Measuring
the Information
Society Report
2014

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Society Report
Bangkok, Thailand
24 November 2014

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ITU Regional Office for Asia and
the Pacific

United Nations

UNESCO   **WHO**   **ILO**   **UPU**   **ICAO**   **WMO**   **IMO**   **IAEA**

WB   **UNWTO**   **FAO**   **IFAD**   **UNIDO**   **WIPO**   **WFP**   **IMF**

A specialized agency of the UN with focus on Telecommunication / ICTs

Founded in **1865**

ITU: A brief overview

International Telecommunication Union

193 Member States
650 Sector Members, Associates and Academia

ITU-R: ITU's Radio-communication Sector globally manages radio-frequency spectrum and satellite orbits that ensure safety of life on land, at sea and in the skies.

ITU-T: ITU's Telecommunication Standardization Sector enables global communications by ensuring that countries' ICT networks and devices are speaking the same language.

ITU-D: ITU's Development Sector fosters international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication/ICT equipment and networks in developing countries.

ITU: Reaching out to the World

ITU Headquarter: Geneva, Switzerland

Europe Regional Office
Geneva, Switzerland

CIS Area Office
Moscow, Russia

Americas

Regional Office
Brasilia, Brazil

Area Offices
Tegucigalpa, Honduras.
Santiago, Chile.
Bridgetown, Barbados

Africa

Regional Office
Addis Ababa, Ethiopia

Area Offices
Yaoundé, Cameroon
Harare, Zimbabwe
Dakar, Senegal

Arab

Regional Office
Cairo, Egypt

Asia-Pacific

Regional Office
Bangkok, Thailand

Regional Director
Mr. Ioane Koroivuki

Area Office
Jakarta, Indonesia
Head: Ms. Aurora Rubio

ITU: Regional Office for Asia and the Pacific

Committed to Connecting the World

ITU International Telecommunication Union

38 Member States

128 Sector Members,

20 Associates

17 Academia

Land Locked Developing Countries (5)

Least Developed Countries (12)	Low-Income States (10)	The Rest (10)
Afghanistan	D.P.R. Korea	Australia
Bangladesh	India	Brunei
Bhutan	Indonesia	China/Hong Kong
Cambodia	Mongolia	Iran
Lao, PDR	Pakistan	Japan
Nepal	Philippines	Malaysia
Myanmar	Sri Lanka	New Zealand
Timor Leste	Vietnam	R.O. Korea
		Singapore
		Thailand

Kiribati | Fiji | PNG
Solomon Is. | Maldives | Samoa
Tuvalu | Marshall Islands
Vanuatu | Micronesia
| Nauru
| Tonga

Small Islands Developing States (12)

Measuring the Information Society Report 2014 launch, 24 November 2014

ITU-D Sector & Associate Members: Asia-Pacific Region

1. Afghan Wireless Communication Co.- Afghanistan
2. Asia Pacific Network Information Centre – Australia
3. The Cyber Guardian Pty Ltd. - Australia
4. Grameenphone (GP) Limited - Bangladesh
5. Orascom Telecom Bangladesh Limited (Banglalink)
6. Robi Axiata Limited - Bangladesh
7. Telekom Brunei Berhad (TelBru) – Brunei Darussalam
8. CHUAN WEI (Cambodia) Co., Ltd. - Cambodia
9. China Telecommunications Corporation - China
10. China Unicom (Hong Kong) Ltd. - China
11. Huawei Technologies Co. Ltd.- China
12. ZTE Corporation – China
13. Amalgamated Telecom Holdings Limited (ATH) - Fiji
14. Secretariat of the Pacific Community (SPC) - Fiji
15. Bharat Sanchar Nigam Ltd. - India
16. Bharti Airtel Limited - India
17. Centre for Internet and Society - India
18. Cellular Operators Association of India
19. ITU-APT Foundation of India
20. RailTel Corporation of India Limited, India
21. Telecom Disputes Settlement & Appellate Tribunal - India
22. Telecom Regulatory Authority of India
23. Vihaan Networks Limited (VNL), India
24. PT. INDOSAT Tbk. - Indonesia
25. PT. Telekomunikasi Indonesia Tbk – Indonesia
26. Irancell Telecommunication Services Company – I.R Iran
27. Iranian Net Communication & Electronic Services Co. – I.R. Iran
28. Telecommunication Company of Iran (TCI)
29. Fujitsu Limited - Japan
30. Hitachi, Ltd. - Japan
31. KDDI Corporation - Japan
32. Mitsubishi Electric Corporation - Japan
33. National Institute of Information and Communications Technology – Japan
34. NEC Corporation - Japan
35. Nippon Telegraph and Telephone East Corporation – Japan
36. Nippon Telegraph and Telephone West Corporation – Japan

