



ITU Asia-Pacific ICT Indicators Workshop

Manila, Philippines

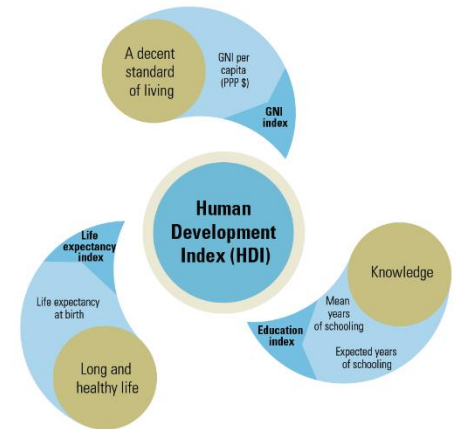
14-16 March 2018

Session 10: The ICT Development Index (IDI)

ICT Data and Statistics Division
Telecommunication Development Bureau
International Telecommunication Union

What is a composite index?

- Multiple indicators combined into single index
- Measures multi-dimensional concept which cannot be captured by a single indicator
- Growing number of composite indices being published worldwide.



Pros and Cons

Pros	Cons
Summarize complex, multi-dimension realities into single value	Can be potentially misinterpreted and misused
Potentially easier to interpret and communicate to general public	May disguise serious failings in some dimensions
Spotlights country performance and progress for purposes of setting policy	Selection of indicators etc. may be subject to political dispute

The ICT Development Index (IDI)



- The IDI is a composite index that combines 11 (until 2017) indicators
- Designed to be global and reflect changes taking in place in countries of different levels of development
- Was developed by ITU in 2008 in response to member states' request to establish an overall ICT index
- Results first reported in the Measuring the Information Society Report (MISR) 2009

