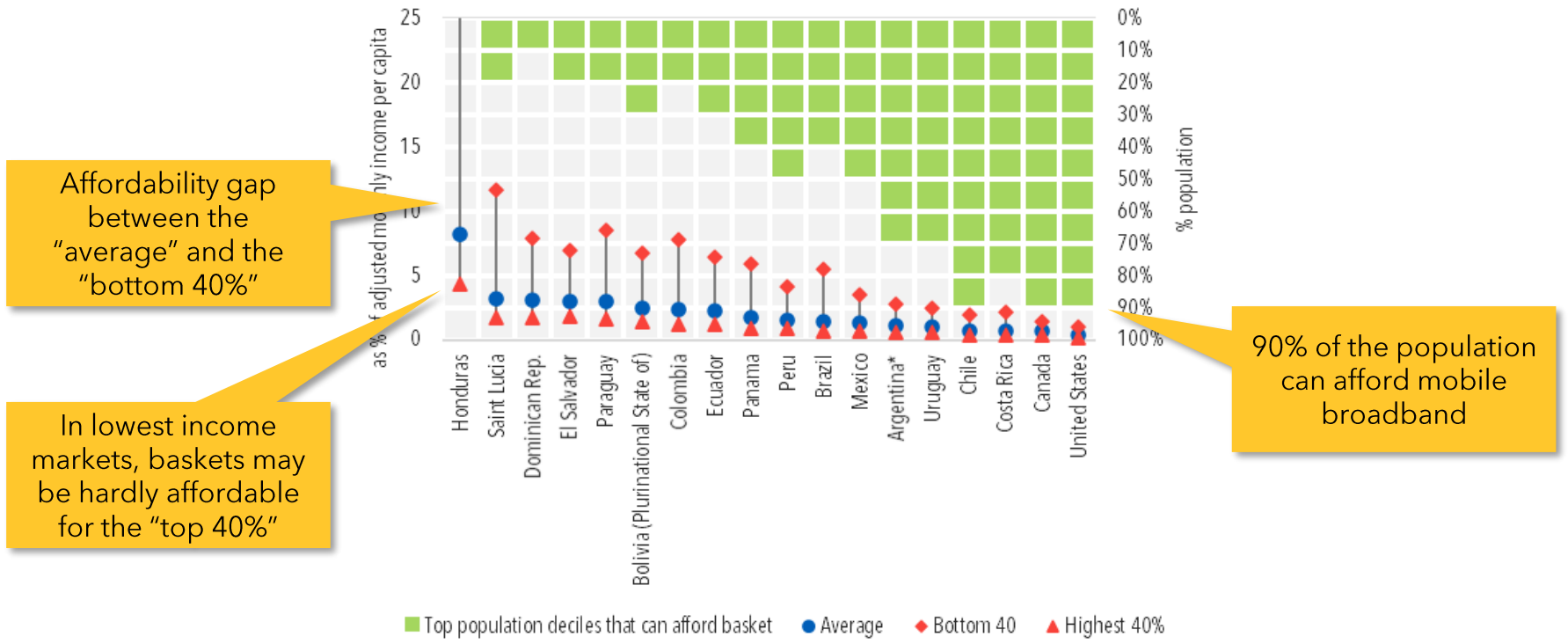
What share of the population can afford a mobile broadband basket…?



Source: ITU and A4AI; GNI p.c. and PovcalNet data from World Bank

How affordable are broadband prices for the least (and most) affluent 40% of the population?
The case of the Americas

- Even in developed countries, where the average can afford, the population with the lowest income have to pay more than 2% of average monthly income