37. Nomura Research Institute Ltd.- Japan
38. The ITU Association of Japan
39. Korea Information Society Development Institute (KISDI) – R.O.Korea
40. KT Corporation _ R.O. Korea
41. National Information Society Agency (NIA) – R.O. Korea
42. Samsung SDS Co.Ltd, R.O. Korea
43. SK Telecom, R.O. Korea
44. Altel Communications Sdn Bhd - Malaysia
45. Asia-Pacific Broadcasting Union – Malaysia
46. Asia-Pacific Institute for Broadcasting Development – Malaysia
47. Axiata Group Berhad, Malaysia
48. Green Packet Berhad – Malaysia
49. Maxis Mobile Sdn Bhd. – Malaysia
50. MEASAT Satellite Systems Sdn. Bhd. - Malaysia
51. Telekom Malaysia Berhad – Malaysia
52. Communications Regulatory Commission of Mongolia
53. Information Communication Network Company – Mongolia
54. MobiCom Corporation – Mongolia
55. Ncell Pvt.Ltd. - Nepal
56. Nepal Telecom Company Limited- Nepal
57. Nepal Telecommunications Authority – Nepal
58. CMPak Limited, Pakistan
59. e Worldwide Group – Pakistan
60. Multinet Pakistan (PVT) Limited - Pakistan
61. National Telecommunication Corporation – Pakistan
62. Pakistan Mobile Communications Limited – Pakistan
63. Telenor Pakistan (Pvt) Ltd. - Pakistan
64. Smart Communications, Inc. – Philippines
65. Telecentre.org Foundation – Philippines
66. ROHDE & SCHWARZ Regional Headquarters Singapore Pte. Ltd. - Singapore
67. Sri Lanka Telecom Ltd. – Sri Lanka
68. Advanced Info Service Public Company Ltd. – Thailand
69. Advanced Wireless Network Company Limited - Thailand
70. Asia-Pacific Telecommunity – Thailand
71. Total Access Communication PLC – Thailand
72. True Corporation Public Co., Ltd. – Thailand
73. Viettel Corporation, VietNam

Membership Application at http://www.itu.int/members/sectmem/Form.pdf

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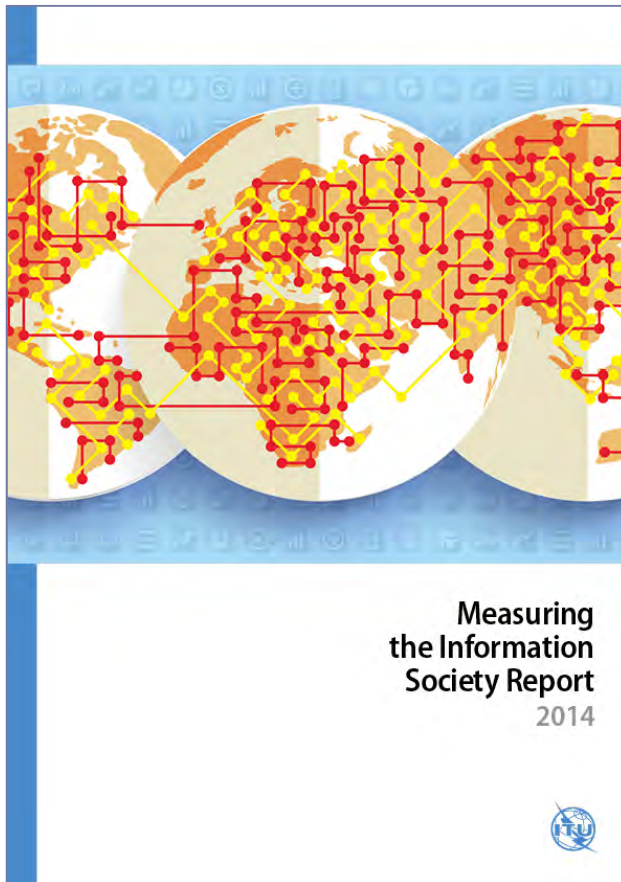
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MIS Report 2014 statistical highlights

Mobile broadband is driving ICT growth

➤ Global mobile-broadband penetration increased from 9% to 32% in the last five years

➤ Africa stands out with a mobile-broadband growth rate of over 40% in 2014

➤ 3G progressing in developing countries, and mobile-broadband penetration 21%

➤ 3G+ techs driving mobile-broadband penetration in developed countries: 84% in 2014

Internet access and use growing steadily

➤ Almost 44 per cent of the world's households have Internet access at home

➤ Growth driven by developing countries in 2014: 14% as against 4% in developed countries

➤ Internet users doubled in five years to reach 3 billion, 2/3 live in developing countries

Mobile-cellular and fixed-broadband uptake slowing down

➤ Growth in mobile penetration slows to a ten-year low of 2.6%

➤ Mobile markets have reached saturation with almost 7 billion subscriptions

➤ Fixed-broadband growth rates have dropped to 6% in developing countries, despite penetration remaining low (6%) in the developing world

➤ Fixed broadband has reached mature levels in developed countries: 27.5% penetration and continuous low growth (3.4%)

The digital **divides**

Fixed (wired)-broadband subscriptions, 2005-2014*

- 450 million people worldwide without access to mobile services

- <1% fixed-broadband penetration in least developed countries (LDCs)

- Rural-urban divide: lower 3G coverage, smaller proportion of households with Internet access and fewer enterprises and schools connected in rural areas.
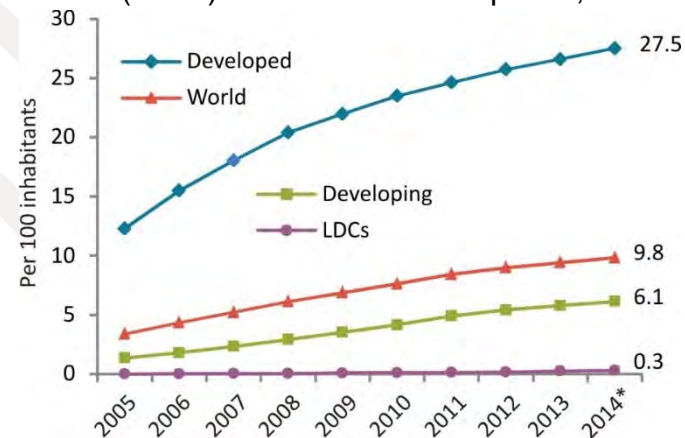
Individuals using the Internet, 2005-2014*