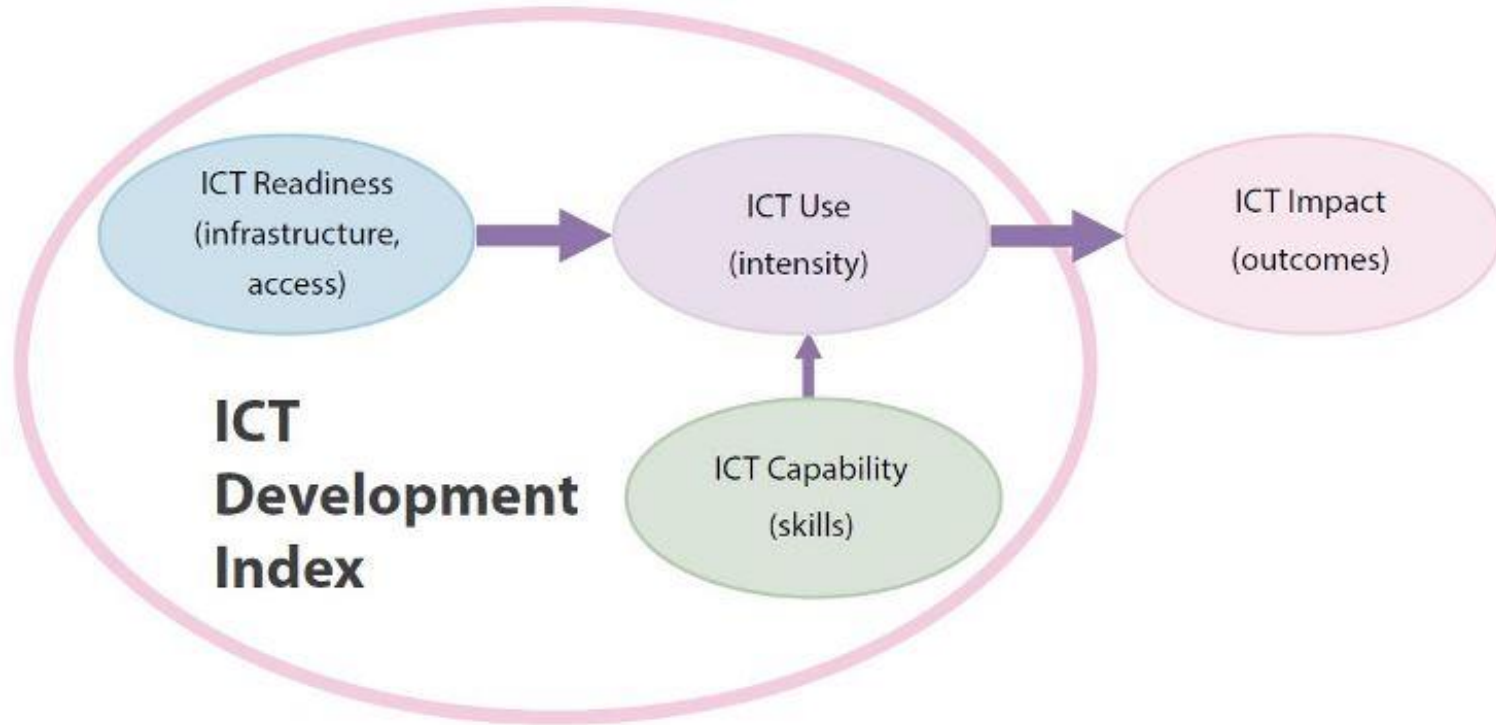


Objectives of the IDI

To measure:

- the *level and evolution over time* of ICT developments in countries and the experience of those countries relative to other countries;
- progress in ICT development in *both developed and developing countries*;
- the *digital divide*, i.e. differences between countries in terms of their levels of ICT development; and
- the *development potential* of ICTs and the extent to which countries can make use of them to enhance growth and development.

Three stages in the evolution towards an information society

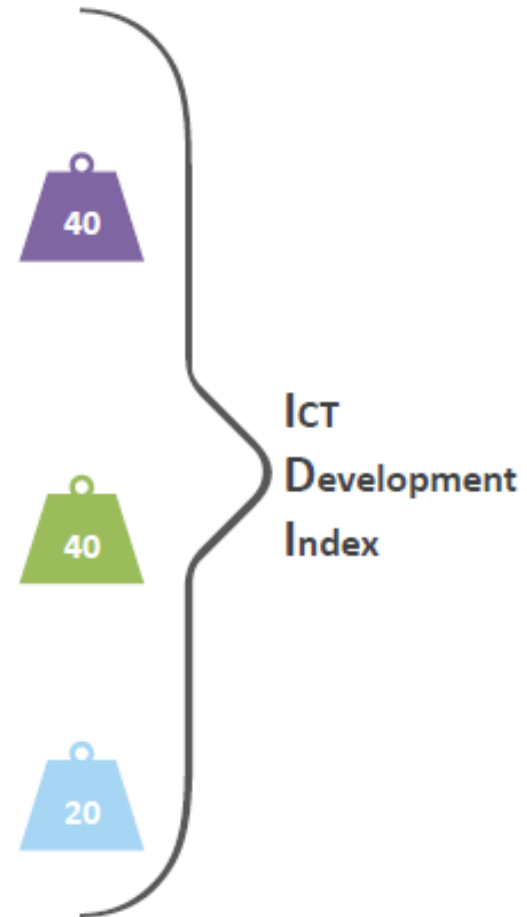


ICT Development Index – indicators, reference values and weights (until 2017)

ICT access	Reference value	(%)
1. Fixed-telephone subscriptions per 100 inhabitants	60	20
2. Mobile-cellular telephone subscriptions per 100 inhabitants	120	20
3. International Internet bandwidth (bit/s) per internet user	2'158'212*	20
4. Percentage of households with a computer	100	20
5. Percentage of households with Internet access	100	20

ICT use	Reference value	(%)
6. Percentage of individuals using the Internet	100	33
7. Fixed-broadband subscriptions per 100 inhabitants	60	33
8. Active mobile-broadband subscriptions per 100 inhabitants	100	33

ICT skills	Reference value	(%)
9. Mean years of schooling	15	33
10. Secondary gross enrolment ratio	100	33
11. Tertiary gross enrolment ratio	100	33



Note: * This corresponds to a log value of 6.33, which was used in the normalization step.