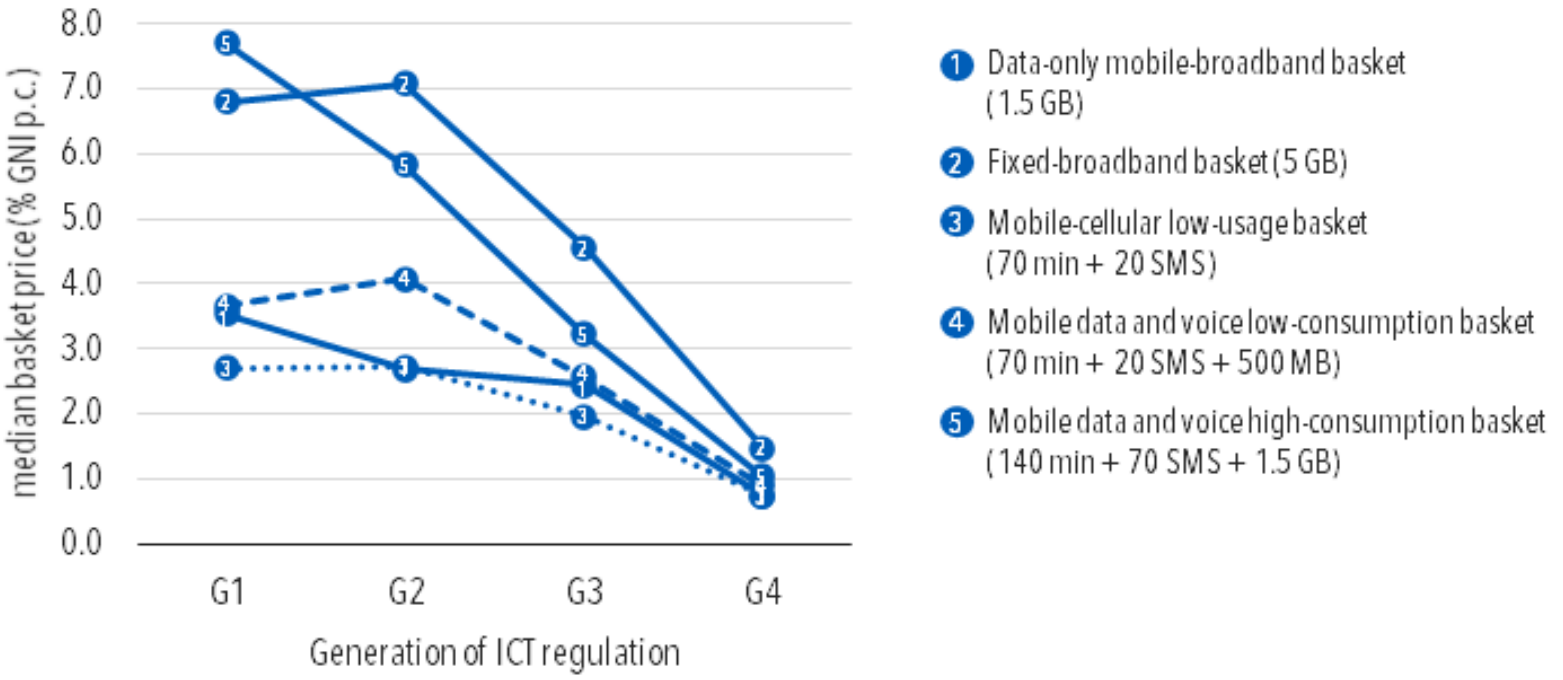


Source: ITU and A4AI; GNI p.c. and PovcalNet data from World Bank

What is the relationship between the regulatory environment and ICT prices?

ITU Regulatory Tracker measures the reg. environment based on 50 qualitative and quantitative indicators. G1→G4: least to most mature most mature environment;

- Highest prices in countries associated with G1 and G2 regulatory environment
- More mature reg. env, lower prices (lowest in G4)
- G4: median price for all 5 baskets below 2%
- Still, high variation of prices within reg. generations



Note: Median basket prices were computed for each of the baskets and for each regulatory generation (based on the 2019 regulatory classes), covering 171 countries (fixed broadband basket), 181 countries (data-only mobile broadband and data and voice low and high-consumption baskets) and 183 countries (mobile cellular low-usage basket) with available data.
Source: ITU and A4AI.

Highlights: ICT Price trends 2020 in numbers

Data collected from over

200
economies

Internet remains a luxury in LDCs, as entry-level mobile broadband basket cost

6.8%
of GNI per capita

…and entry-level fixed broadband services cost

21.5%
of GNI per capita

The 40% of the population with the lowest income could afford the mobile broadband basket in only…

10/66
developing countries

Broadband services cost less than 2% of monthly income in

104
economies

To conclude…

- Monitoring prices ever more important in “new normal” during / after COVID
- We observed a slow-down in the decline in broadband basket prices;
- Important to consider within country inequality when measuring affordability; prices are often unaffordable for the bottom 40%
- Gaps between developed and developing countries remain significant not just in terms of prices, but also value for money

- ITU will continue collaboration with A4AI to collect data for more baskets to obtain a more nuanced view of affordability (basic vs. meaningful connectivity)

- Rich ICT Prices data – free to explore!

Thank you!

Comments, questions to: indicators@itu.int

Visualize ICT price statistics

2008-2020