- 4.3 billion people worldwide are not yet using the Internet, 90% live in the developing world
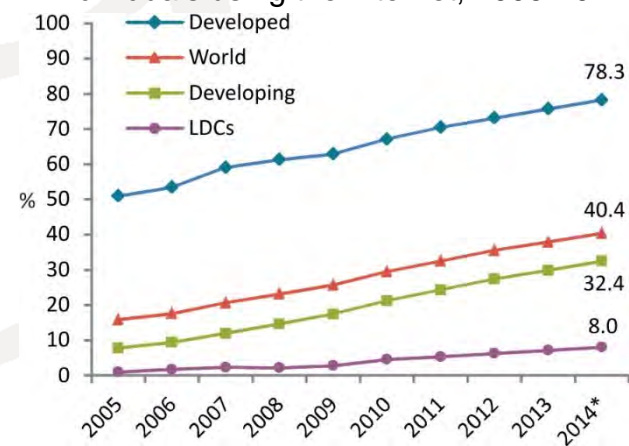
Investment and revenue trends

- Total telecommunication revenues have stagnated at USD 1.88 trillion, 2.7% of world GDP

- The sector returned to negative growth in developed countries, whereas revenues in developing countries increased by 4% in 2012

- Global investment in telecommunications grew by 4% to reach USD 307 billion in 2012

- The developing countries' share in total investment reached almost 40% and an all-time high value of USD 121 billion

Telecommunication revenues, 2007-2012
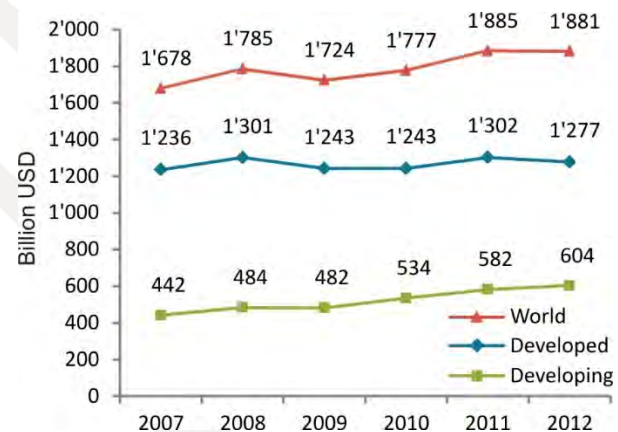
Investment by telecommunication operators, 2007-2012
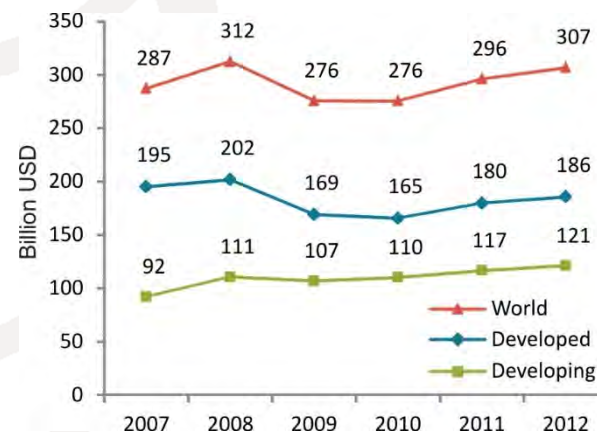
The ICT Development Index (IDI)

- 11 indicators, covering 3 areas:
  - ➤ ICT access, use and skills
- 166 economies
- Comparison of data from 2013 and 2012
- Regional analysis
- Assessment of the relationship between geography and population and IDI performance
- Analysis of the link between IDI and the MDGs

Almost all countries improved in the IDI
but Least Connected Countries lag behind

IDI 2013 top ten

1. Denmark
2. Korea (Rep.)
3. Sweden
4. Iceland
5. United Kingdom
6. Norway
7. Netherlands
8. Finland
9. Hong Kong, China
10. Luxembourg

Key findings

- Top IDI performers have high income levels, competitive markets and a skilled population

- Effective implementation of policies to achieve ambitious ICT targets help drive national information economies

- Some 2.5 billion people living in the world's least connected countries (LCCs) need targeted policies for improved access to ICTs

Wireless broadband drives IDI progress in dynamic countries, most of which are from the developing world

Most dynamic countries - changes between IDI 2013 and 2012

Change in IDI ranking			Change in access ranking			Change in use ranking		
IDI rank 2013	Country	IDI rank change	Access rank 2013	Country	Access rank change	Use rank 2013	Country	Use rank change
32	United Arab Emirates	14	47	Oman	16	71	Thailand	34
91	Fiji	12	101	Cape Verde	7	72	Fiji	24
93	Cape Verde	11	124	Gambia	7	142	Burkina Faso	13
81	Thailand	10	22	Qatar	6	79	Cape Verde	12
52	Oman	9	28	Estonia	5	24	United Arab Emirates	12
34	Qatar	8	64	Seychelles	5	134	Congo (Rep.)	11
38	Belarus	5	97	Albania	4*	111	Bhutan	8
69	Bosnia and Herzegovina	5	38	Belarus	4*	30	Qatar	8
78	Georgia	5	112	Bolivia	4*	61	Antigua & Barbuda	7**