Source: ITU.

Nb: Reference value = ideal value



Extraordinary meeting of EGTI/EGH

- Held in Geneva, Switzerland, on 1-3 March 2017
- Meeting was open to all ITU members and experts in the field of ICT statistics and data collection
- Objective - to discuss, debate and agree on a revised set of indicators to be included in the IDI
- Two input documents prepared by the sub-group and the independent group of experts
- Adopted a total of 14 indicators to be included in the IDI compared to the current list of 11
- Two indicators were dropped from the current IDI
 - fixed-telephone subscriptions per 100 inhabitants
 - mobile-cellular subscriptions per 100 inhabitants
- <http://www.itu.int/en/ITU-D/Statistics/Pages/events/eghegti2017/default.aspx>

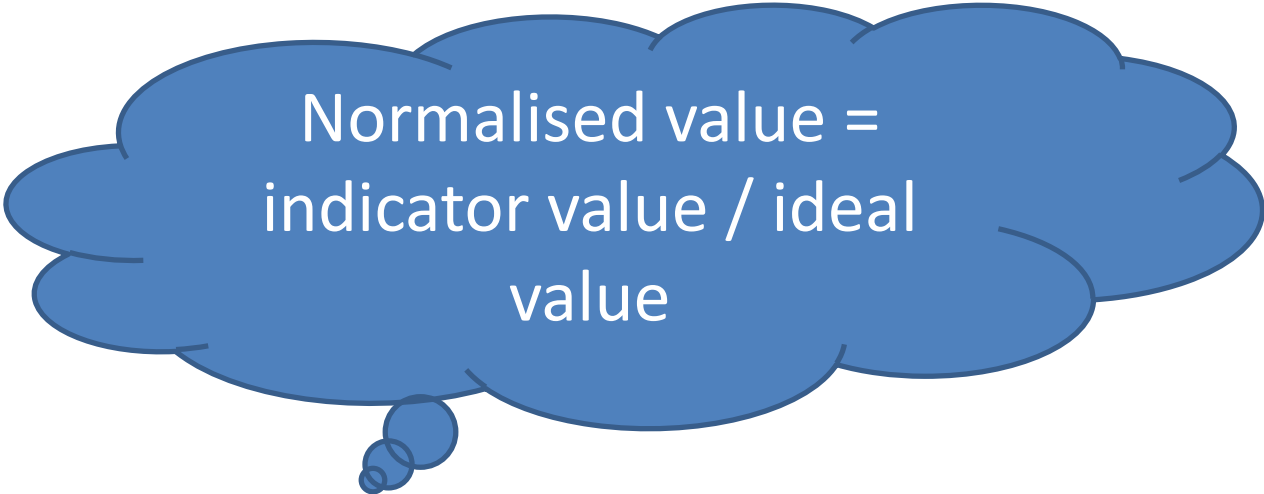
NEW INDICATORS TO BE INCLUDED IN THE IDI (from 2018)



<u>ACCESS</u>	<u>USE</u>	<u>SKILLS</u>
1. Percentage of households with a computer	1. Percentage of individuals using the Internet	1. Mean Years of Schooling
2. Percentage of households with Internet access	2. Active mobile-broadband subscriptions per 100 inhabitants	2. Gross enrollment ratio (secondary level)
3. International Internet bandwidth (bit/s) per Internet user	3. Mobile-broadband Internet traffic per mobile-broadband subscription	3. Gross enrollment ratio (tertiary level)
4. Percentage of the population covered by mobile networks - at least 3G - at least LTE/WiMAX	4. Fixed-broadband Internet traffic per fixed-broadband subscription	4. Proportion of individuals with ICT skills
5. Fixed-broadband subscriptions by speed tiers as a % of total fixed-broadband subscriptions -256kbit/s to 2Mbit/s -2 to 10 Mbit/s -Equal to or above 10 Mbit/s	5. Percentage of individuals who own a mobile phone	