Note: * In the access sub-index, Mali, Mexico, Nepal, Nigeria, the Russian Federation and Uruguay also went up four places between 2012 and 2013. **In the use sub-index, Belarus and Oman also went up seven places.
Source: ITU MIS Report 2014

Regional IDI

IDI ranges and averages, by region and compared to world average, 2013
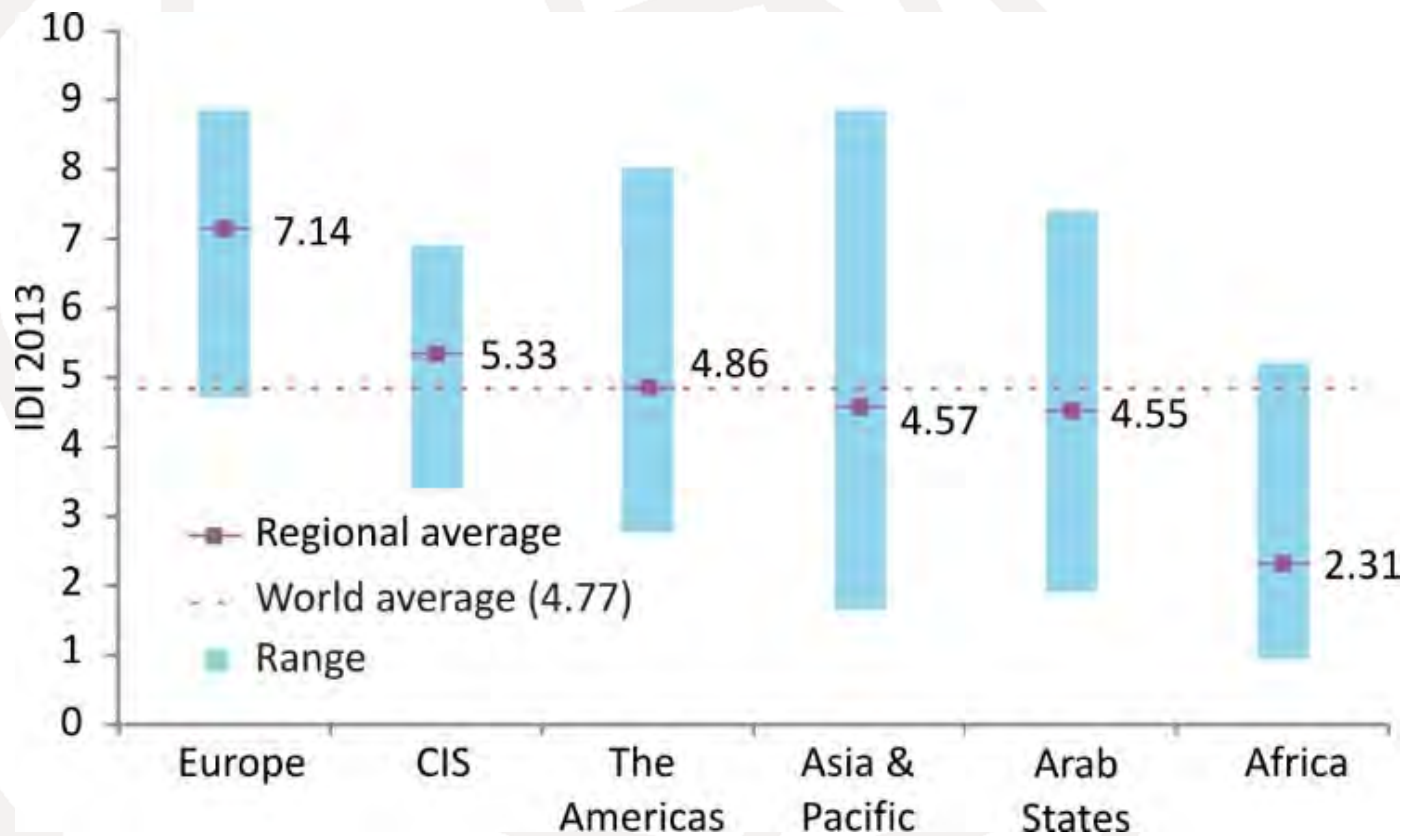
Source: ITU MIS Report 2014

Top five per region

The top five economies in each region and their ranking in the global IDI, 2013

Regional IDI rank	Europe	Global IDI rank	Asia & Pacific	Global IDI rank	The Americas	Global IDI rank	Arab States	Global IDI rank	CIS	Global IDI rank	Africa	Global IDI rank
1	Denmark	1	Korea (Rep.)	2	United States	14	Bahrain	27	Belarus	38	Mauritius	70
2	Sweden	3	Hong Kong, China	9	Canada	23	United Arab Emirates	32	Russian Federation	42	Seychelles	75
3	Iceland	4	Japan	11	Barbados	35	Qatar	34	Kazakhstan	53	South Africa	90
4	United Kingdom	5	Australia	12	Uruguay	48	Saudi Arabia	47	Moldova	61	Cape Verde	93
5	Norway	6	Singapore	16	St. Kitts and Nevis	54	Oman	52	Azerbaijan	64	Botswana	104

Source: ITU MIS Report 2014

Economies in Asia-Pacific – IDI Rankings

Economy	Regional rank 2013	Global rank 2013	IDI 2013	Global rank 2012	IDI 2012	Global rank change 2012-2013
Korea (Rep.)	1	2	8.85	1	8.81	-1
Hong Kong, China	2	9	8.28	11	8.08	2
Japan	3	11	8.22	10	8.15	-1
Australia	4	12	8.18	12	8.03	0
Singapore	5	16	7.90	15	7.85	-1
New Zealand	6	19	7.82	19	7.62	0
Macao, China	7	22	7.66	20	7.59	-2
Brunei Darussalam	8	66	5.43	63	5.36	-3
Malaysia	9	71	5.20	66	5.18	-5
Thailand	10	81	4.76	91	4.09	10
Maldives	11	85	4.71	82	4.50	-3
China	12	86	4.64	86	4.39	0
Fiji	13	91	4.40	103	3.90	12
Mongolia	14	92	4.32	90	4.19	-2
Iran (I.R.)	15	94	4.29	97	4.02	3
Viet Nam	16	101	4.09	99	3.94	-2
Philippines	17	103	4.02	102	3.91	-1
Indonesia	18	106	3.83	106	3.70	0
Sri Lanka	19	116	3.36	113	3.31	-3
Bhutan	20	123	2.85	126	2.58	3
Cambodia	21	127	2.61	127	2.54	0
India	22	129	2.53	129	2.42	0
Nepal	23	131	2.37	134	2.20	3
Lao P.D.R.	24	134	2.35	130	2.25	-4
Solomon Islands	25	136	2.29	132	2.22	-4
Pakistan	26	142	2.05	141	2.01	-1
Bangladesh	27	145	1.97	146	1.90	1
Myanmar	28	150	1.82	148	1.75	-2
Afghanistan	29	155	1.67	155	1.57	0
Average*			4.57		4.42	

Note: *Simple averages.
Source: ITU.

Source: ITU MIS Report 2014

There is a strong relationship between the IDI and many MDG indicators

Goal 4: Reduce child mortality

4.1 Under-five mortality rate

4.2 Infant mortality rate

4.3 Proportion of 1 year-old children immunized against measles

Goal 5: Improve maternal health

5.1 Maternal mortality ratio

5.2 Proportion of births attended by skilled health personnel

5.4 Adolescent birth rate

5.5 Antenatal care coverage (at least one visit and at least four visits)

Goal 6: Combat HIV/AIDS, malaria and other diseases

6.1 HIV prevalence among population aged 15-49 years old

6.9 Incidence, prevalence and death rates associated with tuberculosis

6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course

Goal 1: Eradicate extreme poverty and hunger

1.1 Proportion of population below $1 (PPP) per day

1.1 Population below national poverty line

1.2 Poverty gap ratio

1.6 Proportion of employed people living below 1$ per day

1.9 Proportion of population below minimum level of dietary energy consumption

IDI

Significant partial correlations between IDI and MDG indicators

Goal 7: Ensure environmental sustainability

7.2 CO_2 emissions, metric tons of CO_2 per capita

7.8 Proportion of population using an improved drinking water source

7.9 Proportion of population using improved sanitation facility

Fixed-broadband prices continue to decrease and entry-level speeds are increasing

- From 2008 to 2012, entry-level fixed-broadband prices decreased by 20% per year on average in developing countries

- In 2013, there was a slowdown: price in developing countries decreased by only 4%

- 1 Mbit/s was the most common entry-level speed in 2013, compared with 256 kbit/s in 2008
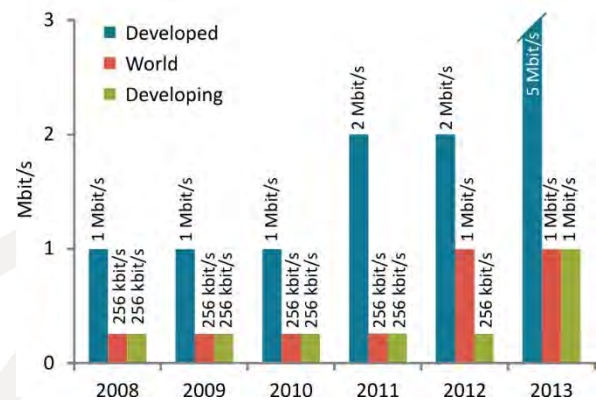
But:

- The price of a basic plan corresponds to >5% GNI p.c. in most developing countries