Normalised value

- Normalised value for an indicator = Value of that indicator / Ideal value for that indicator
- Normalised values have no units

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Normalised value =
indicator value / ideal
value

Ideal value of an indicator

- Highest achievable value (i.e. 100 for use indicators)
- Ideal value of an indicator = mean value of that indicator across all economies + 2 standard deviations

$$\text{Ideal value} = \text{mean} + 2 \text{ sd}$$

- Ideal value may OR may not change every year

Normalising International Internet bandwidth (IIB)



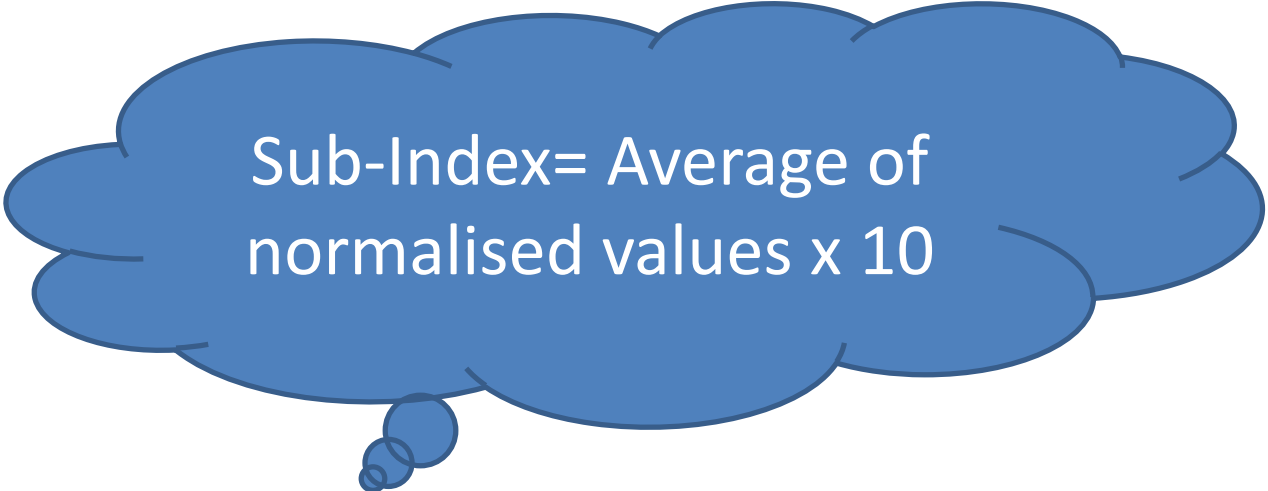
- Normalised value = $\log(\text{IIB for economy}) / \log(\text{ideal value for IIB})$
- Log or Ln can be used. Same results.
- But not a mixture of Log and Ln

Example:

- IIB Iceland = 997'830, ideal value = 2'158'212
- Normalised value = $\log 997'830 / \log 2'158'212 = 0.95$
- Or $\ln 997'830 / \ln 2'158'212$ also = 0.95

Sub-index

- Sub-index = simple average of normalised values of indicators within that sub-index
- Also known as equi-weighted average of normalised values within that sub-index

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Sub-Index= Average of
normalised values x 10

ICT Development Index

- IDI = weighted average of all 3 sub-indices
- Sub-indices: Access, Use, Skills
- Weights: 40, 40, 20 in that order

IDI = 40, 40, 20 weighted
average of sub-indices



Pointers

- Normalised values are between 0 and 1.
- Normalised value > 1 is set to 1
- All sub-indices are between 0 and 10
- IDI is also between 0 and 10

Thank you



For more information
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