Fixed-broadband prices as a % of GNI p.c.
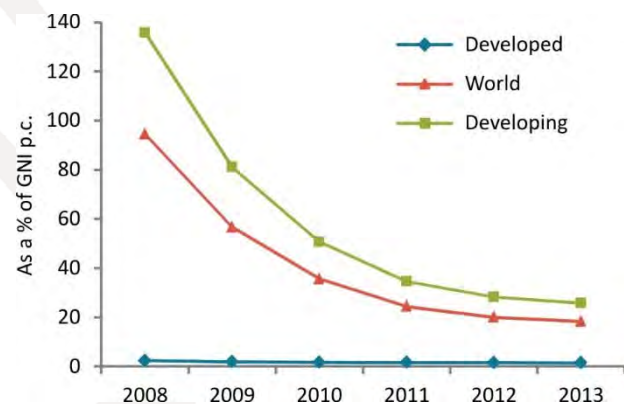
Most common entry-level fixed-broadband speed
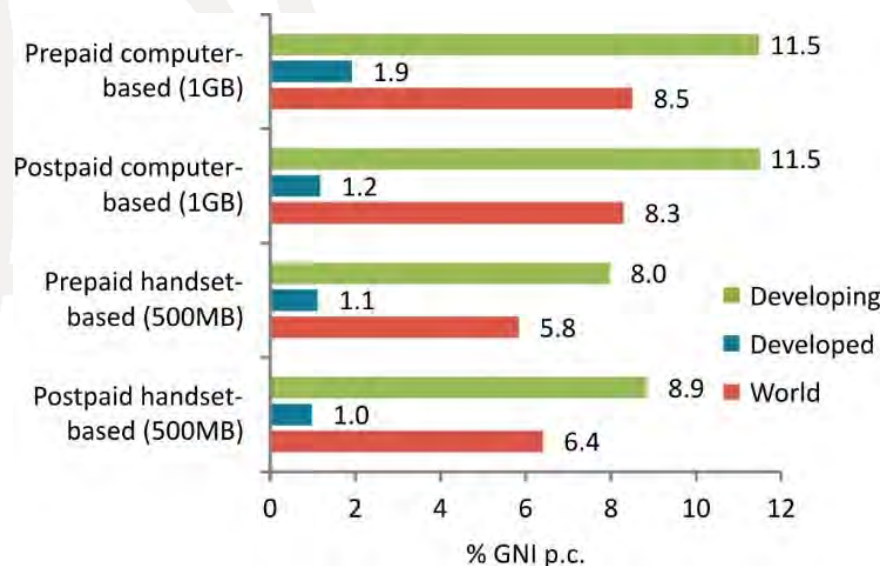
Source: ITU MIS Report 2014

Mobile-broadband prices in developed countries six times more affordable than in developing countries

- The number of developing countries offering mobile-broadband plans increased by 20% from 2012 to 2013

- The price of mobile-broadband plans corresponds on average to >5% of GNI p.c. in the developing world

But:

- In almost half of the African countries, mobile-broadband is more than USD 10 per month cheaper than fixed broadband

Mobile-broadband prices as a % of GNI p.c.

Prepaid computer-based (1GB): 11.5 / 1.9 / 8.5
Postpaid computer-based (1GB): 11.5 / 1.2 / 8.3
Prepaid handset-based (500MB): 8.0 / 1.1 / 5.8
Postpaid handset-based (500MB): 8.9 / 1.0 / 6.4

Developing
Developed
World

% GNI p.c.

Source: ITU MIS Report 2014

Income inequalities contribute to making broadband unaffordable

Prepaid handset-based mobile-broadband prices as % of equivalized household income

- Fixed-broadband is affordable for the 20% households with highest income in most developing countries

  but unaffordable for the 20% households with lowest incomes in almost all developing countries

- Handset-based mobile-broadband prices are affordable for almost all households in the developed world
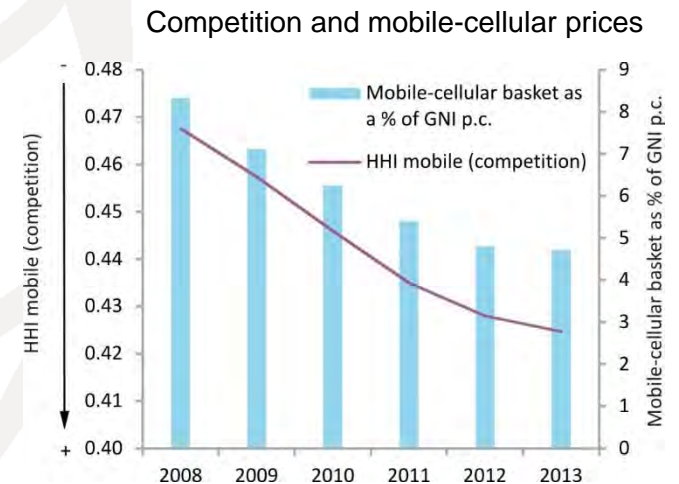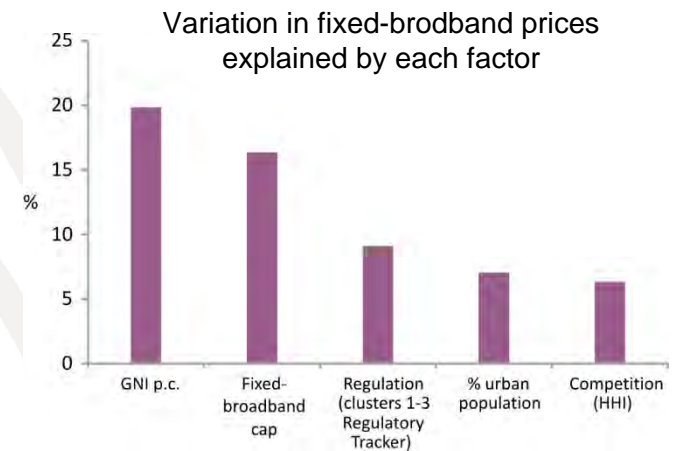
  but unaffordable for some segments of the population in the developing world

Legend:
- Price < 5% equivalized income
- Price 5%-10% equivalized income
- Price 10%-20% equivalized income
- Price >20% equivalized income

Countries (top to bottom): United States, Germany, Ireland, Belgium, Portugal, Estonia, Slovenia, France, United Kingdom, Italy, Canada, New Zealand, Poland, Australia, Switzerland, Finland, Sweden, Iceland, Austria, Norway, Denmark, Czech Republic, Greece, Spain, Slovakia, Russian Federation, Netherlands, Uruguay, Hungary, Chile, Malaysia, Costa Rica, Turkey, Brazil, Peru, Panama, El Salvador, Paraguay, Mexico, Bolivia, Colombia, Honduras, Ecuador, Dominican Rep.

X-axis: 0 10 20 30 40 50 60 70 80 90 100 % population
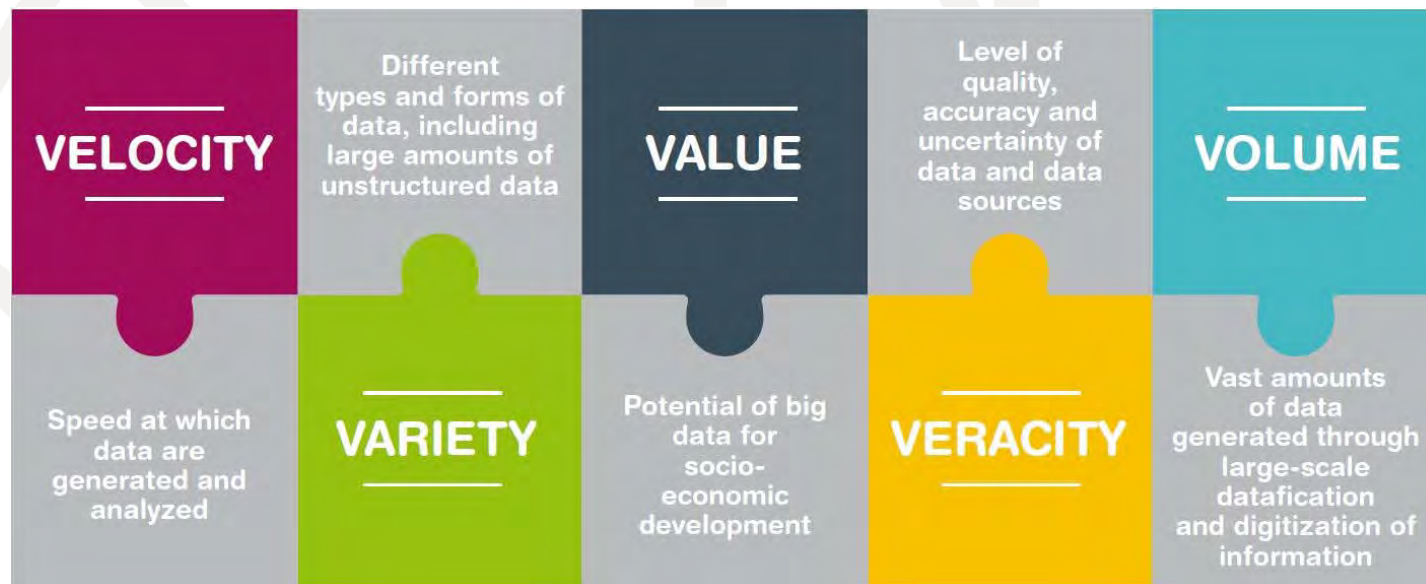
Source: ITU MIS Report 2014

Competition and regulation are key drivers of affordable ICT prices

- Fixed-broadband prices could be reduced by 10% if competition and the regulatory framework in developing countries improved

- An increase in competition in developing countries could lead to a 5% reduction in mobile-cellular prices

- International regulatory best practices, such as the ones adopted at the ITU Global Symposium for Regulators, may serve as guidelines for effective regulatory frameworks

Variation in fixed-brodband prices explained by each factor

Competition and mobile-cellular prices

Source: ITU MIS Report 2014, HHI data sourced from Informa

Big data for development

- Big data are the result of an increasingly **digitized world**

- Big data hold great promise for **improving** the timeliness and completeness of **official statistics**

- Big data can be used for formulating social and economic **development policy**

VELOCITY — Speed at which data are generated and analyzed

Different types and forms of data, including large amounts of unstructured data — **VARIETY**

VALUE — Potential of big data for socio-economic development

Level of quality, accuracy and uncertainty of data and data sources — **VERACITY**

VOLUME — Vast amounts of data generated through large-scale datafication and digitization of information

Big data from the ICT sector

- The ICT sector is one of the richest sources of big data

- **Data from mobile operators are real-time and low-cost**, and are an area with huge development potential
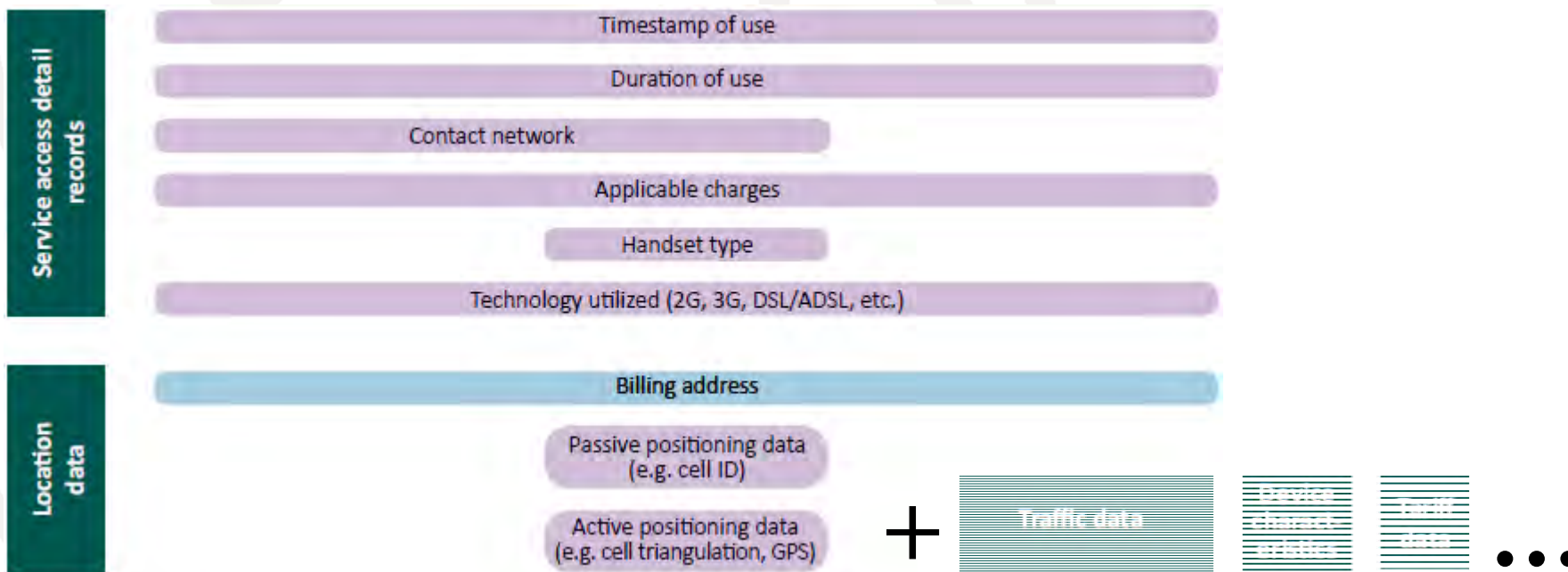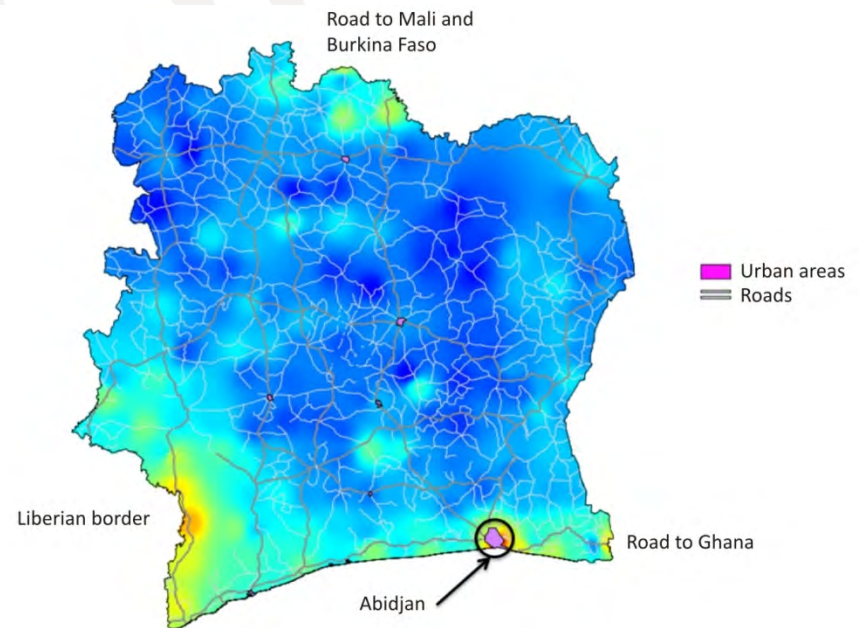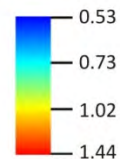

Source: ITU, adapted from Naef et al. (2014).

Use of big data from mobile operators

- Moibile data can reveal new insights into the digital divide
- Mobile data can reveal socio-economic information about mobile users

Example: **Poverty mapping**
in Côte d'Ivoire using mobile-
network data

Road to Mali and
Burkina Faso

Average of purchase
averages (USD)

- 0.53
- 0.73
- 1.02
- 1.44

Urban areas
Roads

Liberian border

Road to Ghana

Abidjan

Source: Gutierrez et al. (2013).

Big data from the ICT sector: development potential and challenges

Potential

- Telecommunication operators, Internet companies and content providers are a **rich source for big data**

- **Data from mobile operators** are real-time and low-cost, and are an area with huge development potential

- Big data could reveal new insights into the **digital divide**

Challenges

- **Privacy issues** remain the biggest challenge
- **Public-private partnerships** are required to harness the potential of big data
- Cooperation among **international stakeholders**

Human Capacity Building in Telecommunications/ICT Statistics and Indicators

ITU/NBTC/ASEAN Forum & Training Workshop on Telecommunications/ICT Statistics and Indicators
16-20 October 2014, Bangkok

For further information:

indicators[at]itu.int

www.itu.int/ict